2000 S.OCEAN DR.

PROJECT

EXHIBIT "E"
TRAFFIC STUDY

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS
an Employee Owned Company

DATE: June 13, 2012

TO: Debbie Orshefsky
Greenberg Traurig
401 E. Las Olas Blvd, Suite 2000
Fort Lauderdale, FL 33301

FROM: Jeffery Maxwell, P.E., PTOE
Calvin, Giordano & Associates, Incorporated
1800 Eller Drive, Suite 600
Fort Lauderdale, FL 33316

SUBJECT: 2000 South Ocean Drive Traffic Statement
CGA Project No. 13-5785

1.0 INTRODUCTION

Calvin, Giordano & Associates, Inc. was retained to evaluate potential traffic impacts generated by the proposed *2000 South Ocean Drive* development located in the City of Hallandale Beach, Florida. The existing approved land use consists of a 65 room hotel/motel and the proposed land use will consist of a 64 unit High Rise condominium building.

2.0 EXISTING LAND USE

Based on trip generation rates obtained from the Broward County Development Review Services and the Institute of Transportation Engineers (ITE) Trip Generation Manual (8th Edition), vehicular trips were calculated for the evening peak hour and average weekday for the existing 65 room Hotel/Motel. The existing development was shown to generate 531 Average Weekday trips and 46 PM peak-hour trips. The results from the trip generation for the existing land use are presented in **Table 1**.

3.0 PROPOSED LAND USE

Based on trip generation rates obtained from the Broward County Development Review Services and the Institute of Transportation Engineers (ITE) Trip Generation Manual (8th Edition), vehicular trips were calculated for the evening peak hour and average weekday for the proposed 64 unit High Rise. The proposed development was shown to generate 269 Average Weekday trips and 24 PM peak-hour trips. The results from the trip generation for the proposed development are presented in **Table 1**.

4.0 NET TRIPS GENERATED

The proposed 64 unit High Rise development was shown to generate significantly less traffic than the existing 65 room Hotel/Motel. Average Weekday traffic will be reduced by 262 trips (49% reduction) and PM peak-hour traffic will be reduced by approximately 22 trips (48% reduction) as a result of the proposed development. The trip generation rates from the Broward County Development Review Services and the ITE Trip Generation Manual are provided as **Attachment A**.

Building Code Services
Code Enforcement
Construction Engineering & Inspection
Construction Services
Contract Government
Data Technologies & Development
Emergency Management Services
Engineering
Governmental Services
Indoor Air Quality
Landscape Architecture & Environmental Services
Municipal Engineering
Planning
Public Administration
Redevelopment & Urban Design
Surveying & Mapping
Transportation Planning & Traffic Engineering
Utility & Community Maintenance Services

1800 Eller Drive, Suite 600
Fort Lauderdale, FL 33316
Phone: 954.921.7781
Fax: 954.921.8807

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Table 1: Trip Generation Table

Land Use	Intensity	Unit	Broward County PM Peak Hour Rate	ITE Daily Rate	PM Peak Hour Trips	Daily Trips
Existing						
Hotel	65	Rooms	0.70*	8.17**	45.5	531.05
Total Trips					45.5	531.05
Proposed						
High Rise	64	Dwelling Units	0.37*	4.20**	23.68	268.8
Total Trips					23.68	268.8
Total Net Trips					**-21.82**	**-262.25**

* Broward County Development Review Services *Trip Rates by Land Use* (December 2009)
**Institute of Transportation Engineers *Trip Generation* (8th Edition)

5.0 ROADWAY NETWORK

The nearest intersections to the project site include County Line Road, located approximately 1,320 feet to the south, and Hallandale Beach Boulevard, located approximately 2,700 feet to the north. The closest intersections to the project site are more than 1,000 feet away, and the proposed land use has been shown to generate significantly fewer trips than the existing land use. Therefore, the traffic impacts on these intersections were not further evaluated. The traffic impact at these intersections will likely be reduced as a result of the proposed site development.

6.0 PROJECT DRIVEWAYS

Site access will be provided through a right-in only driveway located approximately 1,320 feet north of County Line Road, and a right-out only driveway located approximately 60 feet further north. Both driveways will provide a minimum width of 25 feet. The driveway pre-application letter from the Florida Department of Transportation is provided as **Attachment B** and a figure showing the driveway circulation and access is provided as **Attachment C**.

7.0 CONCLUSION

Based on the results of the trip generation analysis, the proposed development is expected to generate significantly fewer trips than the existing land use. The analysis demonstrated that the proposed development will generate only slightly more than half of the trips generated by the existing development. Consequently, it is anticipated that this reduction in project-generated traffic will ultimately reduce the traffic impacts on the surrounding roadway network.

Prepared By: Jeffery Maxwell, P.E., PTOE

Date: _____

ATTACHMENT A

APPENDIX A - TRIP RATES BY LAND USE
EFFECTIVE DECEMBER 8, 2009

Land Use Type (units)	Trip Rate / P.M. Peak Hour
Residential (dwelling units)	
Single Family	1.01
Townhouse	0.66
Garden Apartment	0.60
Mobile Home	0.59
High Rise	0.37
Mid Rise	0.39
Retirement Community	0.24
Hotel	0.70
Timeshare	0.79
ALF	0.22
Office, Institutional and Recreational (1,000 sq. ft.)	
Office	
Less than 100,000 sq. ft.	Ln(T)= 0.737 Ln(FA) + 1.831
Greater than or Equal to 100,000 sq. ft.	T = 1.12(FA) + 78.81
Hospital	T = 0.78(FA) + 186.59
Bank (Free standing and/or drive-thru)	25.82
Church (weekday)	0.55
Community Facility	1.45
Library	7.30
Nursing Home (bed)	0.22
Elementary School (School)	85.00
Secondary School	1.08
Private School (no day care)	0.86
Passive Park (acre)	1.31
Active Park (acre)	3.34
Marina (boat berth)	0.19
Golf Course (acre)	0.30
Industrial (1,000 sq. ft.)	
General Industrial (Permits up to 30% Office)	0.72
General Industrial (acre)	8.45
Mini-warehouse	0.26
Industrial/Showroom (Permits up to 30% Commercial)	1.29
Industrial/Office (Up to 50% Office)	1.09
Commercial/Retail (1,000 sq. ft.)	
Restaurant	9.90
Fast Food Restaurant	19.15 (43% pass-by)
Convenience Store	22.30 (60% pass-by)
Service Station w/ Conv. Store (fuel positions)	10.07 (26.5% pass-by)
Drug Store	9.73
Day Care	12.46
Auto Dealership	2.59
Health/Fitness Club	3.53
Nursery/Garden Center	3.80
Auto Care Center	3.38
Commercial Recreation (acre)	5.77
Commercial LT 20,000 sq. ft.	10.85
Commercial GE 20,000 sq. ft.	Ln(T)=0.66 Ln(FA)+3.403

NOTE: For uses not listed above, consult with staff.

Hotel
(310)

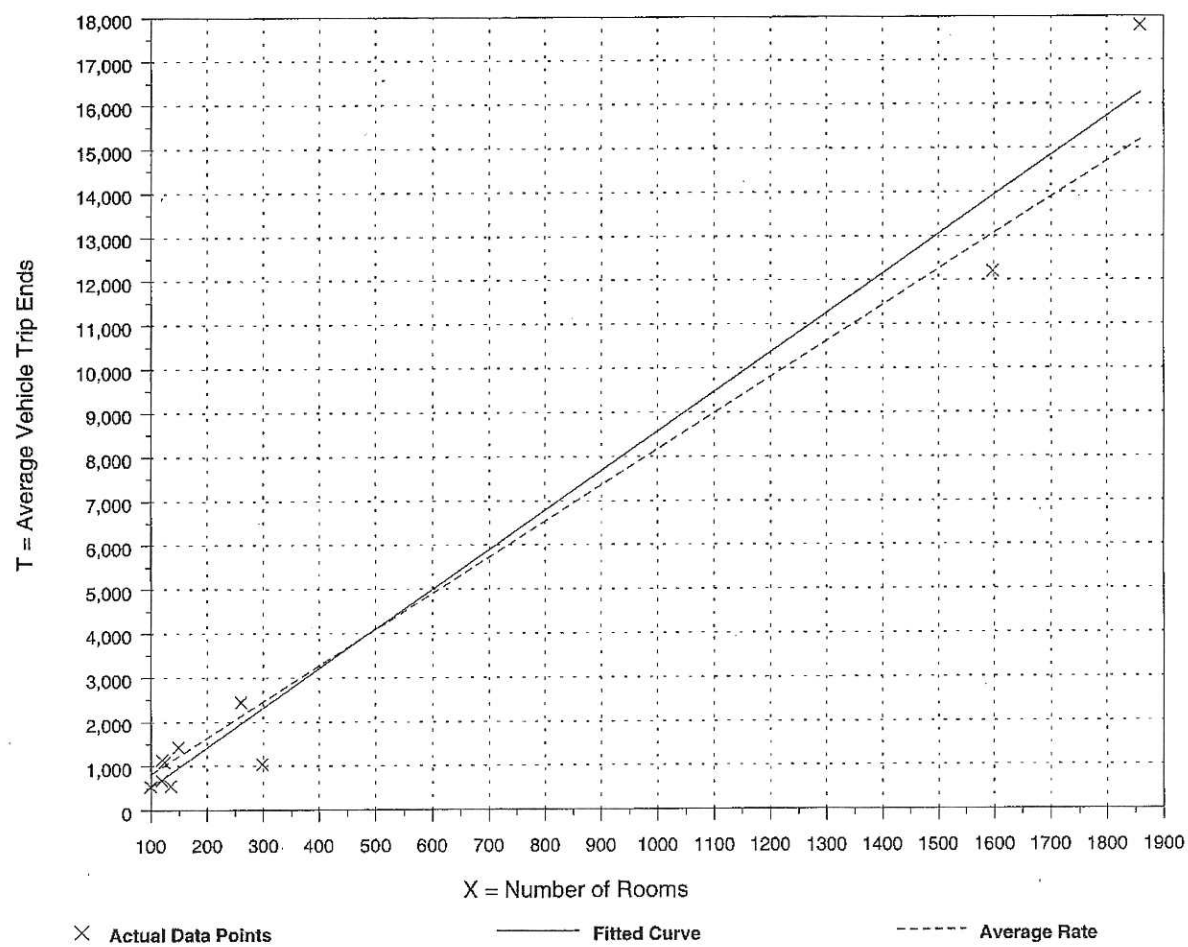
Average Vehicle Trip Ends vs: Rooms
On a: Weekday

Number of Studies: 10
Average Number of Rooms: 476
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Room

Average Rate	Range of Rates	Standard Deviation
8.17	3.47 - 9.58	3.38

Data Plot and Equation



Fitted Curve Equation: T = 8.95(X) - 373.16

R^2 = 0.98

High-Rise Apartment
(222)

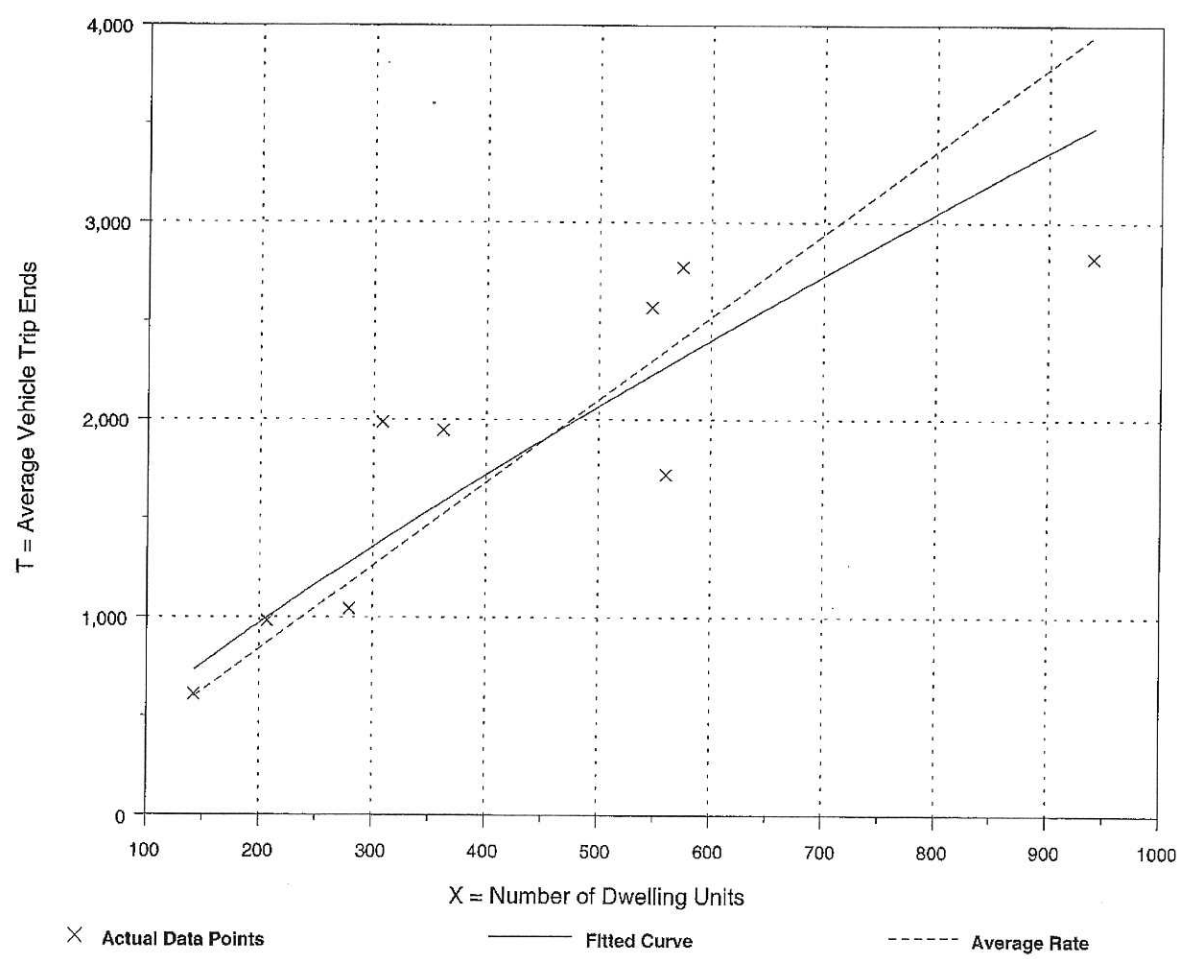
Average Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Number of Studies: 9
Avg. Number of Dwelling Units: 435
Directional Distribution: 50% entering, 50% exiting

Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
4.20	3.00 - 6.45	2.32

Data Plot and Equation



Fitted Curve Equation: Ln(T) = 0.83 Ln(X) + 2.50 $R^2 = 0.82$

ATTACHMENT B

Florida Department of Transportation

RICK SCOTT
GOVERNOR

3400 West Commercial Boulevard
Fort Lauderdale, FL 33309

ANANTH PRASAD, P.E.
SECRETARY

May 23, 2013

THIS PRE-APPLICATION LETTER IS VALID UNTIL MAY 23, 2014
THIS LETTER IS NOT A PERMIT APPROVAL

Mr. Hoyt Holden
Calvin Giordano & Associates Inc
1800 Eller Drive, Suite 600
Fort Lauderdale, Florida 33316

Dear Mr. Holden:

RE: **May 23, 2013** Pre-application Meeting for Category C Driveway
Broward County, Urban, In the City of Hallandale Beach
State Road: A1A, State Section: 86030, Milepost 0.771, Access Class 5, Posted Speed: 35 mph
Reference Project 428727-1, Location: Over half a mile south of Hallandale Beach Boulevard
Site Acreage: 1.31, Proposed Land Use: Residential, Maximum Square Footage: 64 units
Plat Name: Seminole Beach Plat No. , Plat Book: 15, Page: 19
Applicant: B & H Fort Lauderdale LLC, Property Owner: B & H Fort Lauderdale LLC
Proposed Project Name & Address: 2000 South Ocean Drive, Hallandale Beach, Florida

Your Request: Driveway #1: A right-in only driveway located approximately 1320 feet north of County Line Road.

Driveway #2: A right-out only driveway located approximately 60 feet north of Driveway #1.

WE APPROVE YOUR REQUEST. Please see the conditions and comments below.

This ruling is based on your presentation of the facts, site plan and survey.

Conditions: A minimum driveway length of 25 feet, as measured from the ultimate right-of-way line to the first conflict point, shall be provided. If a guard gate is installed a minimum driveway length of 100 feet is required.

Provide signage and pavement marking for one-way traffic circulation.

The existing light pole located in front of the proposed Driveway #1 shall be relocated.

- Drainage mitigation is required for any impacts within FDOT right-of-way (i.e. increased runoff or reduction of existing storage).
- A Storm Water Pollution Prevention Plan must be submitted with the application if there will be more than one acre of "disturbed area" (as defined by the Florida Department of Environmental Protection (FDEP)
- If right-of-way dedication is required to implement the proposed improvements, the applicant shall donate the right-of-way to the Department.
- All driveways not approved in this letter must be fully removed and the area restored.

Comments:
Please note that the dimensions between driveways are measured from the near edge of pavement to near edge of pavement and dimensions between median openings are measured from centerline to centerline unless otherwise indicated.

The purpose of this Pre-Application letter is to document the conceptual review of the approximate location of driveway(s) to the State Highway system and to note any required improvements. This letter shall be submitted with any further reviews. If conceptually approved, the applicant may submit engineering plans to the Department for permitting. The Department's personnel shall review these plans for compliance with this letter as well as current Department standards and/or specifications. Final design must consider the existing roadway profile and any impacts to the existing drainage system. **Please note that this letter does not guarantee permit approval.** The permit may be denied based on the review of the submitted engineering plans. Be aware that any approved median openings may be modified (or closed) in the future, at the sole discretion of the Department.

For right-of-way dedication requirements go to: https://www3.dot.state.fl.us/OneStopPermitting/Home.aspx:
Click on Statewide Permit News. Scroll down to District 4. Scroll down to Additional Information and Examples and choose Right-of-way Donations/Dedications.

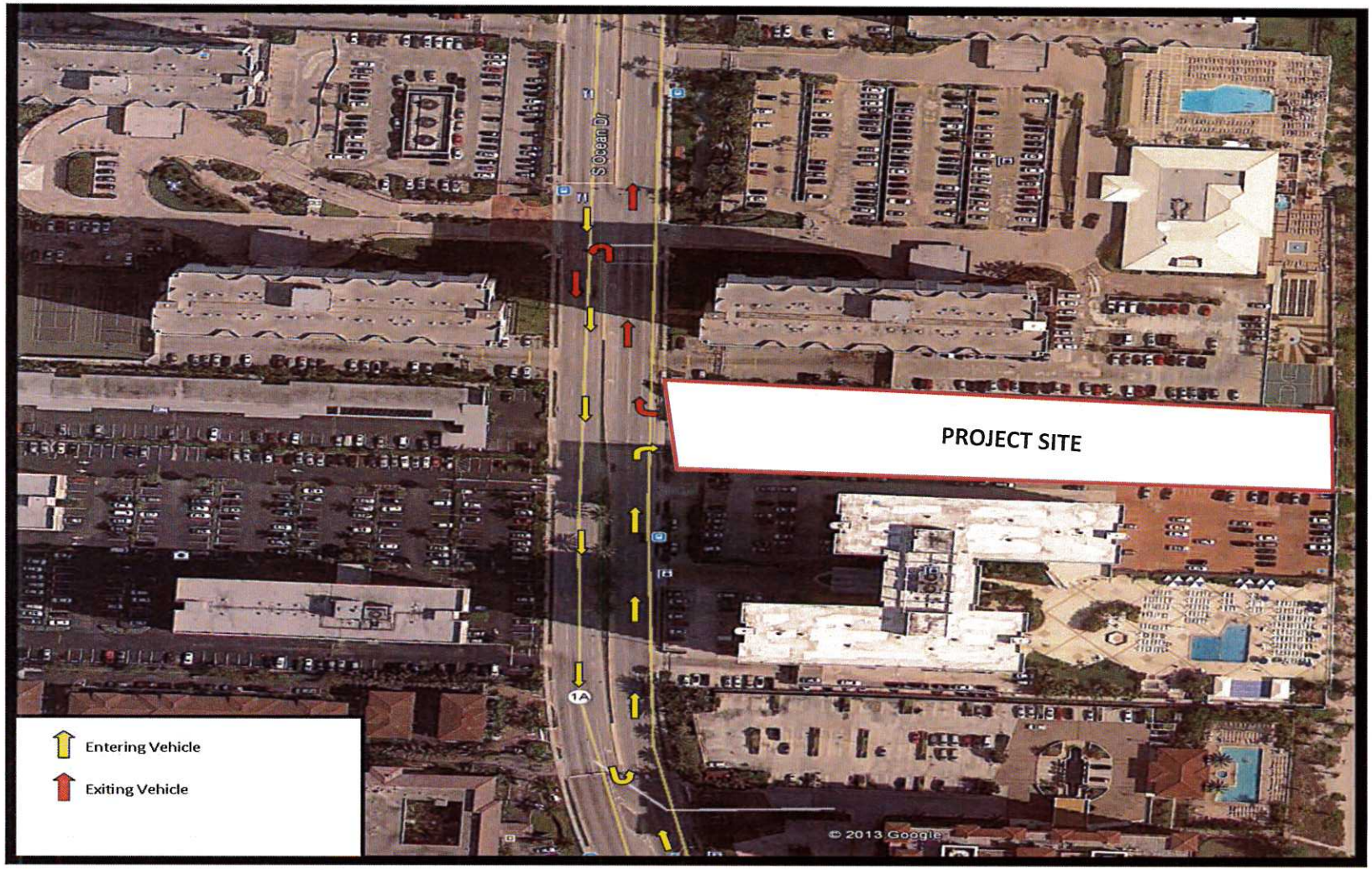
Please contact Christine Nabong Bacomo at the District Permits Office with any questions at telephone number 954-777-4377, fax number 954-677-7893 or e-mail: christine.bacomo@dot.state.fl.us. Thank you.

Sincerely,

Geysa Y. Sosa, P.E.
District Traffic Access Manager

CNB/nyh
cc: Geysa Sosa/Stan Williams SW
File: s:\Permits\Pre-app Letters\Broward County\B & H Fort Lauderdale Beach, LLC – SR A1A.doc

ATTACHMENT C


PROJECT SITE
S Ocean Dr
A1
Entering Vehicle
Exiting Vehicle
© 2013 Google

THE CORRADINO GROUP

CORRADINO

Date:	August 22, 2013
To:	Christy Dominguez Principal Planner, Planning & Zoning Division City of Hallandale Beach, FL
From:	Salman Rathore, PE
Project #:	3986*08
Subject:	2000 Ocean Drive Traffic Impact Analysis Review

MEMORANDUM

Location: 2000 Ocean Drive, City of Hallandale Beach, FL

Traffic

This memorandum documents the findings of the detailed review of the proposed 2000 Ocean Drive Traffic Impact Statement prepared by Calvin, Giordano & Associates, Inc., dated June 13, 2012. The response to comments (with additional analysis and information attached herewith) provided by the applicant's traffic engineer dated August 13, 2013 was also reviewed in detail. Based on our review of the Traffic Impact Statement and response to comments, we have found the results of the traffic statement to be satisfactory.

4055 NW 97th AVENUE • MIAMI, FL 33178
TEL 305.594.0735 • 800.887.5551
FAX 305.594.0755
WWW.CORRADINO.COM

Calvin, Giordano & Associates, Inc.
EXCEPTIONAL SOLUTIONS

August 13, 2013

Christy Dominguez
Principal Planner, Planning & Zoning Division
City of Hallandale Beach, FL

RE: ***2000 Ocean Drive Traffic Impact Analysis***
Response to Comments

In response to comments from Mr. Salman Rathore P.E. of the Corradino Group, *Calvin, Giordano & Associates, Inc.* has evaluated the roadway segment of Ocean Drive between Hallandale Beach Boulevard and Countyline Road. The analysis was based on FDOT's 2013 Quality/Level of Service Handbook (Table 7) which considers peak hour directional volumes. As part of this analysis, traffic generated for existing and proposed land uses were evaluated based on rates from the ITE Trip Generation Manual. The results of the analysis yielded a *reduction* from the existing land use to the proposed land use of 21 trips and 22 trips during the AM and PM peak hours respectively.

Under proposed conditions, the roadway segment operates at or above Broward County's adopted Level of Service standard of "D or better". The results of the analysis are summarized in **Table 1**.

Building Code Services
Code Enforcement
Construction Engineering & Inspection
Construction Services
Contract Government
Data Technologies & Development
Emergency Management Services
Engineering
Governmental Services
Indoor Air Quality
Landscape Architecture & Environmental Services
Municipal Engineering
Planning
Public Administration
Redevelopment & Urban Design
Surveying & Mapping
Transportation Planning & Traffic Engineering
Utility & Community Maintenance Services

1800 Eller Drive, Suite 600
Fort Lauderdale, FL 33316
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Fax: 954.921.8807

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Table 1: Roadway Segment Level of Service Analysis

LOCATION	ROADWAY TYPE	Adopted LOS Standard	Peak Hour LOS "D" Volume*	AM Peak Hour				PM Peak Hour			
				Existing Peak Hour Volume	Existing Peak Hour LOS	Proposed Peak Hour Volume	Proposed Peak Hour LOS	Existing Peak Hour Volume	Existing Peak Hour LOS	Proposed Peak Hour Volume	Proposed Peak Hour LOS
Ocean Drive between CountyLine Road and Hallandale Beach Blvd	6LD	D	2,520	1,177*	D	1,156	C	1,421*	D	1,399	D

**Source: FDOT count station 865044 (SR-A1A south of Hallandale Bch Blvd)*

In addition, an analysis was performed for the intersection of Ocean Drive and Hallandale Beach Boulevard using Synchro Traffic Analysis software. The analysis was performed for the AM and PM Peak periods for the existing and proposed land uses. It should be noted that the existing volumes were derived from traffic counts collected in 2011; the 2011 volumes were forecasted to present year using a conservative growth rate of 0.5%. For the purpose of the analysis, the following assumptions were made:

1. The reduction in trips were split equally between the entering and exiting traffic i.e. 50% of reduced trips applied to entering traffic and 50% of reduced trips applied to exiting traffic
2. The entering trips reduced were split equally between the eastbound right-turn, the westbound left-turn and the southbound through traffic
3. The exiting trips reduced were split equally between the northbound right-turn, the northbound through and the northbound left-turn traffic

The analysis did not reveal a significant change in Level of Service for the individual movements and the intersection as a whole. The analysis demonstrates that with the inclusion of project-generated traffic (a net reduction in trips), existing Levels of Service will be maintained for the intersection of Ocean Drive and Hallandale Beach Boulevard. Given that the intersection of Ocean Drive and Hallandale Beach Boulevard processes a significantly higher volume of traffic than the intersection of Ocean Drive and County Line Road no further analysis of County Line Road was pursued.

The results of the intersection analysis are summarized in **Table 2**.

Table 2: Intersection Analysis

		EB	WB	NB	SB	OVERALL
Ocean Drive and Hallandale Beach Blvd	AM					
	EXISTING	C/21.6	E/53.8	C/21.8	C/24.8	C/25.1
	PROPOSED	C/21.6	D/53.3	C/21.5	C/24.8	C/25.0
	PM					
	EXISTING	C/26.0	D/38.8	C/23.6	C/32.5	C/28.3
	PROPOSED	C/25.9	D/38.5	C/23.3	C/32.3	C/28.2

Sincerely,

Calvin, Giordano and Associates, Inc.
Jankristof DeVastey
Traffic Engineer

Salman Rathore

From: Jankristof Devastey <jdevastey@calvin-giordano.com>
Sent: Monday, August 19, 2013 5:04 PM
To: Salman Rathore
Cc: Jeffery Maxwell; orshefskyd@gtlaw.com; cdominguez@hallandalebeachfl.gov; Joseph M Corradino
Subject: RE: Response to Comments (2000 Ocean Drive Traffic Impact Analysis)
Attachments: HAL-OCE.pdf; Signal Timing.pdf; AM Existing.pdf; AM Proposed.pdf; PM Existing.pdf; PM Proposed.pdf; Response Memo Revised.pdf

Good afternoon Salman,
Please find below the responses to your additional comments/questions.

1. Table 1 – Source for the existing peak hour volumes i.e AM Peak (1177) and PM Peak (1421).
   Response: The volumes were taken from the synopsis report for count station 865044 (SR A1A south of Hallandale Bch Blvd). The memo has been updated to reflect this information.

2. Analysis that was done as part of a previous study (year 2011) i.e turning movement counts , Synchro analysis etc.
   Response: Turning movement counts for the year 2011 were forecasted to present year to perform the analysis. Attached are the TMC sheets.

3. Synchro analysis (Table 2) for the existing and proposed conditions (AM & PM) along with any signal timings obtained from Miami Dade County.
   Response: The table used in the previous memo was not the correct table. The memo was revised to include the correct table. The revised memo, Synchro analysis sheets for existing and proposed conditions and the signal timing info are also attached. The differences (from a LOS standpoint) between the previous table and this one were minor; however, in the interest of accuracy, the analysis was revised to reflect these changes. In addition, please find below the table used to develop the existing and proposed volumes used in the analysis.

Growth Rate	0.50%
Analysis Year	2013
Years	2

AM PEAK

	NB			SB			EB			WB		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2011 Volume	10	338	3	7	346	331	356	48	437	8	132	5
Existing Volume	11	342	4	8	350	335	360	49	442	9	134	6
Project Traffic	-3	-4	-3		-4				-4	-3		
Total Traffic	**8**	**338**	**1**	**8**	**346**	**335**	**360**	**49**	**438**	**6**	**134**	**6**

PM PEAK

	NB			SB			EB			WB		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2011 Volume	18	546	5	14	592	513	535	70	730	10	74	25
Existing Volume	19	552	6	15	598	519	541	71	738	11	75	26
Project Traffic	-3	-4	-3		-4				-4	-3		
Total Traffic	**16**	**548**	**3**	**15**	**594**	**519**	**541**	**71**	**734**	**8**	**75**	**26**

Please let me know if you have any additional questions.

Regards,

Jankristof Devastey E.I.
Traffic Engineer | Traffic Engineering Department (Broward)

Calvin, Giordano & Associates, Inc. | 1800 Eller Drive | Suite 600 | Fort Lauderdale, FL 33316
Office: 954.921.7781 | Direct: 954.766.2709 | Fax: 954.921.8807
Fort Lauderdale | West Palm Beach | Port St. Lucie | Homestead | Clearwater | Jacksonville | Atlanta

#4 South Florida BUSINESS JOURNAL

CGA Ranks **4th** in South Florida Business Journal **Top Engineering Firm 2012**

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From: Salman Rathore [mailto:srathore@CORRADINO.com]
Sent: Monday, August 19, 2013 2:34 PM
To: Jankristof Devastey
Cc: Jeffery Maxwell; orshefskyd@gtlaw.com; cdominguez@hallandalebeachfl.gov; Joseph M Corradino
Subject: RE: Response to Comments (2000 Ocean Drive Traffic Impact Analysis)

Jankristof,

I just want to make sure that you had received my email below. Please feel free to contact me if you have any questions.

Regards,

Salman

From: Salman Rathore
Sent: Friday, August 16, 2013 4:54 PM
To: 'Jankristof Devastey'
Cc: Jeffery Maxwell; orshefskyd@gtlaw.com; cdominguez@hallandalebeachfl.gov; Joseph M Corradino
Subject: RE: Response to Comments (2000 Ocean Drive Traffic Impact Analysis)

Hi Jankristof,

Please send me the following information:

- Table 1 – Source for the existing peak hour volumes i.e AM Peak (1177) and PM Peak (1421).
- Analysis that was done as part of a previous study (year 2011) i.e turning movement counts , Synchro analysis etc.
- Synchro analysis (Table 2) for the existing and proposed conditions (AM & PM) along with any signal timings obtained from Miami Dade County.

Please feel free to contact me if you have any questions.

Regards,

Salman A. Rathore, PE
Project Manager/Traffic Engineer
The Corradino Group
4055 N.W. 97th Avenue, Suite 200
Doral, Florida 33178
Phone: (305) 594-0735 Ext. 3118
Fax: (786) 331-9097

From: Jankristof Devastey [mailto:jdevastey@calvin-giordano.com]
Sent: Friday, August 16, 2013 4:29 PM
To: cdominguez@hallandalebeachfl.gov
Cc: Jeffery Maxwell; Salman Rathore; orshefskyd@gtlaw.com
Subject: Response to Comments (2000 Ocean Drive Traffic Impact Analysis)

Good afternoon Ms. Dominguez,
Please find attached a memo in response to items #2 and #4 of Mr. Rathore's comments for the subject traffic study.

Regards,

Jankristof De\ :ey E.I.
Traffic Engineer | Traffic Engineering Department (Broward)

Calvin, Giordano & Associates, Inc. | 1800 Eller Drive | Suite 600 | Fort Lauderdale, FL 33316
Office: 954.921.7781 | Direct: 954.766.2709 | Fax: 954.921.8807
Fort Lauderdale | West Palm Beach | Port St. Lucie | Homestead | Clearwater |Jacksonville | Atlanta

#4 South Florida BUSINESS JOURNAL

CGA Ranks **4th** in South Florida Business Journal **Top Engineering Firm 2012**

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KMF Traffic Group, LLC
www.kmftraffic.com
Stuart, FL(772-221-7971

Turning Movement - All Traffic
Hallandale Beach Blvd & S Ocean Dr
Hallandale Beach, FL
Location counted: July 14, 2011

File Name : HAL-OCE
Site Code : CGA11505
Start Date : 7/14/2011
Page No : 1

Groups Printed- All Traffic

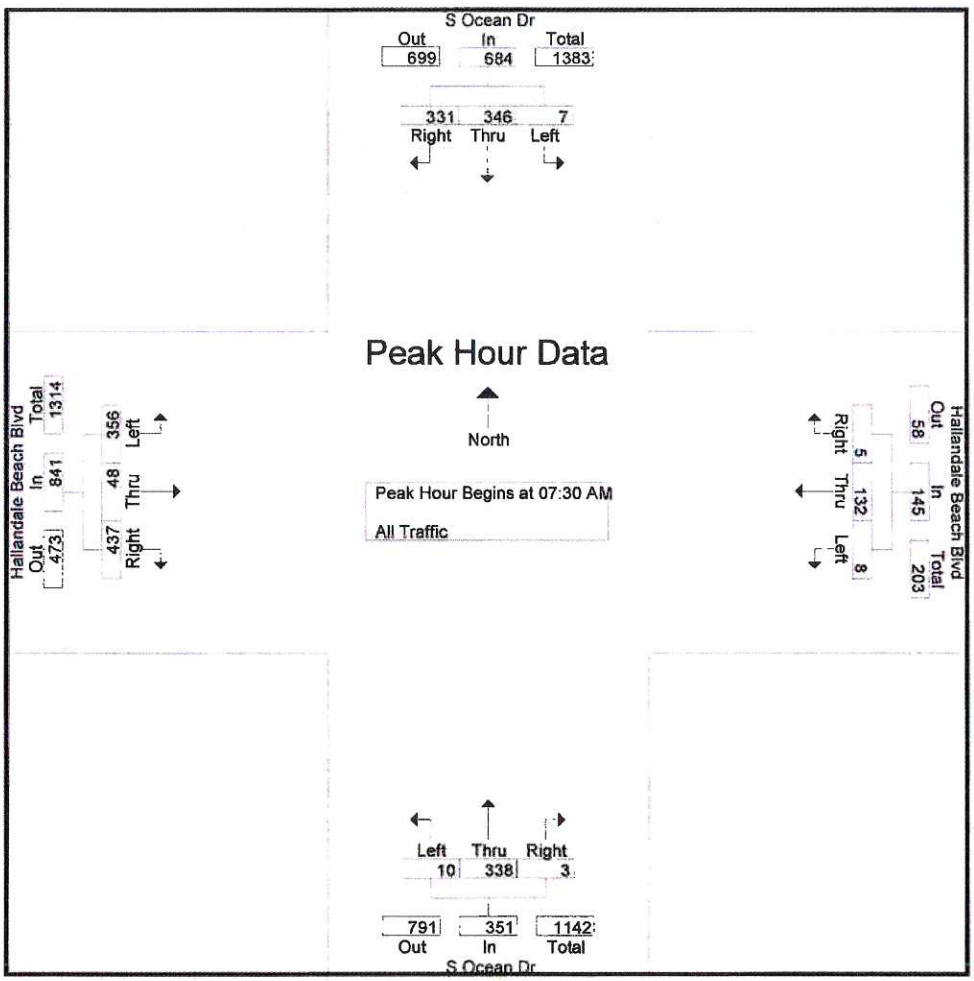
	S Ocean Dr SB			Hallandale Beach Blvd WB			S Ocean Dr NB			Hallandale Beach Blvd EB			
Start Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Int. Total
07:00 AM	67	38	4	2	54	2	1	41	5	39	14	56	323
07:15 AM	66	46	3	1	28	1	0	58	1	65	18	48	335
07:30 AM	76	56	1	1	33	3	1	76	0	103	20	79	449
07:45 AM	84	69	1	2	32	2	0	84	4	112	10	105	505
Total	293	209	9	6	147	8	2	259	10	319	62	288	1612
08:00 AM	87	116	1	1	34	1	1	89	3	112	8	72	525
08:15 AM	84	105	4	1	33	2	1	89	3	110	10	100	542
08:30 AM	36	39	0	2	36	1	0	87	2	160	4	79	446
08:45 AM	0	0	0	1	41	1	3	87	8	174	8	107	430
Total	207	260	5	5	144	5	5	352	16	556	30	358	1943
*** BREAK ***													
04:00 PM	91	91	0	5	21	5	0	123	5	194	26	113	674
04:15 PM	83	92	1	2	15	4	0	132	4	180	12	146	671
04:30 PM	79	109	1	8	16	8	0	152	11	157	21	153	715
04:45 PM	84	101	2	6	18	3	0	137	11	185	14	123	684
Total	337	393	4	21	70	20	0	544	31	716	73	535	2744
05:00 PM	100	128	1	11	17	4	1	136	5	179	16	124	722
05:15 PM	136	150	4	4	19	3	2	147	1	206	15	126	813
05:30 PM	142	181	4	4	17	1	1	148	7	157	20	142	824
05:45 PM	135	133	5	6	21	2	1	115	5	188	19	143	773
Total	513	592	14	25	74	10	5	546	18	730	70	535	3132
Grand Total	1350	1454	32	57	435	43	12	1701	75	2321	235	1716	9431
Apprch %	47.6	51.3	1.1	10.7	81.3	8	0.7	95.1	4.2	54.3	5.5	40.2	
Total %	14.3	15.4	0.3	0.6	4.6	0.5	0.1	18	0.8	24.6	2.5	18.2	

KMF Traffic Group, LLC
www.kmftraffic.com
Stuart, FL(772-221-7971

Turning Movement - All Traffic
Hallandale Beach Blvd & S Ocean Dr
Hallandale Beach, FL
Location counted: July 14, 2011

File Name : HAL-OCE
Site Code : CGA11505
Start Date : 7/14/2011
Page No : 2

	S Ocean Dr SB				Hallandale Beach Blvd WB				S Ocean Dr NB				Hallandale Beach Blvd EB				
Start Time	Right	Thru	Left	App Total	Right	Thru	Left	App Total	Right	Thru	Left	App Total	Right	Thru	Left	App Total	Int Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 07:30 AM																	
07:30 AM	76	56	1	133	1	33	3	37	1	76	0	77	103	20	79	202	449
07:45 AM	84	69	1	154	2	32	2	36	0	84	4	88	112	10	105	227	505
08:00 AM	87	116	1	204	1	34	1	36	1	89	3	93	112	8	72	192	525
08:15 AM	84	105	4	193	1	33	2	36	1	89	3	93	110	10	100	220	542
Total Volume	331	346	7	684	5	132	8	145	3	338	10	351	437	48	356	841	2021
% App Total	48.4	50.6	1		3.4	91	5.5		0.9	96.3	2.8		52	5.7	42.3		
PHF	.951	.746	.438	.838	.625	.971	.667	.980	.750	.949	.625	.944	.975	.600	.848	.926	.932

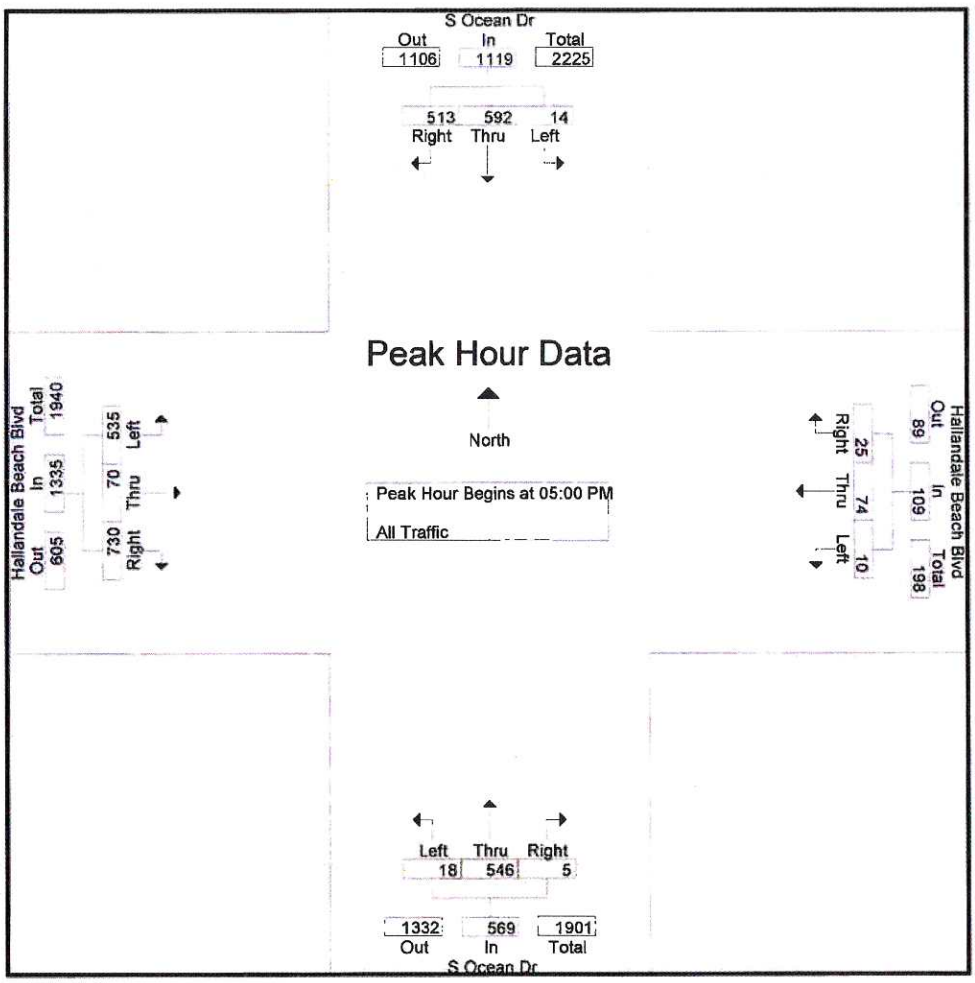


KMF Traffic Group, LLC
www.kmftraffic.com
Stuart, FL(772-221-7971

Turning Movement - All Traffic
Hallandale Beach Blvd & S Ocean Dr
Hallandale Beach, FL
Location counted: July 14, 2011

File Name : HAL-OCE
Site Code : CGA11505
Start Date : 7/14/2011
Page No : 3

	S Ocean Dr SB				Hallandale Beach Blvd WB				S Ocean Dr NB				Hallandale Beach Blvd EB				
Start Time	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Right	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	100	128	1	229	11	17	4	32	1	136	5	142	179	16	124	319	722
05:15 PM	136	150	4	290	4	19	3	26	2	147	1	150	206	15	126	347	813
05:30 PM	142	181	4	327	4	17	1	22	1	148	7	156	157	20	142	319	824
05:45 PM	135	133	5	273	6	21	2	29	1	115	5	121	188	19	143	350	773
Total Volume	513	592	14	1119	25	74	10	109	5	546	18	569	730	70	535	1335	3132
% App. Total	45.8	52.9	1.3		22.9	67.9	9.2		0.9	96	3.2		54.7	5.2	40.1		
PHF	.903	.818	.700	.856	.568	.881	.625	.852	.625	.922	.643	.912	.886	.875	.935	.954	.950



System Number: 3051

Section Number: 18

Wednesday, July 27, 2011

10:53:08 AM

Pattern Timing Plan Data

SR A1A & Hallandale Beach Blvd

Pattern Number	Offset	Cycle Length	Phase Durations NS	WB	EB	NSL	NBL	SBL
1	6	110	45	15	35	15	0	0
2	59	110	45	21	31	13	0	0
3	76	110	45	15	35	15	0	0
4	85	110	45	15	35	15	0	0
5	65	110	45	15	35	15	0	0

Fixed Intervals:

Min Green	7	6	6	5	5	5
Flashing Don't Walk	30	0	0	0	0	0
Yellow	4	4	4	4	4	4
All Red	1	2	2	2	2	2
Green Returns	1,2	3	5	7,8	8	7
Command	YIELD	FO 1	FO 1	FO 1&2	FO 2	FO 1

Time Of Day Schedule

Monday - Friday

Pattern 2	Morning Peak Pattern	06:00 - 09:00
Pattern 3	Midday Pattern	09:00 - 15:10
Pattern 4	Evening Peak Patten	15:10 - 20:00
Pattern 3	Midday Pattern	20:00 - 00:00

Saturday

Pattern 3	Midday Pattern	06:30 - 01:00

Sunday

Pattern 3	Midday Pattern	06:30 - 23:00

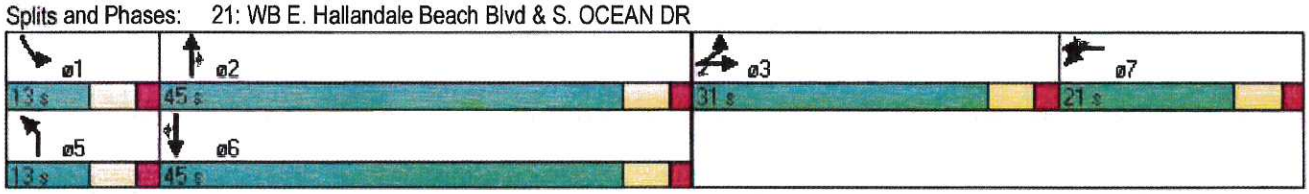
Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	360	49	442	9	134	6	11	342	4	8	350	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0		0	225		225	245		
Storage Lanes	1			0		1	1		1	1		
Taper Length (ft)	25			25		25	25		25	25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950	0.963			0.997		0.950			0.950		
Satd. Flow (prot)	1681	1704	1583	0	1857	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950	0.963			0.997		0.950			0.950		
Satd. Flow (perm)	1681	1704	1583	0	1857	1583	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes						Yes			
Satd. Flow (RTOR)			480						4			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1331			236			253			1114	
Travel Time (s)		30.3			5.4			5.8			25.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	391	53	480	10	146	7	12	372	4	9	380	364
Shared Lane Traffic (%)	44%											
Lane Group Flow (vph)	219	225	480	0	156	7	12	372	4	9	380	364
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (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
Detector 1 Queue (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
Detector 1 Delay (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
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	3		7	7		5	2		1	6	
Permitted Phases			3			7			2			6
Detector Phase	3	3	3	7	7	7	5	2	2	1	6	6

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	22.0	22.0	10.0	10.0	10.0
Total Split (s)	31.0	31.0	31.0	21.0	21.0	21.0	13.0	45.0	45.0	13.0	45.0	45.0
Total Split (%)	28.2%	28.2%	28.2%	19.1%	19.1%	19.1%	11.8%	40.9%	40.9%	11.8%	40.9%	40.9%
Maximum Green (s)	25.0	25.0	25.0	15.0	15.0	15.0	7.0	39.0	39.0	7.0	39.0	39.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	None	None	None	None	Max	Max	None	None	None
Act Effct Green (s)	25.1	25.1	25.1		12.5	12.5	6.2	39.2	39.2	6.1	39.2	39.2
Actuated g/C Ratio	0.26	0.26	0.26		0.13	0.13	0.06	0.40	0.40	0.06	0.40	0.40
v/c Ratio	0.50	0.51	0.63		0.65	0.03	0.11	0.26	0.01	0.08	0.27	0.57
Control Delay	37.0	37.1	7.3		54.5	39.0	47.7	21.0	13.8	47.4	21.1	28.2
Queue Delay	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	37.0	37.1	7.3		54.5	39.0	47.7	21.0	13.8	47.4	21.1	28.2
LOS	D	D	A		D	D	D	C	B	D	C	C
Approach Delay		21.6			53.8			21.8			24.8	
Approach LOS		C			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 97.2
Natural Cycle: 60
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.65
Intersection Signal Delay: 25.1 Intersection LOS: C
Intersection Capacity Utilization 59.6% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 21: WB E. Hallandale Beach Blvd & S. OCEAN DR



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	541	71	738	11	75	0	26	19	552	6	15	598
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0		0		225		225	245	
Storage Lanes	1			0		1		1		1	1	
Taper Length (ft)	25			25		25		25		25	25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95
Frt			0.850			0.850				0.850		
Flt Protected	0.950	0.963			0.994			0.950			0.950	
Satd. Flow (prot)	1681	1704	1583	0	1852	1583	0	1770	3539	1583	1770	3539
Flt Permitted	0.950	0.963			0.994			0.950			0.950	
Satd. Flow (perm)	1681	1704	1583	0	1852	1583	0	1770	3539	1583	1770	3539
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			802			183				7		
Link Speed (mph)		30			30				30			30
Link Distance (ft)		1331			236				253			1114
Travel Time (s)		30.3			5.4				5.8			25.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	588	77	802	12	82	0	28	21	600	7	16	650
Shared Lane Traffic (%)	44%											
Lane Group Flow (vph)	329	336	802	0	94	28	0	21	600	7	16	650
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Left	Left
Median Width(ft)		12			12				12			12
Link Offset(ft)		0			0				0			0
Crosswalk Width(ft)		16			16				16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Number of Detectors	1	2	1	1	2	1		1	2	1	1	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru
Leading Detector (ft)	20	100	20	20	100	20		20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0		0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0		0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20		20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94				94			94
Detector 2 Size(ft)		6			6				6			6
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			0.0
Turn Type	Split		Perm	Split		Perm		Prot		Perm	Prot	
Protected Phases	3	3		7	7			5	2		1	6
Permitted Phases			3			7				2		
Detector Phase	3	3	3	7	7	7		5	2	2	1	6

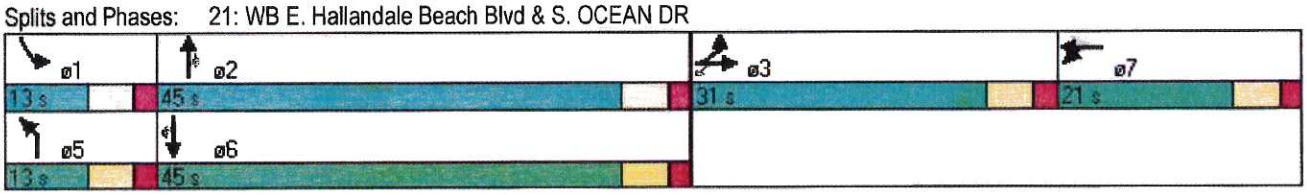
Lane Group	SBR2
Lane Configurations	
Volume (vph)	519
Ideal Flow (vphpl)	1900
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	564
Shared Lane Traffic (%)	
Lane Group Flow (vph)	564
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0		10.0	22.0	22.0	10.0	10.0
Total Split (s)	31.0	31.0	31.0	21.0	21.0	21.0	0.0	13.0	45.0	45.0	13.0	45.0
Total Split (%)	28.2%	28.2%	28.2%	19.1%	19.1%	19.1%	0.0%	11.8%	40.9%	40.9%	11.8%	40.9%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Recall Mode	Max	Max	Max	None	None	None		None	Max	Max	None	None
Act Effct Green (s)	25.5	25.5	25.5		10.3	10.3		6.4	39.7	39.7	6.3	39.7
Actuated g/C Ratio	0.27	0.27	0.27		0.11	0.11		0.07	0.42	0.42	0.07	0.42
v/c Ratio	0.73	0.74	0.79		0.47	0.08		0.18	0.41	0.01	0.14	0.44
Control Delay	45.8	45.9	9.5		50.3	0.5		50.2	22.8	12.8	49.4	23.2
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	45.8	45.9	9.5		50.3	0.5		50.2	22.8	12.8	49.4	23.2
LOS	D	D	A		D	A		D	C	B	D	C
Approach Delay		26.0			38.8				23.6			32.5
Approach LOS		C			D				C			C

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 95.2
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 28.3 Intersection LOS: C
Intersection Capacity Utilization 81.8% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 21: WB E. Hallandale Beach Blvd & S. OCEAN DR



Lane Group	SBR2
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	10.0
Total Split (s)	45.0
Total Split (%)	40.9%
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Recall Mode	None
Act Effct Green (s)	39.7
Actuated g/C Ratio	0.42
v/c Ratio	0.85
Control Delay	42.7
Queue Delay	0.0
Total Delay	42.7
LOS	D
Approach Delay	
Approach LOS	

Intersection Summary

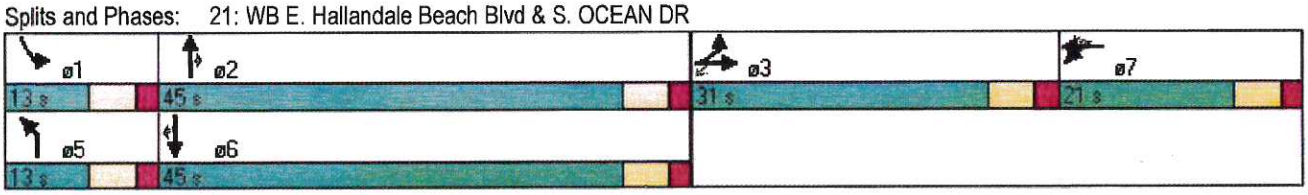
Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Lane Configurations												
Volume (vph)	360	49	438	6	134	6	8	338	1	8	346	335
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0		0	225		225	245		
Storage Lanes	1			0		1	1		1	1		
Taper Length (ft)	25			25		25	25		25	25		
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	1.00
Frt			0.850			0.850			0.850			0.850
Flt Protected	0.950	0.963			0.998		0.950			0.950		
Satd. Flow (prot)	1681	1704	1583	0	1859	1583	1770	3539	1583	1770	3539	1583
Flt Permitted	0.950	0.963			0.998		0.950			0.950		
Satd. Flow (perm)	1681	1704	1583	0	1859	1583	1770	3539	1583	1770	3539	1583
Right Turn on Red			Yes						Yes			
Satd. Flow (RTOR)			476						1			
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		1331			236			253			1114	
Travel Time (s)		30.3			5.4			5.8			25.3	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	391	53	476	7	146	7	9	367	1	9	376	364
Shared Lane Traffic (%)	44%											
Lane Group Flow (vph)	219	225	476	0	153	7	9	367	1	9	376	364
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2	1	1	2	1	1	2	1	1	2	1
Detector Template	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100	20	20	100	20	20	100	20	20	100	20
Trailing Detector (ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0	0	0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20	20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (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
Detector 1 Queue (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
Detector 1 Delay (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
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Split		Perm	Split		Perm	Prot		Perm	Prot		Perm
Protected Phases	3	3		7	7		5	2		1	6	
Permitted Phases			3			7			2			6
Detector Phase	3	3	3	7	7	7	5	2	2	1	6	6

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR2
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0	10.0	22.0	22.0	10.0	10.0	10.0
Total Split (s)	31.0	31.0	31.0	21.0	21.0	21.0	13.0	45.0	45.0	13.0	45.0	45.0
Total Split (%)	28.2%	28.2%	28.2%	19.1%	19.1%	19.1%	11.8%	40.9%	40.9%	11.8%	40.9%	40.9%
Maximum Green (s)	25.0	25.0	25.0	15.0	15.0	15.0	7.0	39.0	39.0	7.0	39.0	39.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	None	None	None	None	Max	Max	None	None	None
Act Effct Green (s)	25.1	25.1	25.1		12.4	12.4	6.1	39.2	39.2	6.1	39.2	39.2
Actuated g/C Ratio	0.26	0.26	0.26		0.13	0.13	0.06	0.40	0.40	0.06	0.40	0.40
v/c Ratio	0.50	0.51	0.62		0.64	0.03	0.08	0.26	0.00	0.08	0.26	0.57
Control Delay	36.9	37.0	7.3		54.0	39.0	47.4	20.9	16.0	47.4	21.0	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
Total Delay	36.9	37.0	7.3		54.0	39.0	47.4	20.9	16.0	47.4	21.0	28.1
LOS	D	D	A		D	D	D	C	B	D	C	C
Approach Delay		21.6			53.3			21.5			24.8	
Approach LOS		C			D			C			C	

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 97.1
Natural Cycle: 60
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.64
Intersection Signal Delay: 25.0 Intersection LOS: C
Intersection Capacity Utilization 59.1% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 21: WB E. Hallandale Beach Blvd & S. OCEAN DR



Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	SBL	SBT
Lane Configurations												
Volume (vph)	541	71	734	8	75	0	26	16	548	3	15	594
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0			0		0		225		225	245	
Storage Lanes	1			0		1		1		1	1	
Taper Length (ft)	25			25		25		25		25	25	
Lane Util. Factor	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95
Frt			0.850			0.850				0.850		
Flt Protected	0.950	0.963			0.995			0.950			0.950	
Satd. Flow (prot)	1681	1704	1583	0	1853	1583	0	1770	3539	1583	1770	3539
Flt Permitted	0.950	0.963			0.995			0.950			0.950	
Satd. Flow (perm)	1681	1704	1583	0	1853	1583	0	1770	3539	1583	1770	3539
Right Turn on Red			Yes				Yes			Yes		
Satd. Flow (RTOR)			798			184				3		
Link Speed (mph)		30			30				30			30
Link Distance (ft)		1331			236				253			1114
Travel Time (s)		30.3			5.4				5.8			25.3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	588	77	798	9	82	0	28	17	596	3	16	646
Shared Lane Traffic (%)	44%											
Lane Group Flow (vph)	329	336	798	0	91	28	0	17	596	3	16	646
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Right	Left	Left	Right	Left	Left
Median Width(ft)		12			12				12			12
Link Offset(ft)		0			0				0			0
Crosswalk Width(ft)		16			16				16			16
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	9	15		9	15	
Number of Detectors	1	2	1	1	2	1		1	2	1	1	2
Detector Template	Left	Thru	Right	Left	Thru	Right		Left	Thru	Right	Left	Thru
Leading Detector (ft)	20	100	20	20	100	20		20	100	20	20	100
Trailing Detector (ft)	0	0	0	0	0	0		0	0	0	0	0
Detector 1 Position(ft)	0	0	0	0	0	0		0	0	0	0	0
Detector 1 Size(ft)	20	6	20	20	6	20		20	6	20	20	6
Detector 1 Type	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94				94			94
Detector 2 Size(ft)		6			6				6			6
Detector 2 Type		Cl+Ex			Cl+Ex				Cl+Ex			Cl+Ex
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0				0.0			0.0
Turn Type	Split		Perm	Split		Perm		Prot		Perm	Prot	
Protected Phases	3	3		7	7			5	2		1	6
Permitted Phases			3			7				2		
Detector Phase	3	3	3	7	7	7		5	2	2	1	6

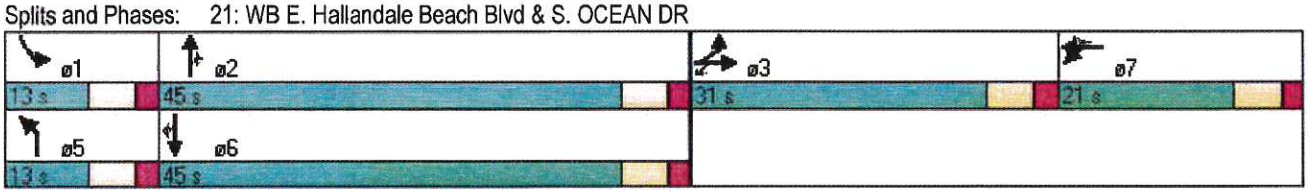
Lane Group	SBR2
Lane Configurations	
Volume (vph)	519
Ideal Flow (vphpl)	1900
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	1.00
Frt	0.850
Flt Protected	
Satd. Flow (prot)	1583
Flt Permitted	
Satd. Flow (perm)	1583
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Peak Hour Factor	0.92
Adj. Flow (vph)	564
Shared Lane Traffic (%)	
Lane Group Flow (vph)	564
Enter Blocked Intersection	No
Lane Alignment	Right
Median Width(ft)	
Link Offset(ft)	
Crosswalk Width(ft)	
Two way Left Turn Lane	
Headway Factor	1.00
Turning Speed (mph)	9
Number of Detectors	1
Detector Template	Right
Leading Detector (ft)	20
Trailing Detector (ft)	0
Detector 1 Position(ft)	0
Detector 1 Size(ft)	20
Detector 1 Type	Cl+Ex
Detector 1 Channel	
Detector 1 Extend (s)	0.0
Detector 1 Queue (s)	0.0
Detector 1 Delay (s)	0.0
Detector 2 Position(ft)	
Detector 2 Size(ft)	
Detector 2 Type	
Detector 2 Channel	
Detector 2 Extend (s)	
Turn Type	Perm
Protected Phases	
Permitted Phases	6
Detector Phase	6

Lane Group	EBL	EBT	EBR2	WBL	WBT	WBR	WBR2	NBL	NBT	NBR	SBL	SBT
Switch Phase												
Minimum Initial (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
Minimum Split (s)	10.0	10.0	10.0	10.0	10.0	10.0		10.0	22.0	22.0	10.0	10.0
Total Split (s)	31.0	31.0	31.0	21.0	21.0	21.0	0.0	13.0	45.0	45.0	13.0	45.0
Total Split (%)	28.2%	28.2%	28.2%	19.1%	19.1%	19.1%	0.0%	11.8%	40.9%	40.9%	11.8%	40.9%
Maximum Green (s)	25.0	25.0	25.0	15.0	15.0	15.0		7.0	39.0	39.0	7.0	39.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0		4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0		2.0	2.0	2.0	2.0	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)	6.0	6.0	6.0	6.0	6.0	6.0	4.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag								Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?								Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0	3.0		3.0	3.0	3.0	3.0	3.0
Recall Mode	Max	Max	Max	None	None	None		None	Max	Max	None	None
Act Effct Green (s)	25.4	25.4	25.4		10.1	10.1		6.3	39.7	39.7	6.3	39.7
Actuated g/C Ratio	0.27	0.27	0.27		0.11	0.11		0.07	0.42	0.42	0.07	0.42
v/c Ratio	0.73	0.74	0.79		0.46	0.08		0.14	0.40	0.00	0.14	0.44
Control Delay	45.6	45.8	9.5		50.2	0.5		49.5	22.6	15.0	49.3	23.1
Queue Delay	0.0	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0
Total Delay	45.6	45.8	9.5		50.2	0.5		49.5	22.6	15.0	49.3	23.1
LOS	D	D	A		D	A		D	C	B	D	C
Approach Delay		25.9			38.5				23.3			32.3
Approach LOS		C			D				C			C

Intersection Summary

Area Type: Other
Cycle Length: 110
Actuated Cycle Length: 95
Natural Cycle: 90
Control Type: Semi Act-Uncoord
Maximum v/c Ratio: 0.85
Intersection Signal Delay: 28.2 Intersection LOS: C
Intersection Capacity Utilization 81.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 21: WB E. Hallandale Beach Blvd & S. OCEAN DR



Lane Group	SBR2
Switch Phase	
Minimum Initial (s)	4.0
Minimum Split (s)	10.0
Total Split (s)	45.0
Total Split (%)	40.9%
Maximum Green (s)	39.0
Yellow Time (s)	4.0
All-Red Time (s)	2.0
Lost Time Adjust (s)	0.0
Total Lost Time (s)	6.0
Lead/Lag	Lag
Lead-Lag Optimize?	Yes
Vehicle Extension (s)	3.0
Recall Mode	None
Act Effct Green (s)	39.7
Actuated g/C Ratio	0.42
v/c Ratio	0.85
Control Delay	42.4
Queue Delay	0.0
Total Delay	42.4
LOS	D
Approach Delay	
Approach LOS	

Intersection Summary