Biscayne 18

North Miami Beach, Florida 33160

prepared for:

Biscayne 18 Development LLC

traffic evaluation

TRAFTECH ENGINEERING, INC.

March 2022

TRAFTECH ENGINEERING, INC.

March 28, 2022

Biscayne 18
c/o Ben Fernandez, Esq.
Bercow Radell Fernandez Larkin + Tapanes
200 S. Biscayne Boulevard, Suite 300
Miami, Florida 33131

Re: **Biscayne 18 – North Miami Beach, Florida**

Dear Ben:

TrafTech Engineering, Inc. is pleased to provide you with the results of the traffic evaluation associated with the proposed office/retail development planned to be located at 15801 Biscayne Boulevard in North Miami Beach, Miami-Dade County, Florida. Figure 1 on the following page shows the location of the project site.

Project Description and Access

The project will consist of one new 3-story building. Access to the project is planned via two driveways off of Biscayne Boulevard, the north driveway is a full access driveway and the south driveway is an egress-only driveway. Appendix A contains the site plan associated with the proposed development. For purposes of this traffic evaluation, the project is anticipated to be built and occupied in the year 2024. The following tasks were undertaken as part of this evaluation:

- Documented the existing lane geometry of the study area. Five (5) intersections including the project driveways were identified as the locations that will be impacted the most by the proposed project. These intersections include:

  1. Biscayne Boulevard and NE 163rd Street
  2. Biscayne Boulevard and NE 151st Street
  3. Biscayne Boulevard and NE 156th Street
  4. Biscayne Boulevard and North Driveway
  5. Biscayne Boulevard and South Driveway

  Figure 2 illustrates the existing lane geometry of the study intersections.

- Collected intersection turning movement counts during the critical peak periods (7:00 AM to 9:00 AM) and (4:00 PM to 6:00 PM) at the following locations:

  - Biscayne Boulevard and NE 163rd Street (traffic signal)
  - Biscayne Boulevard and NE 151st Street (traffic signal)
  - Biscayne Boulevard and NE 156th Street (traffic signal)
  - Biscayne Boulevard and North Driveway (stop)
  - Biscayne Boulevard and South Driveway (stop)

- The above traffic counts were recorded on Wednesday, December 15, 2021 and Tuesday, March 22, 2022. The traffic counts were collected during the peak season based on FDOT's peak season adjustment factors. The traffic counts are included in Appendix B as well as the signal timing plan for the signalized intersections. The peak season adjustment factors and historical traffic counts are provided in Appendix C. Figure 3 shows the 2021 peak season AM and PM peak hour traffic volumes.

- Determined the trip generation of the proposed land use based on the trip generation equations/rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual* (11th Edition). Tables 1 and 2, on the next page, document the trip generation associated with the proposed land uses. As presented in Table 2, the proposed project is projected to generate approximately 195 daily trips, approximately 15 AM peak hour trips (13 inbound and 2 outbound) and approximately 28 trips during the typical afternoon peak hour (4 inbound and 24 outbound).

- The project's peak-hour trips documented in Table 2 were distributed and assigned to the study area. The trip distribution and traffic assignment for the peak trips documented in the trip generation table was based on Miami-Dade County's Cardinal Distribution information for the study area. Using the County's cardinal distribution data for Traffic Analysis Zone 94, which is applicable to the project site from the latest SERPM data published by Miami-Dade County, the following trip distribution was used for the project:

  - 10% to and from the north via US 1/Federal Highway
  - 15% to and from the south via US 1/Federal Highway
  - 10% to and from the south via NE 1st Avenue
  - 5% to and from the east via Pembroke Road
  - 60% to and from the west via Pembroke Road

TABLE 1
Trip Generation Summary (Existing Uses)
Biscayne 18 Development

Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total Trips	Inbound	Outbound	Total Trips	Inbound	Outbound
Building 1 (Office)	9,808							
Buildinjg 2 (Office)	17,432							
Building 3 (Office)	22,151							
Office (All) (LUC 710)	49,391	628	44	39	5	92	16	76
Gross Trips		**628**	**44**	**39**	**5**	**92**	**16**	**76**

Source: ITE Trip Generation Manual (11th Edition)

TABLE 2
Trip Generation Summary (Proposed Uses)
Biscayne 18 Development

Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total Trips	Inbound	Outbound	Total Trips	Inbound	Outbound
Existing Buildings 1-3	49,391							
New Building	18,000							
Restaurant	1,500							
Retail	4,500							
Office	12,000							
Exist + Prop (LUC 710)	67,391	823	59	52	7	120	20	100
Gross Trips		**823**	**59**	**52**	**7**	**120**	**20**	**100**

Source: ITE Trip Generation Manual (11th Edition)

	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total Trips	Inbound	Outbound	Total Trips	Inbound	Outbound
Difference	18,000	195	15	13	2	28	4	24

NOTE: Even though the new building includes a restaurant and retail use, ITE Land Use Code 710 indicates that the "Office Building" category may contain a mixture of tenants including restaurants and retail facilities among other uses.

ITE Land Use Code 710 - General Office Building
Daily Trips: Ln (T) = 0.87 Ln (X) +3.05, X = 1,000 square feet
AM Peak: Ln (T) = 0.86 Ln (X) + 1.16 (88% inbound and 12% outbound), X = 1,000 square feet.
PM Peak: Ln (T) = 0.83 Ln (X) + 1.29 (17% inbound and 83% outbound), X = 1,000 square feet.

Figure 4 documents the project traffic assignment based on the above traffic percentages.

- Figures 5 and 6 present the 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 proposed re-development project.

  The background traffic includes traffic growth based on historical traffic data within the study area (refer to Appendix D). As indicated in the growth analysis presented in Appendix D, negligible traffic growth has occurred during the past five (5) years (2015-2019).

- Please note that 2020 traffic data is not reliable due to Covid-19. However, to assess traffic impacts with a conservative approach, a 0.5% growth rate, compounded annually, was applied to the existing traffic counts to develop future traffic projections. Background traffic also includes project trips from committed developments in the area. Trips from TECO, Uptown Biscayne, and Intercoastal Mall projects were included. Committed Developments information could be found in Appendix D.

  The future traffic volume calculations are contained in Appendix E in tabular format.

- To determine the traffic impacts created by the proposed redevelopment project, capacity/level of service analyses were undertaken using the SYNCHRO software. The results of the capacity/level of service analyses are presented in Table 3. As summarized in Table 3, the intersections of Biscayne Boulevard/ NE 163rd Street and Biscayne Boulevard/NE 151st Street are operating at deficient level of service without the project trips (i.e., background conditions) and are expected to continue operating deficiently with the project in place in the year 2024. The increase in delay due to the project trips is minimal with a maximum increase in delay of 0.3 seconds. The project driveways are projected to operate at acceptable levels of service. Minimal queues are expected at the access driveways. Table 4 Summarizes the 95th queue lengths. The SYNCHRO outputs are contained in Appendix F.

Queuing at the Bank's Drive-thru Lanes

To determine the length of queue associated with the bank, the following assumptions were used:

- Assumed the bank portion of the 9,808 square-foot office/bank building is approximately 5,000 square feet. According to ITE Trip Generation Manual (11th Edition), during the highest volume-hour of the bank (peak hour of the generator), the bank generates 26.35 trips per 1,000 square feet per hour. Hence, 26.35 x 5 = 132 peak hour trips with 67 inbound trips and 65 outbound trips.

- According to ITE's Transportation and Land Development (2nd Edition) publication, approximately 50% of inbound bank trips use the drive-through facility. Due to the current pandemic, 80% drive-thru usage was used for

- purposes of this analysis. Therefore, 80% of 67 inbound trips = 54 inbound trips using the drive-thru lanes.

- According to ITE's Transportation and Land Development (2nd Edition) publication, each drive-thru lane processes between 30 and 35 vehicles per hour. For purposes of this analysis, 30 vehicles per hour were used.

Using the above assumptions, a queuing analysis was undertaken for the bank. The length of queue anticipated at the drive-thru lanes was established using information contained in ITE's Transportation and Land Development, Chapter 8 – Drive-In Facilities1. For this analysis, the following input variables were used:

- Service Rate: With three drive-through lanes, the bank's drive-thru operation can process 90 vehicles per hour (3 drive-thru lanes x 30 vehicles per lane).

- Demand Rate: As indicated above, the maximum number of vehicles projected to use the drive-thru lanes during the peak hour is 54.

Using equation 8-9b and Table 8-11 of ITE's Transportation and Land Development, the maximum length of queue anticipated at the drive-thru lanes, at the 95% confidence level, is three (3) vehicles. As shown in the attached site plan, the distance between the drive-thru windows and the entrance to the drivethru lanes is approximately 68 feet. Using an effective vehicle length of approximately 22 feet per vehicle, 3 vehicles per drive-thru lane can be accommodated. Since the bank has three (3) drive-thru lanes, up to nine (9) vehicles can be accommodated at the drive-thru lanes.

In summary, the bank's drive-thru lanes can accommodate up to nine (9) vehicles and the maximum queue anticipated is three (3) vehicles.

Roadway Segment Analysis

A roadway segment analysis was conducted for the project. As presented in Tables 5A and 5B, all roadway segments located within the study area are currently operating at an acceptable level of service and will continue to operate adequately with the proposed project in place.

Multimodal transportation

Miami-Dade Transit (MDT) and the City of North Miami Beach provide bus service to and from the project area via three (3) routes:

- Route 105/Route E operates along SR 826/NE 163rd Street within the vicinity of the project. This route serves the Golden Glades Park & Ride Lot, Aventura Mall, and the Gulfstream Park. This route operates with 30-minute headways during the A.M. and P.M. peak hours and provides connecting service to additional MDT bus routes.

- North Miami Beach's free trolley NMB-Line Route A operates along SR 826/NE 163rd Street within the vicinity of the project. The route originates at the Intracoastal Mall and offers connections to other routes serving City Hall, Fulford Elementary, Florida International University, and Nova University. This route operates with 60-minute headways during the A.M. and P.M.

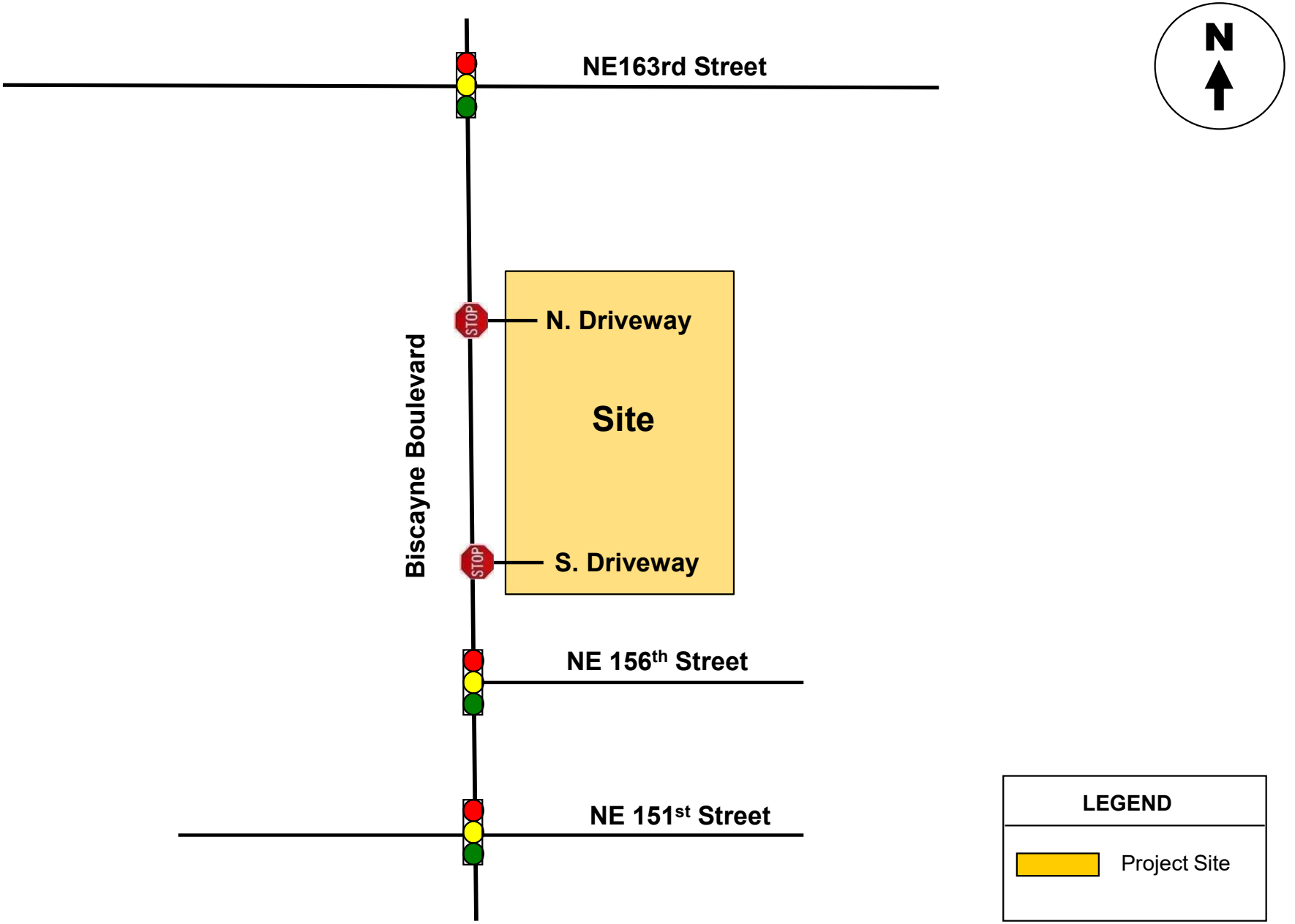
- North Miami Beach's free trolley NMB-Line Route C operates along NE 151st Street within the vicinity of the project. The route originates at Walmart and offers connections to other routes serving Fulford Elementary/Allen Park, Florida International University – Transfer NOMI, Biscayne Commons, Highland Village, and Washington Park. This route operates with 60-minute headways during the A.M. and P.M. peak hours.

Please give me a call if you have any questions.

Sincerely,

TRAF TECH ENGINEERING, INC.

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

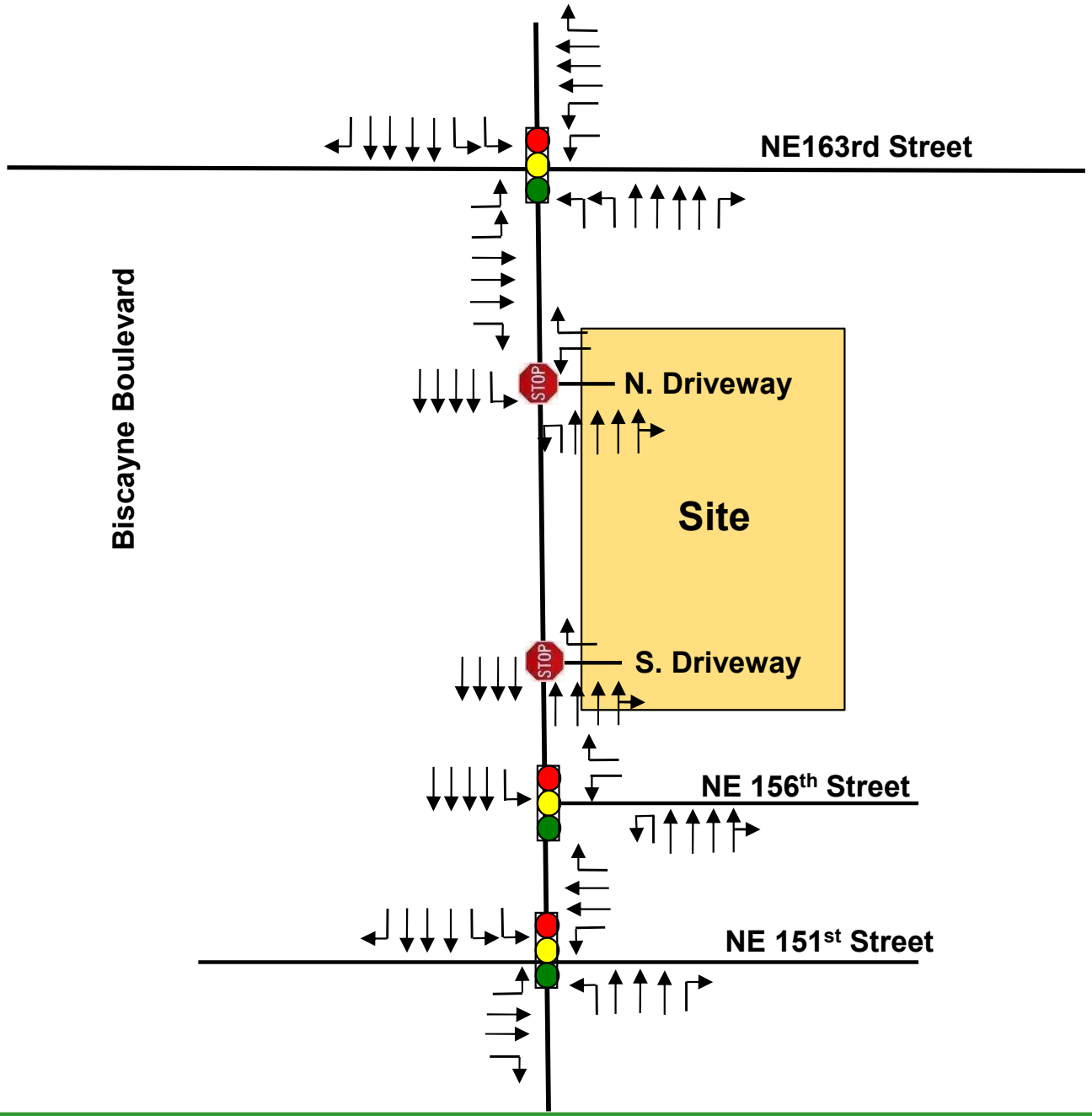


TRAFTECH ENGINEERING, INC.

LOCATION MAP

FIGURE 1

Biscayne 18
North Miami Beach, Florida

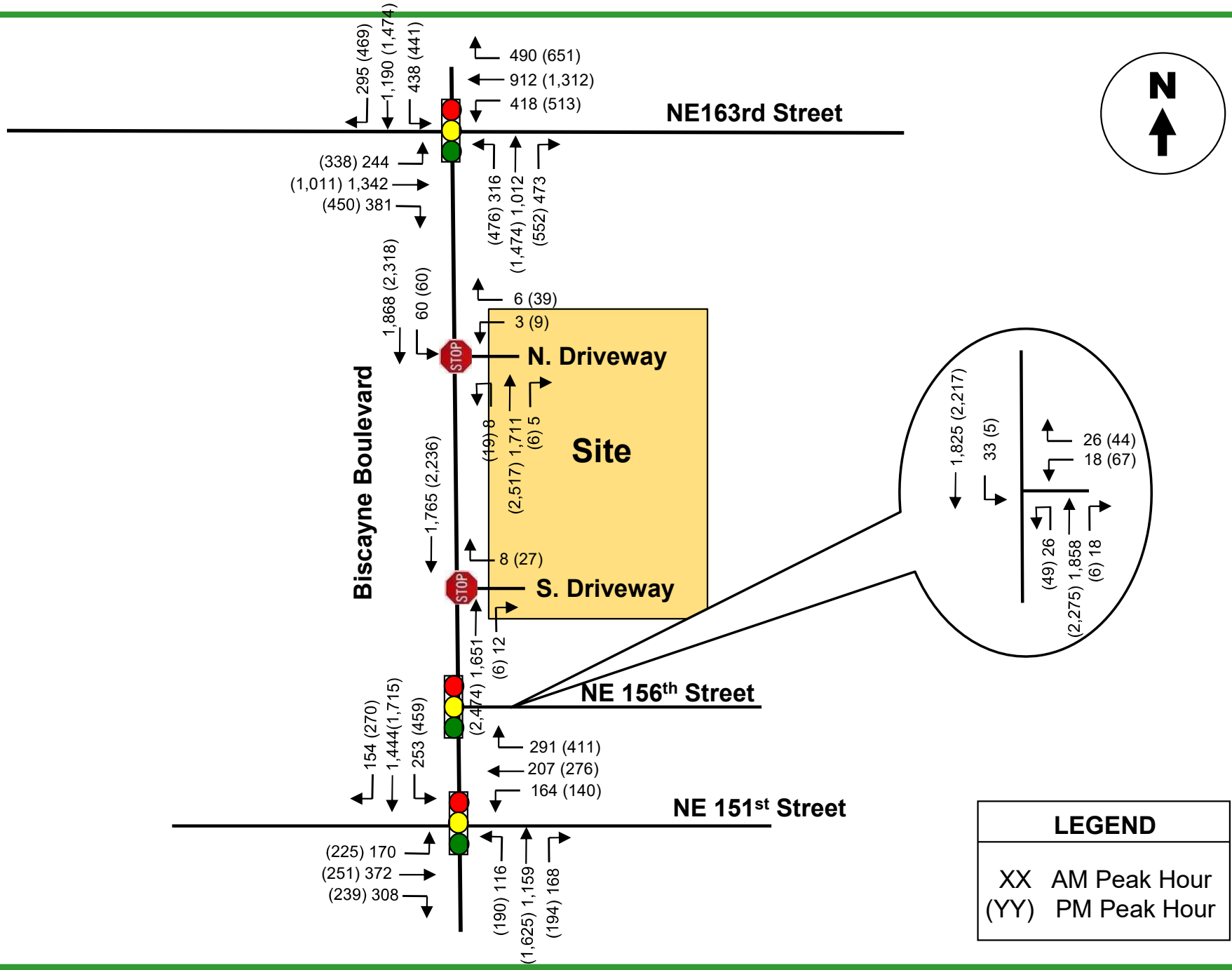


TRAFTECH ENGINEERING, INC.

EXISTING LANE GEOMETRY

FIGURE 2

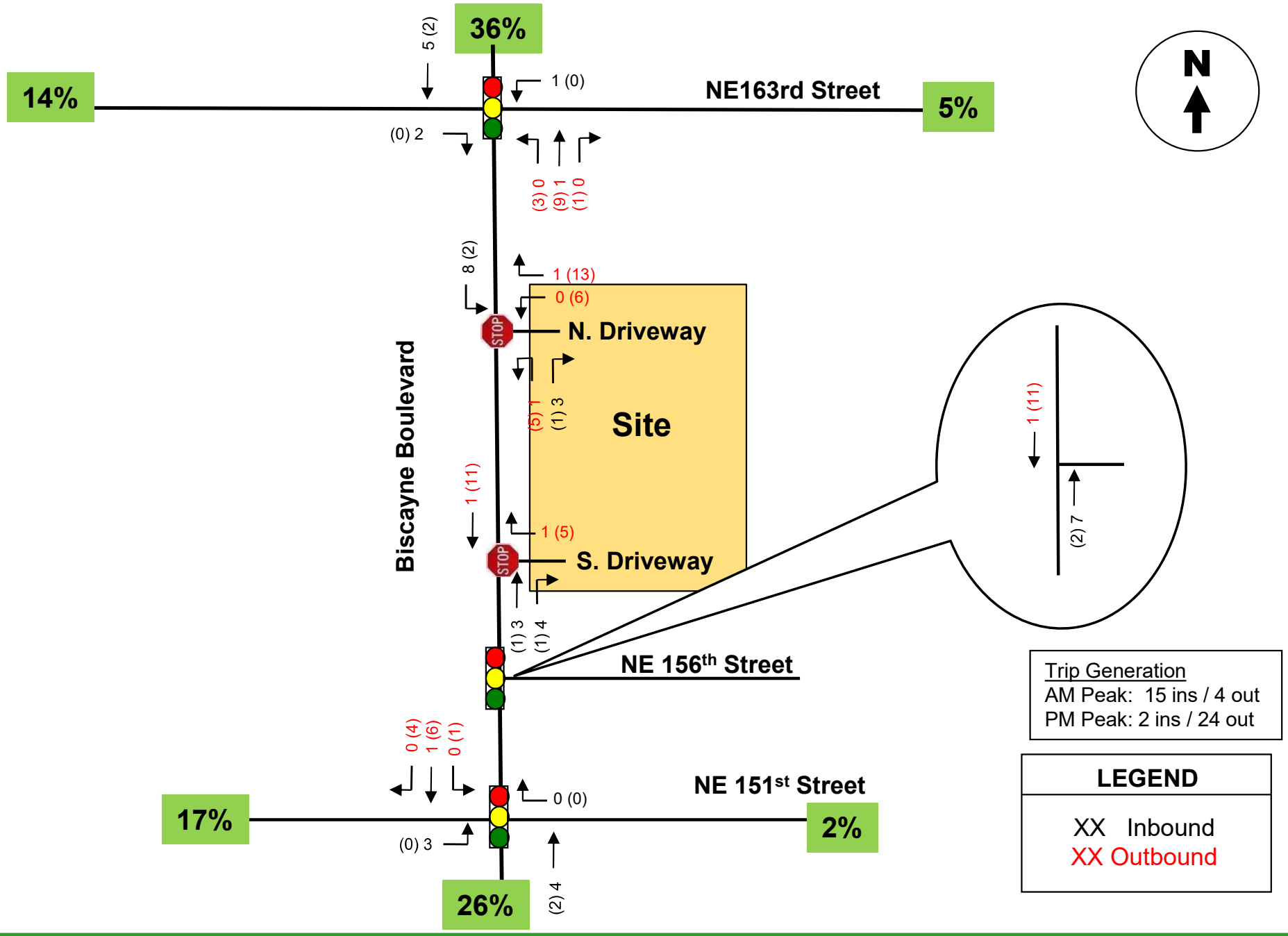
Biscayne 18
North Miami Beach, Florida



TRAFTECH ENGINEERING, INC.

TRAFFIC COUNTS
(Year 2021 Peak Season)

FIGURE 3
Biscayne 18
North Miami Beach, Florida

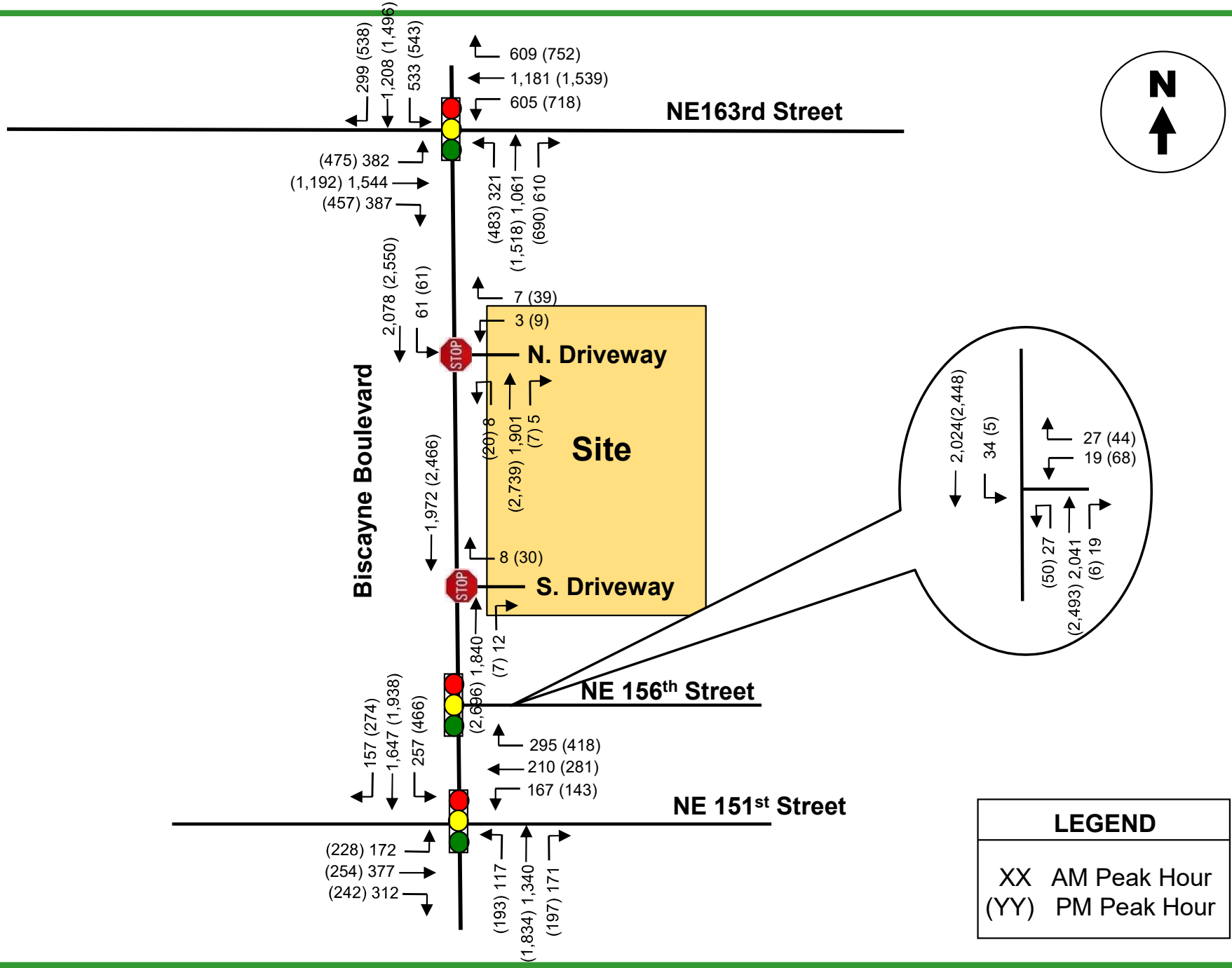


TRAFTECH ENGINEERING, INC.

Project Trip Distribution

FIGURE 4

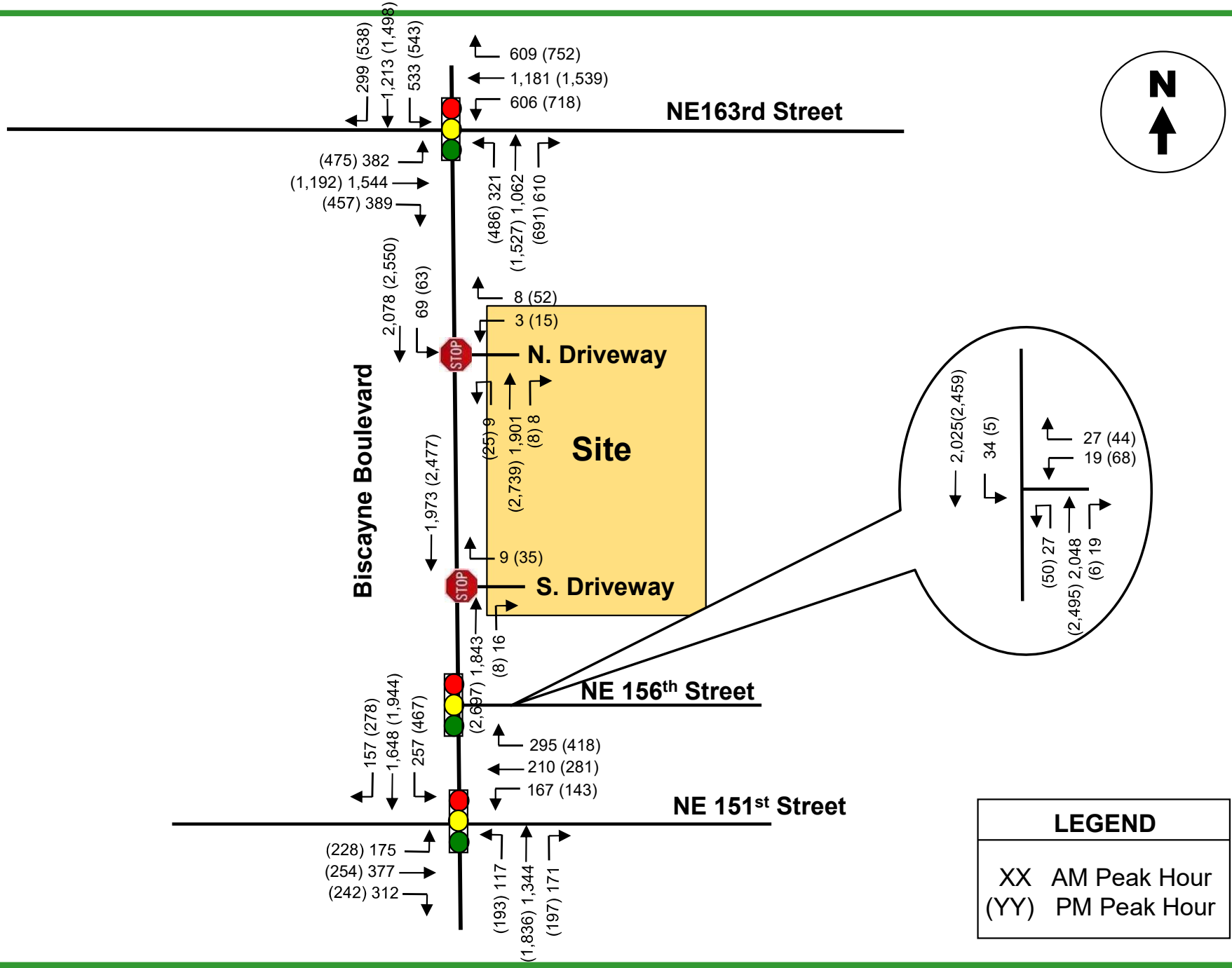
Biscayne 18
North Miami Beach, Florida



TRAFTECH ENGINEERING, INC.

BACKGROUND TRAFFIC VOLUMES without Project Trips (Year 2024 Peak Season)

FIGURE 5
Biscayne 18
North Miami Beach, Florida



TRAFTECH ENGINEERING, INC.

TOTAL TRAFFIC with PROJECT – Year 2024
AM (PM) Peak Hour Trips

FIGURE 6

Biscayne 18
North Miami Beach, Florida

TABLE 3
Level of Service Analyses
Biscayne 18

Intersection	Time Period	EASTBOUND		WESTBOUND		NORTHBOUND		SOUTHBOUND		Intersection	
		Approach		Approach		Approach		Approach			
		LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
Biscayne Blvd & SR 826/NE 163rd Street (traffic signal)	AM	E (F)[F]	70.9(104.0)[103.9]	E (F)[F]	60.3(100.6)[100.9]	E (E)[E]	60.6(70.9)[70.9]	E(F)[F]	69.8(95.1)[95.1]	E(F)[F]	65.9(92.9)[92.9]
	PM	E (E)[F]	60.5(67.6)[67.6]	E (F)[F]	75.7(175.7)[175.7]	E (F)[F]	73.1(93.7)[94.8]	E(F)[F]	72.8(87.0)[87.1]	E(F)[F]	70.9(105.4)[105.7]
Biscayne Blvd & NE 151st Street (traffic signal)	AM	F(F)[F]	103.1(105.9)[104.9]	F (F)[F]	102.4(104.4)[104.4]	C (C)[C]	32.4 (34.8)[35.0]	D (D)[D]	38.1(39.5)[39.7]	E (E)[E]	56.7 (57.3)[57.2]
	PM	E(E)[E]	62.7(63.1)[63.1]	F (F)[F]	184.2(189.3)[189.3]	D (E)[E]	52.0 (56.8)[61.0]	D (E)[E]	54.4(58.7)[58.9]	E (E)[E]	72.5 (76.9)[77.0]
Biscayne Blvd & NE 156th Street (traffic signal)	AM			F (F)[F]	87.1(87.1)[87.1]	A (A)[A]	3.3 (3.4)[3.5]	A (A)[A]	1.2(1.3)[1.3]	A (A)[A]	2.4 (2.5)[2.6]
	PM			F (F)[F]	84.0(84.0)[85.0]	A (A)[A]	5.7 (6.3)[6.7]	A (A)[A]	2.4(2.8)[3.0]	A (A)[A]	4.9 (5.3)[5.9]
Biscayne Blvd & N. Driveway*	AM			C (C)[C]	15.0(16.1)[15.9]	B (B)[B]**	13.0 (14.2)[14.2]				
	PM			C (C)[D]	20.1(23.3)[26.8]	C (C)[C]**	16.0 (18.0)[18.3]				
Biscayne Blvd & S. Driveway*	AM			C (C)[C]	14.7 (15.8)[15.9]						
	PM			C (C)[C]	21.2 (23.6)[24.2]						

SOURCE: SYNCHRO. LEGEND: Existing (Background)[Future]

* Number of lanes and volumes were reduced to account for limitations of the HCM methodology.

** NBU-Turn

TABLE 4
95th Percentile Queues*
Biscayne 18

Intersection	EASTBOUND				WESTBOUND				NORTHBOUND				SOUTHBOUND	
	L		R		L		R		L		R		L	
	Storage (ft)	95th Percentile (ft)	Storage (ft)	95th Percentile (ft)	Storage (ft)	95th Percentile (ft)	Storage (ft)	95th Percentile (ft)	Storage (ft)	95th Percentile (ft)	Storage (ft)	95th Percentile (ft)	Storage (ft)	95th Percentile (ft)
Biscayne Blvd & SR 826/NE 163rd Street (traffic signal)			240	368/376/378	360	#334/#579/#581			420	247/251/251	420	512/#898/#898		
				450/459/459		#444/#707/#707				#409/#418/#421		640/#998/#1000		
Biscayne Blvd & NE 151st Street	100	221/223/226					150	142/156/159					500	210/213/213
		283/286/286						#418/151/#437						#420/#429/#430

SOURCE: SYNCHRO. LEGEND: Existing /Background/Future

* Queues were reported at movements where project trips were added.

95th percentile volume exceeds capacity, queue may be longer.

TABLE 5A
Link Evaluation
AM Peak Hour Analysis

Roadway Segment	Lanes	LOS "D" Capacity	Existing Traffic (2021)* Volume	LOS	Background Traffic (2024) without Project Volume	LOS	Total Traffic (2024) with Project Volume	LOS
Biscayne Boulvard								
North of NW 163rd St	4	4040	1923	A	2040	A	2045	A
South of NW 163 St	4	4040	1801	A	1992	A	1993	A

**Traffic volumes taken from Figures of the traffic study*

Based on 2020 FDOT Quality/LOS Handbook
Biscayne :40 mph

TABLE 5B
Link Evaluation
PM Peak Hour Analysis

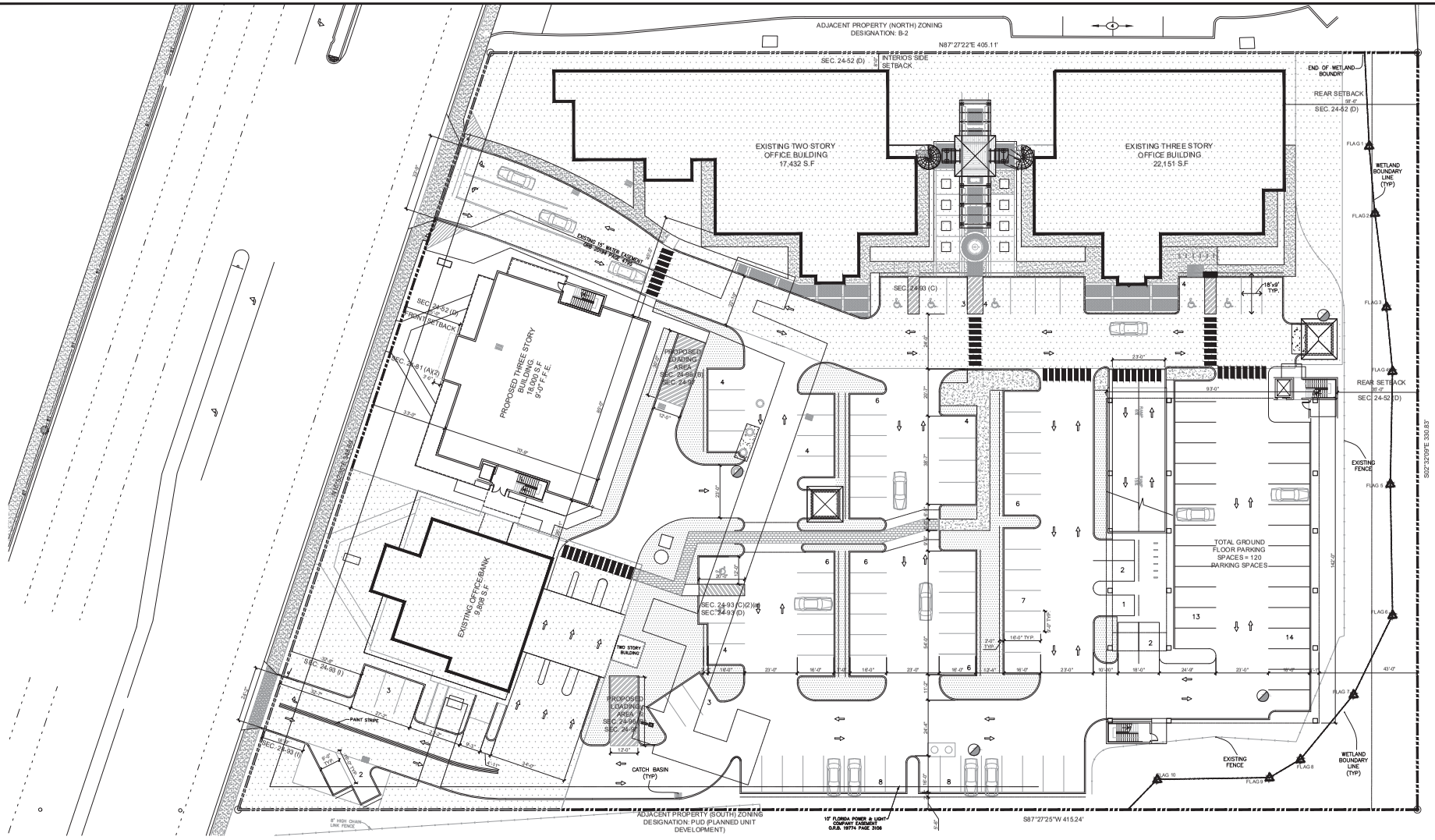
Roadway Segment	Lanes	LOS "D" Capacity	Existing Traffic (2021)* Volume	LOS	Background Traffic (2024) without Project Volume	LOS	Total Traffic (2024) with Project Volume	LOS
Biscayne Boulvard								
North of NW 163rd St	4	4040	2384	A	2577	A	2579	A
South of NW 163 St	4	4040	2502	A	2691	A	2704	A

**Traffic volumes taken from Figures of the traffic study*

Based on 2020 FDOT Quality/LOS Handbook
Biscayne :40 mph

APPENDIX A

Site Plan and Methodology
Biscayne 18



SITE PLAN
SCALE: 1" = 20'-0"

EXISTING

PROPOSED

LEGAL DESCRIPTION:

TRACK "A", "GROVPAC SUBDIVISION", ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 115, PAGE 90, OF THE PUBLIC RECORDS OF MIAMIDADE COUNTY, FLORIDA. LESS THE WESTERLY 24 FEET THEREOF, ACQUIRED BY THE DEPARTMENT OF TRANSPORTATION, STATE OF FLORIDA FOR RIGHT-OF-WAY FOR STATE ROAD NO. 5 (BISCAYNE BOULEVARD).

BICYCLE SPACE CALCULATIONS

SPACE	USE	RATIO	PS REQ'D
LOT	OFFICE/BANK/RETAIL/ RESTAURANT	101 TO 500 PS	12 BICYCLE PS
TOTAL PROVIDED			12 BICYCLES PS

SITE DEVELOPMENT STANDARD

DISTRICT: B-2 GENERAL BUSINESS DISTRICT

TOTAL SITE AREA: 152,239 SF

WORK AREA: 128,837.9 SF

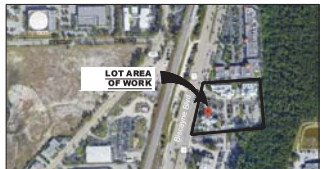
	REQUIRED/PERMITTED SEC. 24-52 (D)	PROVIDED
SETBACK		
FRONT SETBACK	25' - 0"	25' - 0"
REAR SETBACK	25' - 0" 35' - 0" (6 STORIES)	55' - 0" 170' - 0" (6 STORIES)
INTERIOR SIDE SETBACK	0' - 0" 15' - 0" (6 STORIES)	8' - 0" 15' - 0" (6 STORIES)
BUILDING HEIGHT	1 5 STORIES OR 192' - 0"	3 STORIES/ 59' - 4" 6 STORIES/ 72' - 4"
FLOOR AREA	1,000 SF / BLDG. MIN.	149,231 SF
PERVIOUS AREA	20 % MIN. (30,467.88 SF)	23.4% (30,045 SF)
LANDSCAPE AREA		30,045 SF (23.4%)
COVERAGE AREA		20, 127.5 SF (15.65%)
PAVED AREA		31,530.2 SF (25.5%)
OPEN SPACE		34,518.9 SF (27.6%)

PARKING CALCULATIONS

SPACE	USE	AREA	RATIO	PS REQ'D SEC. 24-95 (B)
EXISTING	OFFICE/BANK	9,808 SF	3 PS/1,000 SF	30 PS
EXT. BUILDING-1	OFFICE	17,432 SF	3 PS/1,000 SF	52 PS
EXT. BUILDING-2	OFFICE	22,151 SF	3 PS/1,000 SF	67 PS
PROPOSED RESTAURANT/RETAIL/OFFICE BUILDING				
PROPOSED	RESTAURANT	1,500 SF	15 PS/1,000 SF	22.5 PS
PROPOSED	RETAIL	4,900 SF	5 PS/1,000 SF	22.5 PS
PROPOSED	OFFICE	12,000 SF	3 PS/1,000 SF	36 PS
TOTAL PARKING REQUIRED (INCLUDED 7 HANDICAP SPACES)				210 PS
TOTAL PARKING PROVIDED GROUND FLOOR				120 PS
TOTAL PARKING PROVIDED STRUCTURE (6 TANDEM)				126 PS
TOTAL PARKING PROVIDED (INCLUDED 7 HANDICAP SPACES & 6 TANDEM PARKING SPACES)				246 PS (+16 PS)
OFF-STREET LOADING: (SEC. 24-97) OFFICES 20,000 - 100,000 S.F. = 2 SPACES REQUIRED				2 LS SEC. 24-97

FLOOR AREA CALCULATIONS

SPACE	USE		AREA
EXISTING BANK & OFFICE BUILDING			
EXISTING	OFFICE/BANK		9,808 SF
EXT. BUILDING-1	OFFICE		17,432 SF
EXT. BUILDING-2	OFFICE		22,151 SF
PROPOSED RESTAURANT/RETAIL/OFFICE BUILDING & PARKING STRUCTURE			
PROPOSED	RESTAURANT		1,500 SF
PROPOSED	RETAIL		4,900 SF
PROPOSED	OFFICE		12,000 SF
PROPOSED	PARKING	GROUND FLOOR	13,640 SF
		SECOND FLOOR TO SIXTH FLOOR	69,200 SF
TOTAL FLOOR AREA			149,231 SF



LOCATION MAP
SCALE: NTS

DesignTech International Associates, Inc. AA26001932
Architecture • Planning • Interior Design
14125 N.W. 80th Ave. Suite 303
Miami Lakes, Fl. 33016
T. 786-235-9097
F. 305-362-4430
dtarch@dtarchitect.com
www.dtarchitect.com

Carlos Pizarro, R.A.
AR - 0013079

Revisions:

OWNER/ DEVELOPER:
BISCAYNE 18 DEVELOPMENT LLC
15801 BISCAYNE BOULEVARD SUITE 203
NORTH MIAMI BEACH, FLORIDA 33160

PROJECT:
PROPOSED 3 STORY OFFICE / RETAIL BUILDING & 6 STORY PARKING STRUCTURE AT BISCAYNE OFFICE COMPLEX
15801 BISCAYNE BOULEVARD
NORTH MIAMI BEACH, FLORIDA 33160

Job Number:	21007.01
File Name:	
Issued Date:	07/01/2021
Drawn by:	J.C.
Checked by:	C.P./C.C

SHEET NAME
SITE PLAN

SHEET NUMBER
SP-1.0

TRAFTECH ENGINEERING, INC.

MEMORANDUM

To: City of North Miami Beach

From: Joaquin Vargas

Date: October 7, 2021

Subject: Biscayne 18 - Traffic Study Methodology and Queuing

Traffic Analysis

- The trip generation analysis for the proposed uses will be based upon the Institute of Transportation Engineers (ITE) *Trip Generation Manual (10th Edition)*. Tables 1 and 2 attached documents the trip generation for the existing and proposed uses at the site.

- The anticipated land uses and intensities are as follows:

Existing Uses

- Office (3 Buildings) total of 49,391 square feet

Proposed Uses

- One new 3-story Building
  a) 1,500 square-foot restaurant
  b) 4,500 square feet of retail use
  c) 12,000 square feet of office use
  18,000 square feet

- The trip distribution will be based upon Miami-Dade County Cardinal Distribution data base (i.e. no travel demand modeling will be performed).

- Intersection turning movement counts will be collected for the AM peak period (7:00 AM – 9:00 AM) and the PM peak period (4:00 PM – 6:00 PM). The proposed study intersections include: Biscayne Boulevard at NE 163rd Street, at the project driveways and at NE 151st Street. The traffic counts will include pedestrians and trucks.

- Traffic counts will be adjusted to reflect average peak season conditions based upon the most recent available FDOT adjustment factors.

- A growth factor will be applied to the traffic counts to reflect future traffic conditions at project build-out. The growth factor will be based upon historical traffic data available for the area near the project site. (Negative "growth" rates for the study area, if any, will be adjusted to at least a 0.5% growth rate.)

- The project traffic associated with approved developments in the immediate area will be requested from the City of North Miami Beach

- Existing traffic signal timing data for the study intersections will be obtained from Miami-Dade County Traffic Engineering and will be included in the Appendix of the traffic study.

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

    - Existing traffic
    - Proposed project traffic distribution
    - Background conditions for buildout year
    - Future conditions with project traffic

- Intersection analyses will be conducted using the SYNCHRO software for existing conditions, future conditions without the project, and future conditions with the proposed project in place. Adjustments to the signal timing, if any, will be clearly documented in the traffic study.

- All traffic data obtained for this project will be included in the Appendix of the traffic study.

- Mode splits will be confirmed with City staff prior to the completion of the traffic study.

- Existing and planned transit service as well as existing transit amenities in the immediate area will be documented in the traffic study.

- The project buildout year is 2024.

Queuing at the Bank's Drive-thru Lanes

To determine the length of queue associated with the bank, the following assumptions were used:

- Assumed the bank portion of the 9,808 square-foot office/bank building is approximately 5,000 square feet. According to ITE *Trip Generation Manual (10th Edition)*, during the highest volume-hour of the bank (peak hour of the generator), the bank generates 26.35 trips per 1,000 square feet per hour. Hence, 26.35 x 5 = 132 peak hour trips with 67 inbound trips and 65 outbound trips.

- According to ITE's *Transportation and Land Development (2nd Edition)* publication, approximately 50% of inbound bank trips use the drive-through facility. Due to the current pandemic, 80% drive-thru usage was used for purposes of this analysis. Therefore, 80% of 67 inbound trips = 54 inbound trips using the drive-thru lanes.

- According to ITE's *Transportation and Land Development (2nd Edition)* publication, each drive-thru lane processes between 30 and 35 vehicles per hour. For purposes of this analysis, 30 vehicles per hour were used.

Using the above assumptions, a queuing analysis was undertaken for the bank. The length of queue anticipated at the drive-thru lanes was established using information contained in ITE's *Transportation and Land Development*, Chapter 8 – Drive-In Facilities[1]. For this analysis, the following input variables were used:

- Service Rate: With three drive-through lanes, the bank's drive-thru operation can process 90 vehicles per hour (3 drive-thru lanes x 30 vehicles per lane).

- Demand Rate: As indicated above, the maximum number of vehicles projected to use the drive-thru lanes during the peak hour is 54.

Using equation 8-9b and Table 8-11 of ITE's *Transportation and Land Development*, the maximum length of queue anticipated at the drive-thru lanes, at the 95% confidence level, is three (3) vehicles. As shown in the attached site plan, the distance between the drive-thru windows and the entrance to the drive-thru lanes is approximately 68 feet. Using an effective vehicle length of approximately 22 feet per vehicle, 3 vehicles per drive-thru lane can be

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

accommodated. Since the bank has three (3) drive-thru lanes, up to nine (9) vehicles can be accommodated at the drive-thru lanes.

In summary, the bank's drive-thru lanes can accommodate up to nine (9) vehicles and the maximum queue anticipated is three (3) vehicles.

TABLE 1
Trip Generation Summary (Existing Uses)
Biscayne 18 Development

Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total Trips	Inbound	Outbound	Total Trips	Inbound	Outbound
Building 1 (Office)	9,808							
Buildinjg 2 (Office)	17,432							
Building 3 (Office)	22,151							
Office (All) (LUC 710)	49,391	628	44	39	5	92	16	76
Gross Trips		**628**	**44**	**39**	**5**	**92**	**16**	**76**

Source: ITE Trip Generation Manual (11th Edition)

TABLE 2
Trip Generation Summary (Proposed Uses)
Biscayne 18 Development

Land Use	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total Trips	Inbound	Outbound	Total Trips	Inbound	Outbound
Existing Buildings 1-3	49,391							
New Building	18,000							
Restaurant	1,500							
Retail	4,500							
Office	12,000							
Exist + Prop (LUC 710)	67,391	823	59	52	7	120	20	100
Gross Trips		**823**	**59**	**52**	**7**	**120**	**20**	**100**

Source: ITE Trip Generation Manual (11th Edition)

	Size	Daily Trips	AM Peak Hour			PM Peak Hour		
			Total Trips	Inbound	Outbound	Total Trips	Inbound	Outbound
Difference	18,000	195	15	13	2	28	4	24

NOTE: Even though the new building includes a restaurant and retail use, ITE Land Use Code 710 indicates that the "Office Building" category may contain a mixture of tenants including restaurants and retail facilities among other uses.

TRAFTECH ENGINEERING, INC.

Queuing Analysis based on ITE Procedures
Biscayne 18 Development

q = 54 veh/hr (demand rate) – peak of generator

Q = 90 veh/hr (service rate)

$$p = \frac{q}{NQ} = 0.60 \text{ (N = 3 drive-thru lanes)}$$

$Q_M = 0.3548$ (for N=3)

Using Acceptable Probability of 5% (95% Confidence Level)

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

$$M = \left(\frac{Ln(0.05) - Ln(0.3548)}{Ln(0.60)} \right) - 1$$

$$M = \left(\frac{-2.9957 - (-1.0362)}{-0.5108} \right) - 1$$

M = 3.8 – 1 = 2.8, say **3 vehicles**

TRAFTECH ENGINEERING, INC.

location, a 5% probability of back-up onto the adjacent street is judged to be acceptable. Demand on the system for design is expected to be 110 vehicles in a 45-minute period. Average service time was expected to be 2.2 minutes. Is the queue storage adequate?

Such problems can be quickly solved using Equation (8–9b) given in Table 8-10 and repeated below for convenience.

$$M = \left[\frac{\ln P(x > M) - \ln Q_M}{\ln \rho}\right] - 1$$

where:

M = queue length which is exceeded p percent of the time
N = number of service channels (drive-in positions)
Q = service rate per channel (vehicles per hour)
$\rho = \dfrac{\text{demand rate}}{\text{service rate}} = \dfrac{q}{NQ}$ = utilization factor
q = demand rate on the system (vehicles per hour)
Q_M = tabled values of the relationship between queue length, number of channels, and utilization factor (see Table 8.11)

TABLE 8-11
Table of Q_M Values

	$N = 1$	2	3	4	6	8	10
0.0	0.0000	0.0000	0.0000	0.0000			
0.1	.1000	.0182	.0037	.0008	.0000	0.0000	0.0000
.2	.2000	.0666	.0247	.0096	.0015	.0002	.0000
.3	.3000	.1385	.0700	.0370	.0111	.0036	.0011
.4	.4000	.2286	.1411	.0907	.0400	.0185	.0088
.5	.5000	.3333	.2368	.1739	.0991	.0591	.0360
.6	.6000	.4501	.3548	.2870	.1965	.1395	.1013
.7	.7000	.5766	.4923	.4286	.3359	.2706	.2218
.8	.8000	.7111	.6472	.5964	.5178	.4576	.4093
.9	.9000	.8526	.8172	.7878	.7401	.7014	.6687
1.0	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$\rho = \dfrac{q}{NQ} = \dfrac{\text{arrival rate, total}}{\text{(number of channels) (service rate per channel)}}$

N = number of channels (service positions)

Solution

Step 1: $Q = \dfrac{60 \text{ min/hr}}{2.2 \text{ min/service}} = 27.3$ services per hour

Step 2: $q = (110 \text{ veh}/45 \text{ min}) \times (60 \text{ min/hr}) = 146.7$ vehicles per hour

Step 3: $\rho = \dfrac{q}{NQ} = \dfrac{146.7}{(6)(27.3)} = 0.8956$

Step 4: $Q_M = 0.7303$ by interpolation between 0.8 and 0.9 for $N = 6$ from the table of Q_M values (see Table 8-11).

Step 5: The acceptable probability of the queue, M, being longer than the storage, 18 spaces in this example, was stated to be 5%. $P(x > M) = 0.05$, and:

$$M = \left[\frac{\ln 0.05 - \ln 0.7303}{\ln 0.8956}\right] - 1 = \left[\frac{-2.996 - (-0.314)}{-0.110}\right] - 1$$

$$= 24.38 - 1 = 23.38, \text{ say } 23 \text{ vehicles.}$$

TABLE Project Trip Distribution TAZ # 94								
Year	**Movement**							
	NNE	**ENE**	**ESE**	**SSE**	**SSW**	**WSW**	**WNW**	**NNW**
2015	23.90%	5.60%	1.30%	5.60%	19.20%	16.80%	14.10%	13.50%
2045	22.50%	3.70%	0.50%	6.80%	21.10%	17.70%	15.00%	12.70%
2024*	23.48%	5.03%	1.06%	5.96%	19.77%	17.07%	14.37%	13.26%

*Note: * Interpolated Values*

Source: Miami-Dade County (2045 SERPM)

APPENDIX B

Traffic Counts and Signal Timing

Traf Tech Engineering Inc.

File Name : 1-NE 163rd St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021

Groups Printed- Peds & Bikes

	Biscayne Blvd From North				NE 163rd Street From East				Biscayne Blvd From South				NE 163rd Street From West				
Start Time	Bikes			Peds	Bikes			Peds	Bikes			Peds	Bikes			Peds	Int. Total
07:00	0	0	0	0	1	0	0	0	2	0	0	0	3	0	0	2	8
07:15	1	0	0	2	0	0	0	0	3	0	0	3	2	0	0	0	11
07:30	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	1	4
07:45	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	4
Total	2	0	0	2	2	0	0	3	6	0	0	4	5	0	0	3	27
08:00	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	3
08:15	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:30	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
08:45	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1	6
Total	3	0	0	1	0	0	0	2	4	0	0	1	0	0	0	1	12
*** BREAK ***																	
16:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	2
*** BREAK ***																	
16:45	3	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	5
Total	3	0	0	1	0	0	0	0	1	0	0	0	1	0	0	1	7
17:00	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
17:30	1	0	0	0	1	0	0	1	2	0	0	1	0	0	0	0	6
17:45	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	3	0	0	0	1	0	0	1	2	0	0	1	0	0	0	0	8
Grand Total	11	0	0	4	3	0	0	6	13	0	0	6	6	0	0	5	54
Apprch %	73.3	0	0	26.7	33.3	0	0	66.7	68.4	0	0	31.6	54.5	0	0	45.5	
Total %	20.4	0	0	7.4	5.6	0	0	11.1	24.1	0	0	11.1	11.1	0	0	9.3	

Traf Tech Engineering Inc.

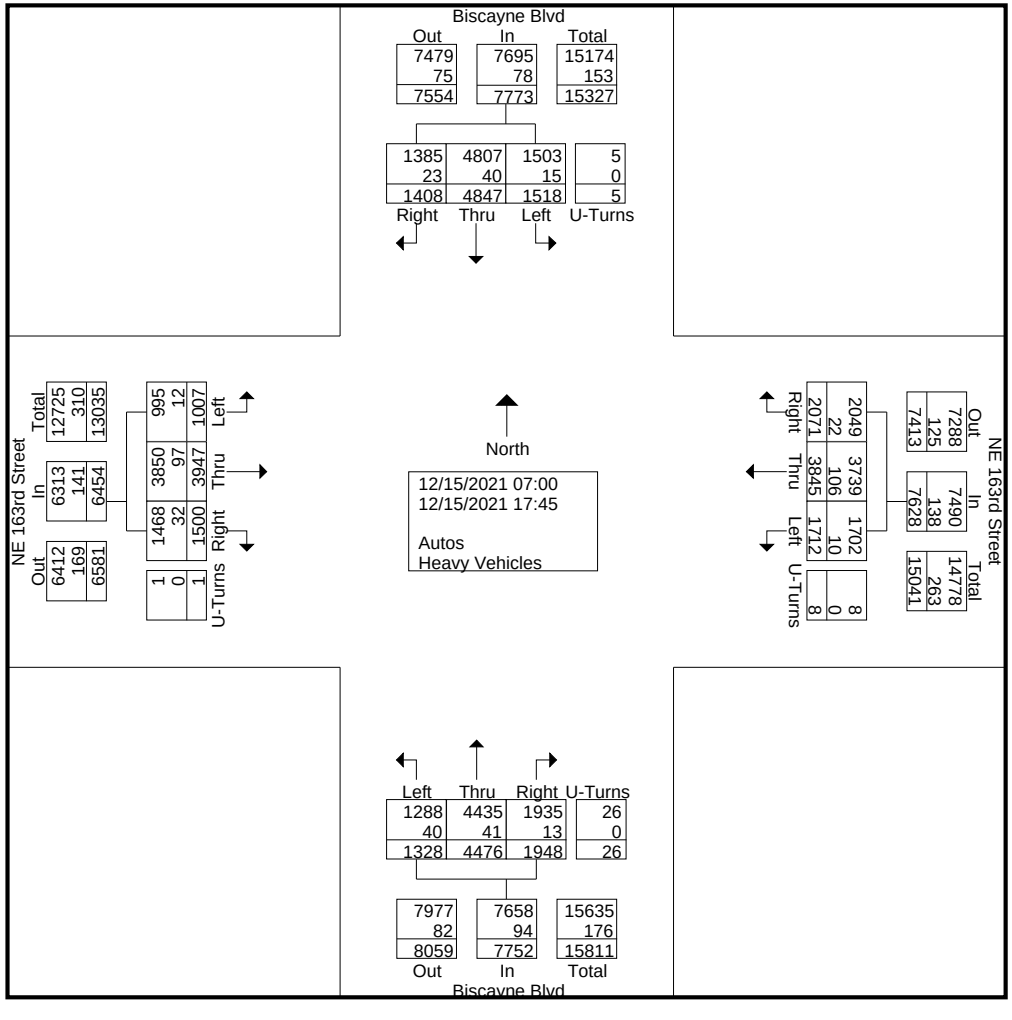
File Name : 1-NE 163rd St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 1

Groups Printed- Autos - Heavy Vehicles

	Biscayne Blvd From North					NE 163rd Street From East					Biscayne Blvd From South					NE 163rd Street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
07:00	43	267	52	0	362	44	172	118	1	335	105	181	37	0	323	92	203	33	0	328	1348
07:15	56	224	65	0	345	62	180	84	0	326	107	228	61	0	396	105	279	40	0	424	1491
07:30	52	265	77	0	394	96	206	76	1	379	99	214	52	0	365	80	224	53	0	357	1495
07:45	73	271	92	0	436	111	193	77	0	381	90	225	88	0	403	98	298	66	0	462	1682
Total	224	1027	286	0	1537	313	751	355	2	1421	401	848	238	0	1487	375	1004	192	0	1571	6016
08:00	67	256	85	1	409	100	181	123	1	405	108	206	61	0	375	91	283	61	0	435	1624
08:15	60	283	122	0	465	115	251	94	0	460	107	217	55	0	379	86	356	52	1	495	1799
08:30	73	292	106	0	471	128	219	92	0	439	133	289	89	0	511	77	306	47	0	430	1851
08:45	86	349	105	1	541	136	73	87	2	298	140	251	30	0	421	16	88	16	0	120	1380
Total	286	1180	418	2	1886	479	724	396	3	1602	488	963	235	0	1686	270	1033	176	1	1480	6654
*** BREAK ***																					
16:00	127	334	108	0	569	175	317	129	0	621	133	292	103	1	529	124	250	64	0	438	2157
16:15	121	303	89	0	513	163	281	123	0	567	159	330	114	3	606	89	243	82	0	414	2100
16:30	122	291	104	0	517	144	281	133	0	558	126	291	104	3	524	98	252	66	0	416	2015
16:45	104	389	113	1	607	154	338	125	0	617	119	290	99	5	513	113	281	81	0	475	2212
Total	474	1317	414	1	2206	636	1217	510	0	2363	537	1203	420	12	2172	424	1026	293	0	1743	8484
17:00	101	364	88	1	554	152	310	79	2	543	126	338	128	2	594	97	207	84	0	388	2079
17:15	107	321	103	0	531	153	286	138	0	577	140	416	110	4	670	109	223	82	0	414	2192
17:30	122	290	73	0	485	159	283	116	1	559	130	354	105	4	593	96	192	85	0	373	2010
17:45	94	348	136	1	579	179	274	118	0	571	126	354	92	4	576	129	262	95	0	486	2212
Total	424	1323	400	2	2149	643	1153	451	3	2250	522	1462	435	14	2433	431	884	346	0	1661	8493
Grand Total	1408	4847	1518	5	7778	2071	3845	1712	8	7636	1948	4476	1328	26	7778	1500	3947	1007	1	6455	29647
Apprch %	18.1	62.3	19.5	0.1		27.1	50.4	22.4	0.1		25	57.5	17.1	0.3		23.2	61.1	15.6	0		
Total %	4.7	16.3	5.1	0	26.2	7	13	5.8	0	25.8	6.6	15.1	4.5	0.1	26.2	5.1	13.3	3.4	0	21.8	
Autos	1385	4807	1503	5	7700	2049	3739	1702	8	7498	1935	4435	1288	26	7684	1468	3850	995	1	6314	29196
% Autos	98.4	99.2	99	100	99	98.9	97.2	99.4	100	98.2	99.3	99.1	97	100	98.8	97.9	97.5	98.8	100	97.8	98.5
Heavy Vehicles																					
% Heavy Vehicles	1.6	0.8	1	0	1	1.1	2.8	0.6	0	1.8	0.7	0.9	3	0	1.2	2.1	2.5	1.2	0	2.2	1.5

Traf Tech Engineering Inc.

File Name : 1-NE 163rd St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 2



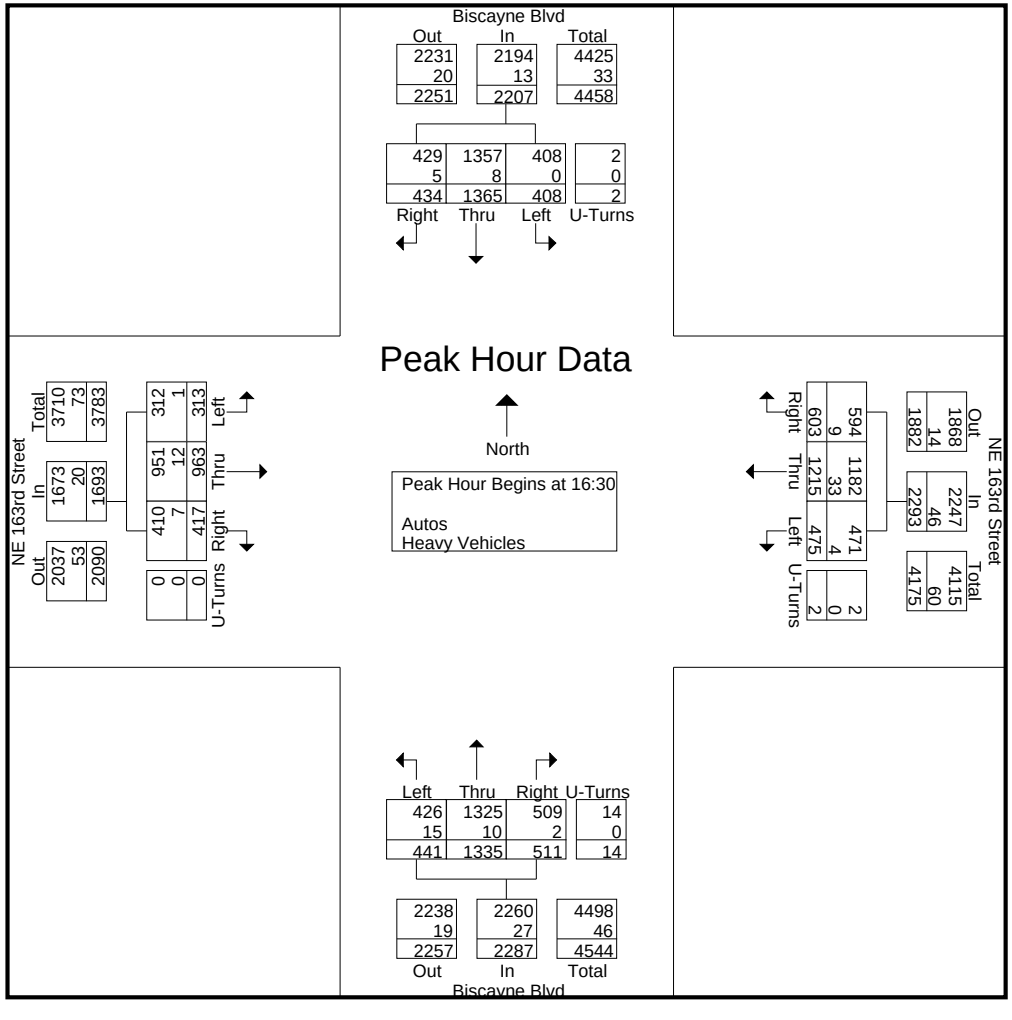
Traf Tech Engineering Inc.

File Name : 1-NE 163rd St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 3

	Biscayne Blvd From North					NE 163rd Street From East					Biscayne Blvd From South					NE 163rd Street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	122	291	104	0	517	144	281	133	0	558	126	291	104	3	524	98	252	66	0	416	2015
16:45	104	389	113	1	607	154	338	125	0	617	119	290	99	5	513	113	281	81	0	475	2212
17:00	101	364	88	1	554	152	310	79	2	543	126	338	128	2	594	97	207	84	0	388	2079
17:15	107	321	103	0	531	153	286	138	0	577	140	416	110	4	670	109	223	82	0	414	2192
Total Volume	434	1365	408	2	2209	603	1215	475	2	2295	511	1335	441	14	2301	417	963	313	0	1693	8498
% App. Total	19.6	61.8	18.5	0.1		26.3	52.9	20.7	0.1		22.2	58	19.2	0.6		24.6	56.9	18.5	0		
PHF	.889	.877	.903	.500	.910	.979	.899	.861	.250	.930	.913	.802	.861	.700	.859	.923	.857	.932	.000	.891	.960
Autos	429	1357	408	2	2196	594	1182	471	2	2249	509	1325	426	14	2274	410	951	312	0	1673	8392
% Autos	98.8	99.4	100	100	99.4	98.5	97.3	99.2	100	98.0	99.6	99.3	96.6	100	98.8	98.3	98.8	99.7	0	98.8	98.8
Heavy Vehicles																					
% Heavy Vehicles	1.2	0.6	0	0	0.6	1.5	2.7	0.8	0	2.0	0.4	0.7	3.4	0	1.2	1.7	1.2	0.3	0	1.2	1.2

Traf Tech Engineering Inc.

File Name : 1-NE 163rd St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 4



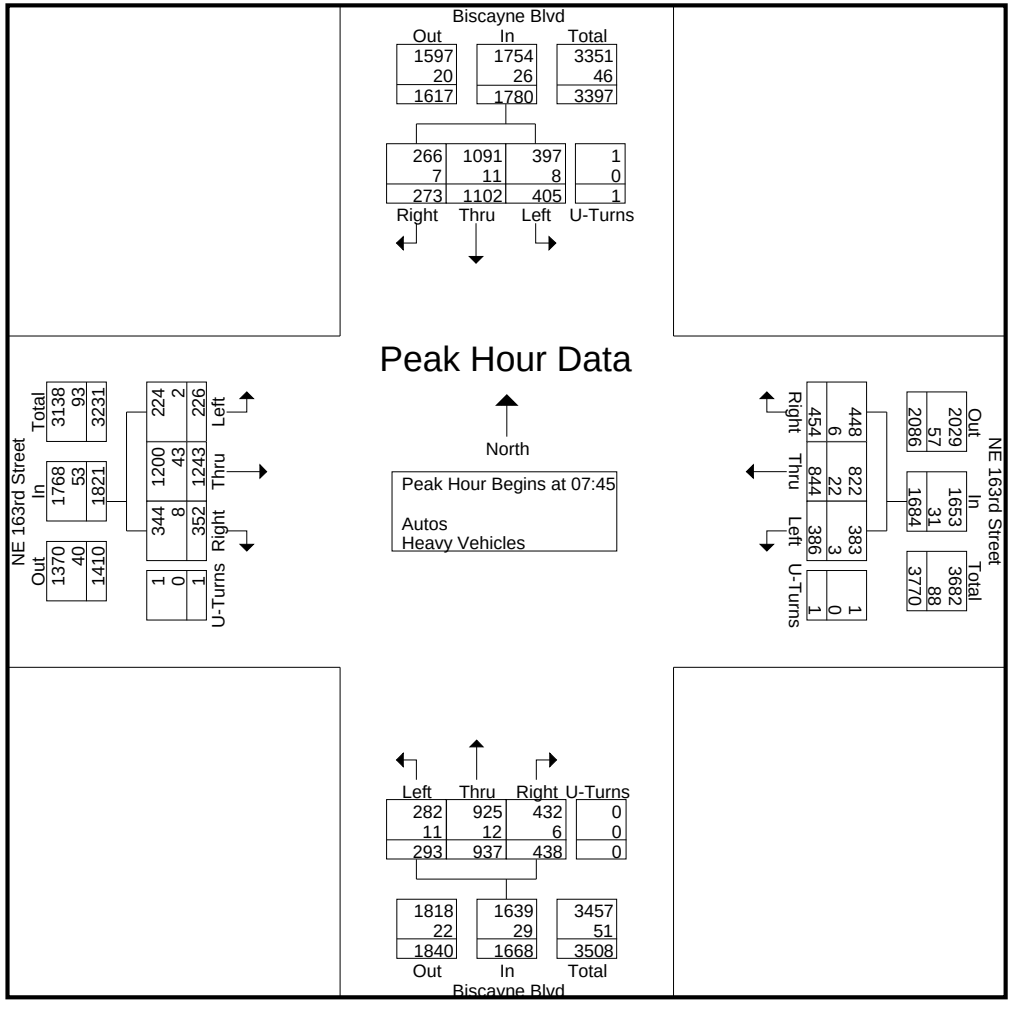
Traf Tech Engineering Inc.

File Name : 1-NE 163rd St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 5

	Biscayne Blvd From North					NE 163rd Street From East					Biscayne Blvd From South					NE 163rd Street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	73	271	92	0	436	111	193	77	0	381	90	225	88	0	403	98	298	66	0	462	1682
08:00	67	256	85	1	409	100	181	123	1	405	108	206	61	0	375	91	283	61	0	435	1624
08:15	60	283	122	0	465	115	251	94	0	460	107	217	55	0	379	86	356	52	1	495	1799
08:30	73	292	106	0	471	128	219	92	0	439	133	289	89	0	511	77	306	47	0	430	1851
Total Volume	273	1102	405	1	1781	454	844	386	1	1685	438	937	293	0	1668	352	1243	226	1	1822	6956
% App. Total	15.3	61.9	22.7	0.1		26.9	50.1	22.9	0.1		26.3	56.2	17.6	0		19.3	68.2	12.4	0.1		
PHF	.935	.943	.830	.250	.945	.887	.841	.785	.250	.916	.823	.811	.823	.000	.816	.898	.873	.856	.250	.920	.939
Autos	266	1091	397	1	1755	448	822	383	1	1654	432	925	282	0	1639	344	1200	224	1	1769	6817
% Autos	97.4	99.0	98.0	100	98.5	98.7	97.4	99.2	100	98.2	98.6	98.7	96.2	0	98.3	97.7	96.5	99.1	100	97.1	98.0
Heavy Vehicles																					
% Heavy Vehicles	2.6	1.0	2.0	0	1.5	1.3	2.6	0.8	0	1.8	1.4	1.3	3.8	0	1.7	2.3	3.5	0.9	0	2.9	2.0

Traf Tech Engineering Inc.

File Name : 1-NE 163rd St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 6



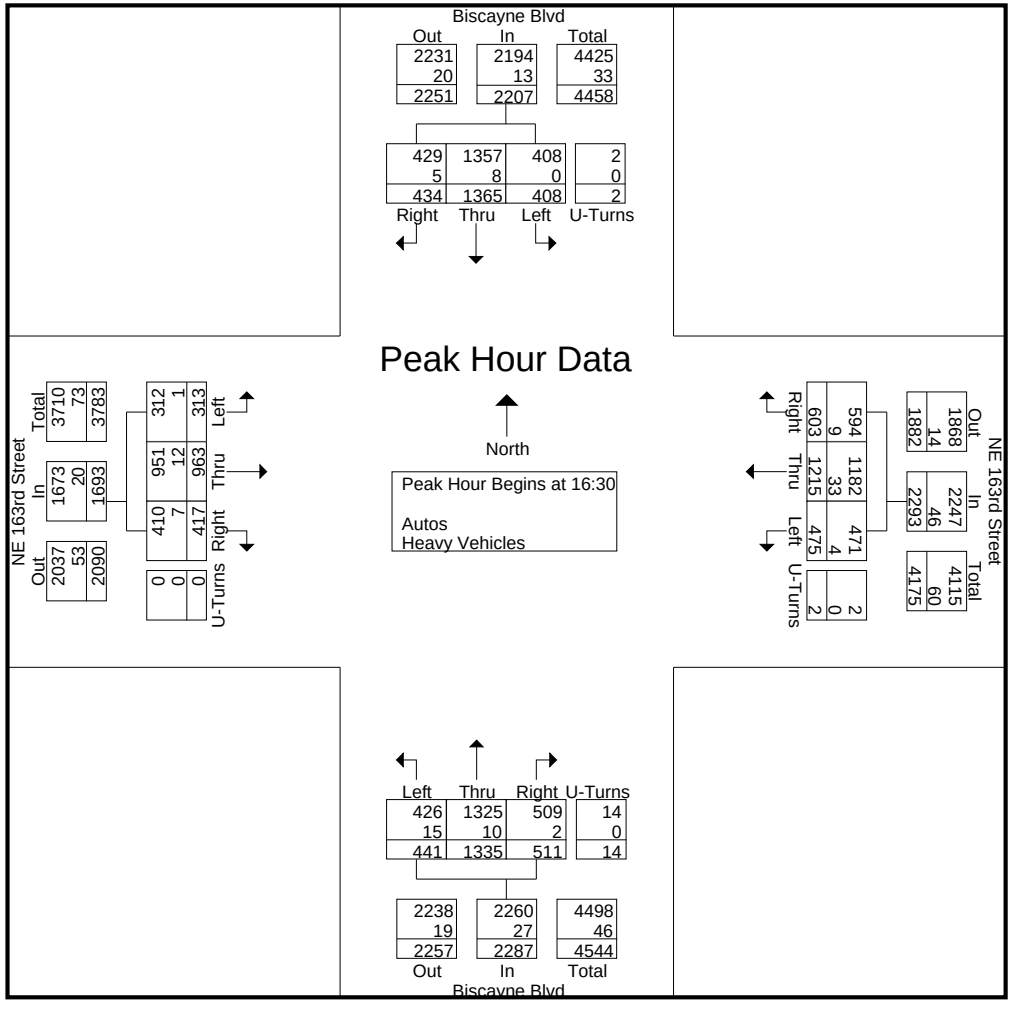
Traf Tech Engineering Inc.

File Name : 1-NE 163rd St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 7

	Biscayne Blvd From North					NE 163rd Street From East					Biscayne Blvd From South					NE 163rd Street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:30																					
16:30	122	291	104	0	517	144	281	133	0	558	126	291	104	3	524	98	252	66	0	416	2015
16:45	104	389	113	1	607	154	338	125	0	617	119	290	99	5	513	113	281	81	0	475	2212
17:00	101	364	88	1	554	152	310	79	2	543	126	338	128	2	594	97	207	84	0	388	2079
17:15	107	321	103	0	531	153	286	138	0	577	140	416	110	4	670	109	223	82	0	414	2192
Total Volume	434	1365	408	2	2209	603	1215	475	2	2295	511	1335	441	14	2301	417	963	313	0	1693	8498
% App. Total	19.6	61.8	18.5	0.1		26.3	52.9	20.7	0.1		22.2	58	19.2	0.6		24.6	56.9	18.5	0		
PHF	.889	.877	.903	.500	.910	.979	.899	.861	.250	.930	.913	.802	.861	.700	.859	.923	.857	.932	.000	.891	.960
Autos	429	1357	408	2	2196	594	1182	471	2	2249	509	1325	426	14	2274	410	951	312	0	1673	8392
% Autos	98.8	99.4	100	100	99.4	98.5	97.3	99.2	100	98.0	99.6	99.3	96.6	100	98.8	98.3	98.8	99.7	0	98.8	98.8
Heavy Vehicles																					
% Heavy Vehicles	1.2	0.6	0	0	0.6	1.5	2.7	0.8	0	2.0	0.4	0.7	3.4	0	1.2	1.7	1.2	0.3	0	1.2	1.2

Traf Tech Engineering Inc.

File Name : 1-NE 163rd St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 8



Traf Tech Engineering Inc.

File Name : 2-N Driveway & Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 1

Groups Printed- Peds & Bikes

	Biscayne Blvd From North				N Driveway From East				Biscayne Blvd From South				N Driveway From West				
Start Time	Bikes			Peds	Bikes			Peds	Bikes			Peds	Bikes			Peds	Int. Total
*** BREAK ***																	
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Apprch %	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total %																	

Traf Tech Engineering Inc.

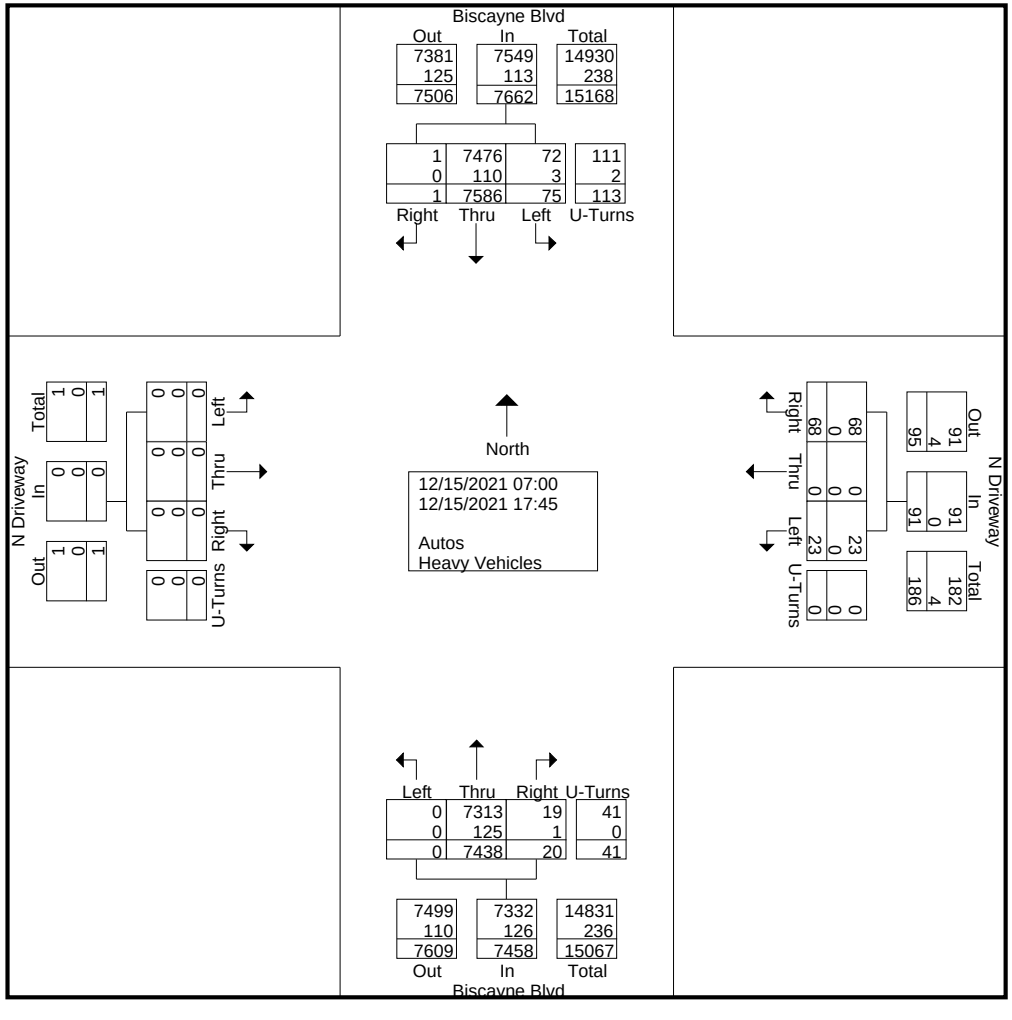
File Name : 2-N Driveway & Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 1

Groups Printed- Autos - Heavy Vehicles

	Biscayne Blvd From North					N Driveway From East					Biscayne Blvd From South					N Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
07:00	0	427	1	1	429	0	0	0	0	0	1	282	0	0	283	0	0	0	0	0	712
07:15	0	370	4	0	374	0	0	1	0	1	0	342	0	0	342	0	0	0	0	0	717
07:30	0	384	3	0	387	0	0	0	0	0	0	341	0	1	342	0	0	0	0	0	729
07:45	0	414	7	2	423	0	0	0	0	0	0	379	0	1	380	0	0	0	0	0	803
Total	0	1595	15	3	1613	0	0	1	0	1	1	1344	0	2	1347	0	0	0	0	0	2961
08:00	0	436	4	1	441	0	0	1	0	1	0	335	0	2	337	0	0	0	0	0	779
08:15	1	432	3	4	440	0	0	1	0	1	1	382	0	2	385	0	0	0	0	0	826
08:30	0	419	9	7	435	3	0	1	0	4	2	445	0	1	448	0	0	0	0	0	887
08:45	0	443	18	10	471	3	0	0	0	3	2	422	0	2	426	0	0	0	0	0	900
Total	1	1730	34	22	1787	6	0	3	0	9	5	1584	0	7	1596	0	0	0	0	0	3392
*** BREAK ***																					
16:00	0	553	5	9	567	7	0	3	0	10	3	523	0	2	528	0	0	0	0	0	1105
16:15	0	487	5	12	504	10	0	4	0	14	0	612	0	4	616	0	0	0	0	0	1134
16:30	0	522	3	13	538	4	0	3	0	7	3	526	0	4	533	0	0	0	0	0	1078
16:45	0	553	2	9	564	5	0	1	0	6	2	518	0	4	524	0	0	0	0	0	1094
Total	0	2115	15	43	2173	26	0	11	0	37	8	2179	0	14	2201	0	0	0	0	0	4411
17:00	0	541	3	14	558	8	0	2	0	10	2	582	0	3	587	0	0	0	0	0	1155
17:15	0	565	6	9	580	10	0	4	0	14	1	613	0	8	622	0	0	0	0	0	1216
17:30	0	497	1	13	511	13	0	0	0	13	1	581	0	4	586	0	0	0	0	0	1110
17:45	0	543	1	9	553	5	0	2	0	7	2	555	0	3	560	0	0	0	0	0	1120
Total	0	2146	11	45	2202	36	0	8	0	44	6	2331	0	18	2355	0	0	0	0	0	4601
Grand Total	1	7586	75	113	7775	68	0	23	0	91	20	7438	0	41	7499	0	0	0	0	0	15365
Apprch %	0	97.6	1	1.5		74.7	0	25.3	0		0.3	99.2	0	0.5		0	0	0	0		
Total %	0	49.4	0.5	0.7	50.6	0.4	0	0.1	0	0.6	0.1	48.4	0	0.3	48.8	0	0	0	0	0	
Autos	1	7476	72	111	7660	68	0	23	0	91	19	7313	0	41	7373	0	0	0	0	0	15124
% Autos	100	98.5	96	98.2	98.5	100	0	100	0	100	95	98.3	0	100	98.3	0	0	0	0	0	98.4
Heavy Vehicles																					
% Heavy Vehicles	0	1.5	4	1.8	1.5	0	0	0	0	0	5	1.7	0	0	1.7	0	0	0	0	0	1.6

Traf Tech Engineering Inc.

File Name : 2-N Driveway & Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 2



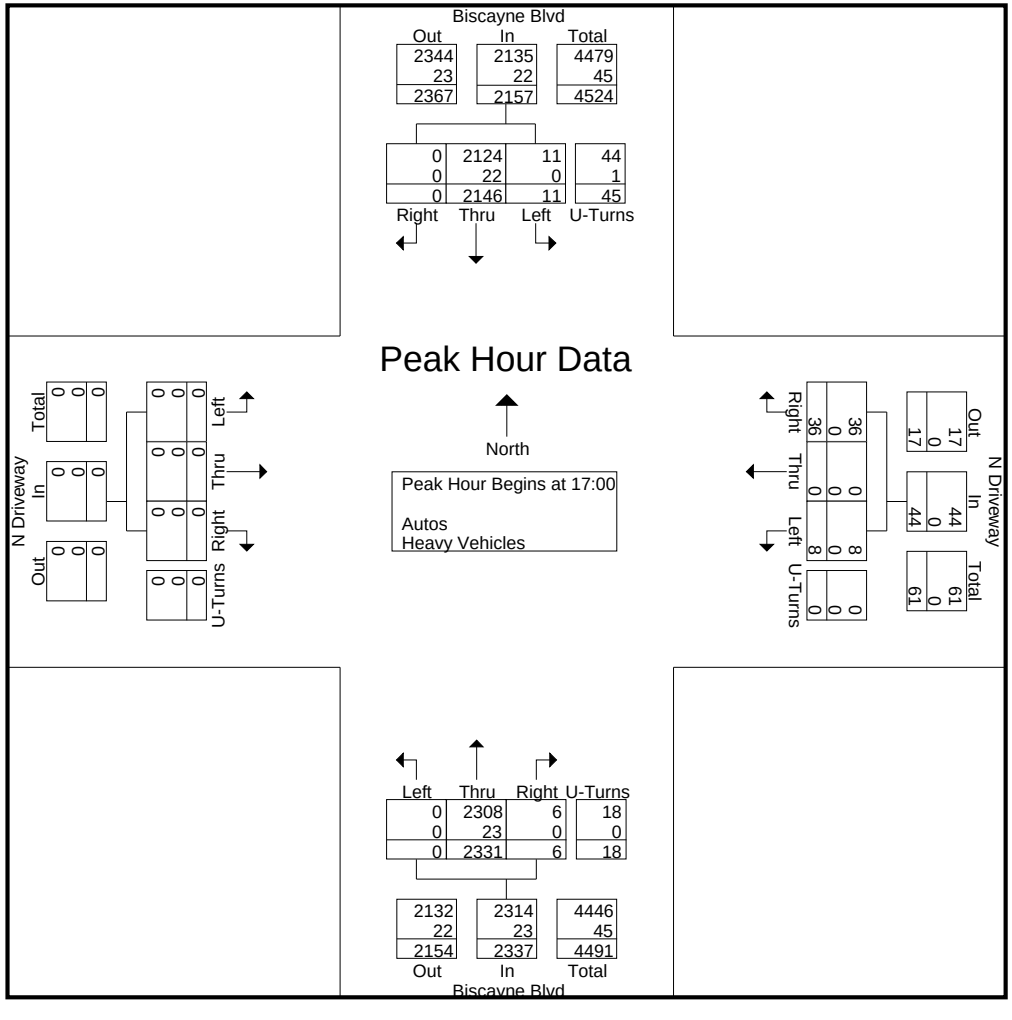
Traf Tech Engineering Inc.

File Name : 2-N Driveway & Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 3

	Biscayne Blvd From North					N Driveway From East					Biscayne Blvd From South					N Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	541	3	14	558	8	0	2	0	10	2	582	0	3	587	0	0	0	0	0	1155
17:15	0	565	6	9	580	10	0	4	0	14	1	613	0	8	622	0	0	0	0	0	1216
17:30	0	497	1	13	511	13	0	0	0	13	1	581	0	4	586	0	0	0	0	0	1110
17:45	0	543	1	9	553	5	0	2	0	7	2	555	0	3	560	0	0	0	0	0	1120
Total Volume	0	2146	11	45	2202	36	0	8	0	44	6	2331	0	18	2355	0	0	0	0	0	4601
% App. Total	0	97.5	0.5	2		81.8	0	18.2	0		0.3	99	0	0.8		0	0	0	0		
PHF	.000	.950	.458	.804	.949	.692	.000	.500	.000	.786	.750	.951	.000	.563	.947	.000	.000	.000	.000	.000	.946
Autos	0	2124	11	44	2179	36	0	8	0	44	6	2308	0	18	2332	0	0	0	0	0	4555
% Autos	0	99.0	100	97.8	99.0	100	0	100	0	100	100	99.0	0	100	99.0	0	0	0	0	0	99.0
Heavy Vehicles																					
% Heavy Vehicles	0	1.0	0	2.2	1.0	0	0	0	0	0	0	1.0	0	0	1.0	0	0	0	0	0	1.0

Traf Tech Engineering Inc.

File Name : 2-N Driveway & Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 4



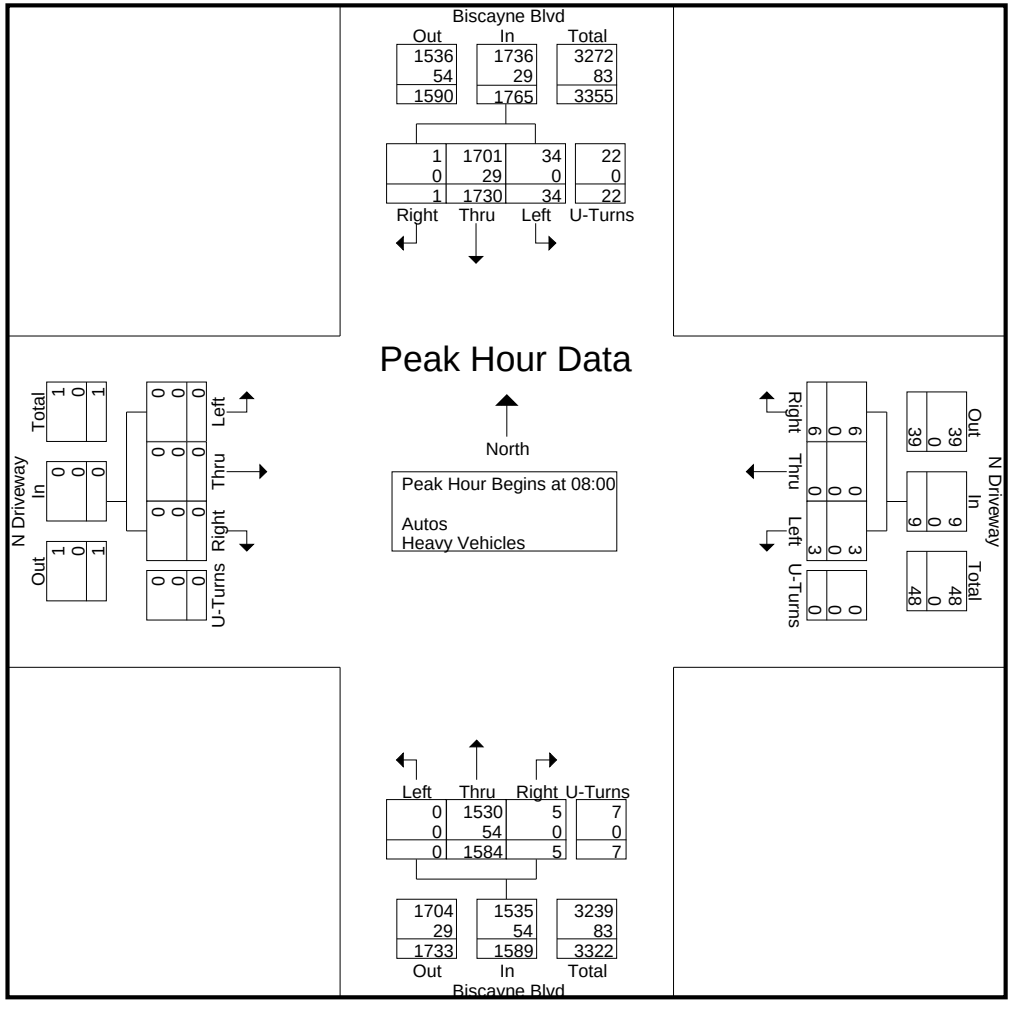
Traf Tech Engineering Inc.

File Name : 2-N Driveway & Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 5

	Biscayne Blvd From North					N Driveway From East					Biscayne Blvd From South					N Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	436	4	1	441	0	0	1	0	1	0	335	0	2	337	0	0	0	0	0	779
08:15	1	432	3	4	440	0	0	1	0	1	1	382	0	2	385	0	0	0	0	0	826
08:30	0	419	9	7	435	3	0	1	0	4	2	445	0	1	448	0	0	0	0	0	887
08:45	0	443	18	10	471	3	0	0	0	3	2	422	0	2	426	0	0	0	0	0	900
Total Volume	1	1730	34	22	1787	6	0	3	0	9	5	1584	0	7	1596	0	0	0	0	0	3392
% App. Total	0.1	96.8	1.9	1.2		66.7	0	33.3	0		0.3	99.2	0	0.4		0	0	0	0		
PHF	.250	.976	.472	.550	.949	.500	.000	.750	.000	.563	.625	.890	.000	.875	.891	.000	.000	.000	.000	.000	.942
Autos	1	1701	34	22	1758	6	0	3	0	9	5	1530	0	7	1542	0	0	0	0	0	3309
% Autos	100	98.3	100	100	98.4	100	0	100	0	100	100	96.6	0	100	96.6	0	0	0	0	0	97.6
Heavy Vehicles																					
% Heavy Vehicles	0	1.7	0	0	1.6	0	0	0	0	0	0	3.4	0	0	3.4	0	0	0	0	0	2.4

Traf Tech Engineering Inc.

File Name : 2-N Driveway & Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 6



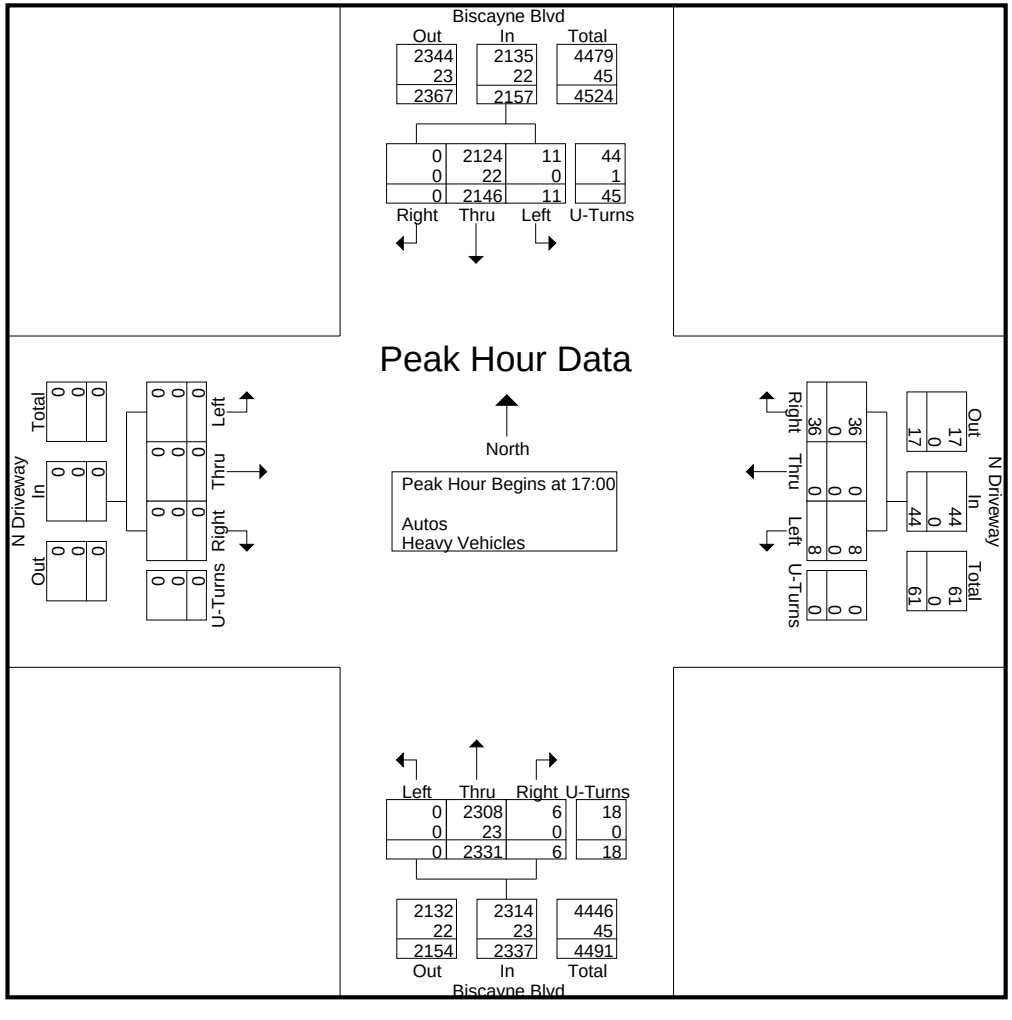
Traf Tech Engineering Inc.

File Name : 2-N Driveway & Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 7

	Biscayne Blvd From North					N Driveway From East					Biscayne Blvd From South					N Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	541	3	14	558	8	0	2	0	10	2	582	0	3	587	0	0	0	0	0	1155
17:15	0	565	6	9	580	10	0	4	0	14	1	613	0	8	622	0	0	0	0	0	1216
17:30	0	497	1	13	511	13	0	0	0	13	1	581	0	4	586	0	0	0	0	0	1110
17:45	0	543	1	9	553	5	0	2	0	7	2	555	0	3	560	0	0	0	0	0	1120
Total Volume	0	2146	11	45	2202	36	0	8	0	44	6	2331	0	18	2355	0	0	0	0	0	4601
% App. Total	0	97.5	0.5	2		81.8	0	18.2	0		0.3	99	0	0.8		0	0	0	0		
PHF	.000	.950	.458	.804	.949	.692	.000	.500	.000	.786	.750	.951	.000	.563	.947	.000	.000	.000	.000	.000	.946
Autos	0	2124	11	44	2179	36	0	8	0	44	6	2308	0	18	2332	0	0	0	0	0	4555
% Autos	0	99.0	100	97.8	99.0	100	0	100	0	100	100	99.0	0	100	99.0	0	0	0	0	0	99.0
Heavy Vehicles																					
% Heavy Vehicles	0	1.0	0	2.2	1.0	0	0	0	0	0	0	1.0	0	0	1.0	0	0	0	0	0	1.0

Traf Tech Engineering Inc.

File Name : 2-N Driveway & Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 8



Traf Tech Engineering Inc.

File Name : 3-S Driveway and Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 1

Groups Printed- Peds & Bikes

	Biscayne Blvd From North				South Driveway From East				Biscayne Blvd From South				South Driveway From West				
Start Time	Bikes			Peds	Bikes			Peds	Bikes			Peds	Bikes			Peds	Int. Total
*** BREAK ***																	
07:30	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:45	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
*** BREAK ***																	
08:15	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
16:00	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
Total	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
17:30	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
Total	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	0	0	0	0	4	1	0	0	0	0	0	0	0	0	0	0	5
Apprch %	0	0	0	0	80	20	0	0	0	0	0	0	0	0	0	0	
Total %	0	0	0	0	80	20	0	0	0	0	0	0	0	0	0	0	

Traf Tech Engineering Inc.

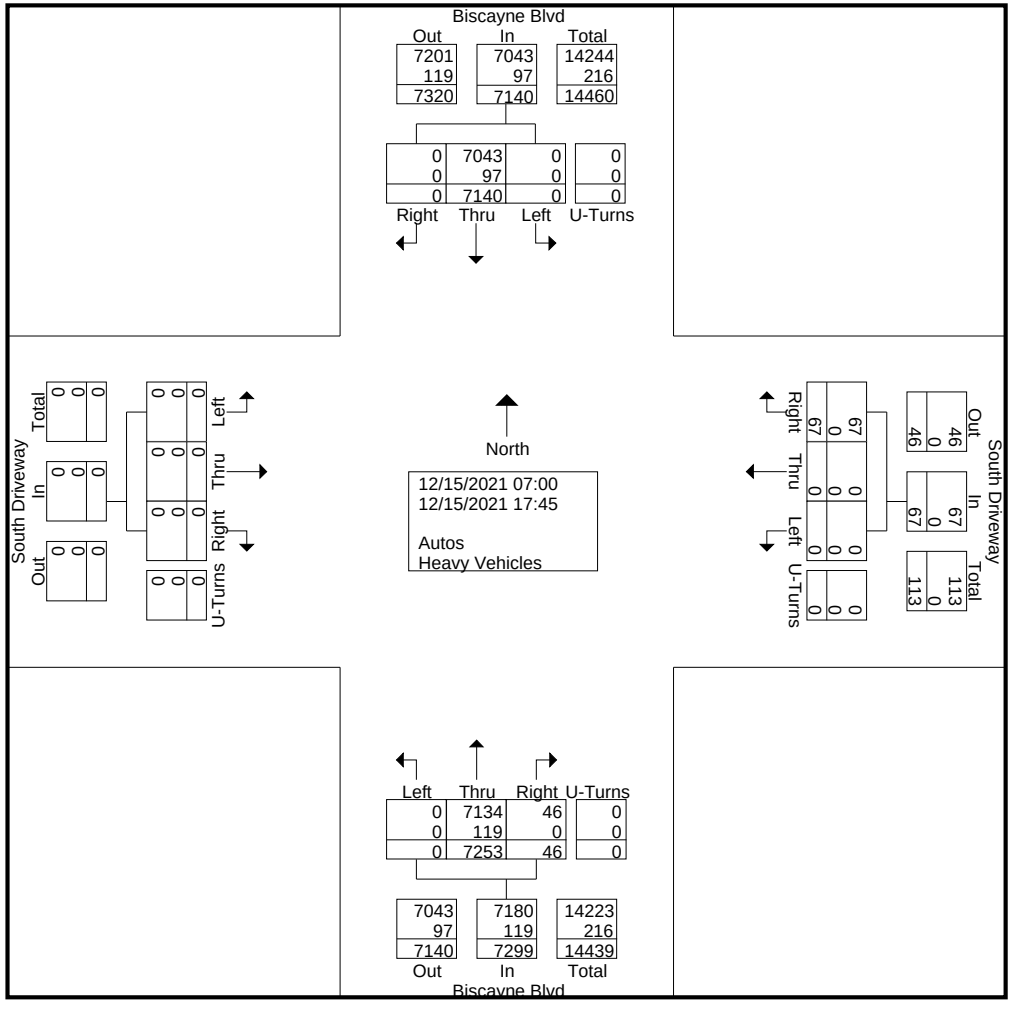
File Name : 3-S Driveway and Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 1

Groups Printed- Autos - Heavy Vehicles

	Biscayne Blvd From North					South Driveway From East					Biscayne Blvd From South					South Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
07:00	0	380	0	0	380	0	0	0	0	0	0	252	0	0	252	0	0	0	0	0	632
07:15	0	335	0	0	335	2	0	0	0	2	1	300	0	0	301	0	0	0	0	0	638
07:30	0	353	0	0	353	0	0	0	0	0	2	317	0	0	319	0	0	0	0	0	672
07:45	0	385	0	0	385	3	0	0	0	3	0	360	0	0	360	0	0	0	0	0	748
Total	0	1453	0	0	1453	5	0	0	0	5	3	1229	0	0	1232	0	0	0	0	0	2690
08:00	0	402	0	0	402	1	0	0	0	1	2	313	0	0	315	0	0	0	0	0	718
08:15	0	404	0	0	404	2	0	0	0	2	5	364	0	0	369	0	0	0	0	0	775
08:30	0	390	0	0	390	4	0	0	0	4	4	428	0	0	432	0	0	0	0	0	826
08:45	0	438	0	0	438	0	0	0	0	0	0	424	0	0	424	0	0	0	0	0	862
Total	0	1634	0	0	1634	7	0	0	0	7	11	1529	0	0	1540	0	0	0	0	0	3181
*** BREAK ***																					
16:00	0	513	0	0	513	11	0	0	0	11	7	521	0	0	528	0	0	0	0	0	1052
16:15	0	467	0	0	467	6	0	0	0	6	8	619	0	0	627	0	0	0	0	0	1100
16:30	0	502	0	0	502	4	0	0	0	4	6	535	0	0	541	0	0	0	0	0	1047
16:45	0	501	0	0	501	7	0	0	0	7	5	529	0	0	534	0	0	0	0	0	1042
Total	0	1983	0	0	1983	28	0	0	0	28	26	2204	0	0	2230	0	0	0	0	0	4241
17:00	0	527	0	0	527	9	0	0	0	9	2	572	0	0	574	0	0	0	0	0	1110
17:15	0	554	0	0	554	9	0	0	0	9	3	595	0	0	598	0	0	0	0	0	1161
17:30	0	480	0	0	480	9	0	0	0	9	1	572	0	0	573	0	0	0	0	0	1062
17:45	0	509	0	0	509	0	0	0	0	0	0	552	0	0	552	0	0	0	0	0	1061
Total	0	2070	0	0	2070	27	0	0	0	27	6	2291	0	0	2297	0	0	0	0	0	4394
Grand Total	0	7140	0	0	7140	67	0	0	0	67	46	7253	0	0	7299	0	0	0	0	0	14506
Apprch %	0	100	0	0		100	0	0	0		0.6	99.4	0	0		0	0	0	0		
Total %	0	49.2	0	0	49.2	0.5	0	0	0	0.5	0.3	50	0	0	50.3	0	0	0	0	0	
Autos	0	7043	0	0	7043	67	0	0	0	67	46	7134	0	0	7180	0	0	0	0	0	14290
% Autos	0	98.6	0	0	98.6	100	0	0	0	100	100	98.4	0	0	98.4	0	0	0	0	0	98.5
Heavy Vehicles																					
% Heavy Vehicles	0	1.4	0	0	1.4	0	0	0	0	0	0	1.6	0	0	1.6	0	0	0	0	0	1.5

Traf Tech Engineering Inc.

File Name : 3-S Driveway and Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 2



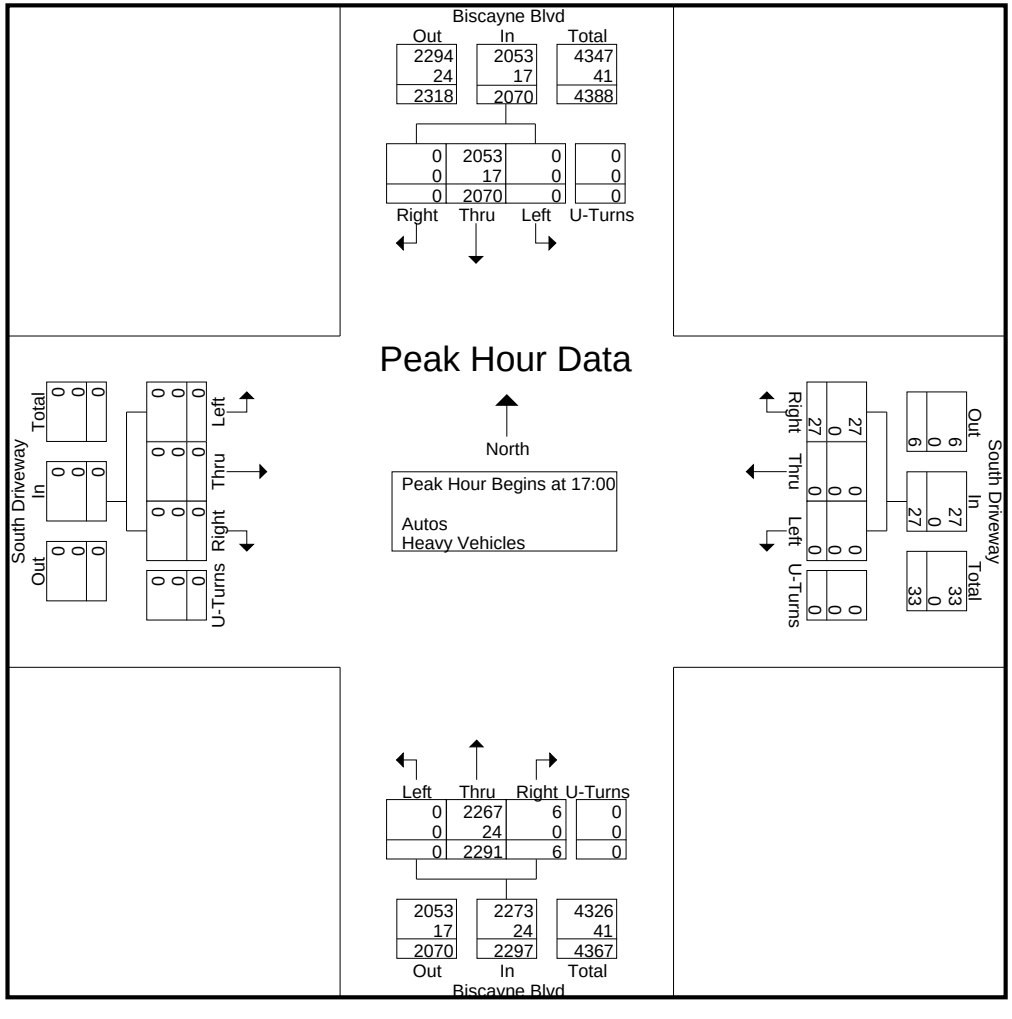
Traf Tech Engineering Inc.

File Name : 3-S Driveway and Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 3

	Biscayne Blvd From North					South Driveway From East					Biscayne Blvd From South					South Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	527	0	0	527	9	0	0	0	9	2	572	0	0	574	0	0	0	0	0	1110
17:15	0	554	0	0	554	9	0	0	0	9	3	595	0	0	598	0	0	0	0	0	1161
17:30	0	480	0	0	480	9	0	0	0	9	1	572	0	0	573	0	0	0	0	0	1062
17:45	0	509	0	0	509	0	0	0	0	0	0	552	0	0	552	0	0	0	0	0	1061
Total Volume	0	2070	0	0	2070	27	0	0	0	27	6	2291	0	0	2297	0	0	0	0	0	4394
% App. Total	0	100	0	0		100	0	0	0		0.3	99.7	0	0		0	0	0	0		
PHF	.000	.934	.000	.000	.934	.750	.000	.000	.000	.750	.500	.963	.000	.000	.960	.000	.000	.000	.000	.000	.946
Autos	0	2053	0	0	2053	27	0	0	0	27	6	2267	0	0	2273	0	0	0	0	0	4353
% Autos	0	99.2	0	0	99.2	100	0	0	0	100	100	99.0	0	0	99.0	0	0	0	0	0	99.1
Heavy Vehicles																					
% Heavy Vehicles	0	0.8	0	0	0.8	0	0	0	0	0	0	1.0	0	0	1.0	0	0	0	0	0	0.9

Traf Tech Engineering Inc.

File Name : 3-S Driveway and Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 4



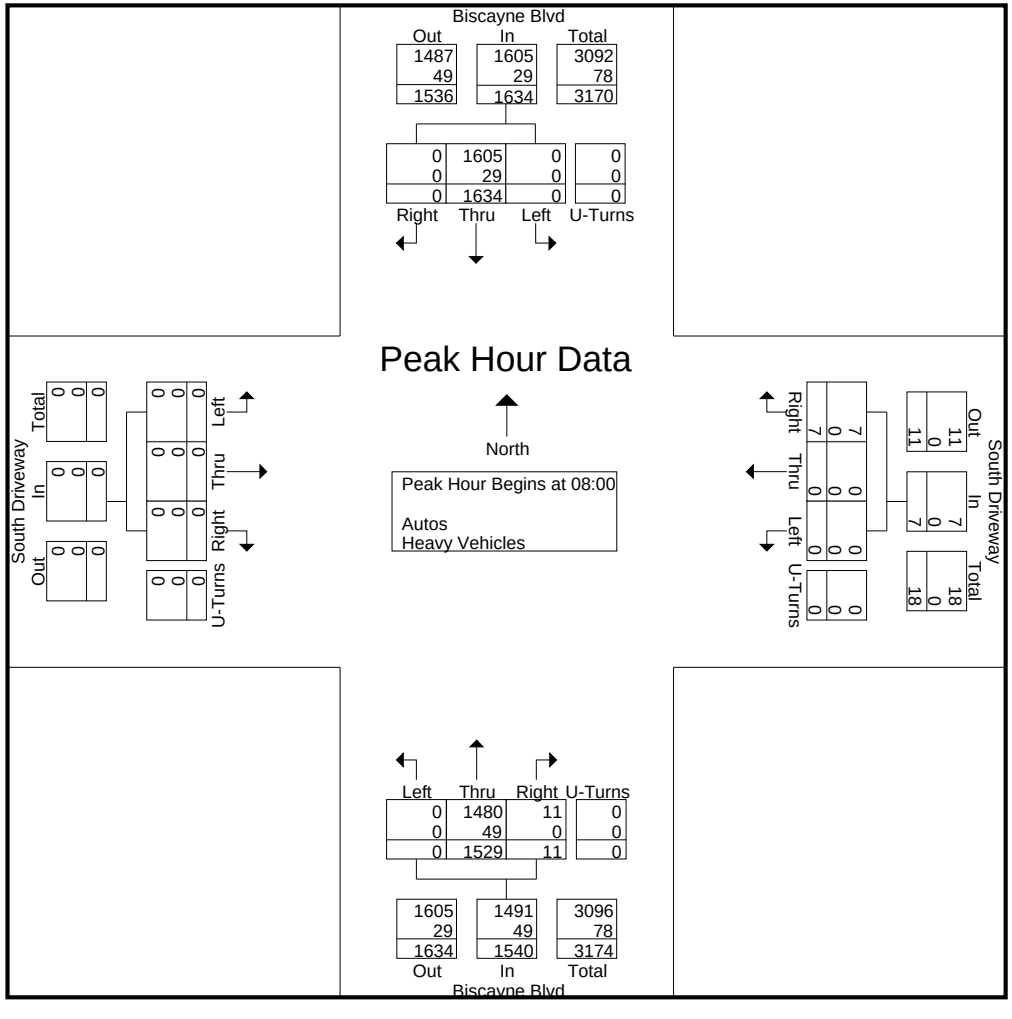
Traf Tech Engineering Inc.

File Name : 3-S Driveway and Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 5

	Biscayne Blvd From North					South Driveway From East					Biscayne Blvd From South					South Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	402	0	0	402	1	0	0	0	1	2	313	0	0	315	0	0	0	0	0	718
08:15	0	404	0	0	404	2	0	0	0	2	5	364	0	0	369	0	0	0	0	0	775
08:30	0	390	0	0	390	4	0	0	0	4	4	428	0	0	432	0	0	0	0	0	826
08:45	0	438	0	0	438	0	0	0	0	0	0	424	0	0	424	0	0	0	0	0	862
Total Volume	0	1634	0	0	1634	7	0	0	0	7	11	1529	0	0	1540	0	0	0	0	0	3181
% App. Total	0	100	0	0		100	0	0	0		0.7	99.3	0	0		0	0	0	0		
PHF	.000	.933	.000	.000	.933	.438	.000	.000	.000	.438	.550	.893	.000	.000	.891	.000	.000	.000	.000	.000	.923
Autos	0	1605	0	0	1605	7	0	0	0	7	11	1480	0	0	1491	0	0	0	0	0	3103
% Autos	0	98.2	0	0	98.2	100	0	0	0	100	100	96.8	0	0	96.8	0	0	0	0	0	97.5
Heavy Vehicles																					
% Heavy Vehicles	0	1.8	0	0	1.8	0	0	0	0	0	0	3.2	0	0	3.2	0	0	0	0	0	2.5

Traf Tech Engineering Inc.

File Name : 3-S Driveway and Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 6



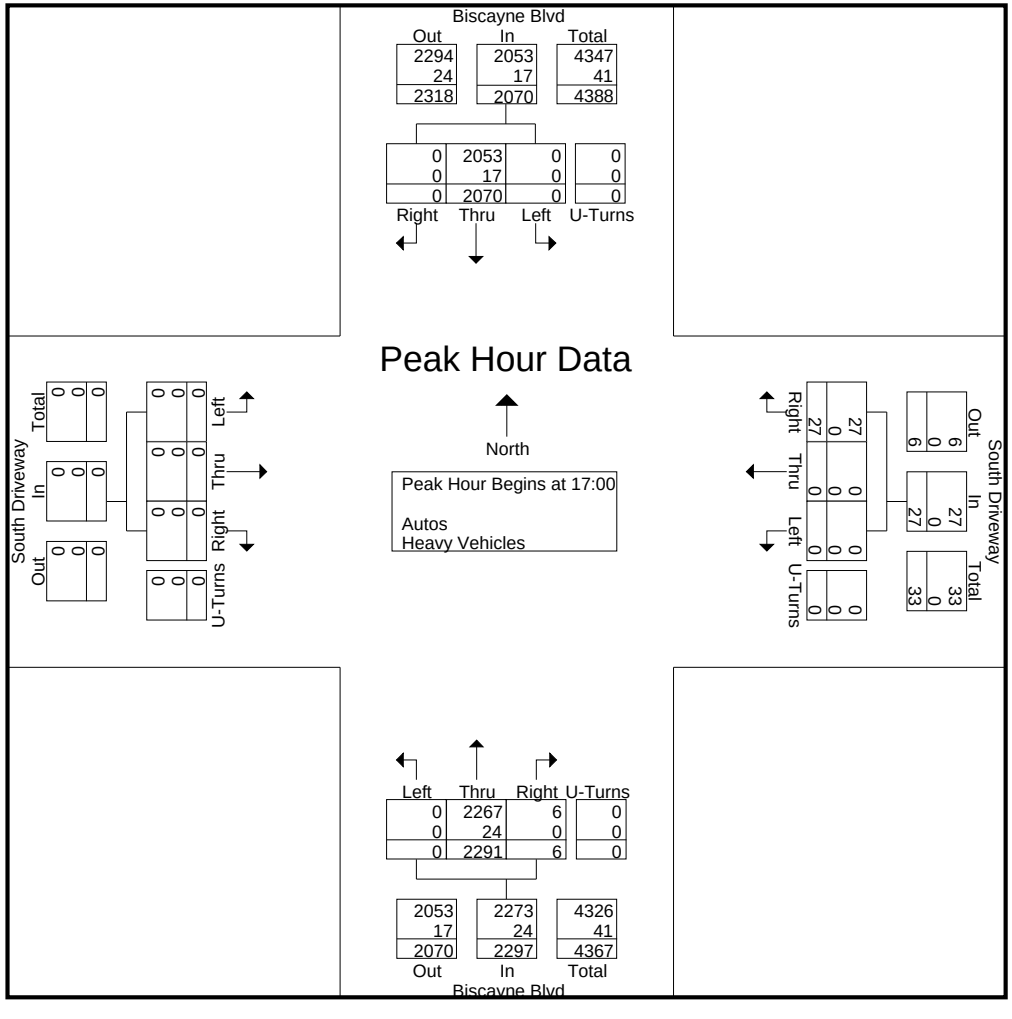
Traf Tech Engineering Inc.

File Name : 3-S Driveway and Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 7

	Biscayne Blvd From North					South Driveway From East					Biscayne Blvd From South					South Driveway From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	0	527	0	0	527	9	0	0	0	9	2	572	0	0	574	0	0	0	0	0	1110
17:15	0	554	0	0	554	9	0	0	0	9	3	595	0	0	598	0	0	0	0	0	1161
17:30	0	480	0	0	480	9	0	0	0	9	1	572	0	0	573	0	0	0	0	0	1062
17:45	0	509	0	0	509	0	0	0	0	0	0	552	0	0	552	0	0	0	0	0	1061
Total Volume	0	2070	0	0	2070	27	0	0	0	27	6	2291	0	0	2297	0	0	0	0	0	4394
% App. Total	0	100	0	0		100	0	0	0		0.3	99.7	0	0		0	0	0	0		
PHF	.000	.934	.000	.000	.934	.750	.000	.000	.000	.750	.500	.963	.000	.000	.960	.000	.000	.000	.000	.000	.946
Autos	0	2053	0	0	2053	27	0	0	0	27	6	2267	0	0	2273	0	0	0	0	0	4353
% Autos	0	99.2	0	0	99.2	100	0	0	0	100	100	99.0	0	0	99.0	0	0	0	0	0	99.1
Heavy Vehicles																					
% Heavy Vehicles	0	0.8	0	0	0.8	0	0	0	0	0	0	1.0	0	0	1.0	0	0	0	0	0	0.9

Traf Tech Engineering Inc.

File Name : 3-S Driveway and Biscayne
Site Code : 00000000
Start Date : 12/15/2021
Page No : 8



Traf Tech Engineering Inc.

File Name : 4-NE 151st St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 1

Groups Printed- Peds & Bikes

	Biscayne Blvd From North				NE 151st street From East				Biscayne Blvd From South				NE 151st street From West				
Start Time	Bikes			Peds	Bikes			Peds	Bikes			Peds	Bikes			Peds	Int. Total
07:00	0	0	0	3	0	0	0	0	2	0	0	1	1	0	0	2	9
07:15	0	0	0	0	0	0	0	0	0	0	0	3	1	0	0	0	4
07:30	0	0	0	1	2	0	0	0	0	0	0	1	0	0	0	0	4
07:45	0	0	0	0	0	0	0	0	2	0	0	2	0	0	0	0	4
Total	0	0	0	4	2	0	0	0	4	0	0	7	2	0	0	2	21
08:00	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
08:15	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
08:30	1	0	0	1	0	0	0	0	0	0	0	2	0	0	0	0	4
08:45	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	3
Total	1	0	0	3	0	0	0	0	1	0	0	3	1	0	0	1	10
*** BREAK ***																	
16:15	0	0	0	7	0	0	0	0	0	0	0	1	0	0	0	0	8
16:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
16:45	0	0	0	6	0	0	0	0	1	0	0	2	0	0	0	0	9
Total	0	0	0	13	0	0	0	0	2	0	0	3	0	0	0	0	18
17:00	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
17:15	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
17:30	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
Total	0	0	0	0	0	0	0	0	1	0	0	5	0	0	0	0	6
Grand Total	1	0	0	20	2	0	0	0	8	0	0	18	3	0	0	3	55
Apprch %	4.8	0	0	95.2	100	0	0	0	30.8	0	0	69.2	50	0	0	50	
Total %	1.8	0	0	36.4	3.6	0	0	0	14.5	0	0	32.7	5.5	0	0	5.5	

Traf Tech Engineering Inc.

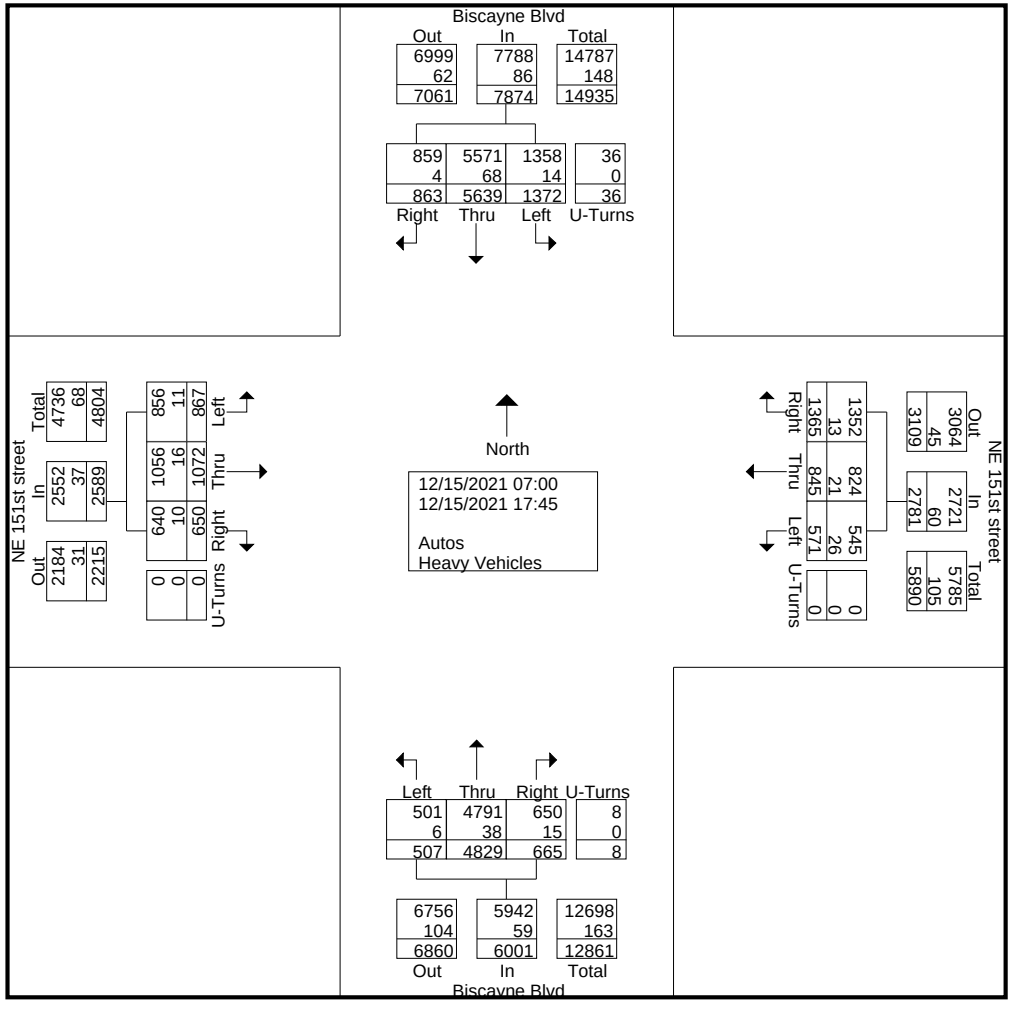
File Name : 4-NE 151st St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 1

Groups Printed- Autos - Heavy Vehicles

	Biscayne Blvd From North					NE 151st street From East					Biscayne Blvd From South					NE 151st street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
07:00	23	285	131	0	439	114	48	60	0	222	95	141	17	1	254	13	123	25	0	161	1076
07:15	28	309	79	0	416	130	66	56	0	252	34	212	21	0	267	18	71	31	0	120	1055
07:30	34	291	48	0	373	57	33	28	0	118	18	232	17	0	267	20	49	68	0	137	895
07:45	34	314	62	2	412	57	40	28	0	125	46	257	29	0	332	30	86	61	0	177	1046
Total	119	1199	320	2	1640	358	187	172	0	717	193	842	84	1	1120	81	329	185	0	595	4072
08:00	38	358	57	1	454	63	37	40	0	140	49	283	23	0	355	35	87	78	0	200	1149
08:15	26	290	49	4	369	80	62	47	0	189	40	218	27	1	286	43	113	66	0	222	1066
08:30	45	375	55	4	479	69	53	37	0	159	21	315	27	0	363	49	58	80	0	187	1188
08:45	28	286	48	2	364	54	22	11	0	87	22	295	32	0	349	27	52	71	0	150	950
Total	137	1309	209	11	1666	266	174	135	0	575	132	1111	109	1	1353	154	310	295	0	759	4353
*** BREAK ***																					
16:00	91	345	97	4	537	93	64	45	0	202	36	308	33	2	379	50	60	50	0	160	1278
16:15	97	414	124	3	638	89	45	30	0	164	50	376	31	1	458	46	37	37	0	120	1380
16:30	83	373	92	4	552	103	63	22	0	188	33	336	43	0	412	52	43	44	0	139	1291
16:45	86	411	105	1	603	75	56	37	0	168	41	351	33	1	426	46	61	48	0	155	1352
Total	357	1543	418	12	2330	360	228	134	0	722	160	1371	140	4	1675	194	201	179	0	574	5301
17:00	61	408	114	3	586	99	80	33	0	212	48	391	35	1	475	49	59	48	0	156	1429
17:15	54	393	108	2	557	95	78	27	0	200	49	356	44	1	450	66	62	52	0	180	1387
17:30	68	384	98	3	553	91	49	35	0	175	40	371	44	0	455	53	64	58	0	175	1358
17:45	67	403	105	3	578	96	49	35	0	180	43	387	51	0	481	53	47	50	0	150	1389
Total	250	1588	425	11	2274	381	256	130	0	767	180	1505	174	2	1861	221	232	208	0	661	5563
Grand Total	863	5639	1372	36	7910	1365	845	571	0	2781	665	4829	507	8	6009	650	1072	867	0	2589	19289
Apprch %	10.9	71.3	17.3	0.5		49.1	30.4	20.5	0		11.1	80.4	8.4	0.1		25.1	41.4	33.5	0		
Total %	4.5	29.2	7.1	0.2	41	7.1	4.4	3	0	14.4	3.4	25	2.6	0	31.2	3.4	5.6	4.5	0	13.4	
Autos	859	5571	1358	36	7824	1352	824	545	0	2721	650	4791	501	8	5950	640	1056	856	0	2552	19047
% Autos	99.5	98.8	99	100	98.9	99	97.5	95.4	0	97.8	97.7	99.2	98.8	100	99	98.5	98.5	98.7	0	98.6	98.7
Heavy Vehicles																					
% Heavy Vehicles	0.5	1.2	1	0	1.1	1	2.5	4.6	0	2.2	2.3	0.8	1.2	0	1	1.5	1.5	1.3	0	1.4	1.3

Traf Tech Engineering Inc.

File Name : 4-NE 151st St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 2



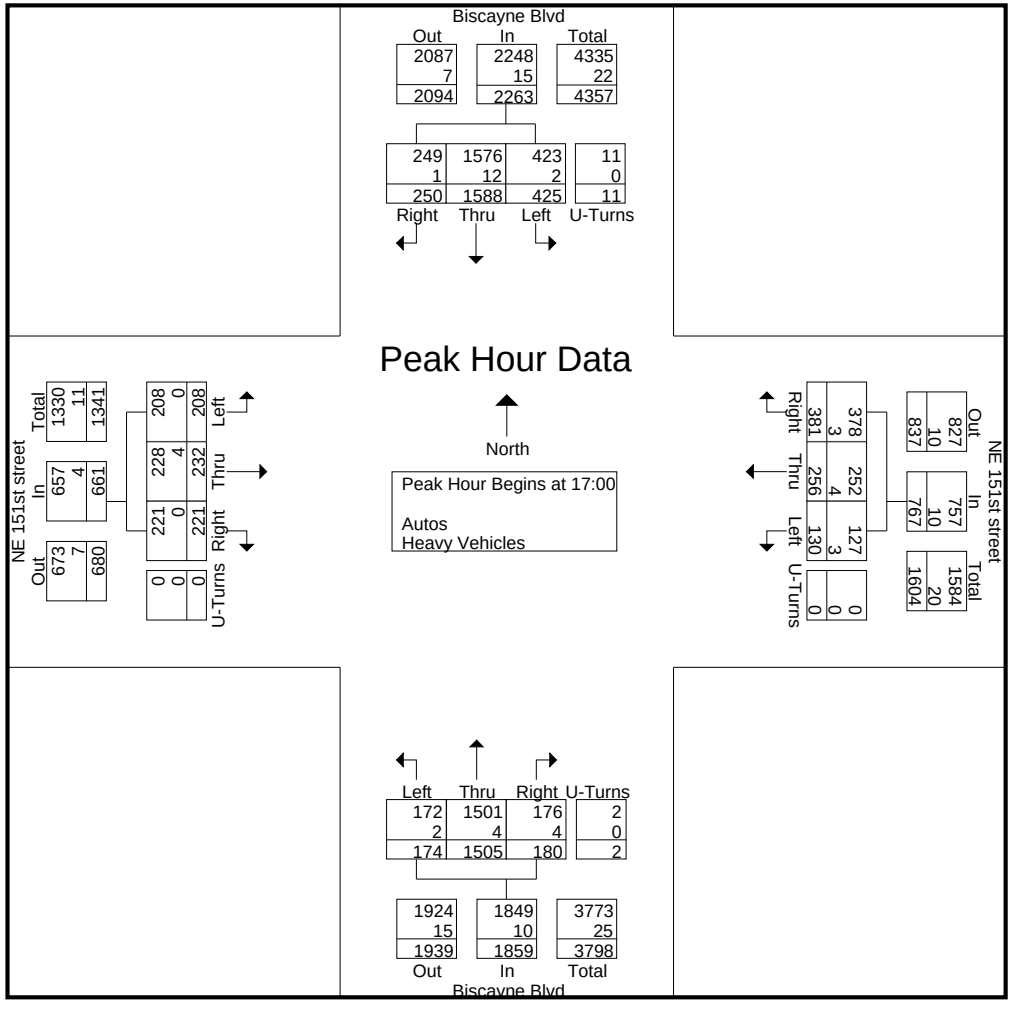
Traf Tech Engineering Inc.

File Name : 4-NE 151st St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021

	Biscayne Blvd From North					NE 151st street From East					Biscayne Blvd From South					NE 151st street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	61	408	114	3	586	99	80	33	0	212	48	391	35	1	475	49	59	48	0	156	1429
17:15	54	393	108	2	557	95	78	27	0	200	49	356	44	1	450	66	62	52	0	180	1387
17:30	68	384	98	3	553	91	49	35	0	175	40	371	44	0	455	53	64	58	0	175	1358
17:45	67	403	105	3	578	96	49	35	0	180	43	387	51	0	481	53	47	50	0	150	1389
Total Volume	250	1588	425	11	2274	381	256	130	0	767	180	1505	174	2	1861	221	232	208	0	661	5563
% App. Total	11	69.8	18.7	0.5		49.7	33.4	16.9	0		9.7	80.9	9.3	0.1		33.4	35.1	31.5	0		
PHF	.919	.973	.932	.917	.970	.962	.800	.929	.000	.904	.918	.962	.853	.500	.967	.837	.906	.897	.000	.918	.973
Autos	249	1576	423	11	2259	378	252	127	0	757	176	1501	172	2	1851	221	228	208	0	657	5524
% Autos	99.6	99.2	99.5	100	99.3	99.2	98.4	97.7	0	98.7	97.8	99.7	98.9	100	99.5	100	98.3	100	0	99.4	99.3
Heavy Vehicles																					
% Heavy Vehicles	0.4	0.8	0.5	0	0.7	0.8	1.6	2.3	0	1.3	2.2	0.3	1.1	0	0.5	0	1.7	0	0	0.6	0.7

Traf Tech Engineering Inc.

File Name : 4-NE 151st St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 4



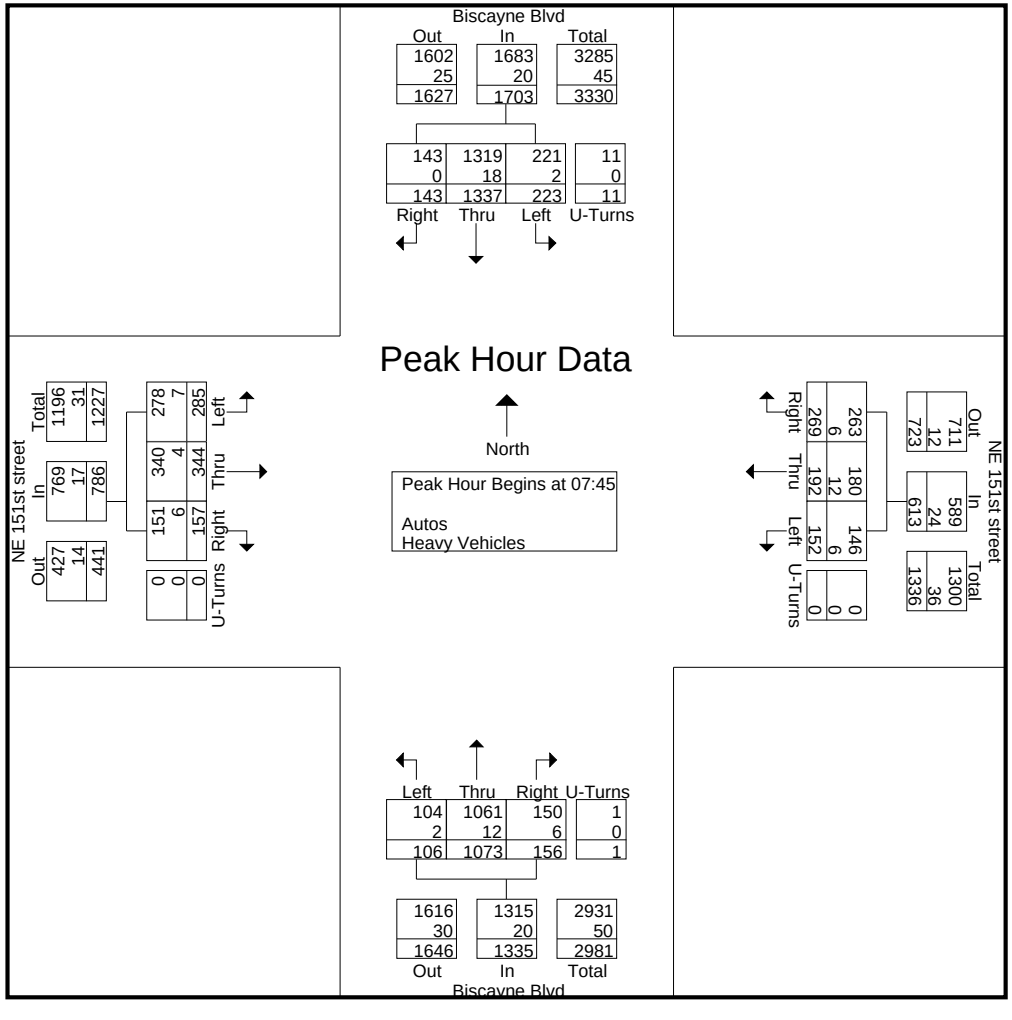
Traf Tech Engineering Inc.

File Name : 4-NE 151st St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 5

	Biscayne Blvd From North					NE 151st street From East					Biscayne Blvd From South					NE 151st street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45																					
07:45	34	314	62	2	412	57	40	28	0	125	46	257	29	0	332	30	86	61	0	177	1046
08:00	38	358	57	1	454	63	37	40	0	140	49	283	23	0	355	35	87	78	0	200	1149
08:15	26	290	49	4	369	80	62	47	0	189	40	218	27	1	286	43	113	66	0	222	1066
08:30	45	375	55	4	479	69	53	37	0	159	21	315	27	0	363	49	58	80	0	187	1188
Total Volume	143	1337	223	11	1714	269	192	152	0	613	156	1073	106	1	1336	157	344	285	0	786	4449
% App. Total	8.3	78	13	0.6		43.9	31.3	24.8	0		11.7	80.3	7.9	0.1		20	43.8	36.3	0		
PHF	.794	.891	.899	.688	.895	.841	.774	.809	.000	.811	.796	.852	.914	.250	.920	.801	.761	.891	.000	.885	.936
Autos	143	1319	221	11	1694	263	180	146	0	589	150	1061	104	1	1316	151	340	278	0	769	4368
% Autos	100	98.7	99.1	100	98.8	97.8	93.8	96.1	0	96.1	96.2	98.9	98.1	100	98.5	96.2	98.8	97.5	0	97.8	98.2
Heavy Vehicles																					
% Heavy Vehicles	0	1.3	0.9	0	1.2	2.2	6.3	3.9	0	3.9	3.8	1.1	1.9	0	1.5	3.8	1.2	2.5	0	2.2	1.8

Traf Tech Engineering Inc.

File Name : 4-NE 151st St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 6



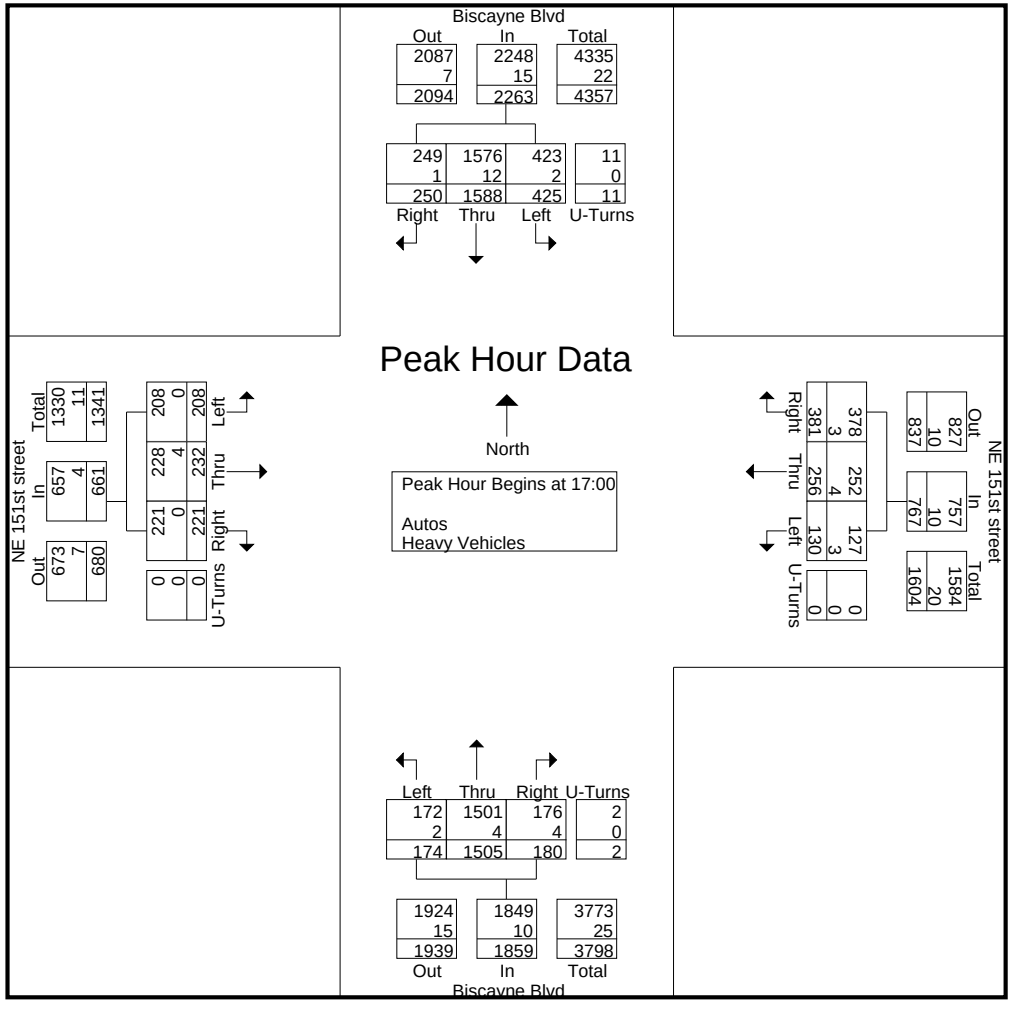
Traf Tech Engineering Inc.

File Name : 4-NE 151st St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 7

	Biscayne Blvd From North					NE 151st street From East					Biscayne Blvd From South					NE 151st street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 17:00																					
17:00	61	408	114	3	586	99	80	33	0	212	48	391	35	1	475	49	59	48	0	156	1429
17:15	54	393	108	2	557	95	78	27	0	200	49	356	44	1	450	66	62	52	0	180	1387
17:30	68	384	98	3	553	91	49	35	0	175	40	371	44	0	455	53	64	58	0	175	1358
17:45	67	403	105	3	578	96	49	35	0	180	43	387	51	0	481	53	47	50	0	150	1389
Total Volume	250	1588	425	11	2274	381	256	130	0	767	180	1505	174	2	1861	221	232	208	0	661	5563
% App. Total	11	69.8	18.7	0.5		49.7	33.4	16.9	0		9.7	80.9	9.3	0.1		33.4	35.1	31.5	0		
PHF	.919	.973	.932	.917	.970	.962	.800	.929	.000	.904	.918	.962	.853	.500	.967	.837	.906	.897	.000	.918	.973
Autos	249	1576	423	11	2259	378	252	127	0	757	176	1501	172	2	1851	221	228	208	0	657	5524
% Autos	99.6	99.2	99.5	100	99.3	99.2	98.4	97.7	0	98.7	97.8	99.7	98.9	100	99.5	100	98.3	100	0	99.4	99.3
Heavy Vehicles																					
% Heavy Vehicles	0.4	0.8	0.5	0	0.7	0.8	1.6	2.3	0	1.3	2.2	0.3	1.1	0	0.5	0	1.7	0	0	0.6	0.7

Traf Tech Engineering Inc.

File Name : 4-NE 151st St & Biscayne Blvd
Site Code : 00000000
Start Date : 12/15/2021
Page No : 8



Traf Tech Engineering Inc.

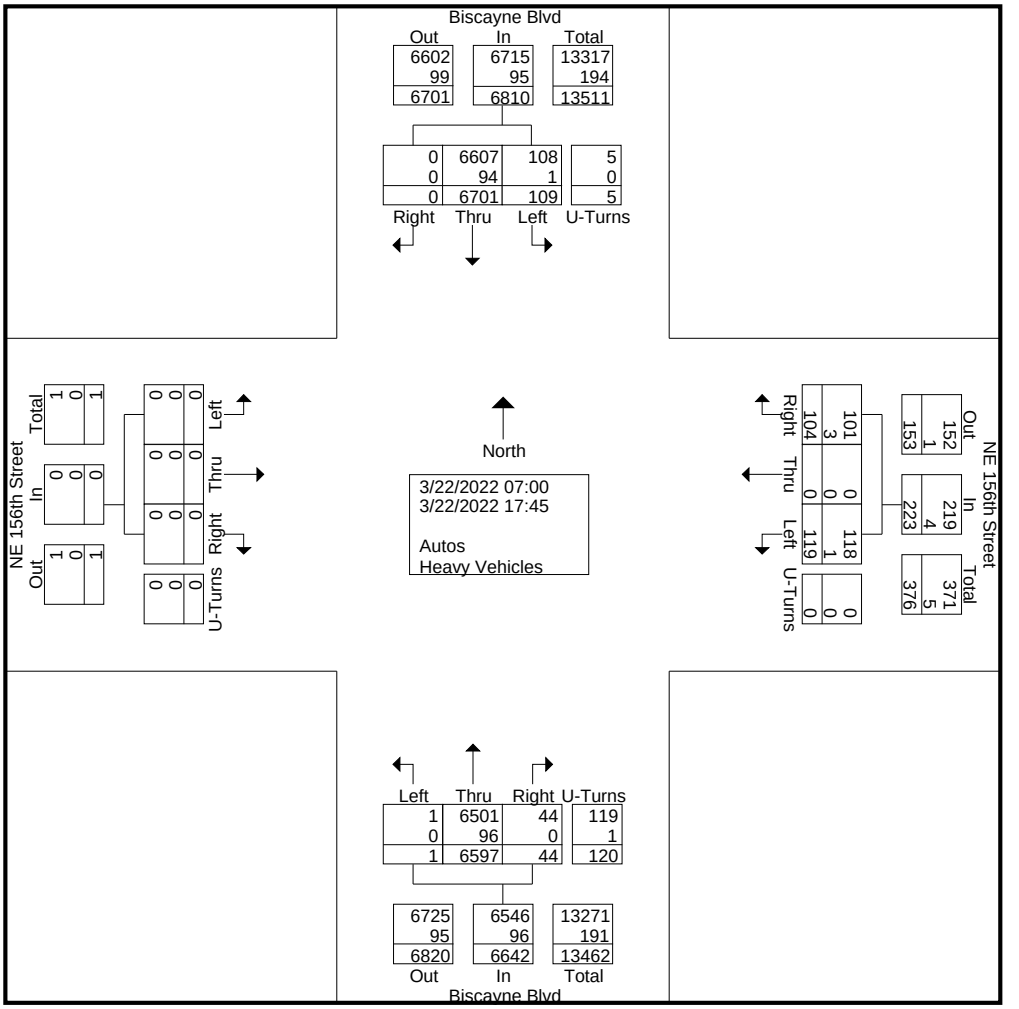
File Name : Biscayne Blvd & NE 156th Street
Site Code : 00000000
Start Date : 3/22/2022
Page No : 1

Groups Printed- Autos - Heavy Vehicles

	Biscayne Blvd From North					NE 156th Street From East					Biscayne Blvd From South					NE 156th Street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
07:00	0	263	16	1	280	6	0	1	0	7	4	179	0	0	183	0	0	0	0	0	470
07:15	0	269	24	0	293	6	0	6	0	12	8	226	1	3	238	0	0	0	0	0	543
07:30	0	341	17	0	358	6	0	6	0	12	4	288	0	2	294	0	0	0	0	0	664
07:45	0	417	14	0	431	7	0	6	0	13	5	315	0	2	322	0	0	0	0	0	766
Total	0	1290	71	1	1362	25	0	19	0	44	21	1008	1	7	1037	0	0	0	0	0	2443
08:00	0	341	9	0	350	6	0	4	0	10	4	319	0	4	327	0	0	0	0	0	687
08:15	0	385	4	0	389	8	0	6	0	14	2	391	0	8	401	0	0	0	0	0	804
08:30	0	439	6	0	445	4	0	4	0	8	5	467	0	2	474	0	0	0	0	0	927
08:45	0	422	10	0	432	5	0	2	0	7	5	439	0	9	453	0	0	0	0	0	892
Total	0	1587	29	0	1616	23	0	16	0	39	16	1616	0	23	1655	0	0	0	0	0	3310
*** BREAK ***																					
16:00	0	485	2	1	488	15	0	23	0	38	3	468	0	13	484	0	0	0	0	0	1010
16:15	0	569	1	0	570	8	0	9	0	17	0	495	0	8	503	0	0	0	0	0	1090
16:30	0	371	0	0	371	10	0	19	0	29	1	498	0	12	511	0	0	0	0	0	911
16:45	0	503	0	0	503	5	0	7	0	12	1	517	0	10	528	0	0	0	0	0	1043
Total	0	1928	3	1	1932	38	0	58	0	96	5	1978	0	43	2026	0	0	0	0	0	4054
17:00	0	432	2	2	436	7	0	6	0	13	0	509	0	10	519	0	0	0	0	0	968
17:15	0	501	0	0	501	6	0	7	0	13	0	497	0	13	510	0	0	0	0	0	1024
17:30	0	457	3	0	460	4	0	4	0	8	1	503	0	12	516	0	0	0	0	0	984
17:45	0	506	1	1	508	1	0	9	0	10	1	486	0	12	499	0	0	0	0	0	1017
Total	0	1896	6	3	1905	18	0	26	0	44	2	1995	0	47	2044	0	0	0	0	0	3993
Grand Total	0	6701	109	5	6815	104	0	119	0	223	44	6597	1	120	6762	0	0	0	0	0	13800
Apprch %	0	98.3	1.6	0.1		46.6	0	53.4	0		0.7	97.6	0	1.8		0	0	0	0		
Total %	0	48.6	0.8	0	49.4	0.8	0	0.9	0	1.6	0.3	47.8	0	0.9	49	0	0	0	0	0	
Autos	0	6607										6501									13604
% Autos	0	98.6	99.1	100	98.6	97.1	0	99.2	0	98.2	100	98.5	100	99.2	98.6	0	0	0	0	0	98.6
Heavy Vehicles																					
% Heavy Vehicles	0	1.4	0.9	0	1.4	2.9	0	0.8	0	1.8	0	1.5	0	0.8	1.4	0	0	0	0	0	1.4

Traf Tech Engineering Inc.

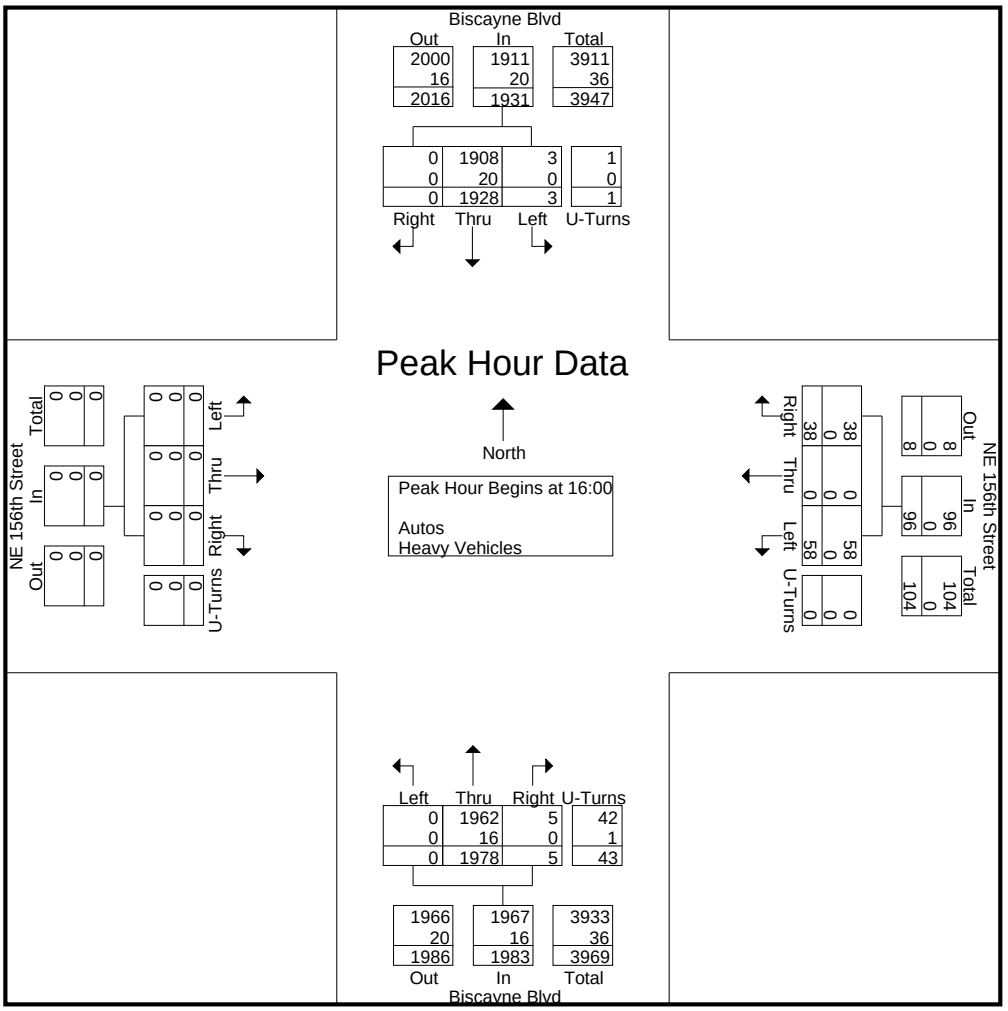
File Name : Biscayne Blvd & NE 156th Street
Site Code : 00000000
Start Date : 3/22/2022
Page No : 2



Traf Tech Engineering Inc.

File Name : Biscayne Blvd & NE 156th Street
Site Code : 00000000
Start Date : 3/22/2022
Page No : 3

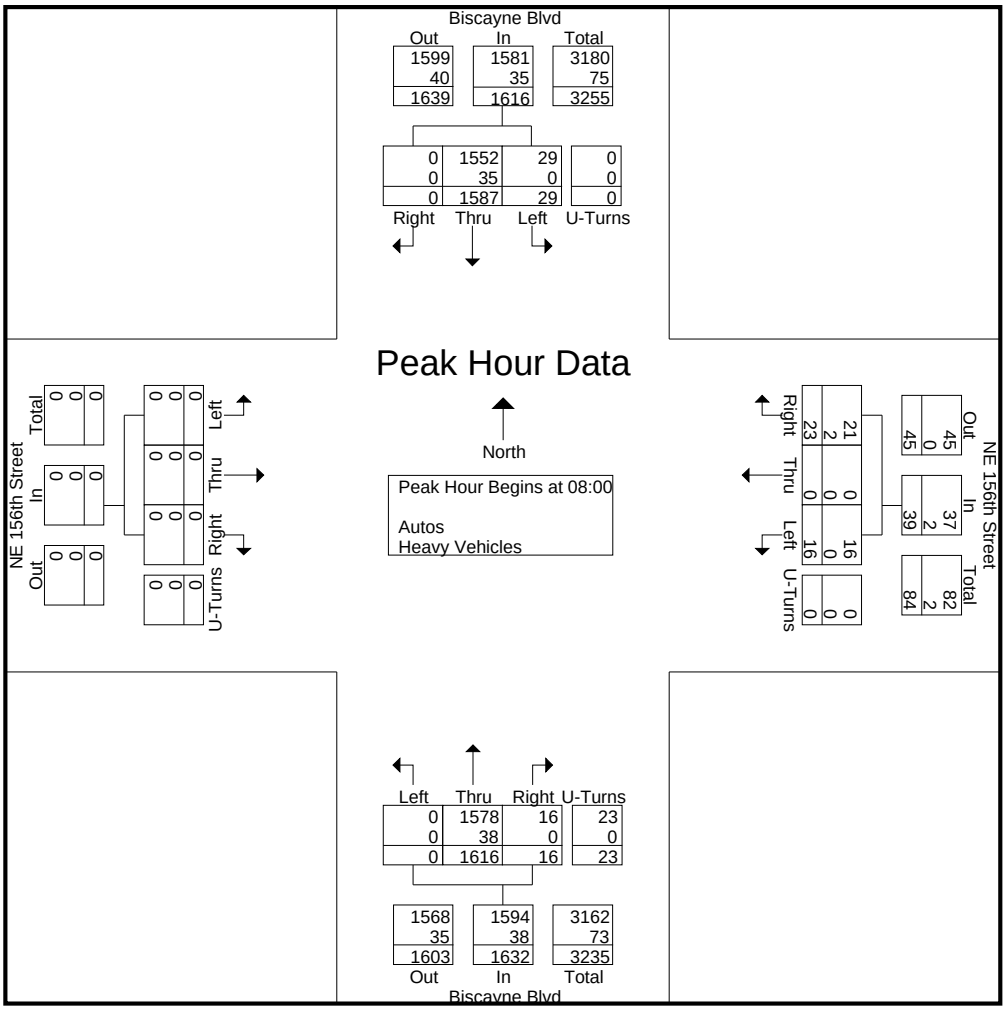
	Biscayne Blvd From North					NE 156th Street From East					Biscayne Blvd From South					NE 156th Street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	0	485	2	1	488	15	0	23	0	38	3	468	0	13	484	0	0	0	0	0	1010
16:15	0	569	1	0	570	8	0	9	0	17	0	495	0	8	503	0	0	0	0	0	1090
16:30	0	371	0	0	371	10	0	19	0	29	1	498	0	12	511	0	0	0	0	0	911
16:45	0	503	0	0	503	5	0	7	0	12	1	517	0	10	528	0	0	0	0	0	1043
Total Volume	0	1928	3	1	1932	38	0	58	0	96	5	1978	0	43	2026	0	0	0	0	0	4054
% App. Total	0	99.8	0.2	0.1		39.6	0	60.4	0		0.2	97.6	0	2.1		0	0	0	0		
PHF	.000	.847	.375	.250	.847	.633	.000	.630	.000	.632	.417	.956	.000	.827	.959	.000	.000	.000	.000	.000	.930
Autos	0	1908										1962									
% Autos	0	99.0	100	100	99.0	100	0	100	0	100	100	99.2	0	97.7	99.2	0	0	0	0	0	99.1
Heavy Vehicles																					
% Heavy Vehicles	0	1.0	0	0	1.0	0	0	0	0	0	0	0.8	0	2.3	0.8	0	0	0	0	0	0.9



Traf Tech Engineering Inc.

File Name : Biscayne Blvd & NE 156th Street
Site Code : 00000000
Start Date : 3/22/2022
Page No : 4

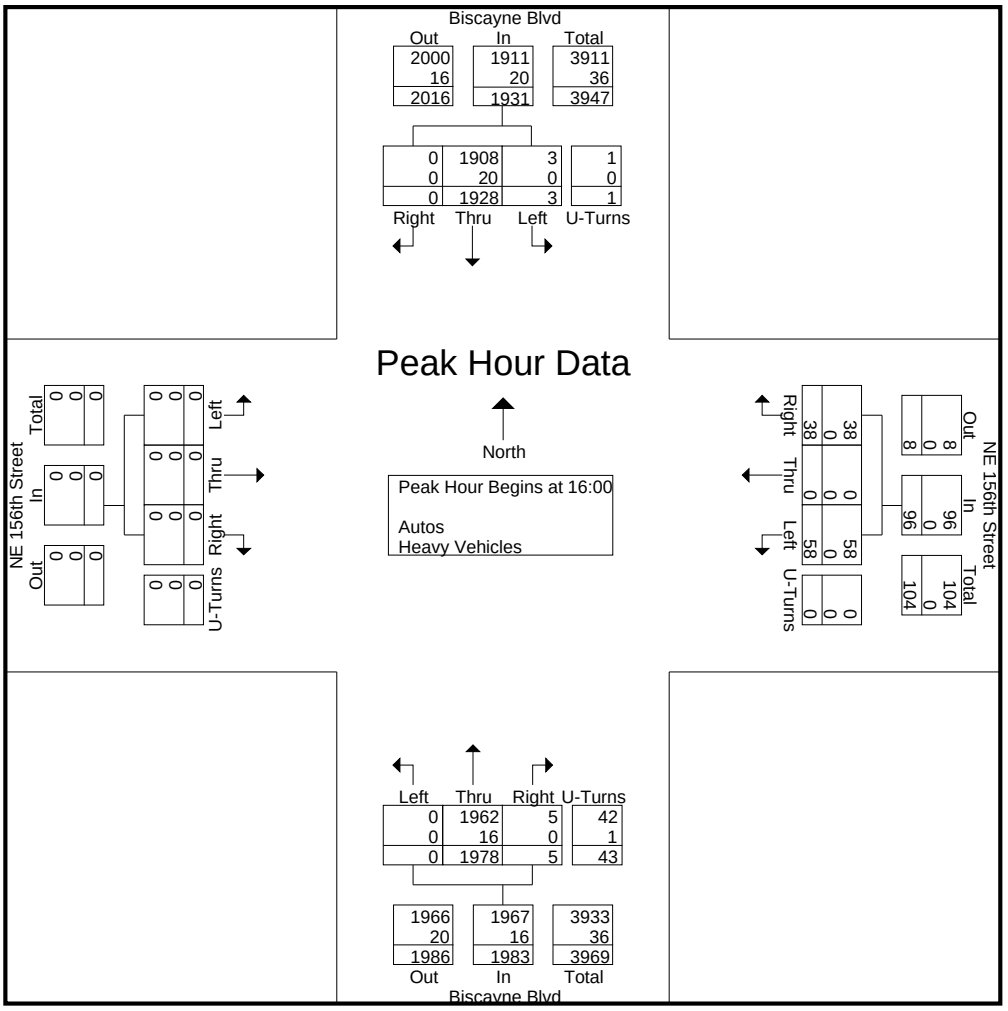
	Biscayne Blvd From North					NE 156th Street From East					Biscayne Blvd From South					NE 156th Street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00																					
08:00	0	341	9	0	350	6	0	4	0	10	4	319	0	4	327	0	0	0	0	0	687
08:15	0	385	4	0	389	8	0	6	0	14	2	391	0	8	401	0	0	0	0	0	804
08:30	0	439	6	0	445	4	0	4	0	8	5	467	0	2	474	0	0	0	0	0	927
08:45	0	422	10	0	432	5	0	2	0	7	5	439	0	9	453	0	0	0	0	0	892
Total Volume	0	1587	29	0	1616	23	0	16	0	39	16	1616	0	23	1655	0	0	0	0	0	3310
% App. Total	0	98.2	1.8	0		59	0	41	0		1	97.6	0	1.4		0	0	0	0		
PHF	.000	.904	.725	.000	.908	.719	.000	.667	.000	.696	.800	.865	.000	.639	.873	.000	.000	.000	.000	.000	.893
Autos	0	1552										1578									
% Autos	0	97.8	100	0	97.8	91.3	0	100	0	94.9	100	97.6	0	100	97.7	0	0	0	0	0	97.7
Heavy Vehicles																					
% Heavy Vehicles	0	2.2	0	0	2.2	8.7	0	0	0	5.1	0	2.4	0	0	2.3	0	0	0	0	0	2.3



Traf Tech Engineering Inc.

File Name : Biscayne Blvd & NE 156th Street
Site Code : 00000000
Start Date : 3/22/2022
Page No : 5

	Biscayne Blvd From North					NE 156th Street From East					Biscayne Blvd From South					NE 156th Street From West					
Start Time	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Right	Thru	Left	U-Turns	App. Total	Int. Total
Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 16:00																					
16:00	0	485	2	1	488	15	0	23	0	38	3	468	0	13	484	0	0	0	0	0	1010
16:15	0	569	1	0	570	8	0	9	0	17	0	495	0	8	503	0	0	0	0	0	1090
16:30	0	371	0	0	371	10	0	19	0	29	1	498	0	12	511	0	0	0	0	0	911
16:45	0	503	0	0	503	5	0	7	0	12	1	517	0	10	528	0	0	0	0	0	1043
Total Volume	0	1928	3	1	1932	38	0	58	0	96	5	1978	0	43	2026	0	0	0	0	0	4054
% App. Total	0	99.8	0.2	0.1		39.6	0	60.4	0		0.2	97.6	0	2.1		0	0	0	0		
PHF	.000	.847	.375	.250	.847	.633	.000	.630	.000	.632	.417	.956	.000	.827	.959	.000	.000	.000	.000	.000	.930
Autos	0	1908										1962									
% Autos	0	99.0	100	100	99.0	100	0	100	0	100	100	99.2	0	97.7	99.2	0	0	0	0	0	99.1
Heavy Vehicles																					
% Heavy Vehicles	0	1.0	0	0	1.0	0	0	0	0	0	0	0.8	0	2.3	0.8	0	0	0	0	0	0.9



Traf Tech Engineering Inc.

File Name : Biscayne Blvd & NE 156th Street
Site Code : 00000000
Start Date : 3/22/2022
Page No : 1

Groups Printed- Peds & Bikes

	Biscayne Blvd From North				NE 156th Street From East				Biscayne Blvd From South				NE 156th Street From West				
Start Time	Bikes			Peds	Bikes			Peds	Bikes			Peds	Bikes			Peds	Int. Total
07:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
07:15	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
07:30	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	3
07:45	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	5	0	0	2	0	0	0	0	0	0	0	0	7
08:00	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5
08:15	0	0	0	0	1	0	0	1	0	0	0	1	0	0	0	0	3
*** BREAK ***																	
08:45	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	8	0	0	1	0	0	0	1	0	0	0	0	10
*** BREAK ***																	
16:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
16:15	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
16:30	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
16:45	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	8
17:00	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
17:15	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
*** BREAK ***																	
17:45	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	5
Grand Total	0	0	0	0	26	0	0	3	0	0	0	1	0	0	0	0	30
Apprch %	0	0	0	0	89.7	0	0	10.3	0	0	0	100	0	0	0	0	
Total %	0	0	0	0	86.7	0	0	10	0	0	0	3.3	0	0	0	0	

TOD Schedule Report
for 2010: SR- 826&US 1

Print Date: 10/4/2021

Print Time: 1:49 PM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2010	SR- 826&US 1	DOW-2	TOD	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
NBL	SBT	EBL	WBT	SBL	NBT	WBL	EBT
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase	Walk Phase Bank 1	Walk Phase Bank 2	Walk Phase Bank 3	Don't Walk Phase Bank 1	Don't Walk Phase Bank 2	Don't Walk Phase Bank 3	Min Initial Phase Bank 1	Min Initial Phase Bank 2	Min Initial Phase Bank 3	Veh Ext Phase Bank 1	Veh Ext Phase Bank 2	Veh Ext Phase Bank 3	Max Limit Phase Bank 1	Max Limit Phase Bank 2	Max Limit Phase Bank 3	Max 2 Phase Bank 1	Max 2 Phase Bank 2	Max 2 Phase Bank 3	Yellow	Red
1 NBL	0	0	0	0	0	0	5	5	5	3	3	3	24	24	24	27	27	27	4.8	2
2 SBT	4	4	4	38	38	38	7	7	7	1	1	1	50	50	50	50	50	50	4.8	2.4
3 EBL	0	0	0	0	0	0	5	5	5	3	3	3	25	25	25	34	34	34	4.8	2
4 WBT	4	4	4	47	47	47	7	7	7	2.5	2.5	2.5	55	55	55	55	55	55	4.8	2.9
5 SBL	0	0	0	0	0	0	5	5	5	3	3	3	24	24	24	27	27	27	4.8	2
6 NBT	4	4	4	38	38	38	7	7	7	1	1	1	50	50	50	50	50	50	4.8	2.4
7 WBL	0	0	0	0	0	0	5	5	5	3	3	3	25	25	25	34	34	34	4.8	2
8 EBT	4	4	4	47	47	47	7	7	7	2.5	2.5	2.5	55	55	55	55	55	55	4.8	2.9

Last In Service Date: unknown

Permitted Phases

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

TOD Schedule Report

for 2010: SR- 826&US 1

Print Date: 10/4/2021

Print Time: 1:49 PM

Current TOD Schedule	Plan	Cycle	Green Time 1 NBL	2 SBT	3 EBL	4 WBT	5 SBL	6 NBT	7 WBL	8 EBT	Ring Offset	Offset
	1	140	13	57	14	27	13	57	14	27	0	56
	2	125	15	32	17	32	15	32	17	32	0	107
	3	170	25	43	26	47	25	43	26	47	0	77
	4	170	22	44	26	49	22	44	26	49	0	77
	5	130	14	32	17	38	14	32	17	38	0	18
	6	150	19	48	19	35	19	48	19	35	0	60
	7	150	19	48	19	35	19	48	19	35	0	60
	8	105	10	32	13	21	10	32	13	21	0	60
	9	150	24	33	25	39	24	33	25	39	0	71
	10	125	16	32	17	31	16	32	17	31	0	107
	11	170	25	43	26	47	25	43	26	47	0	77
	12	115	12	32	14	28	12	32	14	28	0	79
	13	130	14	32	20	35	14	32	20	35	0	54
	14	130	14	32	17	38	14	32	17	38	0	62
	15	150	15	45	22	39	15	45	22	39	0	81
	16	115	10	34	12	30	10	34	12	30	0	56
	22	145	14	53	14	35	14	53	14	35	0	60
	23	140	14	48	14	35	14	48	14	35	0	60
	25	120	13	33	12	32	14	32	19	26	0	52
	26	135	23	32	17	33	22	33	23	28	0	5
	27	160	23	42	17	48	27	38	28	38	0	34
	28	100	13	31	12	14	12	32	13	14	0	83

Local TOD Schedule

Time	Plan	DOW
0000	23	M T W Th F
0000	23	Su S
0100	22	Su S
0100	22	M T W Th F
0500	7	M T W Th F
0530	4	M T W Th F
0600	1	Su S
1000	11	Su S
1000	3	M T W Th F
1500	11	M T W Th F
2100	6	M T W Th F
2100	6	Su S
2300	23	M T W Th F

Current Time of Day Function

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

Local Time of Day Function

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

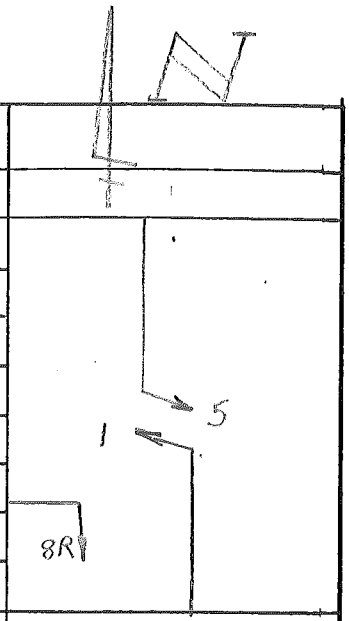
*** Settings**

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

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN

PHASE	INT	1	2	2R	3	4	5	6	6R	7	8	8R	P2	P4	P6	P8
		SIGNAL HEAD NUMBER														
Φ 1+5	R/W	←R	R	R	R	R	←R	R	R	R	R	→R	DW	DW	DW	DW
NBLT-SBLT	TO 1+6	←R	R	R	R	R	←R	R	R	R	R	→R	DW	DW	DW	DW
	TO 2+5	←R	R	R	R	R	←R	R	R	R	R	→R	DW	DW	DW	DW
	TO 2+6	←R	R	R	R	R	←R	R	R	R	R	→R	DW	DW	DW	DW
	TO TRACK CL	←R	R	R	R	R	←R	R	R	R	R	→R	DW	DW	DW	DW
ACTUATED	CLEAR															
	CLEAR															
	CLEAR															
Φ 1+6	R/W	←G	R	R	R	R	R	G	G	R	R	→R	DW	DW	DW	DW
NBLT	TO 2+6	←G	R	R	R	R	R	G	G	R	R	→R	DW	DW	DW	DW
	TO TRACK CL	←Y	R	R	R	R	R	Y	Y	R	R	→R	DW	DW	DW	DW
ACTUATED	CLEAR															
	CLEAR															
	CLEAR															
Φ 2+5	R/W	R	G	G	R	R	←G	R	R	R	R	R	DW	DW	DW	DW
SBLT	TO 2+6	R	G	G	R	R	←G	R	R	R	R	R	DW	DW	DW	DW
	TO TRACK CL	R	Y	Y	R	R	←Y	R	R	R	R	R	DW	DW	DW	DW
ACTUATED	CLEAR															
	CLEAR															
	CLEAR															
Φ 2+6	R/W	R	G	G	R	R	R	G	G	R	R	R	W	DW	W	DW
N-S	Ped CL	R	G	G	R	R	R	G	G	R	R	R	F DW	DW	F DW	DW
	TO 3+7	R	Y	Y	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW
	TO 3+8	R	Y	Y	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW
	TO 4+7	R	Y	Y	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW
RECALL	TO 4+8	R	Y	Y	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW
	CLEAR TRACK CL	R	Y	Y	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW



Drawn	Date
F. Prats	5/8/97
Check	**Date**
E Fru	5/8/97
Division Engineer	**Date**

METROPOLITAN DADE COUNTY
DEPARTMENT OF PUBLIC WORKS

ASSET NO: 32010

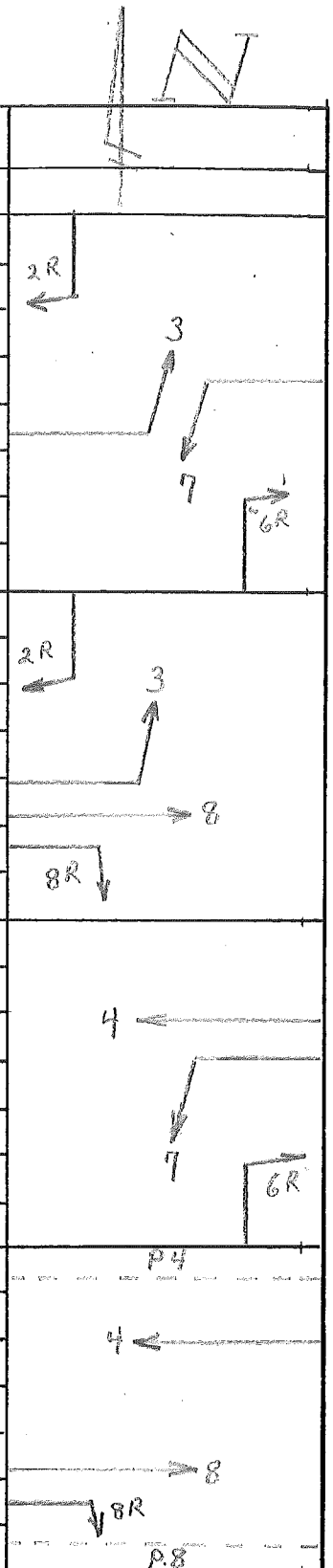
SR 826 & US 1

sheet 1 of 3

Placed in Service		Phasing Number
Date: 10/20/98	By: CONTRACTOR	10

SIGNAL OPERATING PLAN

PHASE	INT	1	2	SIGNAL HEAD NUMBER 2R	3	4	5	6	6R	7	8	8R	P2	P4	P6	P8
ϕ 3+7 EBLT-WBLT Actuated	R/W	R	R	←R	↓R	R	R	R	←R	↓R	R	R	DW	DW	DW	DW
	TO 3+8	R	R	←R	↓R	R	R	R	←R	↓R	R	R	DW	DW	DW	DW
	TO 4+7	R	R	←R	↓R	R	R	R	←R	↓R	R	R	DW	DW	DW	DW
	TO 4+8	R	R	←R	↓R	R	R	R	←R	↓R	R	R	DW	DW	DW	DW
	TO TRACK CL	R	R	←R	↓R	R	R	R	←R	↓R	R	R	DW	DW	DW	DW
	CLEAR															
	CLEAR															
	CLEAR															
ϕ 3+8 EBLT Actuated	R/W	R	R	←R	↓G	R	R	R	R	R	G	G	DW	DW	DW	DW
	TO 4+8	R	R	←R	↓G	R	R	R	R	R	G	G	DW	DW	DW	DW
	TO TRACK CL	R	R	←R	↓G	R	R	R	R	R	G	G	DW	DW	DW	DW
	CLEAR															
	CLEAR															
	CLEAR															
ϕ 4+7 WBLT Actuated	R/W	R	R	R	R	G	R	R	←R	↓G	R	R	DW	DW	DW	DW
	TO 4+8	R	R	R	R	G	R	R	←R	↓G	R	R	DW	DW	DW	DW
	TO TRACK CL	R	R	R	R	Y	R	R	←R	↓Y	R	R	DW	DW	DW	DW
	CLEAR															
	CLEAR															
	CLEAR															
ϕ 4+8 E-W Actuated	R/W	R	R	R	R	G	R	R	R	R	G	G	DW	W	DW	W
	PED CL	R	R	R	R	G	R	R	R	R	G	G	DW	F DW	DW	F DW
	TO 1+5	R	R	R	R	Y	R	R	R	R	Y	Y	DW	DW	DW	DW
	TO 1+6	R	R	R	R	Y	R	R	R	R	Y	Y	DW	DW	DW	DW
	TO 2+5	R	R	R	R	Y	R	R	R	R	Y	Y	DW	DW	DW	DW
	TO 2+6	R	R	R	R	Y	R	R	R	R	Y	Y	DW	DW	DW	DW
	CLEAR TRACK CL	R	R	R	R	Y	R	R	R	R	G	G	DW	DW	DW	DW



Drawn	Date
F. PRATS	5/8/97
Check	**Date**
E Lee	5/8/97
Division Engineer	**Date**

METROPOLITAN DADE COUNTY
DEPARTMENT OF PUBLIC WORKS

ASSET NO: 32010

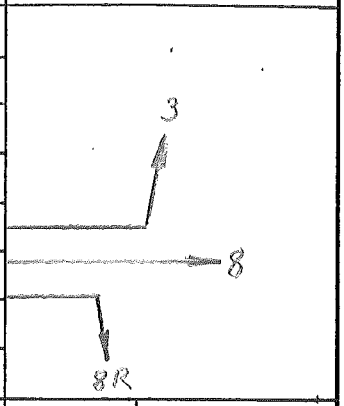
SR 826 & US1

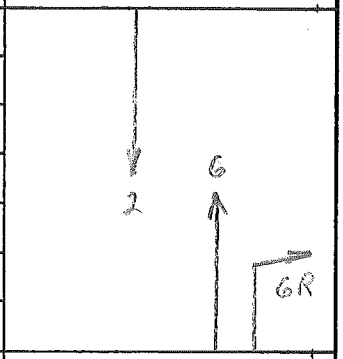
sheet 2 of 3

Placed in Service		Phasing Number
Date: 10/20/98	By: CONTRACTOR	10

SIGNAL OPERATING PLAN

PHASE	INT	1	2	2R	3	4	5	6	6R	7	8	8R	P2	P4	P6	P8
		SIGNAL HEAD NUMBER														
TRACK CLEARANCE	R/W	R	R	R	G	R	R	R	R	R	G	G	DW	DW	DW	DW
	TRAIN PASSAGE	R	R	R	Y	R	R	R	R	R	Y	Y	DW	DW	DW	DW
R.R.	TO CLEAR															
TRAIN PASSAGE	R/W	R	G	R	R	R	R	G	G	R	R	R	DW	DW	DW	DW
R.R.	3+8	R	Y	R	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW
	TO CLEAR	MAY CYCLE TO Φ 2+5 OR Φ7 DURING TRAIN PASSAGE														
	R/W															
	TO CLEAR															
	R/W															
	TO CLEAR															
FLASHING OP		R	Y	R	R	R	R	Y	R	R	R					





Drawn	Date
F. PRATS	5/8/97
Check	**Date**
E Lu	5/8/97
Division Engineer	**Date**

METROPOLITAN DADE COUNTY
DEPARTMENT OF PUBLIC WORKS

ASSET NO: 32010

SR 826 & LIS 1

SHEET 3 OF 3

Placed in Service			Phasing Number
Date: 10/20/98	By: CONTRACTOR		10

TOD Schedule Report
for 4159: US 1&NE 151 St

Print Date: 10/4/2021

Print Time: 5:59 PM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
4159	US 1&NE 151 St	DOW-2	TOD	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
NBL	SBT	EBL	WBT	SBL	NBT	WBL	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 NBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	10 - 25 - 10	25 - 7 - 10	4.8	2
2 SBT	7 - 7 - 7	23 - 23 - 23	7 - 7 - 7	1 - 1 - 1	40 - 75 - 40	0 - 0 - 0	4.8	2.2
3 EBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	10 - 35 - 10	27 - 7 - 12	4	3.4
4 WBT	7 - 7 - 7	38 - 38 - 38	7 - 7 - 7	2.5 - 2.5 - 2.5	14 - 50 - 28	40 - 20 - 22	4	3.4
5 SBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	10 - 30 - 10	26 - 7 - 12	4.8	2
6 NBT	7 - 7 - 7	23 - 23 - 23	7 - 7 - 7	1 - 1 - 1	40 - 75 - 40	0 - 0 - 0	4.8	2.2
7 WBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	10 - 35 - 10	31 - 7 - 17	4	3.4
8 EBT	7 - 7 - 7	38 - 38 - 38	7 - 7 - 7	2.5 - 2.5 - 2.5	14 - 50 - 28	40 - 20 - 22	4	3.4

Last In Service Date: unknown

Permitted Phases

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

TOD Schedule Report

for 4159: US 1&NE 151 St

Print Date: 10/4/2021

Print Time: 5:59 PM

Current TOD Schedule	Plan	Cycle	Green Time 1 NBL	2 SBT	3 EBL	4 WBT	5 SBL	6 NBT	7 WBL	8 EBT	Ring Offset	Offset
	1	180	19	78	22	33	22	75	22	33	0	86
	3	160	19	58	22	33	22	55	22	33	0	158
	4	180	15	78	22	33	25	68	26	33	0	74
	8	180	15	78	22	33	25	68	26	33	0	4
	9	180	15	78	22	33	25	68	26	33	0	30
	10	110	5	52	6	19	5	52	6	19	0	38
	15	120	6	58	9	19	6	58	9	19	0	16
	16	130	14	43	17	28	14	43	17	28	0	78
	17	110	21	31	14	16	21	31	14	16	0	30
	19	180	15	78	22	33	25	68	26	33	0	12
	22	150	16	74	15	17	16	74	15	17	0	84
	25	130	10	60	16	16	19	51	8	24	0	36
	26	110	11	47	11	13	11	47	11	13	0	52
	27	140	18	71	13	10	23	66	13	10	0	94
	28	100	8	35	13	16	8	35	13	16	0	48

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su M T W Th F S

Current Time of Day Function

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

Local Time of Day Function

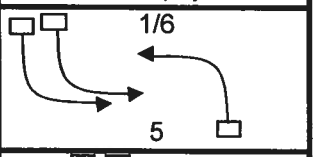
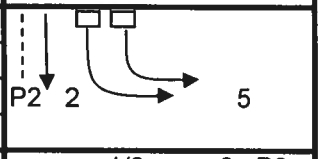
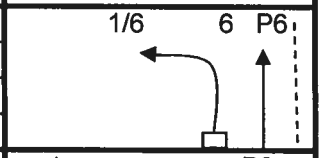
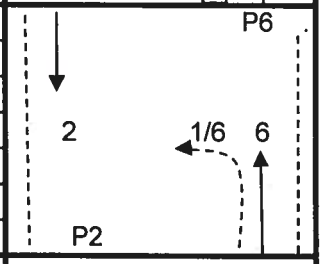
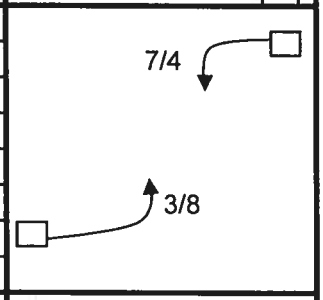
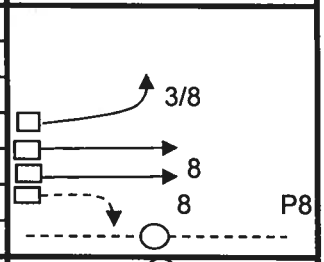
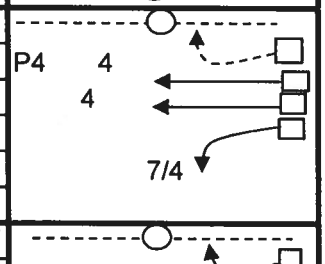
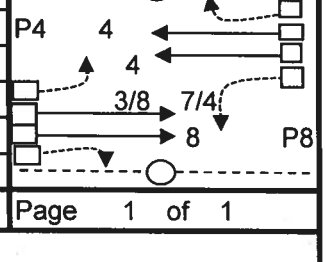
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-------1	SuM T W ThF S

*** Settings**

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

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN

Timing Phases	Direction / Head No.		NB 1/6	NB 6	SB 5	SB 2	EB 3/8	EB 8	WB 7/4	WB 4	Ped Heads P2	Ped Heads P6	Ped Heads P4	Ped Heads P8	Movements/Display/Actuation
(1+5)	Dwell		R/<G	R	<G	R	R	R	R	R	DW	DW	DW	DW	
N/SBLT	clear to	(1+6)	R/<G	R	<Y	R	R	R	R	R	DW	DW	DW	DW	
US-1		(2+5)	R/<Y	R	<G	R	R	R	R	R	DW	DW	DW	DW	
(ACTUATED)		(2+6)	R/<Y	R	<Y	R	R	R	R	R	DW	DW	DW	DW	
(2+5)	Dwell		R	R	<G	G	R	R	R	R	W/F	DW	DW	DW	
NB	clear to	(2+6)	R	R	<Y	G	R	R	R	R	DW	DW	DW	DW	
US-1															
(ACTUATED)															
(1+6)	Dwell		<G/G	G	<R	R	R	R	R	R	DW	W/F	DW	DW	
SB	clear to	(2+6)	<Y/G	G	<R	R	R	R	R	R	DW	DW	DW	DW	
US-1															
(ACTUATED)															
(2+6)	Dwell		G	G	<R	G	R	R	R	R	W/F	W/F	DW	DW	
	clear to	(3+7)	Y	Y	<R	Y	R	R	R	R	DW	DW	DW	DW	
		(3+8)	Y	Y	<R	Y	R	R	R	R	DW	DW	DW	DW	
N/SB		(7+4)	Y	Y	<R	Y	R	R	R	R	DW	DW	DW	DW	
US-1		(4+8)	Y	Y	<R	Y	R	R	R	R	DW	DW	DW	DW	
		(1+5)	Y	Y	<R	Y	R	R	R	R	DW	DW	DW	DW	
(RECALL)		(2+5)	Y	Y	<R	Y	R	R	R	R	DW	DW	DW	DW	
(3+7)	Dwell		R	R	<R	R	R/<G	R	R/<G	R	DW	DW	DW	DW	
	clear to	(3+8)	R	R	<R	R	R/<G	R	R/<Y	R	DW	DW	DW	DW	
E/WBLT		(7+4)	R	R	<R	R	R/<Y	R	R/<G	R	DW	DW	DW	DW	
		(4+8)	R	R	<R	R	R/<Y	R	R/<Y	R	DW	DW	DW	DW	
NE 151 ST		(1+5)	R	R	<R	R	R/<Y	R	R/<Y	R	DW	DW	DW	DW	
(ACTUATED)		(2+5)	R	R	<R	R	R/<Y	R	R/<Y	R	DW	DW	DW	DW	
		(1+6)	R	R	<R	R	R/<Y	R	R/<Y	R	DW	DW	DW	DW	
		(2+6)	R	R	<R	R	R/<Y	R	R/<Y	R	DW	DW	DW	DW	
(3+8)	Dwell		R	R	<R	R	<G/G	G	R	R	DW	DW	DW	W/F	
EB	clear to	(4+8)	R	R	<R	R	<Y/G	G	R	R	DW	DW	DW	DW	
		(1+5)	R	R	<R	R	Y/<Y	Y	R	R	DW	DW	DW	DW	
NE 151 ST		(2+5)	R	R	<R	R	Y/<Y	Y	R	R	DW	DW	DW	DW	
		(1+6_	R	R	<R	R	Y/<Y	Y	R	R	DW	DW	DW	DW	
		(2+6)	R	R	<R	R	Y/<Y	Y	R	R	DW	DW	DW	DW	
(ACTUATED)															
(7+4)	Dwell		R	R	<R	R	R	R	<G/G	G	DW	DW	W/F	DW	
	clear to	(4+8)	R	R	<R	R	R	R	<Y/G	G	DW	DW	DW	DW	
WB		(1+5)	R	R	<R	R	R	R	Y/<Y	Y	DW	DW	DW	DW	
NE 151 ST		(1+6)	R	R	<R	R	R	R	Y/<Y	Y	DW	DW	DW	DW	
		(2+5)	R	R	<R	R	R	R	Y/<Y	Y	DW	DW	DW	DW	
(ACTUATED)		(2+6)	R	R	<R	R	R	R	Y/<Y	Y	DW	DW	DW	DW	
(4+8)	Dwell		R	R	<R	R	G	G	G	G	DW	DW	W/F	W/F	
	clear to	(1+5)	R	R	<R	R	Y	Y	Y	Y	DW	DW	DW	DW	
E/WB		(1+6)	R	R	<R	R	Y	Y	Y	Y	DW	DW	DW	DW	
		(2+6)	R	R	<R	R	Y	Y	Y	Y	DW	DW	DW	DW	
NE 151 ST		(2+6)	R	R	<R	R	Y	Y	Y	Y	DW	DW	DW	DW	
(ACTUATED)															
Flashing Operation			FY	FY	F<R	FY	FR	FR	FR	FR					Page 1 of 1

Miami-Dade County Public Works Department

Drawn	Date	
WILLIAM RIVERA PAZ	4/28/2015	US-1 & NE 151 St

Checked	Date	Placed in Service	Phasing No.	Asset Number
H. HERNANDEZ	4/28/15	Date 9/24/2015 By UPC	5	4159

Blank12

TOD Schedule Report
for 4147: US 1&NE 156 St

Print Date: 10/4/2021

Print Time: 5:57 PM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
4147	US 1&NE 156 St	DOW-2	TOD	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	SBL	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 Phase Bank 1 2 3	Min Initial Phase Bank 1 2 3	Veh Ext Phase Bank 1 2 3	Max Limit Phase Bank 1 2 3	Max 2 Phase Bank 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	13 - 13 - 13	7 - 7 - 7	1 - 1 - 1	40 - 60 - 40	0 - 0 - 0	4.8	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	29 - 29 - 29	7 - 7 - 7	2.5 - 2.5 - 2.5	20 - 10 - 20	20 - 0 - 0	4	3
5 SBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	10 - 7 - 10	20 - 0 - 0	4.8	2
6 NBT	7 - 7 - 7	13 - 13 - 13	7 - 7 - 7	1 - 1 - 1	40 - 60 - 40	0 - 0 - 0	4.8	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	-2-456--
External Permit 0	--------
External Permit 1	--------
External Permit 2	--------

TOD Schedule Report

for 4147: US 1&NE 156 St

Print Date: 10/4/2021

Print Time: 5:57 PM

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 SBT	3 -	4 WBT	5 SBL	6 NBT	7 -	8 -	Ring Offset	Offset
	1	90	0	57	0	19	8	42	0	0	0	74
	4	180	0	149	0	17	5	137	0	0	0	151
	5	130	0	105	0	11	8	90	0	0	0	36
	6	80	0	52	0	14	5	40	0	0	0	53
	7	80	0	57	0	9	5	45	0	0	0	59
	8	130	0	105	0	11	8	90	0	0	0	41
	9	150	0	126	0	10	9	110	0	0	0	67
	10	110	0	87	0	9	4	76	0	0	0	106
	15	120	0	87	0	19	8	72	0	0	0	36
	16	130	0	97	0	19	8	82	0	0	0	17
	17	110	0	87	0	9	5	75	0	0	0	34
	19	180	0	156	0	10	9	140	0	0	0	67
	22	150	0	127	0	9	4	116	0	0	0	54
	25	130	0	103	0	13	13	83	0	0	0	66
	26	110	0	83	0	13	8	68	0	0	0	80
	27	140	0	113	0	13	8	98	0	0	0	116
	28	100	0	73	0	13	8	58	0	0	0	75

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su M T W Th F S
0600	19	M T W Th F
0600	8	Su S
0900	9	Su S
1000	8	M T W Th F
1100	4	Su S
1545	4	M T W Th F
1700	9	Su S
2000	8	M T W Th F
2300	Free	Su M T W Th F S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-------1	SuM T W ThF S
0600	TOD OUTPUTS	--------	SuM T W ThF S
2300	TOD OUTPUTS	-------1	SuM T W ThF S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-------1	SuM T W ThF S
0600	TOD OUTPUTS	--------	SuM T W ThF S
2300	TOD OUTPUTS	-------1	SuM T W ThF S

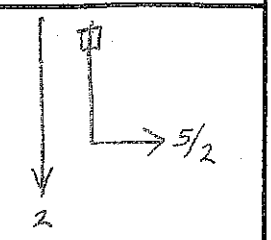
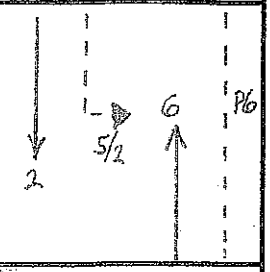
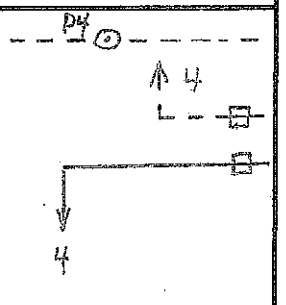
* Settings

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

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN

N

Timing Phases	Direction	N		S				W		Ped Heads				Movements/Display/Actuation
	Head No.		6	5/2	2				4	P6			P4	
	Dwell													
	Clear to													
(2+5) SBLT (ACTUATED)	Dwell		R	G/G	G				R	DW			DW	
	Clear to (2+6)		R	Y/G	G				R	DW			DW	
	Clear to													
(2+6) N-S (Recall)	Dwell		G	G	G				R	W/F			DW	
	Clear to (4)		Y	Y	Y				R	DW			DW	
	Clear to													
	Dwell													
	Clear to													
(4) WB (ACTUATED)	Dwell		R	R	R				G	DW			W/F	
	Clear to (2+5)		R	R	R				Y	DW			DW	
	Clear to (2+6)		R	R	R				Y	DW			DW	
	Clear to													
Flashing Operation			FY	FY	FY				FR					Page 1 of 1

Miami-Dade County Public Works Department

Drawn	Date			
F PRATS	2/22/13	US 1 & NE 156 ST		
Checked	**Date**	**Placed in Service**	**Phasing No.**	**Asset Number**
H. HERNANDEZ	2/28/13	Date 3/1/13 By CONTRACTOR	4	4147

TwoPhaseConcPeds

APPENDIX C

PSCF and Historical Data

2020 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 8700 MIAMI-DADE NORTH

MOCF: 0.92

WEEK	DATES	SF	PSCF
* 1	01/01/2020 - 01/04/2020	0.99	1.08
* 2	01/05/2020 - 01/11/2020	0.94	1.02
* 3	01/12/2020 - 01/18/2020	0.88	0.96
* 4	01/19/2020 - 01/25/2020	0.88	0.96
* 5	01/26/2020 - 02/01/2020	0.87	0.95
* 6	02/02/2020 - 02/08/2020	0.86	0.93
* 7	02/09/2020 - 02/15/2020	0.85	0.92
* 8	02/16/2020 - 02/22/2020	0.88	0.96
* 9	02/23/2020 - 02/29/2020	0.90	0.98
*10	03/01/2020 - 03/07/2020	0.93	1.01
*11	03/08/2020 - 03/14/2020	0.95	1.03
*12	03/15/2020 - 03/21/2020	0.98	1.07
*13	03/22/2020 - 03/28/2020	1.06	1.15
14	03/29/2020 - 04/04/2020	1.13	1.23
15	04/05/2020 - 04/11/2020	1.21	1.32
16	04/12/2020 - 04/18/2020	1.28	1.39
17	04/19/2020 - 04/25/2020	1.24	1.35
18	04/26/2020 - 05/02/2020	1.19	1.29
19	05/03/2020 - 05/09/2020	1.15	1.25
20	05/10/2020 - 05/16/2020	1.11	1.21
21	05/17/2020 - 05/23/2020	1.09	1.18
22	05/24/2020 - 05/30/2020	1.07	1.16
23	05/31/2020 - 06/06/2020	1.05	1.14
24	06/07/2020 - 06/13/2020	1.04	1.13
25	06/14/2020 - 06/20/2020	1.02	1.11
26	06/21/2020 - 06/27/2020	1.03	1.12
27	06/28/2020 - 07/04/2020	1.04	1.13
28	07/05/2020 - 07/11/2020	1.05	1.14
29	07/12/2020 - 07/18/2020	1.05	1.14
30	07/19/2020 - 07/25/2020	1.04	1.13
31	07/26/2020 - 08/01/2020	1.03	1.12
32	08/02/2020 - 08/08/2020	1.02	1.11
33	08/09/2020 - 08/15/2020	1.01	1.10
34	08/16/2020 - 08/22/2020	1.01	1.10
35	08/23/2020 - 08/29/2020	1.01	1.10
36	08/30/2020 - 09/05/2020	1.01	1.10
37	09/06/2020 - 09/12/2020	1.01	1.10
38	09/13/2020 - 09/19/2020	1.01	1.10
39	09/20/2020 - 09/26/2020	1.00	1.09
40	09/27/2020 - 10/03/2020	0.99	1.08
41	10/04/2020 - 10/10/2020	0.98	1.07
42	10/11/2020 - 10/17/2020	0.97	1.05
43	10/18/2020 - 10/24/2020	0.97	1.05
44	10/25/2020 - 10/31/2020	0.98	1.07
45	11/01/2020 - 11/07/2020	0.98	1.07
46	11/08/2020 - 11/14/2020	0.99	1.08
47	11/15/2020 - 11/21/2020	0.99	1.08
48	11/22/2020 - 11/28/2020	0.99	1.08
49	11/29/2020 - 12/05/2020	0.99	1.08
50	12/06/2020 - 12/12/2020	0.99	1.08
51	12/13/2020 - 12/19/2020	0.99	1.08
52	12/20/2020 - 12/26/2020	0.94	1.02
53	12/27/2020 - 12/31/2020	0.88	0.96

* PEAK SEASON

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 5219 - SR 5/US-1, 300' S NE 163 ST/SUNNY ISLES CSWY

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2020	49500 C	N 24500	S 25000	9.00	54.20	2.50
2019	61000 C	N 30000	S 31000	9.00	54.60	2.20
2018	59500 C	N 29500	S 30000	9.00	54.30	2.40
2017	63500 C	N 31500	S 32000	9.00	55.00	2.30
2016	63500 C	N 31000	S 32500	9.00	54.50	2.00
2015	60000 C	N 29500	S 30500	9.00	54.70	2.00
2014	55000 C	N 25500	S 29500	9.00	54.50	4.90
2013	54000 C	N 25000	S 29000	9.00	52.40	3.50
2012	64000 C	N 31000	S 33000	9.00	55.70	4.80
2011	61500 C	N 30500	S 31000	9.00	55.10	3.90
2010	60000 C	N 30000	S 30000	8.98	54.08	3.90
2009	60500 C	N 29500	S 31000	8.99	53.24	3.40
2008	55000 C	N 27000	S 28000	9.09	55.75	4.70
2007	60500 C	N 29000	S 31500	8.01	54.34	5.90
2006	58000 C	N 29000	S 29000	7.97	54.22	4.20
2005	57500 C	N 28500	S 29000	8.80	53.80	7.70

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2020 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

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

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

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

APPENDIX D

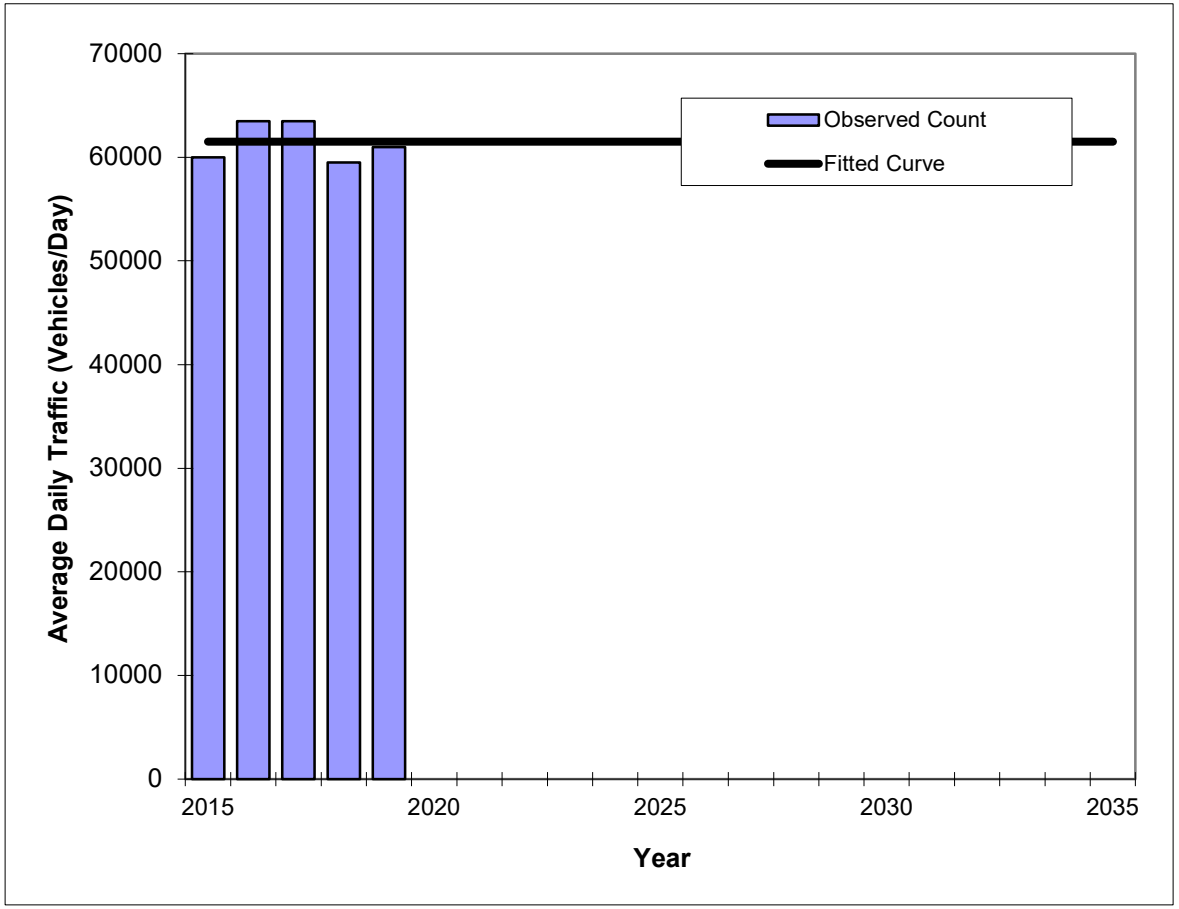
Growth Rate Analysis and Committed Developments Information

Traffic Trends - V03.a

SR 5/US 1 -- 300' S NE 163 ST/SUNNY ISLES CSWY

FIN#	1234
Location	1

County:	Miami-Dade (87)
Station #:	875219
Highway:	SR 5/US 1



Year	Traffic (ADT/AADT) Count*	Trend**
2015	60000	61500
2016	63500	61500
2017	63500	61500
2018	59500	61500
2019	61000	61500
2022 Opening Year Trend		
2022	N/A	61500
2023 Mid-Year Trend		
2023	N/A	61500
2024 Design Year Trend		
2024	N/A	61500
TRANPLAN Forecasts/Trends		

Trend R-squared:	0.00%
Compounded Annual Historic Growth Rate:	0.00%
Compounded Growth Rate (2019 to Design Year):	0.00%
Printed:	29-Dec-21

Decaying Exponential Growth Option

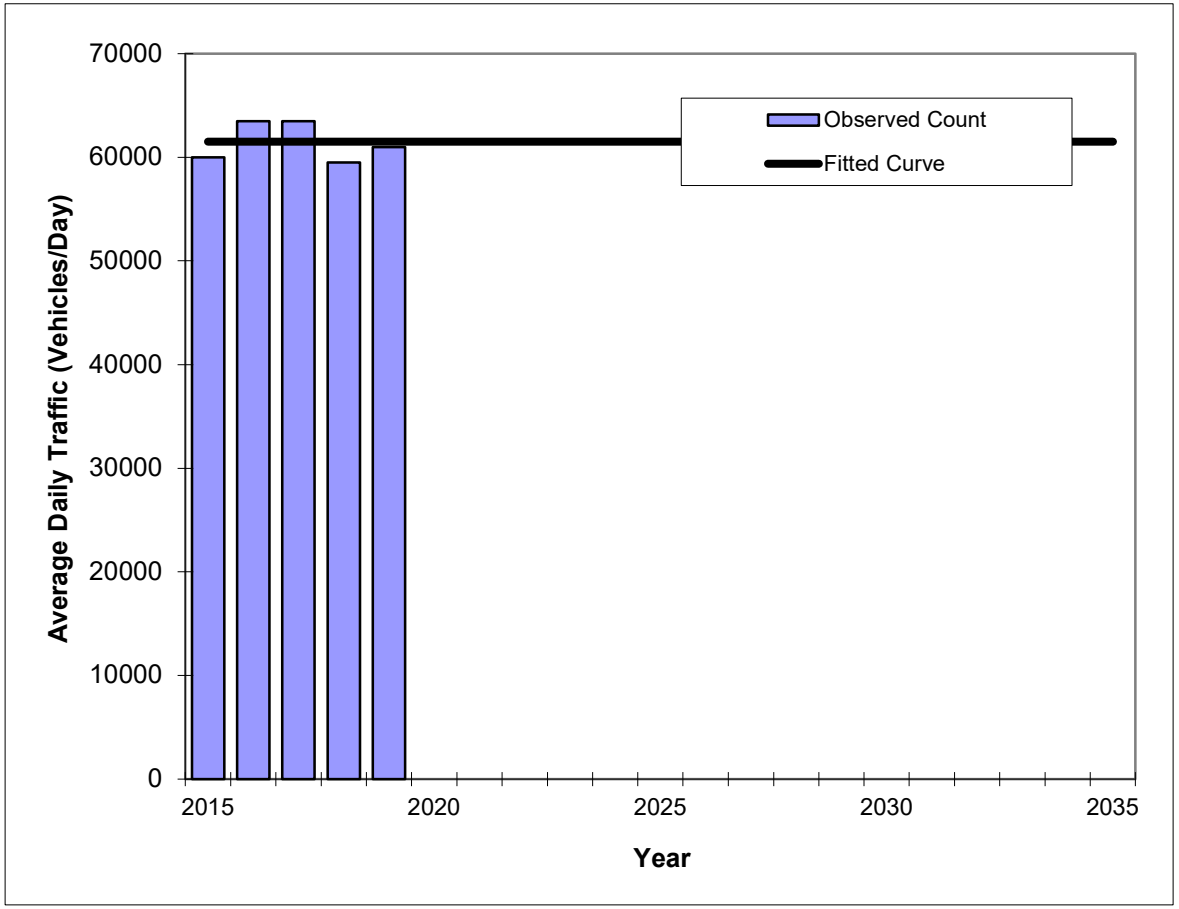
***Axle-Adjusted**

Traffic Trends - V03.a

SR 5/US 1 -- 300' S NE 163 ST/SUNNY ISLES CSWY

FIN#	1234
Location	1

County:	Miami-Dade (87)
Station #:	875219
Highway:	SR 5/US 1



Year	Traffic (ADT/AADT) Count*	Trend**
2015	60000	61500
2016	63500	61500
2017	63500	61500
2018	59500	61500
2019	61000	61500
2022 Opening Year Trend		
2022	N/A	61500
2023 Mid-Year Trend		
2023	N/A	61500
2024 Design Year Trend		
2024	N/A	61500
TRANPLAN Forecasts/Trends		

Trend R-squared:	2.68%
Compounded Annual Historic Growth Rate:	0.00%
Compounded Growth Rate (2019 to Design Year):	0.00%
Printed:	29-Dec-21

Exponential Growth Option

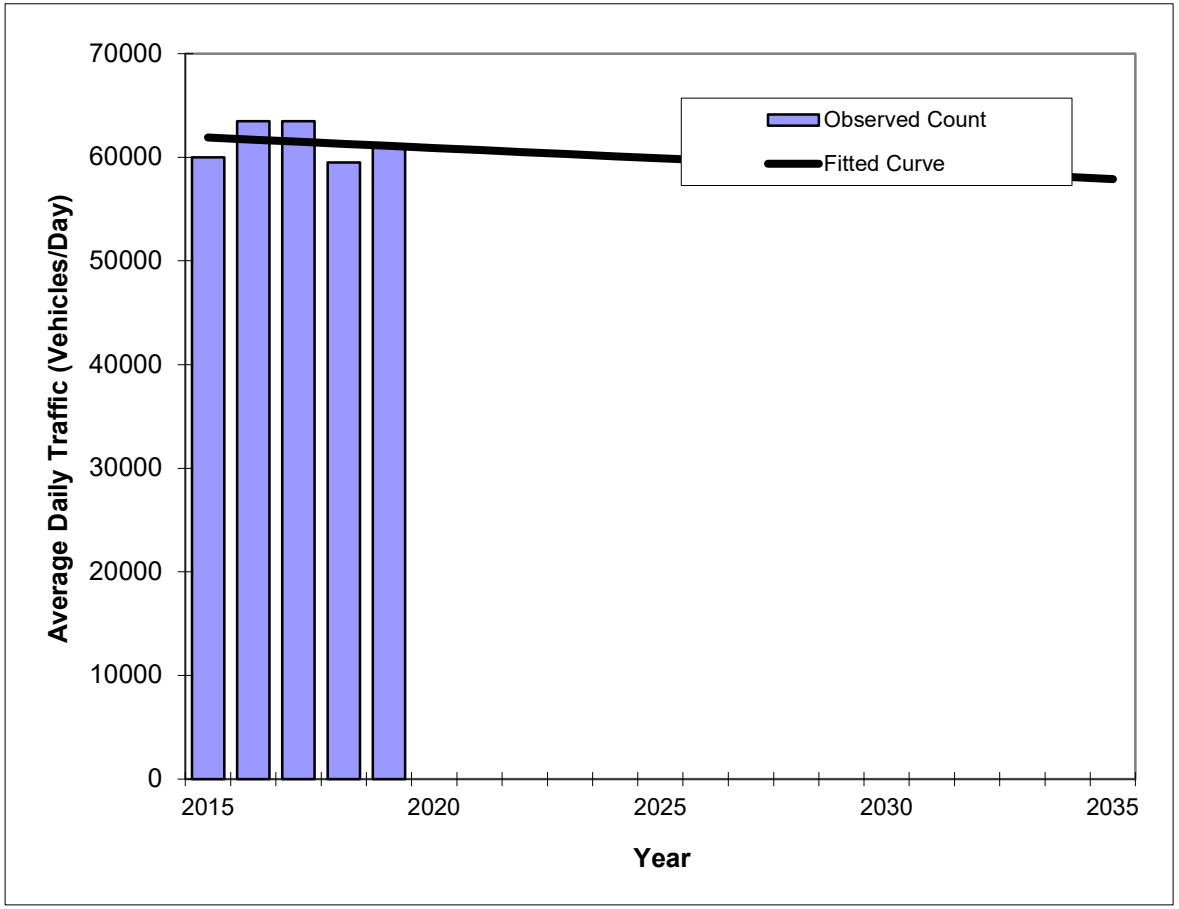
***Axle-Adjusted**

Traffic Trends - V03.a

SR 5/US 1 -- 300' S NE 163 ST/SUNNY ISLES CSWY

FIN#	1234
Location	1

County:	Miami-Dade (87)
Station #:	875219
Highway:	SR 5/US 1



Year	Traffic (ADT/AADT) Count*	Trend**
2015	60000	61900
2016	63500	61700
2017	63500	61500
2018	59500	61300
2019	61000	61100
2022 Opening Year Trend		
2022	N/A	60500
2023 Mid-Year Trend		
2023	N/A	60300
2024 Design Year Trend		
2024	N/A	60100
TRANPLAN Forecasts/Trends		

**** Annual Trend Increase:**	-200
Trend R-squared:	2.76%
Trend Annual Historic Growth Rate:	-0.32%
Trend Growth Rate (2019 to Design Year):	-0.33%
Printed:	29-Dec-21

Straight Line Growth Option

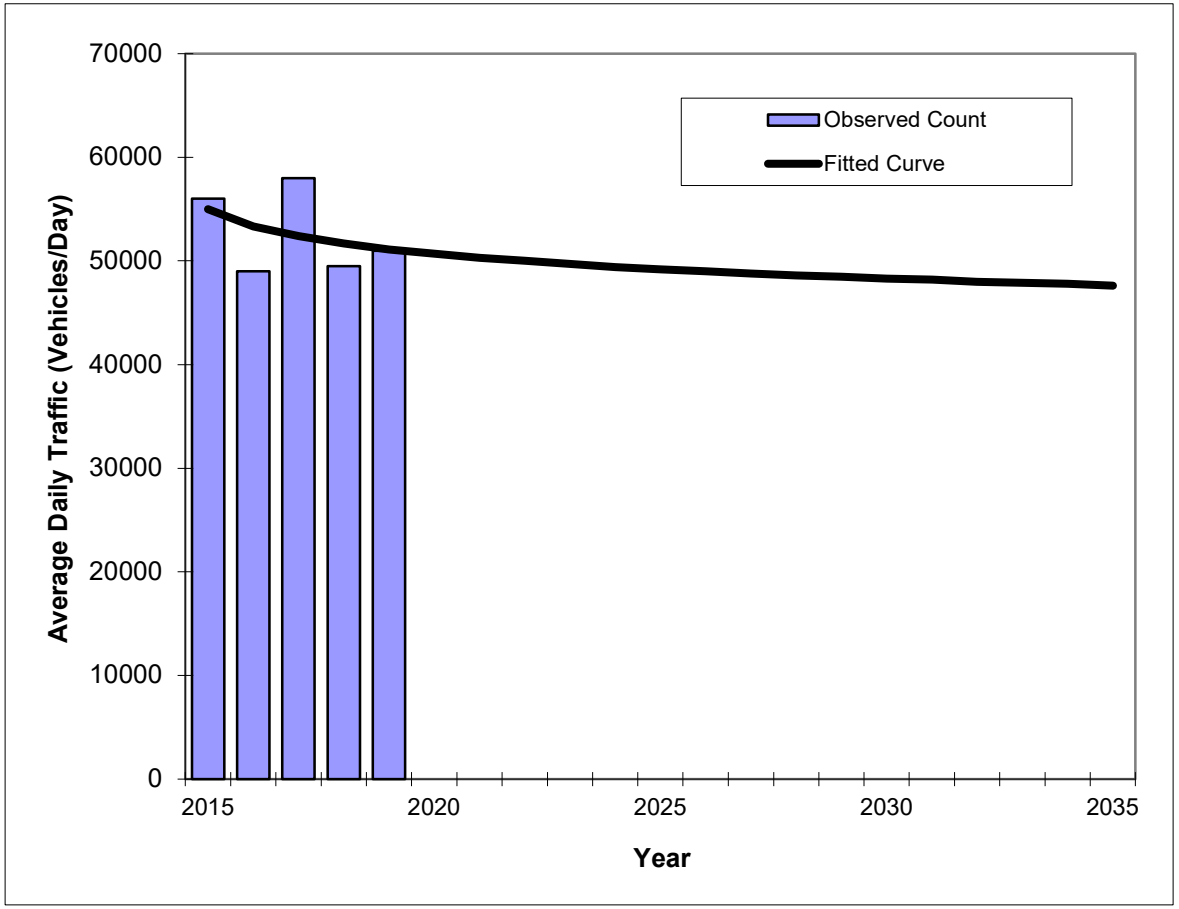
***Axle-Adjusted**

Traffic Trends - V03.a

SR 826/NE 163 ST -- 100' E OF NE 20 AVE

FIN#	1234
Location	2

County:	Miami-Dade (87)
Station #:	875225
Highway:	SR 826/NE 163 ST



Year	Traffic (ADT/AADT) Count*	Trend**
2015	56000	55000
2016	49000	53300
2017	58000	52400
2018	49500	51700
2019	51000	51100
2022 Opening Year Trend		
2022	N/A	50000
2023 Mid-Year Trend		
2023	N/A	49700
2024 Design Year Trend		
2024	N/A	49400
TRANPLAN Forecasts/Trends		

Trend R-squared:	14.41%
Compounded Annual Historic Growth Rate:	-1.82%
Compounded Growth Rate (2019 to Design Year):	-0.67%
Printed:	29-Dec-21

Decaying Exponential Growth Option

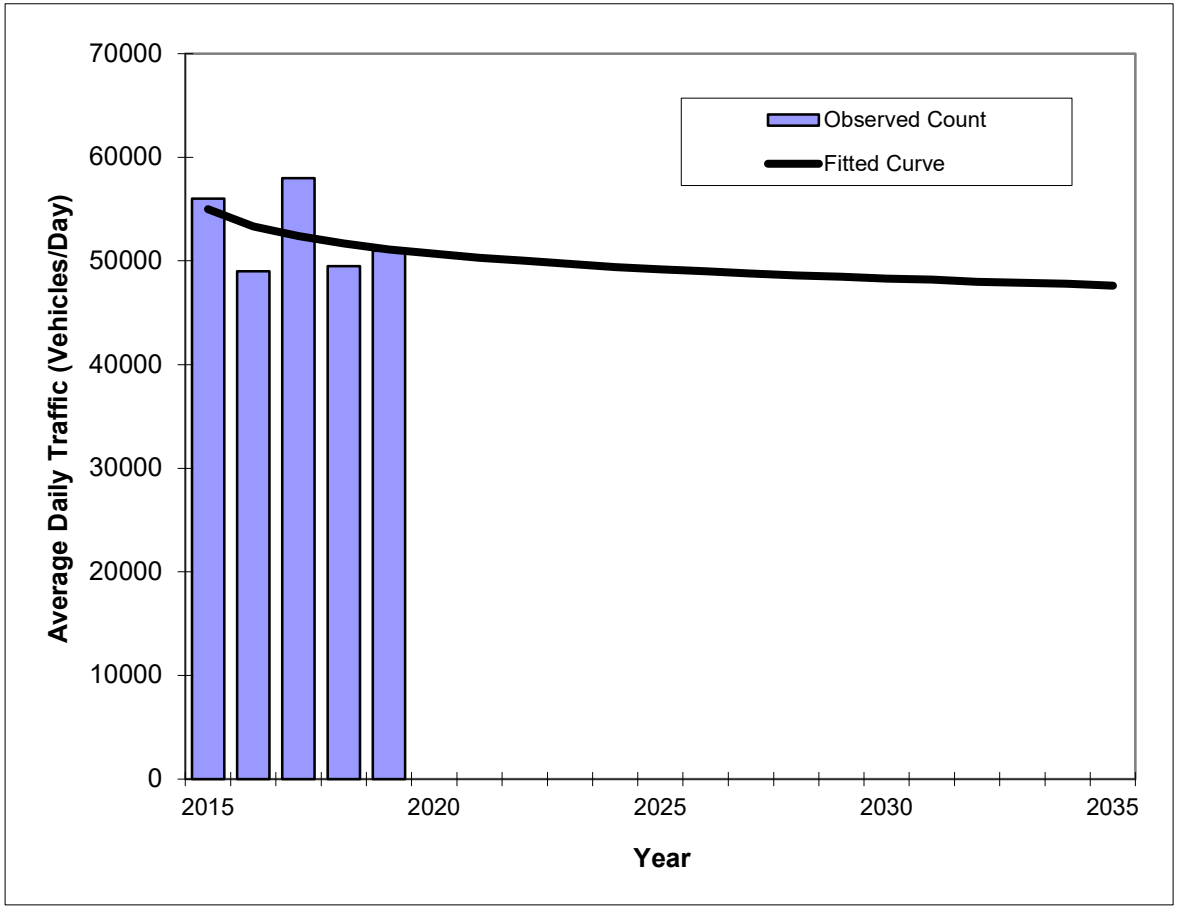
***Axle-Adjusted**

Traffic Trends - V03.a

SR 826/NE 163 ST -- 100' E OF NE 20 AVE

FIN#	1234
Location	2

County:	Miami-Dade (87)
Station #:	875225
Highway:	SR 826/NE 163 ST



Year	Traffic (ADT/AADT) Count*	Trend**
2015	56000	55000
2016	49000	53300
2017	58000	52400
2018	49500	51700
2019	51000	51100
2022 Opening Year Trend		
2022	N/A	50000
2023 Mid-Year Trend		
2023	N/A	49700
2024 Design Year Trend		
2024	N/A	49400
TRANPLAN Forecasts/Trends		

Trend R-squared:	13.52%
Compounded Annual Historic Growth Rate:	-1.82%
Compounded Growth Rate (2019 to Design Year):	-0.67%
Printed:	29-Dec-21

Exponential Growth Option

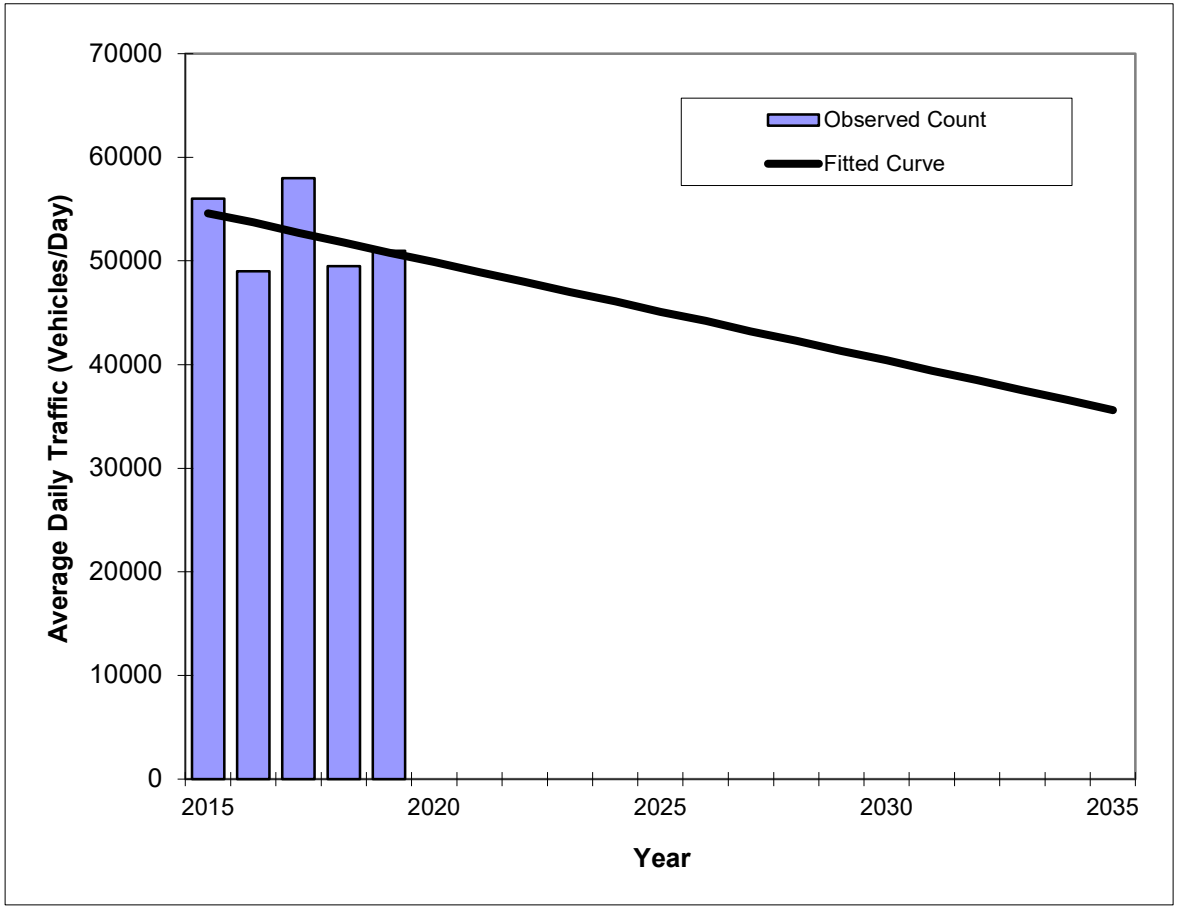
***Axle-Adjusted**

Traffic Trends - V03.a

SR 826/NE 163 ST -- 100' E OF NE 20 AVE

FIN#	1234
Location	2

County:	Miami-Dade (87)
Station #:	875225
Highway:	SR 826/NE 163 ST



Year	Traffic (ADT/AADT) Count*	Trend**
2015	56000	54600
2016	49000	53700
2017	58000	52700
2018	49500	51800
2019	51000	50800
2022 Opening Year Trend		
2022	N/A	48000
2023 Mid-Year Trend		
2023	N/A	47000
2024 Design Year Trend		
2024	N/A	46100
TRANPLAN Forecasts/Trends		

**** Annual Trend Increase:**	-950
Trend R-squared:	13.72%
Trend Annual Historic Growth Rate:	-1.74%
Trend Growth Rate (2019 to Design Year):	-1.85%
Printed:	29-Dec-21

Straight Line Growth Option

***Axle-Adjusted**

Growth Rate Trend Analysis Calcualtions

Description	875219			875225		
Option	**Linear**	**Exponential**	**Decaying Exponential**	**Linear**	**Exponential**	**Decaying Exponential**
Trend Growth Rate 5 years	-0.32	0.00	0.00	-1.74	-1.82	-1.82
Adjusted Growth Rate 5-years (2)	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**	**0.50**
Trend R-squared 5 years	2.76	2.68	0.00	13.72	13.52	14.41
Growth Rate with highest R-squared (5-year)	0.50			0.50		
Average Growth Rate (5-year)	0.50					
Growth Rate Used	**0.50**					

Notes:

1: Refer to Trend Analysis Chart

2: If the resulting growth rate is negative, a 0.5 growth rate was used

What Is R-squared?

R-squared is a statistical measure of how close the data are to the fitted regression line. It is also known as the coefficient of determination, or the coefficient of multiple determination for multiple regression.

The definition of R-squared is fairly straight-forward; it is the percentage of the response variable variation that is explained by a linear model. Or:

R-squared = Explained variation / Total variation

R-squared is always between 0 and 100%:

0% indicates that the model explains none of the variability of the response data around its mean.

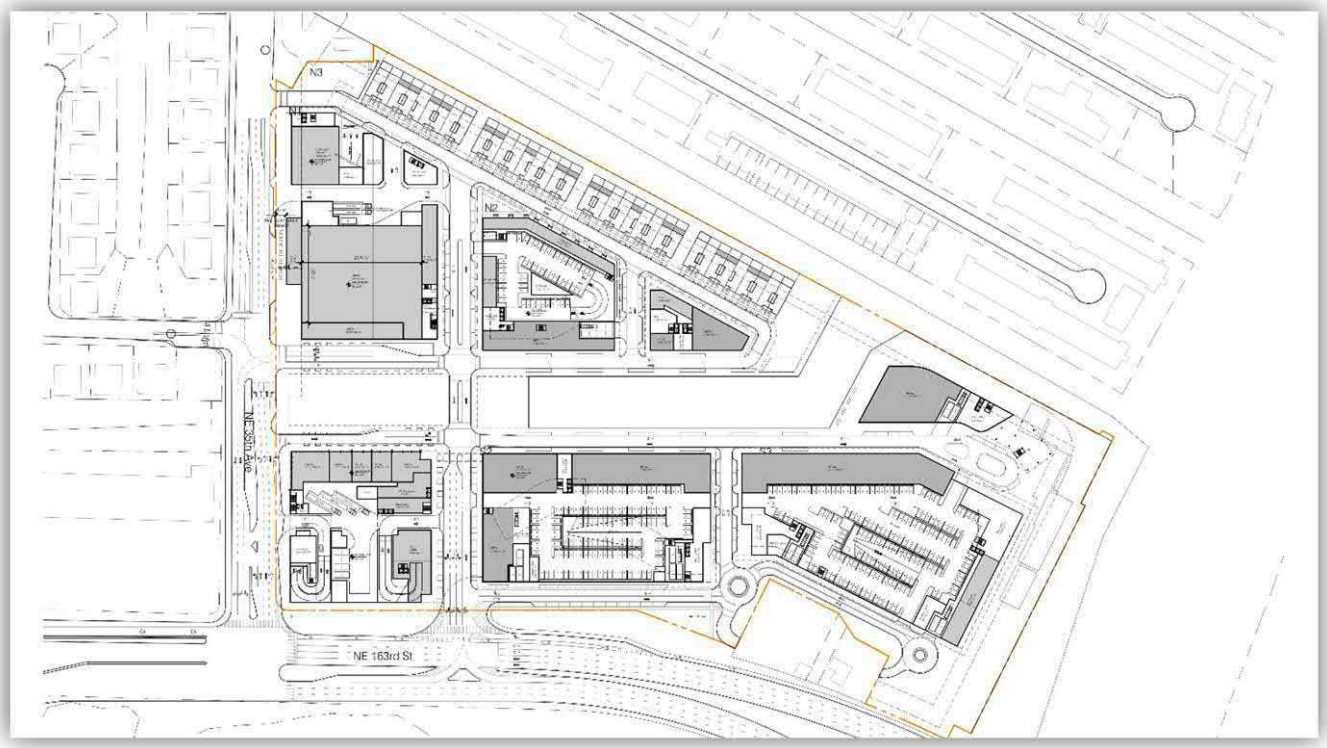
100% indicates that the model explains all the variability of the response data around its mean.

In general, the higher the R-squared, the better the model fits your data. However, there are important conditions for this guideline that I'll talk about both in this post and my next post.

Traffic Impact Analysis for
Submittal to the
Florida Department of Transportation

Intracoastal Mall Redevelopment

North Miami Beach, Florida



Kimley»Horn

Updated March 2020
February 2020
043796003

TRAFFIC VOLUMES
AT STUDY INTERSECTIONS

INTERSECTION: NE 163rd Street/SR 826 and Biscayne Boulevard/US 1
COUNT DATE: May 14, 2019
AM PEAK HOUR FACTOR: 0.99
PM PEAK HOUR FACTOR: 0.97

"AM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM Raw Turning Movements		218	1,142	280		397	971	553		224	980	464		438	1,393	433
Peak Season Correction Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
AM EXISTING CONDITIONS		**225**	**1,176**	**288**		**409**	**1,000**	**570**		**231**	**1,009**	**478**		**451**	**1,435**	**446**

"PM EXISTING TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM Raw Turning Movements		304	1,032	409		463	1,258	781		460	1,357	588		459	1,298	433
Peak Season Correction Factor	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030	1.030
PM EXISTING CONDITIONS		**313**	**1,063**	**421**		**477**	**1,296**	**804**		**474**	**1,398**	**606**		**473**	**1,337**	**446**

"AM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
TECO		99	90				125									138
Uptown Biscayne		35	15			30	31	7			34	14		8		
TOTAL "VESTED" TRAFFIC		134	105	0		30	156	7		0	34	14		8	0	138
Years To Buildout	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Yearly Growth Rate	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%
AM BACKGROUND TRAFFIC GROWTH		32	165	40		57	140	80		32	142	67		63	201	63
AM NON-PROJECT TRAFFIC		**391**	**1,446**	**328**		**496**	**1,296**	**657**		**263**	**1,185**	**559**		**522**	**1,636**	**647**

"PM BACKGROUND TRAFFIC"	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
TECO		78	71				56									62
Uptown Biscayne		54	24			87	91	16			54	22		22		
TOTAL "VESTED" TRAFFIC		132	95	0		87	147	16		0	54	22		22	0	62
Years To Buildout	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Yearly Growth Rate	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%
PM BACKGROUND TRAFFIC GROWTH		44	149	59		67	182	113		66	196	85		66	188	63
PM NON-PROJECT TRAFFIC		**489**	**1,307**	**480**		**631**	**1,625**	**933**		**540**	**1,648**	**713**		**561**	**1,525**	**571**

"AM PROJECT DISTRIBUTION" LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering																
Distribution	Exiting																
Valet	Entering																
Distribution	Exiting																
Net New	Entering			21.0%									32.0%		22.0%		
Distribution	Exiting						32.0%	21.0%	22.0%								

"PM PROJECT DISTRIBUTION" LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By	Entering							-51.0%									
Distribution	Exiting							51.0%									
Valet	Entering																
Distribution	Exiting																
Net New	Entering			21.0%									32.0%		22.0%		
Distribution	Exiting						32.0%	21.0%	22.0%								

"AM PROJECT TRAFFIC" LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
AM TRAFFIC DIVERSIONS																	
Project Trips	Pass - By																
	Valet																
	Net New			76			151	100	104				116		80		
AM TOTAL PROJECT TRAFFIC			**0**	**76**	**0**		**151**	**100**	**104**		**0**	**0**	**116**		**80**	**0**	**0**
AM TOTAL TRAFFIC			**391**	**1,522**	**328**		**647**	**1,396**	**761**		**263**	**1,185**	**675**		**602**	**1,636**	**647**

"PM PROJECT TRAFFIC" LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
PM TRAFFIC DIVERSIONS																	
Project Trips	Pass - By							-12									
	Valet																
	Net New			71			110	72	75				108		74		
PM TOTAL PROJECT TRAFFIC			**0**	**71**	**0**		**110**	**60**	**75**		**0**	**0**	**108**		**74**	**0**	**0**
PM TOTAL TRAFFIC			**489**	**1,378**	**480**		**741**	**1,685**	**1,008**		**540**	**1,648**	**821**		**635**	**1,525**	**571**

APPENDIX E

Future Turning Movement Volumes

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Biscayne Boulevard and NE 163rd Street
AM Peak Hour

Description	Biscayne Boulevard Northbound			Biscayne Boulevard Southbound			NE 163rd Street Eastbound			NE 163rd Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (12/15/2021)	293	937	438	406	1,102	273	226	1,243	353	387	844	454
Season Adjustment Factor	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
2021 Peak Season Traffic	316	1,012	473	438	1,190	295	244	1,342	381	418	912	490
Annual Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Committed Developments:												
TECO		34	14	8			99	90			125	
Uptown Biscayne							35	15		30	31	7
Intercoastal Mall			116	80				76		151	100	104
2024 Projected Traffic	321	1,061	610	533	1,208	299	382	1,544	387	605	1,181	609
Biscayne 18	0	1	0		5				2	1		
2024 Total Traffic	**321**	**1,062**	**610**	**533**	**1,213**	**299**	**382**	**1,544**	**389**	**606**	**1,181**	**609**

TRAFTECH ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Biscayne Boulevard and NE 163rd Street
PM Peak Hour

Description	Biscayne Boulevard Northbound			Biscayne Boulevard Southbound			NE 163rd Street Eastbound			NE 163rd Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (12/15/2021)	441	1,335	511	408	1,365	434	313	936	417	475	1,215	603
Season Adjustment Factor	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
2021 Peak Season Traffic	476	1,442	552	441	1,474	469	338	1,011	450	513	1,312	651
Annual Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Committed Developments:												
TECO						62	78	71			56	
Uptown Biscayne		54	22	22			54	24		87	91	16
Intercoastal Mall			108	74				71		110	60	75
2024 Projected Traffic	483	1,518	690	543	1,496	538	475	1,192	457	718	1,539	752
Biscayne 18	3	9	1		2				0	0		
2024 Total Traffic	**486**	**1,527**	**691**	**543**	**1,498**	**538**	**475**	**1,192**	**457**	**718**	**1,539**	**752**

TRAFTECH ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Biscayne Boulevard and NE 151st Street
AM Peak Hour

Description	Biscayne Boulevard Northbound			Biscayne Boulevard Southbound			NE 151st Street Eastbound			NE 151st Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (12/15/2021)	107	1,073	156	234	1,337	143	157	344	285	152	192	269
Season Adjustment Factor	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
2021 Peak Season Traffic	116	1,159	168	253	1,444	154	170	372	308	164	207	291
Annual Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Committed Developments:												
TECO		48										
Uptown Biscayne					30							
Intercoastal Mall		116			151							
2024 Projected Traffic	117	1,340	171	257	1,647	157	172	377	312	167	210	295
Biscayne 18		4		0	1	0	3					0
2024 Total Traffic	**117**	**1,344**	**171**	**257**	**1,648**	**157**	**175**	**377**	**312**	**167**	**210**	**295**

TRAFTECH ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Biscayne Boulevard and NE 151st Street
PM Peak Hour

Description	Biscayne Boulevard Northbound			Biscayne Boulevard Southbound			NE 151st Street Eastbound			NE 151st Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (12/15/2021)	176	1,505	180	425	1,588	250	208	232	221	130	256	381
Season Adjustment Factor	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
2021 Peak Season Traffic	190	1,625	194	459	1,715	270	225	251	239	140	276	411
Annual Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Committed Developments:												
TECO												
Uptown Biscayne		76			87							
Intercoastal Mall		108			110							
2024 Projected Traffic	193	1,834	197	466	1,938	274	228	254	242	143	281	418
Biscayne 18		2		1	6	4	0					0
2024 Total Traffic	**193**	**1,836**	**197**	**467**	**1,944**	**278**	**228**	**254**	**242**	**143**	**281**	**418**

TRAFTECH ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Biscayne Boulevard and N. Driveway
AM Peak Hour

Description	Biscayne Boulevard Northbound			Biscayne Boulevard Southbound			Eastbound			N. Driveway Westbound		
	U-turn	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (12/15/2021)	7	1,584	5	56	1,730					3		6
Season Adjustment Factor	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
2021 Peak Season Traffic	8	1,711	5	60	1,868	0	0	0	0	3	0	6
Annual Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Committed Developments:												
TECO		48										
Uptown Biscayne					30							
Intercoastal Mall		116			151							
2024 Projected Traffic	8	1,901	5	61	2,078	0	0	0	0	3	0	7
Biscayne 18	1		3	8						0		1
2024 Total Traffic	**9**	**1,901**	**8**	**69**	**2,078**	**0**	**0**	**0**	**0**	**3**	**0**	**8**

TRAFTECH ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Biscayne Boulevard and N. Driveway
PM Peak Hour

Description	Biscayne Boulevard Northbound			Biscayne Boulevard Southbound			Eastbound			N. Driveway Westbound		
	U-turn	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (12/15/2021)	18	2,331	6	56	2,146					8		36
Season Adjustment Factor	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
2021 Peak Season Traffic	19	2,517	6	60	2,318	0	0	0	0	9	0	39
Annual Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Committed Developments:												
TECO												
Uptown Biscayne		76			87							
Intercoastal Mall		108			110							
2024 Projected Traffic	20	2,739	7	61	2,550	0	0	0	0	9	0	39
Biscayne 18	5		1	2						6		13
2024 Total Traffic	**25**	**2,739**	**8**	**63**	**2,550**	**0**	**0**	**0**	**0**	**15**	**0**	**52**

TRAFTECH ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Biscayne Boulevard and S. Driveway
AM Peak Hour

Description	Biscayne Boulevard Northbound			Biscayne Boulevard Southbound			Eastbound			S. Driveway Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (12/15/2021)		1,529	11		1,634							7
Season Adjustment Factor	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
2021 Peak Season Traffic	0	1,651	12	0	1,765	0	0	0	0	0	0	8
Annual Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Committed Developments:												
TECO		48										
Uptown Biscayne					30							
Intercoastal Mall		116			151							
2024 Projected Traffic	0	1,840	12	0	1,972	0	0	0	0	0	0	8
Biscayne 18		3	4		1							1
2024 Total Traffic	**0**	**1,843**	**16**	**0**	**1,973**	**0**	**0**	**0**	**0**	**0**	**0**	**9**

TRAFTECH ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Biscayne Boulevard and S. Driveway
PM Peak Hour

Description	Biscayne Boulevard Northbound			Biscayne Boulevard Southbound			Eastbound			S. Driveway Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (12/15/2021)		2,291	6		2,070							27
Season Adjustment Factor	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08	1.08
2021 Peak Season Traffic	0	2,474	6	0	2,236	0	0	0	0	0	0	29
Annual Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Committed Developments:												
TECO												
Uptown Biscayne		76			87							
Intercoastal Mall		108			110							
2024 Projected Traffic	0	2,696	7	0	2,466	0	0	0	0	0	0	30
Biscayne 18		1	1		11							5
2024 Total Traffic	**0**	**2,697**	**8**	**0**	**2,477**	**0**	**0**	**0**	**0**	**0**	**0**	**35**

TRAFTECH ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Biscayne Boulevard and NW 156 Street
AM Peak Hour

Description	Biscayne Boulevard Northbound			Biscayne Boulevard Southbound			NE 156 Street Eastbound			NE 156 Street Westbound		
	U-Turn	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (3/22/2022)	23	1,616	16	29	1,587					16		23
Season Adjustment Factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2021 Peak Season Traffic	26	1,858	18	33	1,825	0	0	0	0	18	0	26
Annual Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Committed Developments:												
TECO		48										
Uptown Biscayne					30							
Intercoastal Mall		116			151							
2024 Projected Traffic	27	2,041	19	34	2,024	0	0	0	0	19	0	27
Biscayne 18		7			1							
2024 Total Traffic	**27**	**2,048**	**19**	**34**	**2,025**	**0**	**0**	**0**	**0**	**19**	**0**	**27**

TRAFTECH ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Biscayne Boulevard and NW 156 Street
PM Peak Hour

Description	Biscayne Boulevard Northbound			Biscayne Boulevard Southbound			NE 156 Street Eastbound			NE 156 Street Westbound		
	U-turn	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (12/15/2021)	43	1,978	5	4	1,928					58		38
Season Adjustment Factor	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
2021 Peak Season Traffic	49	2,275	6	5	2,217	0	0	0	0	67	0	44
Annual Growth Rate	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%
Committed Developments:												
TECO												
Uptown Biscayne		76			87							
Intercoastal Mall		108			110							
2024 Projected Traffic	50	2,493	6	5	2,448	0	0	0	0	68	0	44
Biscayne 18		2			11							
2024 Total Traffic	**50**	**2,495**	**6**	**5**	**2,459**	**0**	**0**	**0**	**0**	**68**	**0**	**44**

TRAFTECH ENGINEERING, INC.

APPENDIX F

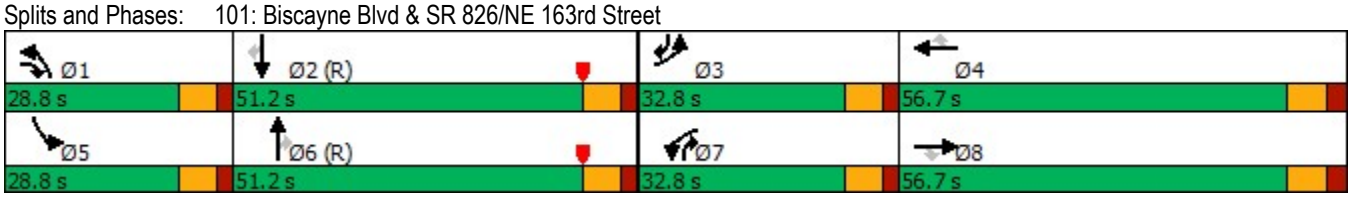
SYNCHRO Analyses

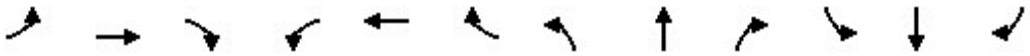
Timings
101: Biscayne Blvd & SR 826/NE 163rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	244	1342	381	418	912	490	316	1012	473	438	1190	295
Future Volume (vph)	244	1342	381	418	912	490	316	1012	473	438	1190	295
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	7.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	56.7	11.8	11.8	56.7	56.7	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	32.8	56.7	28.8	32.8	56.7	56.7	28.8	51.2	32.8	28.8	51.2	32.8
Total Split (%)	19.4%	33.5%	17.0%	19.4%	33.5%	33.5%	17.0%	30.2%	19.4%	17.0%	30.2%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.9	2.0	2.4	2.0	2.0	2.4	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	7.7	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	18.3	49.4	70.8	25.1	56.3	56.3	20.4	44.0	69.5	22.4	46.0	71.5
Actuated g/C Ratio	0.11	0.29	0.42	0.15	0.33	0.33	0.12	0.26	0.41	0.13	0.27	0.42
v/c Ratio	0.70	0.96	0.58	0.88	0.57	0.73	0.81	0.65	0.73	1.03	0.73	0.44
Control Delay	83.2	74.7	30.6	89.0	48.8	27.8	88.6	58.0	38.5	118.8	59.3	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.2	74.7	30.6	89.0	48.8	27.8	88.6	58.0	38.5	118.8	59.3	28.1
LOS	F	E	C	F	D	C	F	E	D	F	E	C
Approach Delay		67.2			52.4			58.3			68.1	
Approach LOS		E			D			E			E	

Intersection Summary	
Cycle Length: 169.5	
Actuated Cycle Length: 169.5	
Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.03	
Intersection Signal Delay: 61.7	Intersection LOS: E
Intersection Capacity Utilization 109.6%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 101: Biscayne Blvd & SR 826/NE 163rd Street





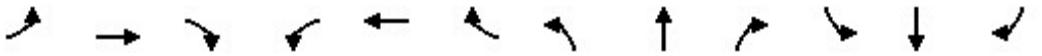
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	260	1428	405	445	970	521	336	1077	503	466	1266	314
v/c Ratio	0.70	0.96	0.58	0.88	0.57	0.73	0.81	0.65	0.73	1.03	0.73	0.44
Control Delay	83.2	74.7	30.6	89.0	48.8	27.8	88.6	58.0	38.5	118.8	59.3	28.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	83.2	74.7	30.6	89.0	48.8	27.8	88.6	58.0	38.5	118.8	59.3	28.1
Queue Length 50th (ft)	146	578	260	251	325	233	188	312	372	~288	380	192
Queue Length 95th (ft)	191	#680	368	#334	393	408	247	354	512	#408	425	268
Internal Link Dist (ft)		871			949			1251			874	
Turn Bay Length (ft)	250		240	360		480	420		420	430		405
Base Capacity (vph)	526	1483	709	526	1688	714	445	1663	694	454	1739	779
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.96	0.57	0.85	0.57	0.73	0.76	0.65	0.72	1.03	0.73	0.40

Intersection Summary

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

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

HCM 6th Signalized Intersection Summary
101: Biscayne Blvd & SR 826/NE 163rd Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	244	1342	381	418	912	490	316	1012	473	438	1190	295
Future Volume (veh/h)	244	1342	381	418	912	490	316	1012	473	438	1190	295
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	260	1428	405	445	970	0	336	1077	503	466	1266	314
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	310	1472	624	488	1735		381	1759	656	447	1883	605
Arrive On Green	0.09	0.29	0.29	0.14	0.34	0.00	0.11	0.27	0.27	0.13	0.29	0.29
Sat Flow, veh/h	3456	5106	1560	3456	5106	1585	3456	6434	1582	3456	6434	1582
Grp Volume(v), veh/h	260	1428	405	445	970	0	336	1077	503	466	1266	314
Grp Sat Flow(s),veh/h/ln	1728	1702	1560	1728	1702	1585	1728	1609	1582	1728	1609	1582
Q Serve(g_s), s	12.6	47.0	35.9	21.6	26.3	0.0	16.3	24.8	46.4	22.0	29.5	26.0
Cycle Q Clear(g_c), s	12.6	47.0	35.9	21.6	26.3	0.0	16.3	24.8	46.4	22.0	29.5	26.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	310	1472	624	488	1735		381	1759	656	447	1883	605
V/C Ratio(X)	0.84	0.97	0.65	0.91	0.56		0.88	0.61	0.77	1.04	0.67	0.52
Avail Cap(c_a), veh/h	529	1472	624	529	1735		447	1759	656	447	1883	605
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.2	59.8	41.6	71.9	45.7	0.0	74.6	53.9	42.7	74.0	52.9	40.4
Incr Delay (d2), s/veh	6.0	16.8	2.2	19.2	0.3	0.0	16.5	1.6	8.3	53.9	1.9	3.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	5.9	22.6	14.3	10.9	11.3	0.0	8.2	10.4	19.8	13.2	12.3	10.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	82.2	76.6	43.7	91.2	46.1	0.0	91.1	55.5	51.0	127.9	54.9	43.6
LnGrp LOS	F	E	D	F	D		F	E	D	F	D	D
Approach Vol, veh/h		2093			1415	A		1916			2046	
Approach Delay, s/veh		70.9			60.3			60.6			69.8	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.5	57.0	22.1	65.5	28.8	53.7	30.8	56.7
Change Period (Y+Rc), s	6.8	* 7.2	6.8	* 7.7	6.8	* 7.2	6.8	* 7.7
Max Green Setting (Gmax), s	22.0	* 44	26.0	* 49	22.0	* 44	26.0	* 49
Max Q Clear Time (g_c+I1), s	18.3	31.5	14.6	28.3	24.0	48.4	23.6	49.0
Green Ext Time (p_c), s	0.4	3.6	0.7	5.9	0.0	0.0	0.4	0.0

Intersection Summary	
HCM 6th Ctrl Delay	65.9
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

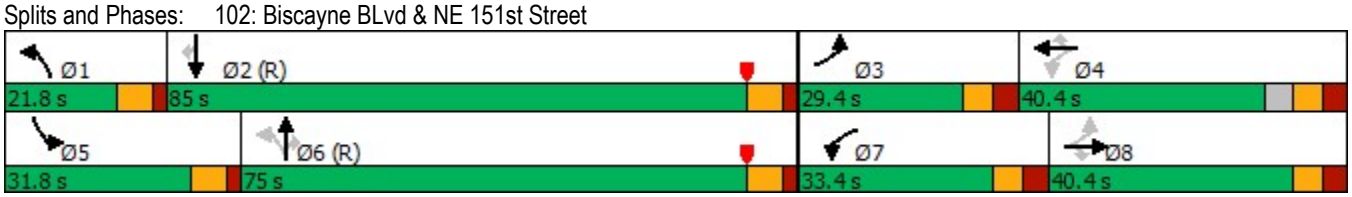
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
102: Biscayne BLvd & NE 151st Street

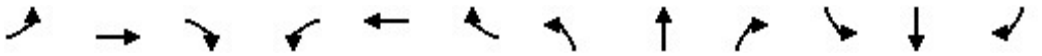
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	170	372	308	164	207	291	116	1159	168	253	1444	154
Future Volume (vph)	170	372	308	164	207	291	116	1159	168	253	1444	154
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	13.2	40.4	40.4	13.2	40.4	40.4	11.8	37.0	37.0	11.8	37.0	37.0
Total Split (s)	29.4	40.4	40.4	33.4	40.4	40.4	21.8	75.0	75.0	31.8	85.0	85.0
Total Split (%)	16.3%	22.4%	22.4%	18.5%	22.4%	22.4%	12.1%	41.5%	41.5%	17.6%	47.1%	47.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	2.0	2.2	2.2	2.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	6.8	7.0	7.0	6.8	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	46.0	27.4	27.4	47.7	28.3	28.3	97.5	86.7	86.7	18.5	94.5	94.5
Actuated g/C Ratio	0.25	0.15	0.15	0.26	0.16	0.16	0.54	0.48	0.48	0.10	0.52	0.52
v/c Ratio	0.53	0.74	0.87	0.65	0.40	0.66	0.60	0.51	0.21	0.77	0.58	0.19
Control Delay	53.7	81.2	57.9	59.1	69.4	17.5	31.8	35.1	4.7	93.3	32.4	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	81.2	57.9	59.1	69.4	17.5	31.8	35.1	4.7	93.3	32.4	9.9
LOS	D	F	E	E	E	B	C	D	A	F	C	A
Approach Delay		67.2			44.0			31.3			38.8	
Approach LOS		E			D			C			D	

Intersection Summary	
Cycle Length: 180.6	
Actuated Cycle Length: 180.6	
Offset: 74 (41%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 42.3	Intersection LOS: D
Intersection Capacity Utilization 81.7%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 102: Biscayne BLvd & NE 151st Street



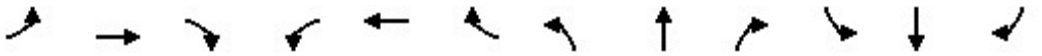
Queues
102: Biscayne BLvd & NE 151st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	181	396	328	174	220	310	123	1233	179	269	1536	164
v/c Ratio	0.53	0.74	0.87	0.65	0.40	0.66	0.60	0.51	0.21	0.77	0.58	0.19
Control Delay	53.7	81.2	57.9	59.1	69.4	17.5	31.8	35.1	4.7	93.3	32.4	9.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.7	81.2	57.9	59.1	69.4	17.5	31.8	35.1	4.7	93.3	32.4	9.9
Queue Length 50th (ft)	168	239	197	161	125	40	58	365	0	162	449	30
Queue Length 95th (ft)	221	291	319	213	162	142	114	486	53	210	596	89
Internal Link Dist (ft)		466			520			483			927	
Turn Bay Length (ft)	100		85	150		150	220		515	500		
Base Capacity (vph)	374	649	422	329	725	536	247	2439	852	475	2661	871
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.48	0.61	0.78	0.53	0.30	0.58	0.50	0.51	0.21	0.57	0.58	0.19

Intersection Summary

HCM 6th Signalized Intersection Summary
102: Biscayne BLvd & NE 151st Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	170	372	308	164	207	291	116	1159	168	253	1444	154
Future Volume (veh/h)	170	372	308	164	207	291	116	1159	168	253	1444	154
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	181	396	328	174	220	310	123	1233	179	269	1536	164
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	658	287	262	648	283	213	2432	755	310	2652	813
Arrive On Green	0.09	0.19	0.19	0.09	0.18	0.18	0.05	0.48	0.48	0.09	0.52	0.52
Sat Flow, veh/h	1781	3554	1548	1781	3554	1551	1781	5106	1585	3456	5106	1565
Grp Volume(v), veh/h	181	396	328	174	220	310	123	1233	179	269	1536	164
Grp Sat Flow(s),veh/h/ln	1781	1777	1548	1781	1777	1551	1781	1702	1585	1728	1702	1565
Q Serve(g_s), s	14.8	18.5	33.5	14.2	9.8	33.0	6.4	30.2	12.1	13.9	37.4	10.2
Cycle Q Clear(g_c), s	14.8	18.5	33.5	14.2	9.8	33.0	6.4	30.2	12.1	13.9	37.4	10.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	658	287	262	648	283	213	2432	755	310	2652	813
V/C Ratio(X)	0.57	0.60	1.14	0.66	0.34	1.10	0.58	0.51	0.24	0.87	0.58	0.20
Avail Cap(c_a), veh/h	368	658	287	356	648	283	278	2432	755	477	2652	813
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.2	67.6	73.7	54.2	64.5	74.0	26.3	32.7	28.0	81.3	29.9	23.4
Incr Delay (d2), s/veh	0.6	1.4	97.8	1.1	0.2	81.6	0.9	0.8	0.7	6.7	0.9	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.8	8.6	21.2	6.6	4.5	19.6	2.8	12.9	4.9	6.5	15.8	4.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.8	69.0	171.5	55.3	64.7	155.6	27.3	33.5	28.7	88.0	30.8	23.9
LnGrp LOS	D	E	F	E	E	F	C	C	C	F	C	C
Approach Vol, veh/h		905			704			1535			1969	
Approach Delay, s/veh		103.1			102.4			32.4			38.1	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	101.0	24.3	40.4	23.1	93.2	23.8	40.9
Change Period (Y+Rc), s	6.8	* 7	7.4	7.4	6.8	* 7	7.4	7.4
Max Green Setting (Gmax), s	15.0	* 78	22.0	33.0	25.0	* 68	26.0	33.0
Max Q Clear Time (g_c+I1), s	8.4	39.4	16.8	35.0	15.9	32.2	16.2	35.5
Green Ext Time (p_c), s	0.1	5.6	0.1	0.0	0.4	4.1	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	56.7
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	3	6	8	1140	5	60	1245
Future Vol, veh/h	3	6	8	1140	5	60	1245
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	0	100	-	-	250	-
Veh in Median Storage, #	1	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	3	6	9	1213	5	64	1324

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	1892	609	967	0	0	1218	0
Stage 1	1234	-	-	-	-	-	-
Stage 2	658	-	-	-	-	-	-
Critical Hdwy	5.5	5.5	5.64	-	-	5.34	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-	-
Follow-up Hdwy	3	3	2.32	-	-	3.12	-
Pot Cap-1 Maneuver	132	603	458	-	-	307	-
Stage 1	292	-	-	-	-	-	-
Stage 2	570	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	102	603	458	-	-	307	-
Mov Cap-2 Maneuver	202	-	-	-	-	-	-
Stage 1	286	-	-	-	-	-	-
Stage 2	451	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15	0.1	0.9
HCM LOS	C		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	458	-	-	202	603	307	-
HCM Lane V/C Ratio	0.019	-	-	0.016	0.011	0.208	-
HCM Control Delay (s)	13	-	-	23.1	11	19.8	-
HCM Lane LOS	B	-	-	C	B	C	-
HCM 95th %tile Q(veh)	0.1	-	-	0	0	0.8	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	1100	12	0	1176
Future Vol, veh/h	0	8	1100	12	0	1176
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	1196	13	0	1278

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	605	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	378	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	378	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.7	0	0
HCM LOS	B		

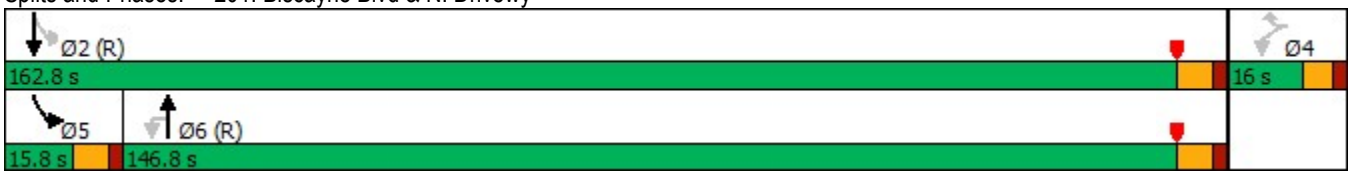
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	378	-
HCM Lane V/C Ratio	-	-	0.023	-
HCM Control Delay (s)	-	-	14.7	-
HCM Lane LOS	-	-	B	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Timings
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	6	8	1711	60	1868
Future Volume (vph)	3	6	8	1711	60	1868
Turn Type	Perm	Perm	Perm	NA	pm+pt	NA
Protected Phases				6	5	2
Permitted Phases	4	4	6		2	
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	7.0
Minimum Split (s)	39.0	39.0	26.8	26.8	11.8	26.8
Total Split (s)	16.0	16.0	146.8	146.8	15.8	162.8
Total Split (%)	8.9%	8.9%	82.1%	82.1%	8.8%	91.1%
Yellow Time (s)	4.0	4.0	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.8	6.8	6.8	6.8
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	7.0	7.0	154.7	154.7	166.8	170.9
Actuated g/C Ratio	0.04	0.04	0.87	0.87	0.93	0.96
v/c Ratio	0.04	0.10	0.08	0.35	0.35	0.34
Control Delay	84.0	43.7	4.2	2.8	5.6	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.0	43.7	4.2	2.8	5.6	0.9
LOS	F	D	A	A	A	A
Approach Delay	55.8			2.8		1.0
Approach LOS	E			A		A

Intersection Summary	
Cycle Length: 178.8	
Actuated Cycle Length: 178.8	
Offset: 67 (37%), Referenced to phase 2:SBTL and 6:NBTU, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.35	
Intersection Signal Delay: 2.0	Intersection LOS: A
Intersection Capacity Utilization 55.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 201: Biscayne Blvd & N. Drivewy



Queues
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Group Flow (vph)	3	7	9	1928	67	2099
v/c Ratio	0.04	0.10	0.08	0.35	0.35	0.34
Control Delay	84.0	43.7	4.2	2.8	5.6	0.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.0	43.7	4.2	2.8	5.6	0.9
Queue Length 50th (ft)	4	0	1	70	0	0
Queue Length 95th (ft)	16	20	6	155	12	91
Internal Link Dist (ft)	306			548		452
Turn Bay Length (ft)			240		150	
Base Capacity (vph)	98	95	119	5544	226	6124
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.07	0.08	0.35	0.30	0.34

Intersection Summary

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	3	6	8	1711	5	60	1868
Future Volume (vph)	3	6	8	1711	5	60	1868
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	0.86		1.00	0.86
Frpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1767	1583	1770	6404		1770	6408
Flt Permitted	0.95	1.00	0.07	1.00		0.08	1.00
Satd. Flow (perm)	1767	1583	139	6404		156	6408
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	3	7	9	1922	6	67	2099
RTOR Reduction (vph)	0	7	0	0	0	0	0
Lane Group Flow (vph)	3	0	9	1928	0	67	2099
Confl. Peds. (#/hr)	1				1	1	
Confl. Bikes (#/hr)					8		
Turn Type	Perm	Perm	Perm	NA		pm+pt	NA
Protected Phases				6		5	2
Permitted Phases	4	4	6			2	
Actuated Green, G (s)	2.8	2.8	151.1	151.1		163.2	163.2
Effective Green, g (s)	2.8	2.8	151.1	151.1		163.2	163.2
Actuated g/C Ratio	0.02	0.02	0.85	0.85		0.91	0.91
Clearance Time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Vehicle Extension (s)	2.5	2.5	1.0	1.0		2.0	1.0
Lane Grp Cap (vph)	27	24	117	5411		190	5848
v/s Ratio Prot				0.30		0.01	c0.33
v/s Ratio Perm	c0.00	0.00	0.06			0.31	
v/c Ratio	0.11	0.00	0.08	0.36		0.35	0.36
Uniform Delay, d1	86.8	86.6	2.3	3.1		1.4	1.0
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.1	1.3	0.2		0.4	0.2
Delay (s)	88.1	86.7	3.6	3.3		1.8	1.2
Level of Service	F	F	A	A		A	A
Approach Delay (s)	87.1			3.3			1.2
Approach LOS	F			A			A

Intersection Summary			
HCM 2000 Control Delay	2.4	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.37		
Actuated Cycle Length (s)	178.8	Sum of lost time (s)	19.6
Intersection Capacity Utilization	55.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

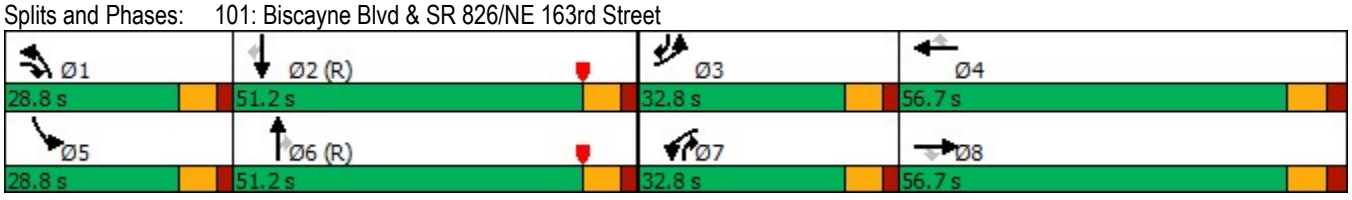
HCM 6th Edition methodology does not support Non-NEMA phasing.

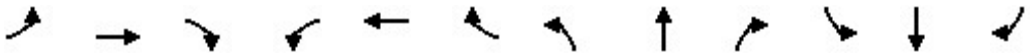
Timings
101: Biscayne Blvd & SR 826/NE 163rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	382	1544	387	605	1181	609	321	1061	610	533	1208	299
Future Volume (vph)	382	1544	387	605	1181	609	321	1061	610	533	1208	299
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	7.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	56.7	11.8	11.8	56.7	56.7	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	32.8	56.7	28.8	32.8	56.7	56.7	28.8	51.2	32.8	28.8	51.2	32.8
Total Split (%)	19.4%	33.5%	17.0%	19.4%	33.5%	33.5%	17.0%	30.2%	19.4%	17.0%	30.2%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.9	2.0	2.4	2.0	2.0	2.4	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	7.7	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	24.0	49.0	70.4	26.0	51.0	51.0	20.5	44.0	70.4	22.0	45.5	76.7
Actuated g/C Ratio	0.14	0.29	0.42	0.15	0.30	0.30	0.12	0.26	0.42	0.13	0.27	0.45
v/c Ratio	0.84	1.12	0.60	1.22	0.82	0.98	0.82	0.68	0.94	1.27	0.75	0.42
Control Delay	86.2	116.5	31.1	173.7	60.8	65.0	89.0	58.9	59.5	195.3	60.2	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.2	116.5	31.1	173.7	60.8	65.0	89.0	58.9	59.5	195.3	60.2	25.3
LOS	F	F	C	F	E	E	F	E	E	F	E	C
Approach Delay		97.2			90.4			63.9			90.4	
Approach LOS		F			F			E			F	

Intersection Summary	
Cycle Length: 169.5	
Actuated Cycle Length: 169.5	
Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 86.2	Intersection LOS: F
Intersection Capacity Utilization 121.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 101: Biscayne Blvd & SR 826/NE 163rd Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	406	1643	412	644	1256	648	341	1129	649	567	1285	318
v/c Ratio	0.84	1.12	0.60	1.22	0.82	0.98	0.82	0.68	0.94	1.27	0.75	0.42
Control Delay	86.2	116.5	31.1	173.7	60.8	65.0	89.0	58.9	59.5	195.3	60.2	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.2	116.5	31.1	173.7	60.8	65.0	89.0	58.9	59.5	195.3	60.2	25.3
Queue Length 50th (ft)	226	~764	268	~451	486	~503	191	330	579	~408	387	179
Queue Length 95th (ft)	290	#858	376	#579	547	#777	251	373	#898	#533	432	266
Internal Link Dist (ft)		871			949			1251			874	
Turn Bay Length (ft)	250		240	360		480	420		420	430		405
Base Capacity (vph)	526	1470	705	526	1529	658	445	1663	694	445	1718	774
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	1.12	0.58	1.22	0.82	0.98	0.77	0.68	0.94	1.27	0.75	0.41

Intersection Summary

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

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

HCM 6th Signalized Intersection Summary
101: Biscayne Blvd & SR 826/NE 163rd Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	382	1544	387	605	1181	609	321	1061	610	533	1208	299
Future Volume (veh/h)	382	1544	387	605	1181	609	321	1061	610	533	1208	299
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	406	1643	412	644	1256	0	341	1129	649	567	1285	318
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	453	1472	626	529	1583		385	1684	656	447	1799	650
Arrive On Green	0.13	0.29	0.29	0.15	0.31	0.00	0.11	0.26	0.26	0.13	0.28	0.28
Sat Flow, veh/h	3456	5106	1560	3456	5106	1585	3456	6434	1581	3456	6434	1582
Grp Volume(v), veh/h	406	1643	412	644	1256	0	341	1129	649	567	1285	318
Grp Sat Flow(s),veh/h/ln	1728	1702	1560	1728	1702	1585	1728	1609	1581	1728	1609	1582
Q Serve(g_s), s	19.7	49.0	36.6	26.0	38.3	0.0	16.5	26.7	44.5	22.0	30.6	25.2
Cycle Q Clear(g_c), s	19.7	49.0	36.6	26.0	38.3	0.0	16.5	26.7	44.5	22.0	30.6	25.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	453	1472	626	529	1583		385	1684	656	447	1799	650
V/C Ratio(X)	0.90	1.12	0.66	1.22	0.79		0.88	0.67	0.99	1.27	0.71	0.49
Avail Cap(c_a), veh/h	529	1472	626	529	1583		447	1684	656	447	1799	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.7	60.5	41.6	72.0	53.7	0.0	74.4	56.2	49.4	74.0	55.1	36.9
Incr Delay (d2), s/veh	16.2	62.2	2.3	114.6	2.8	0.0	17.0	2.1	32.5	137.3	2.5	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	29.6	14.7	20.0	16.9	0.0	8.3	11.2	33.1	18.3	12.8	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.9	122.7	43.9	186.6	56.4	0.0	91.4	58.3	81.9	211.3	57.6	39.6
LnGrp LOS	F	F	D	F	E		F	E	F	F	E	D
Approach Vol, veh/h		2461			1900	A		2119			2170	
Approach Delay, s/veh		104.0			100.6			70.9			95.1	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.8	54.7	29.1	60.4	28.8	51.7	32.8	56.7
Change Period (Y+Rc), s	6.8	* 7.2	6.8	* 7.7	6.8	* 7.2	6.8	* 7.7
Max Green Setting (Gmax), s	22.0	* 44	26.0	* 49	22.0	* 44	26.0	* 49
Max Q Clear Time (g_c+I1), s	18.5	32.6	21.7	40.3	24.0	46.5	28.0	51.0
Green Ext Time (p_c), s	0.4	3.5	0.6	4.8	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	92.9
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

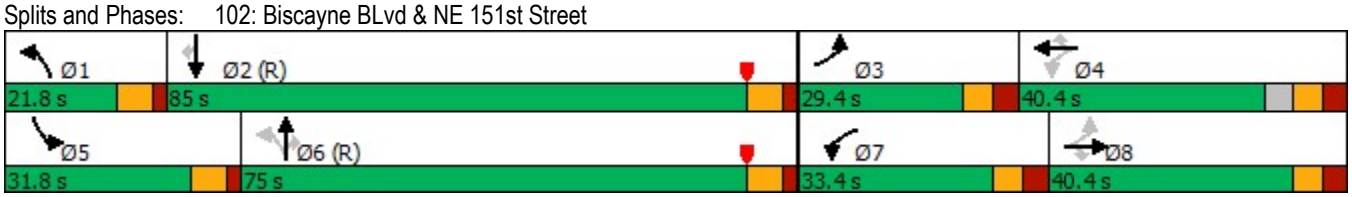
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
102: Biscayne BLvd & NE 151st Street

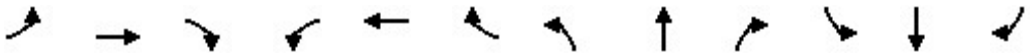
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	172	377	312	167	210	295	117	1340	171	257	1647	157
Future Volume (vph)	172	377	312	167	210	295	117	1340	171	257	1647	157
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	13.2	40.4	40.4	13.2	40.4	40.4	11.8	37.0	37.0	11.8	37.0	37.0
Total Split (s)	29.4	40.4	40.4	33.4	40.4	40.4	21.8	75.0	75.0	31.8	85.0	85.0
Total Split (%)	16.3%	22.4%	22.4%	18.5%	22.4%	22.4%	12.1%	41.5%	41.5%	17.6%	47.1%	47.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	2.0	2.2	2.2	2.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	6.8	7.0	7.0	6.8	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	46.4	27.8	27.8	48.6	28.9	28.9	97.9	85.8	85.8	18.7	92.6	92.6
Actuated g/C Ratio	0.26	0.15	0.15	0.27	0.16	0.16	0.54	0.48	0.48	0.10	0.51	0.51
v/c Ratio	0.53	0.74	0.87	0.65	0.39	0.66	0.69	0.59	0.21	0.77	0.67	0.20
Control Delay	53.3	81.0	58.7	58.9	68.9	19.0	49.2	37.8	4.8	93.3	36.3	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	81.0	58.7	58.9	68.9	19.0	49.2	37.8	4.8	93.3	36.3	10.5
LOS	D	F	E	E	E	B	D	D	A	F	D	B
Approach Delay		67.4			44.5			35.1			41.4	
Approach LOS		E			D			D			D	

Intersection Summary	
Cycle Length: 180.6	
Actuated Cycle Length: 180.6	
Offset: 74 (41%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 44.1	Intersection LOS: D
Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 102: Biscayne BLvd & NE 151st Street



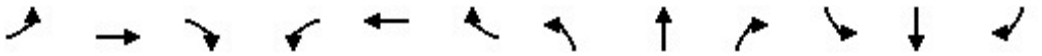
Queues
102: Biscayne BLvd & NE 151st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	183	401	332	178	223	314	124	1426	182	273	1752	167
v/c Ratio	0.53	0.74	0.87	0.65	0.39	0.66	0.69	0.59	0.21	0.77	0.67	0.20
Control Delay	53.3	81.0	58.7	58.9	68.9	19.0	49.2	37.8	4.8	93.3	36.3	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.3	81.0	58.7	58.9	68.9	19.0	49.2	37.8	4.8	93.3	36.3	10.5
Queue Length 50th (ft)	169	241	202	164	126	49	63	450	0	165	567	33
Queue Length 95th (ft)	223	295	326	217	164	156	156	587	54	213	716	93
Internal Link Dist (ft)		466			520			483			927	
Turn Bay Length (ft)	100		85	150		150	220		515	500		
Base Capacity (vph)	376	651	423	330	725	532	212	2416	847	475	2607	856
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.49	0.62	0.78	0.54	0.31	0.59	0.58	0.59	0.21	0.57	0.67	0.20

Intersection Summary

HCM 6th Signalized Intersection Summary
102: Biscayne BLvd & NE 151st Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	172	377	312	167	210	295	117	1340	171	257	1647	157
Future Volume (veh/h)	172	377	312	167	210	295	117	1340	171	257	1647	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	183	401	332	178	223	314	124	1426	182	273	1752	167
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	318	655	285	263	648	283	186	2421	752	314	2645	811
Arrive On Green	0.09	0.18	0.18	0.09	0.18	0.18	0.05	0.47	0.47	0.09	0.52	0.52
Sat Flow, veh/h	1781	3554	1548	1781	3554	1551	1781	5106	1585	3456	5106	1565
Grp Volume(v), veh/h	183	401	332	178	223	314	124	1426	182	273	1752	167
Grp Sat Flow(s),veh/h/ln	1781	1777	1548	1781	1777	1551	1781	1702	1585	1728	1702	1565
Q Serve(g_s), s	15.0	18.8	33.4	14.6	9.9	33.0	6.5	36.9	12.3	14.1	45.6	10.4
Cycle Q Clear(g_c), s	15.0	18.8	33.4	14.6	9.9	33.0	6.5	36.9	12.3	14.1	45.6	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	318	655	285	263	648	283	186	2421	752	314	2645	811
V/C Ratio(X)	0.57	0.61	1.16	0.68	0.34	1.11	0.67	0.59	0.24	0.87	0.66	0.21
Avail Cap(c_a), veh/h	367	655	285	354	648	283	249	2421	752	477	2645	811
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.1	67.9	73.8	54.1	64.6	74.0	30.6	34.7	28.3	81.2	32.0	23.5
Incr Delay (d2), s/veh	0.6	1.5	105.1	1.2	0.2	86.4	1.5	1.1	0.8	7.2	1.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	6.9	8.8	21.7	6.7	4.6	20.0	2.9	15.8	5.0	6.7	19.3	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	69.4	178.9	55.4	64.8	160.4	32.2	35.8	29.0	88.4	33.3	24.1
LnGrp LOS	D	E	F	E	E	F	C	D	C	F	C	C
Approach Vol, veh/h		916			715			1732			2192	
Approach Delay, s/veh		105.9			104.4			34.8			39.5	
Approach LOS		F			F			C			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.3	100.8	24.5	40.4	23.3	92.8	24.1	40.8
Change Period (Y+Rc), s	6.8	* 7	7.4	7.4	6.8	* 7	7.4	7.4
Max Green Setting (Gmax), s	15.0	* 78	22.0	33.0	25.0	* 68	26.0	33.0
Max Q Clear Time (g_c+I1), s	8.5	47.6	17.0	35.0	16.1	38.9	16.6	35.4
Green Ext Time (p_c), s	0.1	6.7	0.1	0.0	0.4	4.9	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	57.3
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	3	7	8	1267	5	61	1385
Future Vol, veh/h	3	7	8	1267	5	61	1385
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	0	100	-	-	250	-
Veh in Median Storage, #	1	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	3	7	9	1348	5	65	1473

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	2088	677	1076	0	0	1353	0
Stage 1	1369	-	-	-	-	-	-
Stage 2	719	-	-	-	-	-	-
Critical Hdwy	5.5	5.5	5.64	-	-	5.34	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-	-
Follow-up Hdwy	3	3	2.32	-	-	3.12	-
Pot Cap-1 Maneuver	104	558	399	-	-	263	-
Stage 1	248	-	-	-	-	-	-
Stage 2	532	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	77	558	399	-	-	263	-
Mov Cap-2 Maneuver	169	-	-	-	-	-	-
Stage 1	242	-	-	-	-	-	-
Stage 2	401	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	16.1	0.1	1
HCM LOS	C		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	399	-	-	169	558	263	-
HCM Lane V/C Ratio	0.021	-	-	0.019	0.013	0.247	-
HCM Control Delay (s)	14.2	-	-	26.7	11.5	23.1	-
HCM Lane LOS	B	-	-	D	B	C	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	0.9	-

Intersection	
Int Delay, s/veh	0

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	8	1226	12	0	1314
Future Vol, veh/h	0	8	1226	12	0	1314
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	9	1333	13	0	1428

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	673	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	341	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	341	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.8	0	0
HCM LOS	C		

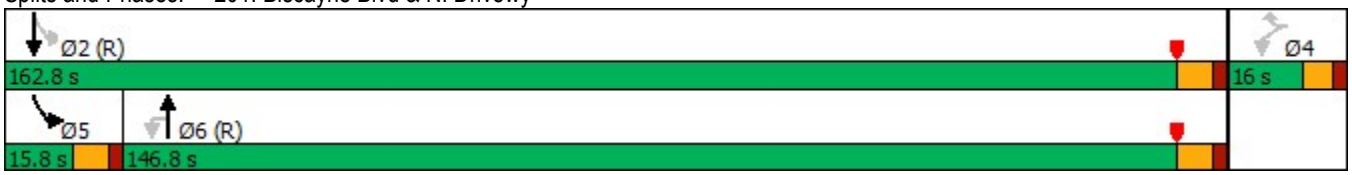
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	341	-
HCM Lane V/C Ratio	-	-	0.026	-
HCM Control Delay (s)	-	-	15.8	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Timings
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	7	8	1901	61	2078
Future Volume (vph)	3	7	8	1901	61	2078
Turn Type	Perm	Perm	Perm	NA	pm+pt	NA
Protected Phases				6	5	2
Permitted Phases	4	4	6		2	
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	7.0
Minimum Split (s)	39.0	39.0	26.8	26.8	11.8	26.8
Total Split (s)	16.0	16.0	146.8	146.8	15.8	162.8
Total Split (%)	8.9%	8.9%	82.1%	82.1%	8.8%	91.1%
Yellow Time (s)	4.0	4.0	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.8	6.8	6.8	6.8
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	7.0	7.0	154.7	154.7	166.8	170.9
Actuated g/C Ratio	0.04	0.04	0.87	0.87	0.93	0.96
v/c Ratio	0.04	0.12	0.10	0.39	0.43	0.38
Control Delay	84.0	43.3	5.4	3.0	9.1	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.0	43.3	5.4	3.0	9.1	1.0
LOS	F	D	A	A	A	A
Approach Delay	54.4			3.0		1.2
Approach LOS	D			A		A

Intersection Summary	
Cycle Length: 178.8	
Actuated Cycle Length: 178.8	
Offset: 67 (37%), Referenced to phase 2:SBTL and 6:NBTU, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.43	
Intersection Signal Delay: 2.2	Intersection LOS: A
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 201: Biscayne Blvd & N. Drivewy



Queues
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Group Flow (vph)	3	8	9	2142	69	2335
v/c Ratio	0.04	0.12	0.10	0.39	0.43	0.38
Control Delay	84.0	43.3	5.4	3.0	9.1	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.0	43.3	5.4	3.0	9.1	1.0
Queue Length 50th (ft)	4	0	1	81	0	0
Queue Length 95th (ft)	16	21	7	181	12	106
Internal Link Dist (ft)	306			548		452
Turn Bay Length (ft)			240		150	
Base Capacity (vph)	98	96	91	5542	193	6124
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.08	0.10	0.39	0.36	0.38

Intersection Summary

HCM Signalized Intersection Capacity Analysis
201: Biscayne Blvd & N. Drivewy

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	3	7	8	1901	5	61	2078
Future Volume (vph)	3	7	8	1901	5	61	2078
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	0.86		1.00	0.86
Frpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1767	1583	1770	6405		1770	6408
Flt Permitted	0.95	1.00	0.06	1.00		0.06	1.00
Satd. Flow (perm)	1767	1583	105	6405		120	6408
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	3	8	9	2136	6	69	2335
RTOR Reduction (vph)	0	8	0	0	0	0	0
Lane Group Flow (vph)	3	0	9	2142	0	69	2335
Confl. Peds. (#/hr)	1				1	1	
Confl. Bikes (#/hr)					8		
Turn Type	Perm	Perm	Perm	NA		pm+pt	NA
Protected Phases				6		5	2
Permitted Phases	4	4	6			2	
Actuated Green, G (s)	2.8	2.8	151.1	151.1		163.2	163.2
Effective Green, g (s)	2.8	2.8	151.1	151.1		163.2	163.2
Actuated g/C Ratio	0.02	0.02	0.85	0.85		0.91	0.91
Clearance Time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Vehicle Extension (s)	2.5	2.5	1.0	1.0		2.0	1.0
Lane Grp Cap (vph)	27	24	88	5412		158	5848
v/s Ratio Prot				0.33		0.01	c0.36
v/s Ratio Perm	c0.00	0.00	0.09			c0.39	
v/c Ratio	0.11	0.01	0.10	0.40		0.44	0.40
Uniform Delay, d1	86.8	86.6	2.3	3.2		2.0	1.1
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.1	2.3	0.2		0.7	0.2
Delay (s)	88.1	86.7	4.7	3.4		2.7	1.3
Level of Service	F	F	A	A		A	A
Approach Delay (s)	87.1			3.4			1.3
Approach LOS	F			A			A

Intersection Summary			
HCM 2000 Control Delay	2.5	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.45		
Actuated Cycle Length (s)	178.8	Sum of lost time (s)	19.6
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

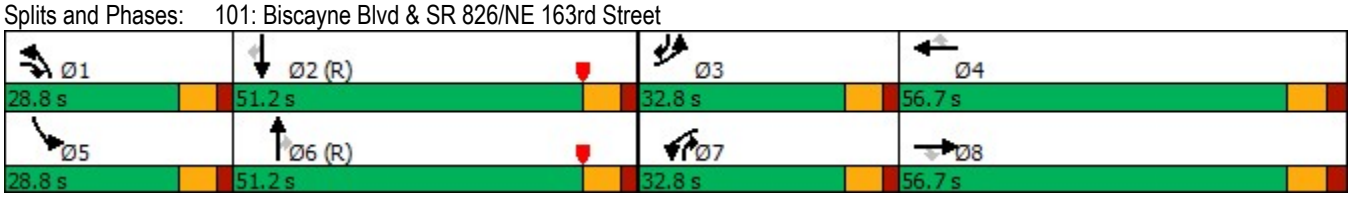
HCM 6th Edition methodology does not support Non-NEMA phasing.

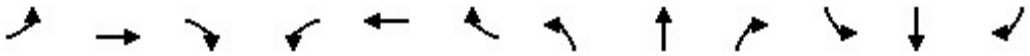
Timings
101: Biscayne Blvd & SR 826/NE 163rd Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	382	1544	389	606	1181	609	321	1062	610	533	1213	299
Future Volume (vph)	382	1544	389	606	1181	609	321	1062	610	533	1213	299
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	7.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	56.7	11.8	11.8	56.7	56.7	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	32.8	56.7	28.8	32.8	56.7	56.7	28.8	51.2	32.8	28.8	51.2	32.8
Total Split (%)	19.4%	33.5%	17.0%	19.4%	33.5%	33.5%	17.0%	30.2%	19.4%	17.0%	30.2%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.9	2.0	2.4	2.0	2.0	2.4	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	7.7	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	24.0	49.0	70.4	26.0	51.0	51.0	20.5	44.0	70.4	22.0	45.5	76.7
Actuated g/C Ratio	0.14	0.29	0.42	0.15	0.30	0.30	0.12	0.26	0.42	0.13	0.27	0.45
v/c Ratio	0.84	1.12	0.60	1.23	0.82	0.98	0.82	0.68	0.94	1.27	0.75	0.42
Control Delay	86.2	116.5	31.3	174.4	60.8	65.0	89.0	58.9	59.5	195.3	60.4	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.2	116.5	31.3	174.4	60.8	65.0	89.0	58.9	59.5	195.3	60.4	25.3
LOS	F	F	C	F	E	E	F	E	E	F	E	C
Approach Delay		97.2			90.6			63.9			90.4	
Approach LOS		F			F			E			F	

Intersection Summary	
Cycle Length: 169.5	
Actuated Cycle Length: 169.5	
Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.27	
Intersection Signal Delay: 86.2	Intersection LOS: F
Intersection Capacity Utilization 121.5%	ICU Level of Service H
Analysis Period (min) 15	

Splits and Phases: 101: Biscayne Blvd & SR 826/NE 163rd Street





Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	406	1643	414	645	1256	648	341	1130	649	567	1290	318
v/c Ratio	0.84	1.12	0.60	1.23	0.82	0.98	0.82	0.68	0.94	1.27	0.75	0.42
Control Delay	86.2	116.5	31.3	174.4	60.8	65.0	89.0	58.9	59.5	195.3	60.4	25.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.2	116.5	31.3	174.4	60.8	65.0	89.0	58.9	59.5	195.3	60.4	25.3
Queue Length 50th (ft)	226	~764	270	~452	486	~503	191	330	579	~408	389	179
Queue Length 95th (ft)	290	#858	378	#581	547	#777	251	373	#898	#533	434	266
Internal Link Dist (ft)		871			949			1251			874	
Turn Bay Length (ft)	250		240	360		480	420		420	430		405
Base Capacity (vph)	526	1470	705	526	1529	658	445	1663	694	445	1718	774
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.77	1.12	0.59	1.23	0.82	0.98	0.77	0.68	0.94	1.27	0.75	0.41

Intersection Summary

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

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

HCM 6th Signalized Intersection Summary
101: Biscayne Blvd & SR 826/NE 163rd Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	382	1544	389	606	1181	609	321	1062	610	533	1213	299
Future Volume (veh/h)	382	1544	389	606	1181	609	321	1062	610	533	1213	299
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	406	1643	414	645	1256	0	341	1130	649	567	1290	318
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	453	1472	626	529	1583		385	1684	656	447	1799	650
Arrive On Green	0.13	0.29	0.29	0.15	0.31	0.00	0.11	0.26	0.26	0.13	0.28	0.28
Sat Flow, veh/h	3456	5106	1560	3456	5106	1585	3456	6434	1581	3456	6434	1582
Grp Volume(v), veh/h	406	1643	414	645	1256	0	341	1130	649	567	1290	318
Grp Sat Flow(s),veh/h/ln	1728	1702	1560	1728	1702	1585	1728	1609	1581	1728	1609	1582
Q Serve(g_s), s	19.7	49.0	36.9	26.0	38.3	0.0	16.5	26.7	44.5	22.0	30.7	25.2
Cycle Q Clear(g_c), s	19.7	49.0	36.9	26.0	38.3	0.0	16.5	26.7	44.5	22.0	30.7	25.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	453	1472	626	529	1583		385	1684	656	447	1799	650
V/C Ratio(X)	0.90	1.12	0.66	1.22	0.79		0.88	0.67	0.99	1.27	0.72	0.49
Avail Cap(c_a), veh/h	529	1472	626	529	1583		447	1684	656	447	1799	650
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	72.7	60.5	41.7	72.0	53.7	0.0	74.4	56.2	49.4	74.0	55.2	36.9
Incr Delay (d2), s/veh	16.2	62.2	2.4	115.4	2.8	0.0	17.0	2.1	32.5	137.3	2.5	2.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.8	29.6	14.8	20.0	16.9	0.0	8.3	11.2	33.1	18.3	12.9	10.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	88.9	122.7	44.1	187.4	56.4	0.0	91.4	58.3	81.9	211.3	57.7	39.6
LnGrp LOS	F	F	D	F	E		F	E	F	F	E	D
Approach Vol, veh/h		2463			1901	A		2120			2175	
Approach Delay, s/veh		103.9			100.9			70.9			95.1	
Approach LOS		F			F			E			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	25.8	54.7	29.1	60.4	28.8	51.7	32.8	56.7
Change Period (Y+Rc), s	6.8	* 7.2	6.8	* 7.7	6.8	* 7.2	6.8	* 7.7
Max Green Setting (Gmax), s	22.0	* 44	26.0	* 49	22.0	* 44	26.0	* 49
Max Q Clear Time (g_c+I1), s	18.5	32.7	21.7	40.3	24.0	46.5	28.0	51.0
Green Ext Time (p_c), s	0.4	3.5	0.6	4.8	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 6th Ctrl Delay	92.9
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

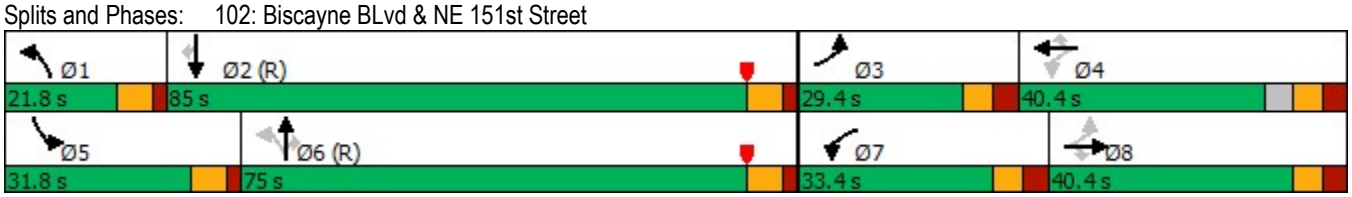
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
102: Biscayne BLvd & NE 151st Street

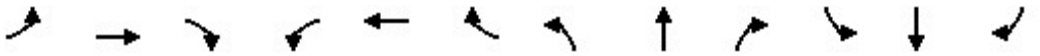
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	175	377	312	167	210	295	117	1344	171	257	1648	157
Future Volume (vph)	175	377	312	167	210	295	117	1344	171	257	1648	157
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	13.2	40.4	40.4	13.2	40.4	40.4	11.8	37.0	37.0	11.8	37.0	37.0
Total Split (s)	29.4	40.4	40.4	33.4	40.4	40.4	21.8	75.0	75.0	31.8	85.0	85.0
Total Split (%)	16.3%	22.4%	22.4%	18.5%	22.4%	22.4%	12.1%	41.5%	41.5%	17.6%	47.1%	47.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	2.0	2.2	2.2	2.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	6.8	7.0	7.0	6.8	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	46.5	27.8	27.8	48.4	28.7	28.7	98.0	85.9	85.9	18.7	92.6	92.6
Actuated g/C Ratio	0.26	0.15	0.15	0.27	0.16	0.16	0.54	0.48	0.48	0.10	0.51	0.51
v/c Ratio	0.54	0.74	0.87	0.66	0.40	0.67	0.69	0.59	0.21	0.77	0.67	0.19
Control Delay	53.6	81.0	58.7	59.0	69.1	19.5	49.2	37.8	4.7	93.3	36.3	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	81.0	58.7	59.0	69.1	19.5	49.2	37.8	4.7	93.3	36.3	10.5
LOS	D	F	E	E	E	B	D	D	A	F	D	B
Approach Delay		67.4			44.8			35.2			41.4	
Approach LOS		E			D			D			D	

Intersection Summary	
Cycle Length: 180.6	
Actuated Cycle Length: 180.6	
Offset: 74 (41%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow	
Natural Cycle: 105	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.87	
Intersection Signal Delay: 44.2	Intersection LOS: D
Intersection Capacity Utilization 86.0%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 102: Biscayne BLvd & NE 151st Street



Queues
102: Biscayne BLvd & NE 151st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	186	401	332	178	223	314	124	1430	182	273	1753	167
v/c Ratio	0.54	0.74	0.87	0.66	0.40	0.67	0.69	0.59	0.21	0.77	0.67	0.19
Control Delay	53.6	81.0	58.7	59.0	69.1	19.5	49.2	37.8	4.7	93.3	36.3	10.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	53.6	81.0	58.7	59.0	69.1	19.5	49.2	37.8	4.7	93.3	36.3	10.5
Queue Length 50th (ft)	172	241	202	164	126	51	63	452	0	165	567	33
Queue Length 95th (ft)	226	295	326	217	164	159	156	589	54	213	717	93
Internal Link Dist (ft)		466			520			483			927	
Turn Bay Length (ft)	100		85	150		150	220		515	500		
Base Capacity (vph)	375	651	423	330	725	530	212	2417	847	475	2608	857
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.50	0.62	0.78	0.54	0.31	0.59	0.58	0.59	0.21	0.57	0.67	0.19

Intersection Summary

HCM 6th Signalized Intersection Summary
102: Biscayne BLvd & NE 151st Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	175	377	312	167	210	295	117	1344	171	257	1648	157
Future Volume (veh/h)	175	377	312	167	210	295	117	1344	171	257	1648	157
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		1.00	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	186	401	332	178	223	314	124	1430	182	273	1753	167
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	321	660	287	264	648	283	185	2415	750	314	2638	809
Arrive On Green	0.10	0.19	0.19	0.09	0.18	0.18	0.05	0.47	0.47	0.09	0.52	0.52
Sat Flow, veh/h	1781	3554	1548	1781	3554	1551	1781	5106	1585	3456	5106	1565
Grp Volume(v), veh/h	186	401	332	178	223	314	124	1430	182	273	1753	167
Grp Sat Flow(s),veh/h/ln	1781	1777	1548	1781	1777	1551	1781	1702	1585	1728	1702	1565
Q Serve(g_s), s	15.2	18.7	33.6	14.6	9.9	33.0	6.5	37.1	12.4	14.1	45.7	10.4
Cycle Q Clear(g_c), s	15.2	18.7	33.6	14.6	9.9	33.0	6.5	37.1	12.4	14.1	45.7	10.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	321	660	287	264	648	283	185	2415	750	314	2638	809
V/C Ratio(X)	0.58	0.61	1.16	0.67	0.34	1.11	0.67	0.59	0.24	0.87	0.66	0.21
Avail Cap(c_a), veh/h	367	660	287	355	648	283	249	2415	750	477	2638	809
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	53.0	67.6	73.7	54.1	64.6	74.0	30.9	34.9	28.4	81.2	32.2	23.7
Incr Delay (d2), s/veh	0.7	1.4	101.8	1.2	0.2	86.4	1.6	1.1	0.8	7.2	1.3	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	7.0	8.7	21.6	6.7	4.6	20.0	2.9	15.9	5.0	6.7	19.4	4.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	53.7	69.1	175.5	55.3	64.8	160.4	32.4	36.0	29.2	88.4	33.5	24.3
LnGrp LOS	D	E	F	E	E	F	C	D	C	F	C	C
Approach Vol, veh/h		919			715			1736			2193	
Approach Delay, s/veh		104.4			104.4			35.0			39.7	
Approach LOS		F			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.4	100.5	24.7	40.4	23.3	92.6	24.1	41.0
Change Period (Y+Rc), s	6.8	* 7	7.4	7.4	6.8	* 7	7.4	7.4
Max Green Setting (Gmax), s	15.0	* 78	22.0	33.0	25.0	* 68	26.0	33.0
Max Q Clear Time (g_c+I1), s	8.5	47.7	17.2	35.0	16.1	39.1	16.6	35.6
Green Ext Time (p_c), s	0.1	6.7	0.1	0.0	0.4	4.9	0.2	0.0

Intersection Summary	
HCM 6th Ctrl Delay	57.2
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	3	8	9	1267	8	69	1385
Future Vol, veh/h	3	8	9	1267	8	69	1385
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	0	100	-	-	250	-
Veh in Median Storage, #	1	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	3	9	10	1348	9	73	1473

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	2108	679	1076	0	0	1357	0
Stage 1	1373	-	-	-	-	-	-
Stage 2	735	-	-	-	-	-	-
Critical Hdwy	5.5	5.5	5.64	-	-	5.34	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-	-
Follow-up Hdwy	3	3	2.32	-	-	3.12	-
Pot Cap-1 Maneuver	102	557	399	-	-	262	-
Stage 1	247	-	-	-	-	-	-
Stage 2	522	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	72	557	399	-	-	262	-
Mov Cap-2 Maneuver	164	-	-	-	-	-	-
Stage 1	241	-	-	-	-	-	-
Stage 2	376	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.9	0.1	1.1
HCM LOS	C		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	399	-	-	164	557	262	-
HCM Lane V/C Ratio	0.024	-	-	0.019	0.015	0.28	-
HCM Control Delay (s)	14.2	-	-	27.4	11.6	24	-
HCM Lane LOS	B	-	-	D	B	C	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0	1.1	-

Intersection	
Int Delay, s/veh	0.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	9	1228	16	0	1315
Future Vol, veh/h	0	9	1228	16	0	1315
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	10	1335	17	0	1429

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	676	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	339	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	339	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	15.9	0	0
HCM LOS	C		

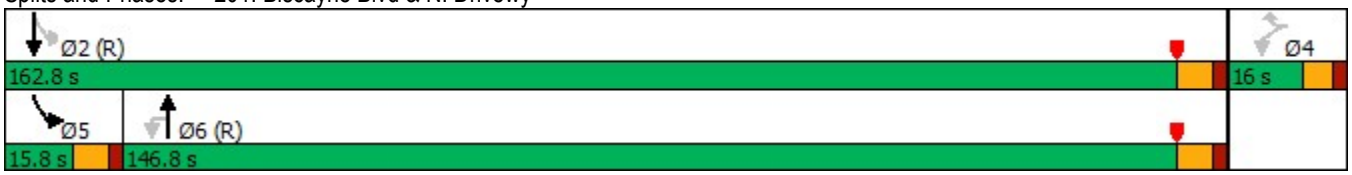
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	339	-
HCM Lane V/C Ratio	-	-	0.029	-
HCM Control Delay (s)	-	-	15.9	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.1	-

Timings
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	3	8	9	1901	69	2078
Future Volume (vph)	3	8	9	1901	69	2078
Turn Type	Perm	Perm	Perm	NA	pm+pt	NA
Protected Phases				6	5	2
Permitted Phases	4	4	6		2	
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	7.0
Minimum Split (s)	39.0	39.0	26.8	26.8	11.8	26.8
Total Split (s)	16.0	16.0	146.8	146.8	15.8	162.8
Total Split (%)	8.9%	8.9%	82.1%	82.1%	8.8%	91.1%
Yellow Time (s)	4.0	4.0	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.8	6.8	6.8	6.8
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	7.0	7.0	154.4	154.4	166.8	170.9
Actuated g/C Ratio	0.04	0.04	0.86	0.86	0.93	0.96
v/c Ratio	0.04	0.13	0.11	0.39	0.48	0.38
Control Delay	84.0	41.5	5.8	3.1	12.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.0	41.5	5.8	3.1	12.7	1.0
LOS	F	D	A	A	B	A
Approach Delay	52.1			3.1		1.3
Approach LOS	D			A		A

Intersection Summary	
Cycle Length: 178.8	
Actuated Cycle Length: 178.8	
Offset: 67 (37%), Referenced to phase 2:SBTL and 6:NBTU, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 2.3	Intersection LOS: A
Intersection Capacity Utilization 58.1%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 201: Biscayne Blvd & N. Drivewy



Queues
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Group Flow (vph)	3	9	10	2145	78	2335
v/c Ratio	0.04	0.13	0.11	0.39	0.48	0.38
Control Delay	84.0	41.5	5.8	3.1	12.7	1.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	84.0	41.5	5.8	3.1	12.7	1.0
Queue Length 50th (ft)	4	0	1	81	1	0
Queue Length 95th (ft)	16	22	8	191	22	106
Internal Link Dist (ft)	306			548		452
Turn Bay Length (ft)			240		150	
Base Capacity (vph)	98	97	91	5527	193	6124
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.03	0.09	0.11	0.39	0.40	0.38

Intersection Summary

HCM Signalized Intersection Capacity Analysis
201: Biscayne Blvd & N. Drivewy

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	3	8	9	1901	8	69	2078
Future Volume (vph)	3	8	9	1901	8	69	2078
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	0.86		1.00	0.86
Frpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1767	1583	1770	6403		1770	6408
Flt Permitted	0.95	1.00	0.06	1.00		0.06	1.00
Satd. Flow (perm)	1767	1583	105	6403		119	6408
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	3	9	10	2136	9	78	2335
RTOR Reduction (vph)	0	9	0	0	0	0	0
Lane Group Flow (vph)	3	0	10	2145	0	78	2335
Confl. Peds. (#/hr)	1				1	1	
Confl. Bikes (#/hr)					8		
Turn Type	Perm	Perm	Perm	NA		pm+pt	NA
Protected Phases				6		5	2
Permitted Phases	4	4	6			2	
Actuated Green, G (s)	2.8	2.8	150.8	150.8		163.2	163.2
Effective Green, g (s)	2.8	2.8	150.8	150.8		163.2	163.2
Actuated g/C Ratio	0.02	0.02	0.84	0.84		0.91	0.91
Clearance Time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Vehicle Extension (s)	2.5	2.5	1.0	1.0		2.0	1.0
Lane Grp Cap (vph)	27	24	88	5400		160	5848
v/s Ratio Prot				0.33		0.02	c0.36
v/s Ratio Perm	c0.00	0.00	0.09			c0.43	
v/c Ratio	0.11	0.01	0.11	0.40		0.49	0.40
Uniform Delay, d1	86.8	86.6	2.4	3.3		2.2	1.1
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	0.1	2.6	0.2		0.9	0.2
Delay (s)	88.1	86.7	5.0	3.5		3.1	1.3
Level of Service	F	F	A	A		A	A
Approach Delay (s)	87.1			3.5			1.3
Approach LOS	F			A			A

Intersection Summary			
HCM 2000 Control Delay	2.6	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.50		
Actuated Cycle Length (s)	178.8	Sum of lost time (s)	19.6
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

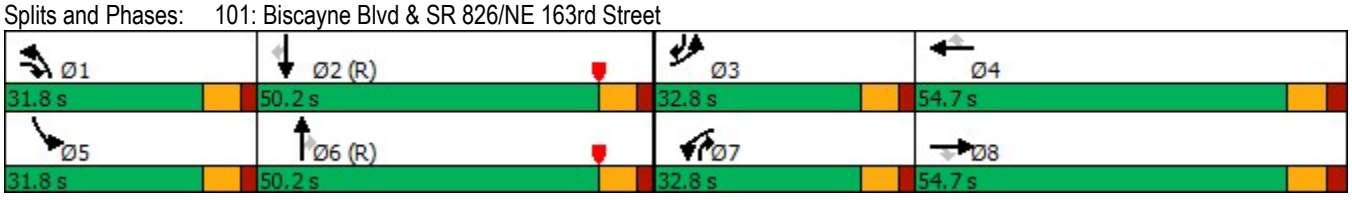
HCM 6th Edition methodology does not support Non-NEMA phasing.

Timings
101: Biscayne Blvd & SR 826/NE 163rd Street

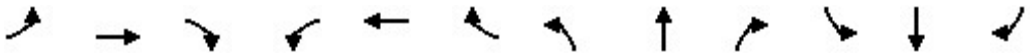
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	338	1011	450	513	1312	651	476	1442	552	441	1474	469
Future Volume (vph)	338	1011	450	513	1312	651	476	1442	552	441	1474	469
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	7.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	54.7	11.8	11.8	54.7	54.7	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	32.8	54.7	31.8	32.8	54.7	54.7	31.8	50.2	32.8	31.8	50.2	32.8
Total Split (%)	19.4%	32.3%	18.8%	19.4%	32.3%	32.3%	18.8%	29.6%	19.4%	18.8%	29.6%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.9	2.0	2.4	2.0	2.0	2.4	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	7.7	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	22.7	47.0	72.9	26.0	50.3	50.3	25.0	43.4	76.6	24.6	43.0	72.9
Actuated g/C Ratio	0.13	0.28	0.43	0.15	0.30	0.30	0.15	0.26	0.45	0.15	0.25	0.43
v/c Ratio	0.77	0.75	0.66	1.02	0.91	1.00	0.98	0.92	0.76	0.92	0.94	0.68
Control Delay	82.1	59.7	33.0	112.2	66.7	67.4	106.0	70.7	41.4	95.8	74.4	37.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.1	59.7	33.0	112.2	66.7	67.4	106.0	70.7	41.4	95.8	74.4	37.4
LOS	F	E	C	F	E	E	F	E	D	F	E	D
Approach Delay		57.2			76.3			71.0			71.1	
Approach LOS		E			E			E			E	

Intersection Summary	
Cycle Length: 169.5	
Actuated Cycle Length: 169.5	
Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.02	
Intersection Signal Delay: 69.7	Intersection LOS: E
Intersection Capacity Utilization 94.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 101: Biscayne Blvd & SR 826/NE 163rd Street



Queues
101: Biscayne Blvd & SR 826/NE 163rd Street



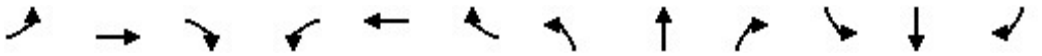
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	352	1053	469	534	1367	678	496	1502	575	459	1535	489
v/c Ratio	0.77	0.75	0.66	1.02	0.91	1.00	0.98	0.92	0.76	0.92	0.94	0.68
Control Delay	82.1	59.7	33.0	112.2	66.7	67.4	106.0	70.7	41.4	95.8	74.4	37.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	82.1	59.7	33.0	112.2	66.7	67.4	106.0	70.7	41.4	95.8	74.4	37.4
Queue Length 50th (ft)	196	393	325	~320	542	~518	287	477	472	262	490	370
Queue Length 95th (ft)	251	449	450	#444	#654	#808	#409	525	640	#362	#559	496
Internal Link Dist (ft)		871			949			1251			874	
Turn Bay Length (ft)	250		240	360		480	420		420	430		405
Base Capacity (vph)	526	1410	715	526	1508	675	506	1640	756	506	1625	752
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.75	0.66	1.02	0.91	1.00	0.98	0.92	0.76	0.91	0.94	0.65

Intersection Summary

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

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

HCM 6th Signalized Intersection Summary
101: Biscayne Blvd & SR 826/NE 163rd Street



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	338	1011	450	513	1312	651	476	1442	552	441	1474	469
Future Volume (veh/h)	338	1011	450	513	1312	651	476	1442	552	441	1474	469
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	352	1053	469	534	1367	0	496	1502	575	459	1535	489
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	402	1389	658	529	1576		508	1697	660	497	1675	597
Arrive On Green	0.12	0.27	0.27	0.15	0.31	0.00	0.15	0.26	0.26	0.14	0.26	0.26
Sat Flow, veh/h	3456	5106	1563	3456	5106	1585	3456	6434	1585	3456	6434	1585
Grp Volume(v), veh/h	352	1053	469	534	1367	0	496	1502	575	459	1535	489
Grp Sat Flow(s),veh/h/ln	1728	1702	1563	1728	1702	1585	1728	1609	1585	1728	1609	1585
Q Serve(g_s), s	17.0	32.2	42.3	26.0	43.0	0.0	24.3	38.1	44.8	22.3	39.4	44.3
Cycle Q Clear(g_c), s	17.0	32.2	42.3	26.0	43.0	0.0	24.3	38.1	44.8	22.3	39.4	44.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	402	1389	658	529	1576		508	1697	660	497	1675	597
V/C Ratio(X)	0.88	0.76	0.71	1.01	0.87		0.98	0.89	0.87	0.92	0.92	0.82
Avail Cap(c_a), veh/h	529	1412	665	529	1576		508	1697	660	508	1675	597
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	73.9	56.8	41.0	72.0	55.5	0.0	72.2	60.1	45.4	71.9	61.1	47.8
Incr Delay (d2), s/veh	12.3	2.3	3.3	41.8	5.3	0.0	33.7	7.2	14.7	22.5	9.4	11.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	8.3	14.2	17.0	14.6	19.3	0.0	13.2	16.5	24.9	11.5	17.2	20.7
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	86.2	59.0	44.3	113.8	60.8	0.0	105.9	67.3	60.1	94.4	70.5	59.7
LnGrp LOS	F	E	D	F	E		F	E	E	F	E	E
Approach Vol, veh/h		1874			1901	A		2573			2483	
Approach Delay, s/veh		60.5			75.7			73.1			72.8	
Approach LOS		E			E			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.8	51.5	26.6	60.2	31.2	52.0	32.8	53.9
Change Period (Y+Rc), s	6.8	* 7.2	6.8	* 7.7	6.8	* 7.2	6.8	* 7.7
Max Green Setting (Gmax), s	25.0	* 43	26.0	* 47	25.0	* 43	26.0	* 47
Max Q Clear Time (g_c+I1), s	26.3	46.3	19.0	45.0	24.3	46.8	28.0	44.3
Green Ext Time (p_c), s	0.0	0.0	0.7	1.5	0.1	0.0	0.0	1.9

Intersection Summary	
HCM 6th Ctrl Delay	70.9
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

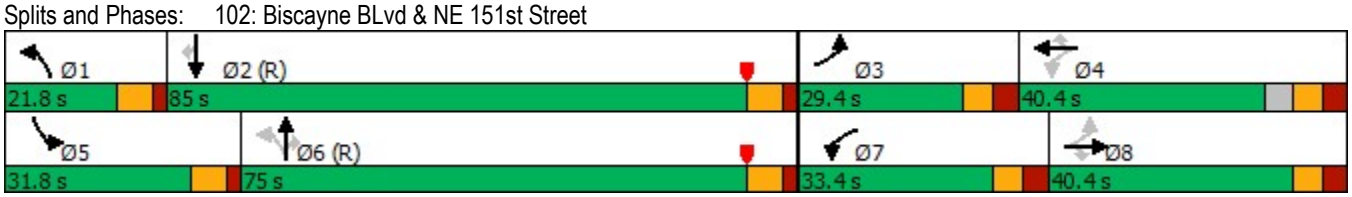
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
102: Biscayne BLvd & NE 151st Street

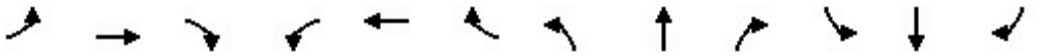
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	225	251	239	140	276	411	190	1625	194	459	1715	270
Future Volume (vph)	225	251	239	140	276	411	190	1625	194	459	1715	270
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	13.2	40.4	40.4	13.2	40.4	40.4	11.8	37.0	37.0	11.8	37.0	37.0
Total Split (s)	29.4	40.4	40.4	33.4	40.4	40.4	21.8	75.0	75.0	31.8	85.0	85.0
Total Split (%)	16.3%	22.4%	22.4%	18.5%	22.4%	22.4%	12.1%	41.5%	41.5%	17.6%	47.1%	47.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	2.0	2.2	2.2	2.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	6.8	7.0	7.0	6.8	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	55.3	34.5	34.5	44.1	28.9	28.9	94.0	74.3	74.3	28.0	82.8	82.8
Actuated g/C Ratio	0.31	0.19	0.19	0.24	0.16	0.16	0.52	0.41	0.41	0.16	0.46	0.46
v/c Ratio	0.69	0.38	0.54	0.44	0.50	0.95	0.84	0.80	0.26	0.89	0.76	0.34
Control Delay	58.5	64.4	19.1	49.0	71.2	64.6	78.6	51.5	5.0	92.8	44.1	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	64.4	19.1	49.0	71.2	64.6	78.6	51.5	5.0	92.8	44.1	14.0
LOS	E	E	B	D	E	E	E	D	A	F	D	B
Approach Delay		47.4			64.2			49.6			50.0	
Approach LOS		D			E			D			D	

Intersection Summary	
Cycle Length: 180.6	
Actuated Cycle Length: 180.6	
Offset: 12 (7%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow	
Natural Cycle: 125	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 51.5	Intersection LOS: D
Intersection Capacity Utilization 88.4%	ICU Level of Service E
Analysis Period (min) 15	

Splits and Phases: 102: Biscayne BLvd & NE 151st Street



Queues
102: Biscayne BLvd & NE 151st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	232	259	246	144	285	424	196	1675	200	473	1768	278
v/c Ratio	0.69	0.38	0.54	0.44	0.50	0.95	0.84	0.80	0.26	0.89	0.76	0.34
Control Delay	58.5	64.4	19.1	49.0	71.2	64.6	78.6	51.5	5.0	92.8	44.1	14.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.5	64.4	19.1	49.0	71.2	64.6	78.6	51.5	5.0	92.8	44.1	14.0
Queue Length 50th (ft)	211	138	51	124	162	249	179	677	0	282	665	83
Queue Length 95th (ft)	283	185	146	178	206	#418	#383	741	57	#420	726	160
Internal Link Dist (ft)		466			520			483			927	
Turn Bay Length (ft)	100		85	150		150	220		515	500		
Base Capacity (vph)	345	727	473	428	725	507	234	2092	768	531	2332	815
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.67	0.36	0.52	0.34	0.39	0.84	0.84	0.80	0.26	0.89	0.76	0.34

Intersection Summary

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

HCM 6th Signalized Intersection Summary
102: Biscayne BLvd & NE 151st Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	225	251	239	140	276	411	190	1625	194	459	1715	270
Future Volume (veh/h)	225	251	239	140	276	411	190	1625	194	459	1715	270
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	232	259	246	144	285	424	196	1675	200	473	1768	278
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	784	343	319	648	287	214	2075	644	477	2391	742
Arrive On Green	0.12	0.22	0.22	0.08	0.18	0.18	0.08	0.41	0.41	0.14	0.47	0.47
Sat Flow, veh/h	1781	3554	1554	1781	3554	1572	1781	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	232	259	246	144	285	424	196	1675	200	473	1768	278
Grp Sat Flow(s),veh/h/ln	1781	1777	1554	1781	1777	1572	1781	1702	1585	1728	1702	1585
Q Serve(g_s), s	18.8	11.1	26.5	11.8	12.9	33.0	11.7	52.5	15.5	24.7	51.0	20.5
Cycle Q Clear(g_c), s	18.8	11.1	26.5	11.8	12.9	33.0	11.7	52.5	15.5	24.7	51.0	20.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	327	784	343	319	648	287	214	2075	644	477	2391	742
V/C Ratio(X)	0.71	0.33	0.72	0.45	0.44	1.48	0.92	0.81	0.31	0.99	0.74	0.37
Avail Cap(c_a), veh/h	338	784	343	438	648	287	226	2075	644	477	2391	742
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	51.0	59.3	65.3	54.1	65.8	74.0	39.6	47.5	36.5	77.9	39.1	31.0
Incr Delay (d2), s/veh	5.4	0.2	6.7	0.4	0.3	233.6	35.8	3.5	1.3	38.7	2.1	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.0	5.1	11.2	5.4	5.9	32.0	7.3	23.1	6.4	13.6	22.0	8.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.4	59.5	72.0	54.5	66.1	307.6	75.5	51.0	37.8	116.6	41.2	32.5
LnGrp LOS	E	E	E	D	E	F	E	D	D	F	D	C
Approach Vol, veh/h		737			853			2071			2519	
Approach Delay, s/veh		62.7			184.2			52.0			54.4	
Approach LOS		E			F			D			D	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	20.6	91.8	28.3	40.4	31.8	80.5	21.3	47.3
Change Period (Y+Rc), s	6.8	* 7	7.4	7.4	6.8	* 7	7.4	7.4
Max Green Setting (Gmax), s	15.0	* 78	22.0	33.0	25.0	* 68	26.0	33.0
Max Q Clear Time (g_c+I1), s	13.7	53.0	20.8	35.0	26.7	54.5	13.8	28.5
Green Ext Time (p_c), s	0.0	6.7	0.0	0.0	0.0	5.1	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	72.5
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	9	39	19	1678	6	60	1545
Future Vol, veh/h	9	39	19	1678	6	60	1545
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	0	100	-	-	250	-
Veh in Median Storage, #	1	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	9	41	20	1766	6	63	1626

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	2585	886	1187	0	0	1772	0
Stage 1	1809	-	-	-	-	-	-
Stage 2	776	-	-	-	-	-	-
Critical Hdwy	5.5	5.5	5.64	-	-	5.34	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-	-
Follow-up Hdwy	3	3	2.32	-	-	3.12	-
Pot Cap-1 Maneuver	56	438	346	-	-	163	-
Stage 1	147	-	-	-	-	-	-
Stage 2	498	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	32	438	346	-	-	163	-
Mov Cap-2 Maneuver	97	-	-	-	-	-	-
Stage 1	138	-	-	-	-	-	-
Stage 2	305	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	20.1	0.2	1.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	346	-	-	97	438	163	-
HCM Lane V/C Ratio	0.058	-	-	0.098	0.094	0.387	-
HCM Control Delay (s)	16	-	-	46.1	14.1	40.4	-
HCM Lane LOS	C	-	-	E	B	E	-
HCM 95th %tile Q(veh)	0.2	-	-	0.3	0.3	1.7	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	29	1649	6	0	1490
Future Vol, veh/h	0	29	1649	6	0	1490
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	31	1736	6	0	1568

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	871	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	253	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	253	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	21.2	0	0
HCM LOS	C		

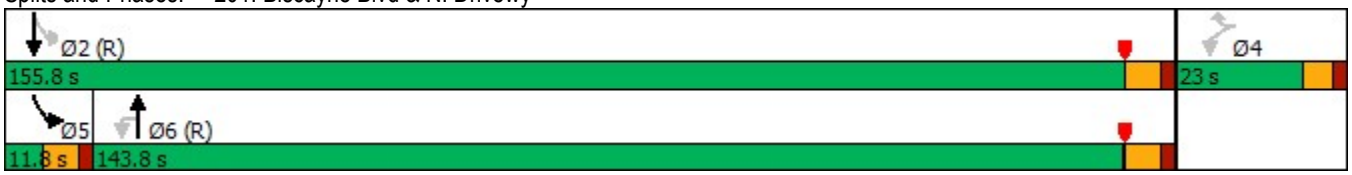
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	253	-
HCM Lane V/C Ratio	-	-	0.121	-
HCM Control Delay (s)	-	-	21.2	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.4	-

Timings
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	39	19	2517	60	2318
Future Volume (vph)	9	39	19	2517	60	2318
Turn Type	Perm	Perm	Perm	NA	pm+pt	NA
Protected Phases				6	5	2
Permitted Phases	4	4	6		2	
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	7.0
Minimum Split (s)	23.0	23.0	26.8	26.8	11.8	26.8
Total Split (s)	23.0	23.0	143.8	143.8	11.8	155.8
Total Split (%)	12.9%	12.9%	80.4%	80.4%	6.6%	87.1%
Yellow Time (s)	4.0	4.0	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.8	6.8	6.8	6.8
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	7.4	7.4	146.9	146.9	161.2	162.5
Actuated g/C Ratio	0.04	0.04	0.82	0.82	0.90	0.91
v/c Ratio	0.14	0.40	0.28	0.52	0.53	0.43
Control Delay	86.3	31.2	16.1	5.8	39.8	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	31.2	16.1	5.8	39.8	1.8
LOS	F	C	B	A	D	A
Approach Delay	41.8			5.9		2.8
Approach LOS	D			A		A

Intersection Summary	
Cycle Length: 178.8	
Actuated Cycle Length: 178.8	
Offset: 151 (84%), Referenced to phase 2:SBTL and 6:NBTU, Start of Yellow	
Natural Cycle: 75	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.53	
Intersection Signal Delay: 4.8	Intersection LOS: A
Intersection Capacity Utilization 62.9%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 201: Biscayne Blvd & N. Drivewy



Queues
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Group Flow (vph)	10	42	20	2712	65	2492
v/c Ratio	0.14	0.40	0.28	0.52	0.53	0.43
Control Delay	86.3	31.2	16.1	5.8	39.8	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	31.2	16.1	5.8	39.8	1.8
Queue Length 50th (ft)	12	0	5	261	16	113
Queue Length 95th (ft)	35	45	25	338	75	138
Internal Link Dist (ft)	306			548		452
Turn Bay Length (ft)			240		150	
Base Capacity (vph)	168	188	72	5263	122	5824
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.22	0.28	0.52	0.53	0.43

Intersection Summary

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	9	39	19	2517	6	60	2318
Future Volume (vph)	9	39	19	2517	6	60	2318
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	0.86		1.00	0.86
Frpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1770	6405		1770	6408
Flt Permitted	0.95	1.00	0.05	1.00		0.03	1.00
Satd. Flow (perm)	1770	1583	88	6405		56	6408
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	10	42	20	2706	6	65	2492
RTOR Reduction (vph)	0	41	0	0	0	0	0
Lane Group Flow (vph)	10	1	20	2712	0	65	2492
Confl. Bikes (#/hr)					8		
Turn Type	Perm	Perm	Perm	NA		pm+pt	NA
Protected Phases				6		5	2
Permitted Phases	4	4	6			2	
Actuated Green, G (s)	6.0	6.0	145.7	145.7		160.0	160.0
Effective Green, g (s)	6.0	6.0	145.7	145.7		160.0	160.0
Actuated g/C Ratio	0.03	0.03	0.81	0.81		0.89	0.89
Clearance Time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Vehicle Extension (s)	2.5	2.5	1.0	1.0		2.0	1.0
Lane Grp Cap (vph)	59	53	71	5219		122	5734
v/s Ratio Prot				0.42		0.02	c0.39
v/s Ratio Perm	c0.01	0.00	0.23			c0.45	
v/c Ratio	0.17	0.03	0.28	0.52		0.53	0.43
Uniform Delay, d1	84.0	83.6	4.0	5.3		21.7	1.6
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	0.1	9.7	0.4		2.2	0.2
Delay (s)	85.0	83.7	13.6	5.7		23.9	1.9
Level of Service	F	F	B	A		C	A
Approach Delay (s)	84.0			5.7			2.4
Approach LOS	F			A			A

Intersection Summary			
HCM 2000 Control Delay	4.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	178.8	Sum of lost time (s)	19.6
Intersection Capacity Utilization	62.9%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

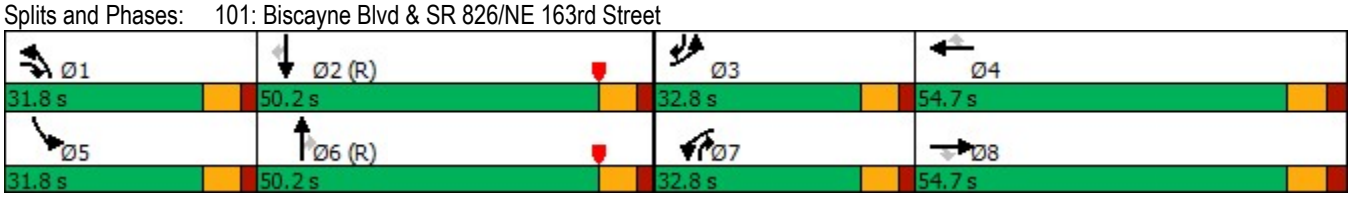
HCM 6th Edition methodology does not support Non-NEMA phasing.

Timings
101: Biscayne Blvd & SR 826/NE 163rd Street

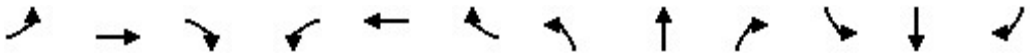
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	475	1192	457	718	1539	752	483	1518	690	543	1496	538
Future Volume (vph)	475	1192	457	718	1539	752	483	1518	690	543	1496	538
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	7.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	54.7	11.8	11.8	54.7	54.7	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	32.8	54.7	31.8	32.8	54.7	54.7	31.8	50.2	32.8	31.8	50.2	32.8
Total Split (%)	19.4%	32.3%	18.8%	19.4%	32.3%	32.3%	18.8%	29.6%	19.4%	18.8%	29.6%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.9	2.0	2.4	2.0	2.0	2.4	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	7.7	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	26.0	47.0	72.9	26.0	47.0	47.0	25.0	43.0	76.2	25.0	43.0	76.2
Actuated g/C Ratio	0.15	0.28	0.43	0.15	0.28	0.28	0.15	0.25	0.45	0.15	0.25	0.45
v/c Ratio	0.94	0.88	0.67	1.42	1.14	1.22	0.99	0.97	0.96	1.12	0.96	0.74
Control Delay	97.1	66.9	33.5	248.8	124.4	142.1	109.2	78.8	63.8	139.5	76.4	40.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.1	66.9	33.5	248.8	124.4	142.1	109.2	78.8	63.8	139.5	76.4	40.4
LOS	F	E	C	F	F	F	F	E	E	F	E	D
Approach Delay		66.5			158.5			80.4			82.2	
Approach LOS		E			F			F			F	

Intersection Summary	
Cycle Length: 169.5	
Actuated Cycle Length: 169.5	
Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay: 100.6	Intersection LOS: F
Intersection Capacity Utilization 104.9%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 101: Biscayne Blvd & SR 826/NE 163rd Street



Queues
101: Biscayne Blvd & SR 826/NE 163rd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	495	1242	476	748	1603	783	503	1581	719	566	1558	560
v/c Ratio	0.94	0.88	0.67	1.42	1.14	1.22	0.99	0.97	0.96	1.12	0.96	0.74
Control Delay	97.1	66.9	33.5	248.8	124.4	142.1	109.2	78.8	63.8	139.5	76.4	40.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.1	66.9	33.5	248.8	124.4	142.1	109.2	78.8	63.8	139.5	76.4	40.4
Queue Length 50th (ft)	284	487	333	~574	~756	~813	292	510	711	~370	500	451
Queue Length 95th (ft)	#396	549	459	#707	#851	#1076	#418	#588	#998	#495	#573	613
Internal Link Dist (ft)		871			949			1251			874	
Turn Bay Length (ft)	250		240	360		480	420		420	430		405
Base Capacity (vph)	526	1410	715	526	1410	644	506	1625	752	506	1625	752
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.88	0.67	1.42	1.14	1.22	0.99	0.97	0.96	1.12	0.96	0.74

Intersection Summary

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

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

HCM 6th Signalized Intersection Summary
101: Biscayne Blvd & SR 826/NE 163rd Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	1192	457	718	1539	752	483	1518	690	543	1496	538
Future Volume (veh/h)	475	1192	457	718	1539	752	483	1518	690	543	1496	538
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	495	1242	476	748	1603	0	503	1581	719	566	1558	560
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	529	1412	665	529	1412		508	1646	648	508	1646	648
Arrive On Green	0.15	0.28	0.28	0.15	0.28	0.00	0.15	0.26	0.26	0.15	0.26	0.26
Sat Flow, veh/h	3456	5106	1563	3456	5106	1585	3456	6434	1585	3456	6434	1585
Grp Volume(v), veh/h	495	1242	476	748	1603	0	503	1581	719	566	1558	560
Grp Sat Flow(s),veh/h/ln	1728	1702	1563	1728	1702	1585	1728	1609	1585	1728	1609	1585
Q Serve(g_s), s	24.1	39.5	42.9	26.0	47.0	0.0	24.7	41.2	43.5	25.0	40.4	43.5
Cycle Q Clear(g_c), s	24.1	39.5	42.9	26.0	47.0	0.0	24.7	41.2	43.5	25.0	40.4	43.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	529	1412	665	529	1412		508	1646	648	508	1646	648
V/C Ratio(X)	0.94	0.88	0.72	1.42	1.14		0.99	0.96	1.11	1.11	0.95	0.86
Avail Cap(c_a), veh/h	529	1412	665	529	1412		508	1646	648	508	1646	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.2	58.8	40.6	72.0	61.5	0.0	72.4	62.4	50.3	72.5	62.1	45.9
Incr Delay (d2), s/veh	24.4	6.6	3.5	197.8	70.3	0.0	37.2	14.6	69.3	74.9	12.7	14.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	18.0	17.3	26.1	29.5	0.0	13.6	18.6	39.9	16.4	18.0	24.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.6	65.4	44.1	269.8	131.8	0.0	109.5	77.0	119.6	147.4	74.8	60.3
LnGrp LOS	F	E	D	F	F		F	E	F	F	E	E
Approach Vol, veh/h		2213			2351	A		2803			2684	
Approach Delay, s/veh		67.6			175.7			93.7			87.0	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.8	50.7	32.8	54.7	31.8	50.7	32.8	54.7
Change Period (Y+Rc), s	6.8	* 7.2	6.8	* 7.7	6.8	* 7.2	6.8	* 7.7
Max Green Setting (Gmax), s	25.0	* 43	26.0	* 47	25.0	* 43	26.0	* 47
Max Q Clear Time (g_c+I1), s	26.7	45.5	26.1	49.0	27.0	45.5	28.0	44.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	105.4
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

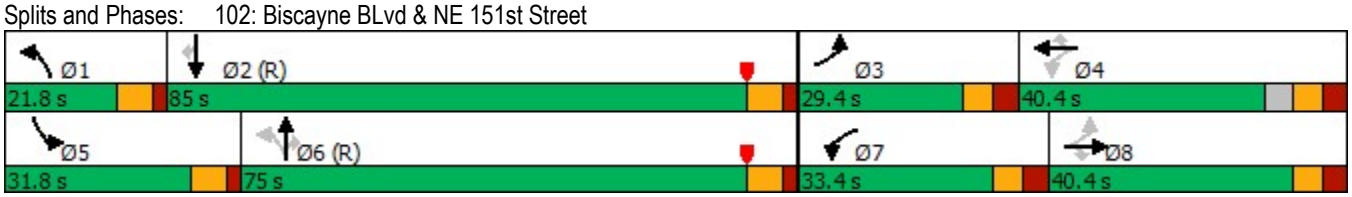
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
102: Biscayne BLvd & NE 151st Street

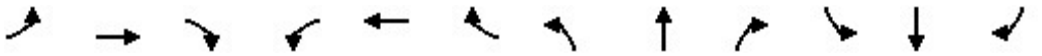
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	254	242	143	281	418	193	1834	197	466	1938	274
Future Volume (vph)	228	254	242	143	281	418	193	1834	197	466	1938	274
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	13.2	40.4	40.4	13.2	40.4	40.4	11.8	37.0	37.0	11.8	37.0	37.0
Total Split (s)	29.4	40.4	40.4	33.4	40.4	40.4	21.8	75.0	75.0	31.8	85.0	85.0
Total Split (%)	16.3%	22.4%	22.4%	18.5%	22.4%	22.4%	12.1%	41.5%	41.5%	17.6%	47.1%	47.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	2.0	2.2	2.2	2.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	6.8	7.0	7.0	6.8	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	56.0	35.2	35.2	45.1	29.7	29.7	93.0	73.2	73.2	28.2	81.8	81.8
Actuated g/C Ratio	0.31	0.19	0.19	0.25	0.16	0.16	0.51	0.41	0.41	0.16	0.45	0.45
v/c Ratio	0.69	0.38	0.54	0.45	0.50	0.95	0.85	0.92	0.27	0.90	0.87	0.35
Control Delay	58.0	63.9	19.5	48.6	70.5	65.6	82.4	59.1	5.2	93.2	50.2	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	63.9	19.5	48.6	70.5	65.6	82.4	59.1	5.2	93.2	50.2	16.4
LOS	E	E	B	D	E	E	F	E	A	F	D	B
Approach Delay		47.2			64.4			56.4			54.2	
Approach LOS		D			E			E			D	

Intersection Summary	
Cycle Length: 180.6	
Actuated Cycle Length: 180.6	
Offset: 12 (7%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 55.5	Intersection LOS: E
Intersection Capacity Utilization 93.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 102: Biscayne BLvd & NE 151st Street



Queues
102: Biscayne BLvd & NE 151st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	235	262	249	147	290	431	199	1891	203	480	1998	282
v/c Ratio	0.69	0.38	0.54	0.45	0.50	0.95	0.85	0.92	0.27	0.90	0.87	0.35
Control Delay	58.0	63.9	19.5	48.6	70.5	65.6	82.4	59.1	5.2	93.2	50.2	16.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	63.9	19.5	48.6	70.5	65.6	82.4	59.1	5.2	93.2	50.2	16.4
Queue Length 50th (ft)	211	139	53	125	163	258	188	816	1	291	808	101
Queue Length 95th (ft)	286	188	151	181	210	#437	#396	#927	58	#429	873	180
Internal Link Dist (ft)		466			520			483			927	
Turn Bay Length (ft)	100		85	150		150	220		515	500		
Base Capacity (vph)	348	731	475	433	725	507	233	2061	761	536	2303	798
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.36	0.52	0.34	0.40	0.85	0.85	0.92	0.27	0.90	0.87	0.35

Intersection Summary

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

HCM 6th Signalized Intersection Summary
102: Biscayne BLvd & NE 151st Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	254	242	143	281	418	193	1834	197	466	1938	274
Future Volume (veh/h)	228	254	242	143	281	418	193	1834	197	466	1938	274
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	235	262	249	147	290	431	199	1891	203	480	1998	282
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	784	343	320	648	287	206	2068	642	477	2350	730
Arrive On Green	0.12	0.22	0.22	0.08	0.18	0.18	0.08	0.41	0.41	0.14	0.46	0.46
Sat Flow, veh/h	1781	3554	1554	1781	3554	1572	1781	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	235	262	249	147	290	431	199	1891	203	480	1998	282
Grp Sat Flow(s),veh/h/ln	1781	1777	1554	1781	1777	1572	1781	1702	1585	1728	1702	1585
Q Serve(g_s), s	19.1	11.2	26.9	12.0	13.2	33.0	14.2	63.3	15.8	25.0	62.8	21.1
Cycle Q Clear(g_c), s	19.1	11.2	26.9	12.0	13.2	33.0	14.2	63.3	15.8	25.0	62.8	21.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	327	784	343	320	648	287	206	2068	642	477	2350	730
V/C Ratio(X)	0.72	0.33	0.73	0.46	0.45	1.50	0.97	0.91	0.32	1.01	0.85	0.39
Avail Cap(c_a), veh/h	336	784	343	436	648	287	206	2068	642	477	2350	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	59.4	65.5	54.0	65.9	74.0	52.5	50.9	36.7	78.0	43.3	32.1
Incr Delay (d2), s/veh	5.9	0.2	7.1	0.4	0.4	244.1	52.7	7.7	1.3	42.6	4.1	1.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	5.2	11.4	5.5	6.1	32.8	12.3	28.5	6.5	14.0	27.4	8.6
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	59.5	72.6	54.4	66.2	318.1	105.1	58.6	38.0	120.6	47.4	33.6
LnGrp LOS	E	E	E	D	E	F	F	E	D	F	D	C
Approach Vol, veh/h		746			868			2293			2760	
Approach Delay, s/veh		63.1			189.3			60.8			58.7	
Approach LOS		E			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	90.3	28.5	40.4	31.8	80.3	21.6	47.3
Change Period (Y+Rc), s	6.8	* 7	7.4	7.4	6.8	* 7	7.4	7.4
Max Green Setting (Gmax), s	15.0	* 78	22.0	33.0	25.0	* 68	26.0	33.0
Max Q Clear Time (g_c+I1), s	16.2	64.8	21.1	35.0	27.0	65.3	14.0	28.9
Green Ext Time (p_c), s	0.0	6.2	0.0	0.0	0.0	1.8	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	76.9
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.3

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	9	39	20	1826	7	61	1700
Future Vol, veh/h	9	39	20	1826	7	61	1700
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	0	100	-	-	250	-
Veh in Median Storage, #	1	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	9	41	21	1922	7	64	1789

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	2812	965	1306	0	0	1929	0
Stage 1	1968	-	-	-	-	-	-
Stage 2	844	-	-	-	-	-	-
Critical Hdwy	5.5	5.5	5.64	-	-	5.34	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-	-
Follow-up Hdwy	3	3	2.32	-	-	3.12	-
Pot Cap-1 Maneuver	42	400	297	-	-	136	-
Stage 1	121	-	-	-	-	-	-
Stage 2	460	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	21	400	297	-	-	136	-
Mov Cap-2 Maneuver	76	-	-	-	-	-	-
Stage 1	112	-	-	-	-	-	-
Stage 2	243	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.3	0.2	1.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	297	-	-	76	400	136	-
HCM Lane V/C Ratio	0.071	-	-	0.125	0.103	0.472	-
HCM Control Delay (s)	18	-	-	59	15	53.2	-
HCM Lane LOS	C	-	-	F	C	F	-
HCM 95th %tile Q(veh)	0.2	-	-	0.4	0.3	2.2	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	30	1795	7	0	1644
Future Vol, veh/h	0	30	1795	7	0	1644
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	32	1889	7	0	1731

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	948	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	225	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	225	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.6	0	0
HCM LOS	C		

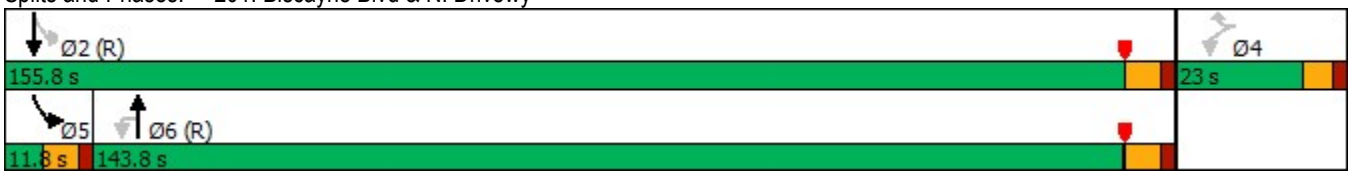
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	225	-
HCM Lane V/C Ratio	-	-	0.14	-
HCM Control Delay (s)	-	-	23.6	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.5	-

Timings
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	9	39	20	2739	61	2550
Future Volume (vph)	9	39	20	2739	61	2550
Turn Type	Perm	Perm	Perm	NA	pm+pt	NA
Protected Phases				6	5	2
Permitted Phases	4	4	6		2	
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	7.0
Minimum Split (s)	23.0	23.0	26.8	26.8	11.8	26.8
Total Split (s)	23.0	23.0	143.8	143.8	11.8	155.8
Total Split (%)	12.9%	12.9%	80.4%	80.4%	6.6%	87.1%
Yellow Time (s)	4.0	4.0	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.8	6.8	6.8	6.8
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	7.4	7.4	146.7	146.7	161.2	162.5
Actuated g/C Ratio	0.04	0.04	0.82	0.82	0.90	0.91
v/c Ratio	0.14	0.40	0.42	0.56	0.57	0.47
Control Delay	86.3	31.2	33.4	6.4	49.3	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	31.2	33.4	6.4	49.3	2.0
LOS	F	C	C	A	D	A
Approach Delay	41.8			6.6		3.1
Approach LOS	D			A		A

Intersection Summary	
Cycle Length: 178.8	
Actuated Cycle Length: 178.8	
Offset: 151 (84%), Referenced to phase 2:SBTL and 6:NBTU, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.57	
Intersection Signal Delay: 5.2	Intersection LOS: A
Intersection Capacity Utilization 66.1%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 201: Biscayne Blvd & N. Drivewy



Queues
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Group Flow (vph)	10	42	22	2953	66	2742
v/c Ratio	0.14	0.40	0.42	0.56	0.57	0.47
Control Delay	86.3	31.2	33.4	6.4	49.3	2.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.3	31.2	33.4	6.4	49.3	2.0
Queue Length 50th (ft)	12	0	6	306	26	134
Queue Length 95th (ft)	35	45	#60	394	84	162
Internal Link Dist (ft)	306			548		452
Turn Bay Length (ft)			240		150	
Base Capacity (vph)	168	188	53	5258	116	5824
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.06	0.22	0.42	0.56	0.57	0.47

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
201: Biscayne Blvd & N. Drivewy

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	9	39	20	2739	7	61	2550
Future Volume (vph)	9	39	20	2739	7	61	2550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	0.86		1.00	0.86
Frpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1770	6405		1770	6408
Flt Permitted	0.95	1.00	0.04	1.00		0.03	1.00
Satd. Flow (perm)	1770	1583	65	6405		49	6408
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	10	42	22	2945	8	66	2742
RTOR Reduction (vph)	0	41	0	0	0	0	0
Lane Group Flow (vph)	10	1	22	2953	0	66	2742
Confl. Bikes (#/hr)					8		
Turn Type	Perm	Perm	Perm	NA		pm+pt	NA
Protected Phases				6		5	2
Permitted Phases	4	4	6			2	
Actuated Green, G (s)	6.0	6.0	145.6	145.6		160.0	160.0
Effective Green, g (s)	6.0	6.0	145.6	145.6		160.0	160.0
Actuated g/C Ratio	0.03	0.03	0.81	0.81		0.89	0.89
Clearance Time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Vehicle Extension (s)	2.5	2.5	1.0	1.0		2.0	1.0
Lane Grp Cap (vph)	59	53	52	5215		117	5734
v/s Ratio Prot				0.46		0.02	c0.43
v/s Ratio Perm	c0.01	0.00	0.34			c0.48	
v/c Ratio	0.17	0.03	0.42	0.57		0.56	0.48
Uniform Delay, d1	84.0	83.6	4.7	5.7		31.9	1.7
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.0	0.1	23.3	0.4		3.7	0.3
Delay (s)	85.0	83.7	28.0	6.2		35.6	2.0
Level of Service	F	F	C	A		D	A
Approach Delay (s)	84.0			6.3			2.8
Approach LOS	F			A			A

Intersection Summary			
HCM 2000 Control Delay	5.3	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	178.8	Sum of lost time (s)	19.6
Intersection Capacity Utilization	66.1%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

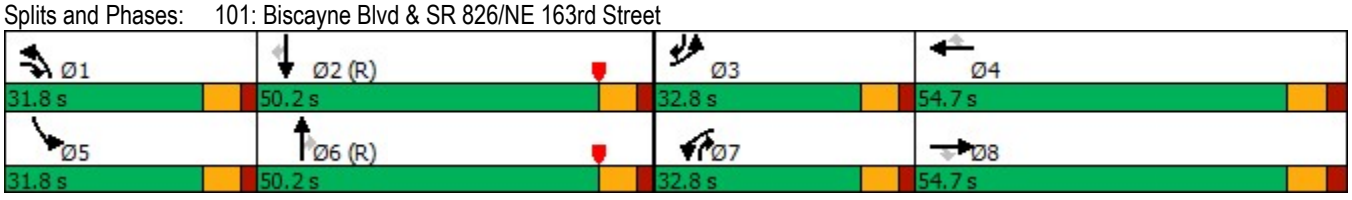
HCM 6th Edition methodology does not support Non-NEMA phasing.

Timings
101: Biscayne Blvd & SR 826/NE 163rd Street

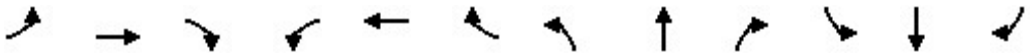
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	475	1192	457	718	1539	752	486	1527	691	543	1498	538
Future Volume (vph)	475	1192	457	718	1539	752	486	1527	691	543	1498	538
Turn Type	Prot	NA	pm+ov	Prot	NA	Perm	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1	7	4		1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	4	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	7.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	54.7	11.8	11.8	54.7	54.7	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	32.8	54.7	31.8	32.8	54.7	54.7	31.8	50.2	32.8	31.8	50.2	32.8
Total Split (%)	19.4%	32.3%	18.8%	19.4%	32.3%	32.3%	18.8%	29.6%	19.4%	18.8%	29.6%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.9	2.0	2.4	2.0	2.0	2.4	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	7.7	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lag	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
Act Effct Green (s)	26.0	47.0	72.9	26.0	47.0	47.0	25.0	43.0	76.2	25.0	43.0	76.2
Actuated g/C Ratio	0.15	0.28	0.43	0.15	0.28	0.28	0.15	0.25	0.45	0.15	0.25	0.45
v/c Ratio	0.94	0.88	0.67	1.42	1.14	1.22	1.00	0.98	0.96	1.12	0.96	0.74
Control Delay	97.1	66.9	33.5	248.8	124.4	142.1	110.6	80.0	64.1	139.5	76.6	40.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.1	66.9	33.5	248.8	124.4	142.1	110.6	80.0	64.1	139.5	76.6	40.4
LOS	F	E	C	F	F	F	F	F	E	F	E	D
Approach Delay		66.5			158.5			81.4			82.3	
Approach LOS		E			F			F			F	

Intersection Summary	
Cycle Length: 169.5	
Actuated Cycle Length: 169.5	
Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow	
Natural Cycle: 150	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.42	
Intersection Signal Delay: 100.9	Intersection LOS: F
Intersection Capacity Utilization 105.1%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 101: Biscayne Blvd & SR 826/NE 163rd Street



Queues
101: Biscayne Blvd & SR 826/NE 163rd Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	495	1242	476	748	1603	783	506	1591	720	566	1560	560
v/c Ratio	0.94	0.88	0.67	1.42	1.14	1.22	1.00	0.98	0.96	1.12	0.96	0.74
Control Delay	97.1	66.9	33.5	248.8	124.4	142.1	110.6	80.0	64.1	139.5	76.6	40.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	97.1	66.9	33.5	248.8	124.4	142.1	110.6	80.0	64.1	139.5	76.6	40.4
Queue Length 50th (ft)	284	487	333	~574	~756	~813	294	514	713	~370	501	451
Queue Length 95th (ft)	#396	549	459	#707	#851	#1076	#421	#595	#1000	#495	#575	613
Internal Link Dist (ft)		871			949			1251			874	
Turn Bay Length (ft)	250		240	360		480	420		420	430		405
Base Capacity (vph)	526	1410	715	526	1410	644	506	1625	752	506	1625	752
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.94	0.88	0.67	1.42	1.14	1.22	1.00	0.98	0.96	1.12	0.96	0.74

Intersection Summary

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

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

HCM 6th Signalized Intersection Summary
101: Biscayne Blvd & SR 826/NE 163rd Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	475	1192	457	718	1539	752	486	1527	691	543	1498	538
Future Volume (veh/h)	475	1192	457	718	1539	752	486	1527	691	543	1498	538
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.99	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	495	1242	476	748	1603	0	506	1591	720	566	1560	560
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	529	1412	665	529	1412		508	1646	648	508	1646	648
Arrive On Green	0.15	0.28	0.28	0.15	0.28	0.00	0.15	0.26	0.26	0.15	0.26	0.26
Sat Flow, veh/h	3456	5106	1563	3456	5106	1585	3456	6434	1585	3456	6434	1585
Grp Volume(v), veh/h	495	1242	476	748	1603	0	506	1591	720	566	1560	560
Grp Sat Flow(s),veh/h/ln	1728	1702	1563	1728	1702	1585	1728	1609	1585	1728	1609	1585
Q Serve(g_s), s	24.1	39.5	42.9	26.0	47.0	0.0	24.9	41.6	43.5	25.0	40.5	43.5
Cycle Q Clear(g_c), s	24.1	39.5	42.9	26.0	47.0	0.0	24.9	41.6	43.5	25.0	40.5	43.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	529	1412	665	529	1412		508	1646	648	508	1646	648
V/C Ratio(X)	0.94	0.88	0.72	1.42	1.14		1.00	0.97	1.11	1.11	0.95	0.86
Avail Cap(c_a), veh/h	529	1412	665	529	1412		508	1646	648	508	1646	648
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	71.2	58.8	40.6	72.0	61.5	0.0	72.4	62.5	50.3	72.5	62.1	45.9
Incr Delay (d2), s/veh	24.4	6.6	3.5	197.8	70.3	0.0	38.7	15.5	69.9	74.9	12.8	14.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	12.5	18.0	17.3	26.1	29.5	0.0	13.8	18.8	40.0	16.4	18.1	24.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	95.6	65.4	44.1	269.8	131.8	0.0	111.2	78.0	120.1	147.4	74.9	60.3
LnGrp LOS	F	E	D	F	F		F	E	F	F	E	E
Approach Vol, veh/h		2213			2351	A		2817			2686	
Approach Delay, s/veh		67.6			175.7			94.8			87.1	
Approach LOS		E			F			F			F	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	31.8	50.7	32.8	54.7	31.8	50.7	32.8	54.7
Change Period (Y+Rc), s	6.8	* 7.2	6.8	* 7.7	6.8	* 7.2	6.8	* 7.7
Max Green Setting (Gmax), s	25.0	* 43	26.0	* 47	25.0	* 43	26.0	* 47
Max Q Clear Time (g_c+I1), s	26.9	45.5	26.1	49.0	27.0	45.5	28.0	44.9
Green Ext Time (p_c), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6

Intersection Summary	
HCM 6th Ctrl Delay	105.7
HCM 6th LOS	F

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

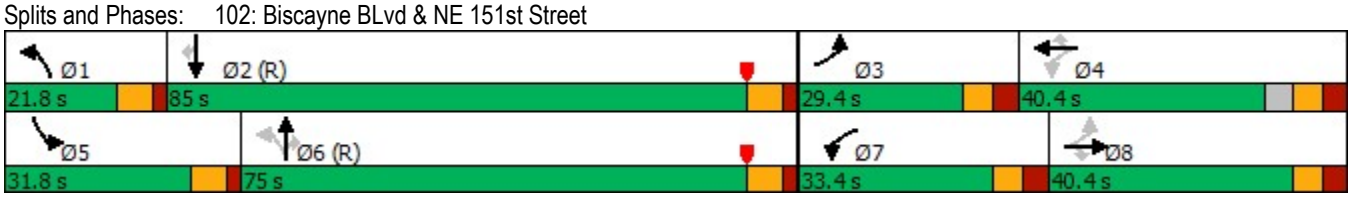
Unsignalized Delay for [WBR] is excluded from calculations of the approach delay and intersection delay.

Timings
102: Biscayne BLvd & NE 151st Street

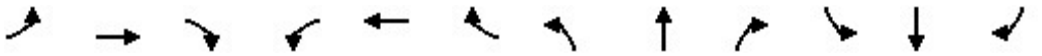
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	228	254	242	143	281	418	193	1836	197	467	1944	278
Future Volume (vph)	228	254	242	143	281	418	193	1836	197	467	1944	278
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	Prot	NA	Perm
Protected Phases	3	8		7	4		1	6		5	2	
Permitted Phases	8		8	4		4	6		6			2
Detector Phase	3	8	8	7	4	4	1	6	6	5	2	2
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	13.2	40.4	40.4	13.2	40.4	40.4	11.8	37.0	37.0	11.8	37.0	37.0
Total Split (s)	29.4	40.4	40.4	33.4	40.4	40.4	21.8	75.0	75.0	31.8	85.0	85.0
Total Split (%)	16.3%	22.4%	22.4%	18.5%	22.4%	22.4%	12.1%	41.5%	41.5%	17.6%	47.1%	47.1%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	3.4	3.4	3.4	3.4	3.4	3.4	2.0	2.2	2.2	2.0	2.2	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.4	7.4	7.4	7.4	7.4	7.4	6.8	7.0	7.0	6.8	7.0	7.0
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	C-Max	None	C-Max	C-Max
Act Effct Green (s)	56.0	35.2	35.2	45.1	29.7	29.7	93.0	73.2	73.2	28.3	81.8	81.8
Actuated g/C Ratio	0.31	0.19	0.19	0.25	0.16	0.16	0.51	0.41	0.41	0.16	0.45	0.45
v/c Ratio	0.69	0.38	0.54	0.45	0.50	0.95	0.85	0.92	0.27	0.90	0.87	0.36
Control Delay	58.0	63.9	19.5	48.6	70.5	65.6	82.6	59.3	5.2	93.1	50.4	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	63.9	19.5	48.6	70.5	65.6	82.6	59.3	5.2	93.1	50.4	16.6
LOS	E	E	B	D	E	E	F	E	A	F	D	B
Approach Delay		47.2			64.4			56.6			54.3	
Approach LOS		D			E			E			D	

Intersection Summary	
Cycle Length: 180.6	
Actuated Cycle Length: 180.6	
Offset: 12 (7%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow	
Natural Cycle: 135	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.95	
Intersection Signal Delay: 55.6	Intersection LOS: E
Intersection Capacity Utilization 93.0%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 102: Biscayne BLvd & NE 151st Street



Queues
102: Biscayne BLvd & NE 151st Street



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	235	262	249	147	290	431	199	1893	203	481	2004	287
v/c Ratio	0.69	0.38	0.54	0.45	0.50	0.95	0.85	0.92	0.27	0.90	0.87	0.36
Control Delay	58.0	63.9	19.5	48.6	70.5	65.6	82.6	59.3	5.2	93.1	50.4	16.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	58.0	63.9	19.5	48.6	70.5	65.6	82.6	59.3	5.2	93.1	50.4	16.6
Queue Length 50th (ft)	211	139	53	125	163	258	188	817	1	291	812	104
Queue Length 95th (ft)	286	188	151	181	210	#437	#396	#930	58	#430	879	184
Internal Link Dist (ft)		466			520			483			927	
Turn Bay Length (ft)	100		85	150		150	220		515	500		
Base Capacity (vph)	348	731	475	433	725	507	233	2059	761	537	2303	799
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.68	0.36	0.52	0.34	0.40	0.85	0.85	0.92	0.27	0.90	0.87	0.36

Intersection Summary

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

HCM 6th Signalized Intersection Summary
102: Biscayne BLvd & NE 151st Street

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	228	254	242	143	281	418	193	1836	197	467	1944	278
Future Volume (veh/h)	228	254	242	143	281	418	193	1836	197	467	1944	278
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.99	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	235	262	249	147	290	431	199	1893	203	481	2004	287
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	327	784	343	320	648	287	205	2068	642	477	2350	730
Arrive On Green	0.12	0.22	0.22	0.08	0.18	0.18	0.08	0.41	0.41	0.14	0.46	0.46
Sat Flow, veh/h	1781	3554	1554	1781	3554	1572	1781	5106	1585	3456	5106	1585
Grp Volume(v), veh/h	235	262	249	147	290	431	199	1893	203	481	2004	287
Grp Sat Flow(s),veh/h/ln	1781	1777	1554	1781	1777	1572	1781	1702	1585	1728	1702	1585
Q Serve(g_s), s	19.1	11.2	26.9	12.0	13.2	33.0	14.3	63.4	15.8	25.0	63.1	21.6
Cycle Q Clear(g_c), s	19.1	11.2	26.9	12.0	13.2	33.0	14.3	63.4	15.8	25.0	63.1	21.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	327	784	343	320	648	287	205	2068	642	477	2350	730
V/C Ratio(X)	0.72	0.33	0.73	0.46	0.45	1.50	0.97	0.92	0.32	1.01	0.85	0.39
Avail Cap(c_a), veh/h	336	784	343	436	648	287	205	2068	642	477	2350	730
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	50.9	59.4	65.5	54.0	65.9	74.0	52.7	50.9	36.7	78.0	43.4	32.2
Incr Delay (d2), s/veh	5.9	0.2	7.1	0.4	0.4	244.1	53.4	7.8	1.3	43.1	4.2	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	9.2	5.2	11.4	5.5	6.1	32.8	12.4	28.6	6.5	14.1	27.6	8.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	56.9	59.5	72.6	54.4	66.2	318.1	106.1	58.7	38.0	121.1	47.6	33.8
LnGrp LOS	E	E	E	D	E	F	F	E	D	F	D	C
Approach Vol, veh/h		746			868			2295			2772	
Approach Delay, s/veh		63.1			189.3			61.0			58.9	
Approach LOS		E			F			E			E	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.8	90.3	28.5	40.4	31.8	80.3	21.6	47.3
Change Period (Y+Rc), s	6.8	* 7	7.4	7.4	6.8	* 7	7.4	7.4
Max Green Setting (Gmax), s	15.0	* 78	22.0	33.0	25.0	* 68	26.0	33.0
Max Q Clear Time (g_c+I1), s	16.3	65.1	21.1	35.0	27.0	65.4	14.0	28.9
Green Ext Time (p_c), s	0.0	6.2	0.0	0.0	0.0	1.8	0.1	0.9

Intersection Summary	
HCM 6th Ctrl Delay	77.0
HCM 6th LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Vol, veh/h	15	52	25	1826	8	63	1700
Future Vol, veh/h	15	52	25	1826	8	63	1700
Conflicting Peds, #/hr	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free	Free
RT Channelized	-	None	-	-	None	-	None
Storage Length	0	0	100	-	-	250	-
Veh in Median Storage, #	1	-	-	0	-	-	0
Grade, %	0	-	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2	2
Mvmt Flow	16	55	26	1922	8	66	1789

Major/Minor	Minor1		Major1			Major2	
Conflicting Flow All	2826	965	1306	0	0	1930	0
Stage 1	1978	-	-	-	-	-	-
Stage 2	848	-	-	-	-	-	-
Critical Hdwy	5.5	5.5	5.64	-	-	5.34	-
Critical Hdwy Stg 1	5.5	-	-	-	-	-	-
Critical Hdwy Stg 2	5.5	-	-	-	-	-	-
Follow-up Hdwy	3	3	2.32	-	-	3.12	-
Pot Cap-1 Maneuver	42	400	297	-	-	136	-
Stage 1	119	-	-	-	-	-	-
Stage 2	458	-	-	-	-	-	-
Platoon blocked, %				-	-		-
Mov Cap-1 Maneuver	20	400	297	-	-	136	-
Mov Cap-2 Maneuver	74	-	-	-	-	-	-
Stage 1	109	-	-	-	-	-	-
Stage 2	236	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	26.8	0.2	1.9
HCM LOS	D		

Minor Lane/Major Mvmt	NBU	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	297	-	-	74	400	136	-
HCM Lane V/C Ratio	0.089	-	-	0.213	0.137	0.488	-
HCM Control Delay (s)	18.3	-	-	66.4	15.4	54.4	-
HCM Lane LOS	C	-	-	F	C	F	-
HCM 95th %tile Q(veh)	0.3	-	-	0.7	0.5	2.3	-

Intersection	
Int Delay, s/veh	0.2

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	35	1798	8	0	1651
Future Vol, veh/h	0	35	1798	8	0	1651
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	37	1893	8	0	1738

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	-	951	0	0	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	7.14	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.92	-	-	-	-
Pot Cap-1 Maneuver	0	224	-	-	0	-
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	-	224	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.2	0	0
HCM LOS	C		

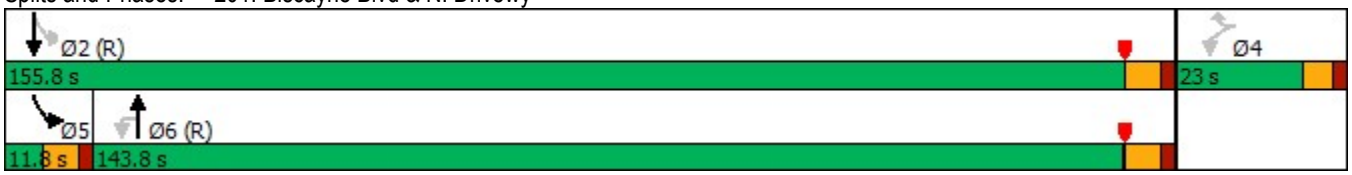
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBT
Capacity (veh/h)	-	-	224	-
HCM Lane V/C Ratio	-	-	0.164	-
HCM Control Delay (s)	-	-	24.2	-
HCM Lane LOS	-	-	C	-
HCM 95th %tile Q(veh)	-	-	0.6	-

Timings
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	15	52	25	2739	63	2550
Future Volume (vph)	15	52	25	2739	63	2550
Turn Type	Perm	Perm	Perm	NA	pm+pt	NA
Protected Phases				6	5	2
Permitted Phases	4	4	6		2	
Detector Phase	4	4	6	6	5	2
Switch Phase						
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	7.0
Minimum Split (s)	23.0	23.0	26.8	26.8	11.8	26.8
Total Split (s)	23.0	23.0	143.8	143.8	11.8	155.8
Total Split (%)	12.9%	12.9%	80.4%	80.4%	6.6%	87.1%
Yellow Time (s)	4.0	4.0	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.8	6.8	6.8	6.8
Lead/Lag			Lag	Lag	Lead	
Lead-Lag Optimize?			Yes	Yes	Yes	
Recall Mode	None	None	C-Max	C-Max	None	C-Max
Act Effct Green (s)	8.2	8.2	146.0	146.0	160.4	161.8
Actuated g/C Ratio	0.05	0.05	0.82	0.82	0.90	0.90
v/c Ratio	0.20	0.50	0.51	0.56	0.59	0.47
Control Delay	86.9	43.9	46.2	6.7	51.7	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.9	43.9	46.2	6.7	51.7	2.2
LOS	F	D	D	A	D	A
Approach Delay	53.5			7.0		3.4
Approach LOS	D			A		A

Intersection Summary	
Cycle Length: 178.8	
Actuated Cycle Length: 178.8	
Offset: 151 (84%), Referenced to phase 2:SBTL and 6:NBTU, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.59	
Intersection Signal Delay: 5.9	Intersection LOS: A
Intersection Capacity Utilization 66.2%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 201: Biscayne Blvd & N. Drivewy



Queues
201: Biscayne Blvd & N. Drivewy

Lane Group	WBL	WBR	NBU	NBT	SBL	SBT
Lane Group Flow (vph)	16	56	27	2954	68	2742
v/c Ratio	0.20	0.50	0.51	0.56	0.59	0.47
Control Delay	86.9	43.9	46.2	6.7	51.7	2.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	86.9	43.9	46.2	6.7	51.7	2.2
Queue Length 50th (ft)	19	15	9	310	29	134
Queue Length 95th (ft)	47	66	#83	410	89	185
Internal Link Dist (ft)	306			548		452
Turn Bay Length (ft)			240		150	
Base Capacity (vph)	168	189	53	5231	116	5798
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.10	0.30	0.51	0.56	0.59	0.47

Intersection Summary

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

HCM Signalized Intersection Capacity Analysis
201: Biscayne Blvd & N. Drivewy

Movement	WBL	WBR	NBU	NBT	NBR	SBL	SBT
Lane Configurations							
Traffic Volume (vph)	15	52	25	2739	8	63	2550
Future Volume (vph)	15	52	25	2739	8	63	2550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Lane Util. Factor	1.00	1.00	1.00	0.86		1.00	0.86
Frpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	1.00	1.00		1.00	1.00
Flt Protected	0.95	1.00	0.95	1.00		0.95	1.00
Satd. Flow (prot)	1770	1583	1770	6404		1770	6408
Flt Permitted	0.95	1.00	0.04	1.00		0.03	1.00
Satd. Flow (perm)	1770	1583	65	6404		49	6408
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	16	56	27	2945	9	68	2742
RTOR Reduction (vph)	0	41	0	0	0	0	0
Lane Group Flow (vph)	16	15	27	2954	0	68	2742
Confl. Bikes (#/hr)					8		
Turn Type	Perm	Perm	Perm	NA		pm+pt	NA
Protected Phases				6		5	2
Permitted Phases	4	4	6			2	
Actuated Green, G (s)	6.8	6.8	144.8	144.8		159.2	159.2
Effective Green, g (s)	6.8	6.8	144.8	144.8		159.2	159.2
Actuated g/C Ratio	0.04	0.04	0.81	0.81		0.89	0.89
Clearance Time (s)	6.0	6.0	6.8	6.8		6.8	6.8
Vehicle Extension (s)	2.5	2.5	1.0	1.0		2.0	1.0
Lane Grp Cap (vph)	67	60	52	5186		116	5705
v/s Ratio Prot				0.46		0.02	c0.43
v/s Ratio Perm	0.01	c0.01	0.41			c0.49	
v/c Ratio	0.24	0.24	0.52	0.57		0.59	0.48
Uniform Delay, d1	83.5	83.5	5.6	6.0		33.4	1.9
Progression Factor	1.00	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	1.3	1.5	32.5	0.5		4.8	0.3
Delay (s)	84.8	85.0	38.1	6.5		38.2	2.2
Level of Service	F	F	D	A		D	A
Approach Delay (s)	85.0			6.7			3.0
Approach LOS	F			A			A

Intersection Summary			
HCM 2000 Control Delay	5.9	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	178.8	Sum of lost time (s)	19.6
Intersection Capacity Utilization	66.2%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM 6th Edition methodology does not support Non-NEMA phasing.