Grand Beach Hotel
Traffic Study

Prepared by:

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1750 Ponce de Leon Boulevard
Coral Gables, Florida 33134

August 2011
DPA Project #11161

8/25/2011

EXECUTIVE SUMMARY

The Grand Beach Hotel - Surfside will consist of two separate hotel properties located on the east and west side of Collins Avenue just north of 94th Street in Surfside, Florida. The east parcel will consist of 269 rooms and will provide 206 parking spaces on-site. The west parcel will consist of 72 rooms and will provide 178 parking spaces on-site. Access to the east parcel will be through a circular driveway on Collins Avenue providing right-in and right-out movements. Access to the west parcel will be through a full access driveway located on 94th Street.

A traffic analysis was performed for the AM and PM peak hour traffic conditions to determine the percentage of project trip impact as compared to the capacity threshold for the study roadways. A roadway significance analysis was performed for both the AM and PM peak hour traffic conditions to determine the percentage of project trip impact as compared to the capacity threshold for the study roadway. The Level of Service threshold was obtained from the Town of Surfside Comprehensive Plan (January 2010; see Attachment C). The Town of Surfside guidelines establish a three percent (3%) significance threshold to determine whether or not a proposed development is significant on a roadway segment. **The analysis shows that traffic generated by the proposed development will be below the threshold established by the Town.** In addition, a link analysis was conducted for 94th and 95th Street with the project limits. The results of the analysis show that both roadways will operate within the Level of Service standard (LOS D) established by the Town of Surfside. **Therefore, traffic impacts associated with the proposed development can be considered *de minimis*.**

The potential queue at the drop-off area of the valet operations (for both hotels) during the PM peak hour (worst case scenario) was also calculated. **The results of the analysis show that with three valet attendants processing cars at the east hotel and one at the west hotel during the PM peak hour, there will be no queue at either drop-off area.**

INTRODUCTION

The Grand Beach Hotel will consist of two separate hotel properties located on the east and west side of Collins Avenue just north of 94th Street in Surfside, Florida (see Exhibit 1). The east parcel will consist of 269 rooms and will provide 206 parking spaces on-site. The west parcel will consist of 72 rooms and will provide 178 parking spaces on-site. The proposed site plan is included in Attachment A. Access to the east parcel will be through a circular driveway on Collins Avenue providing right-in and right-out movements. Ingress and egress to the west parcel will be through a full access driveway located on 94th Street.

The purpose of this work is to compare the trips generated by the proposed project against the maximum service volume of Collins and Harding Avenues to determine the project percent consumption of the roadway capacity. This work also includes a link analysis for 94th and 95th Streets and queuing analysis at the drop-off (valet area) area of both hotels.

TRAFFIC ANALYSIS

A trip generation analysis was conducted to determine the trips generated by the project site. The trip generation analysis was based on rates and/or equations from the Institute of Transportation Engineers (ITE) Trip Generation Manual, 8th Edition (published in 2008). This manual provides trip generation data by specific land uses that have been collected throughout the United States and Canada. The trip generation calculations were performed for typical weekday AM and PM peak hours of the adjacent street traffic. Exhibit 2 provides the trip generation summary. Trip generation worksheets are included in Attachment B.

PROJECT TITLE: Grand Beach Hotel

EXHIBIT TITLE: Location Map

Exhibit 1

Exhibit 2

Project Trip Generation Summary

ITE Land Use Designation[1]	Size/Units	24-Hour Two-way Volume	Weekday AM Peak Hour Vehicle			Weekday PM Peak Hour Vehicle		
			In	Out	Total	In	Out	Total
Hotel (East Side) Land Use 310	269 Rooms	2,198	91	59	150	83	75	158
Pedestrians/Transit/ Shuttle Service	10%	-220	-9	-6	-15	-8	-8	-16
Total Trips		**1,978**	**82**	**53**	**135**	**75**	**67**	**142**
Hotel (West Side) Land Use 310	72 Rooms	588	24	16	40	22	20	42
Pedestrians/Transit/ Shuttle Service	10%	-60	-2	-2	-4	-2	-2	-4
Total Trips		**528**	**22**	**14**	**36**	**20**	**18**	**38**

[1] Based on ITE Trip Generation manual, Eighth Edition (published in 2008). Source: David Plummer & Associates

The major roadways within the project limits include Collins Avenue and Harding Avenue. Collins Avenue is a major principal arterial which runs parallel to Harding Avenue. The three lane facility serves only northbound traffic. Harding Avenue is a major principal arterial which runs parallel to Collins Avenue. The three lane facility serves only southbound traffic. Both roadways are within a ½-mile of mass transit. In addition, 94th Street and 95th Street are major local roads running perpendicular and providing access between Collins Avenue and Harding Avenue.

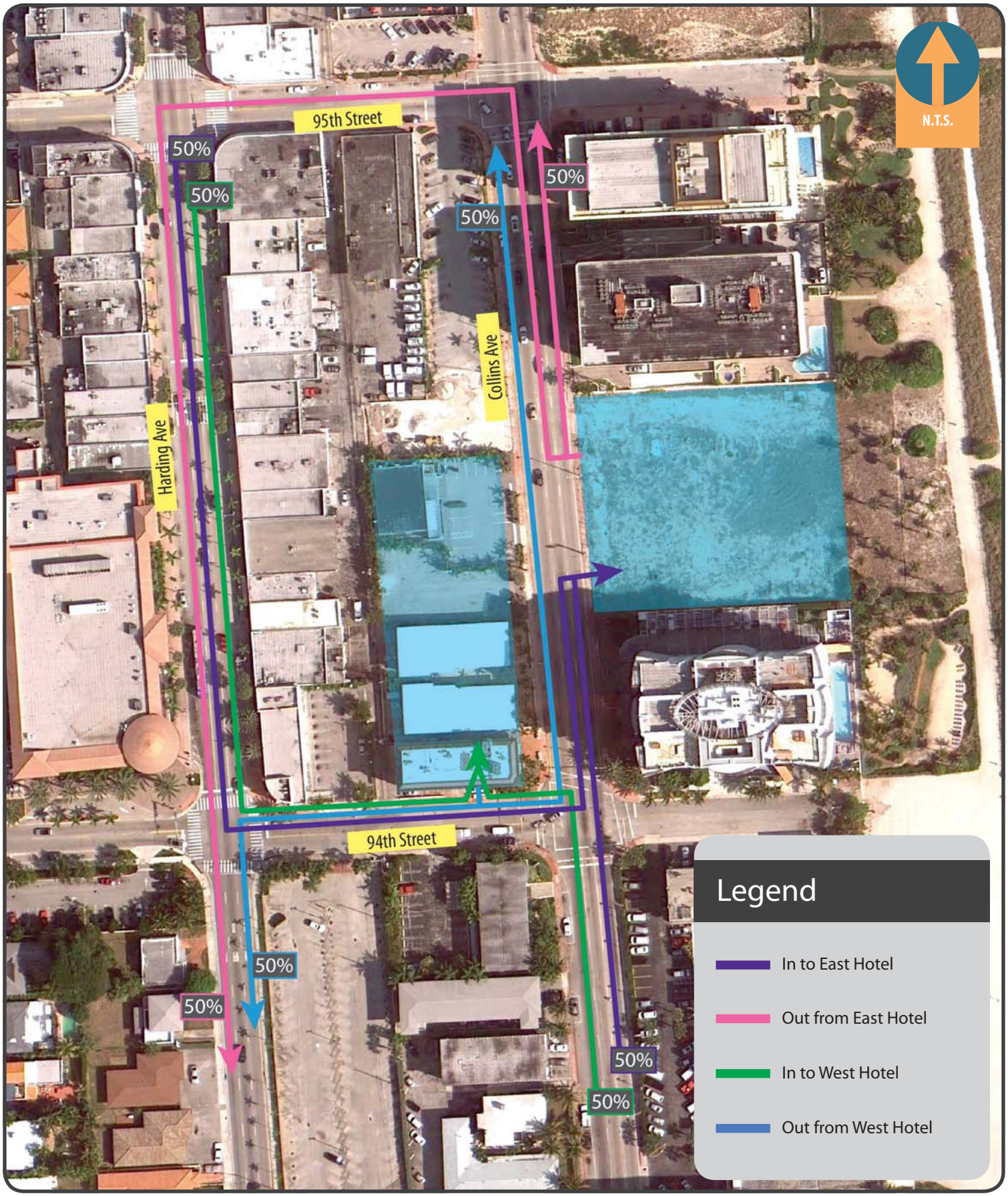
The proposed hotel is located within the Town's Central Business District (CBD). Therefore, pedestrian activity is expected between the hotel and destinations (retail, restaurants and services). The project site is also in area served by seven (7) bus routes from Miami-Dade Transit. The routes travel through the Town, most of which run along Collins Avenue. The following are the route numbers and service areas:

Route G - NW 27 Avenue/163 Street, Bunche Park, Opa-locka, Bal Harbour, Collins Avenue, City of Miami Beach, Lincoln Road, Convention Center Drive
Route H - North Miami Beach, Skylake Mall, The Mall at 163rd Street, Sunny Isles Boulevard, Bal Harbour, Bal Harbour Shops, City of Miami Beach, Collins Avenue, Lincoln Road Mall, South Beach, Rebecca Towers
Route K - Omni Bus Terminal, Downtown (Miami) Bus Terminal, Federal Building, MacArthur Causeway, South Beach, Washington Avenue, City of Miami Beach, Haulover Marina, Winston Towers, Hallandale Beach Boulevard (Broward County), Diplomat Mall (Broward County)
Route R - City of Miami Beach, Alton Road, Mount Sinai Hospital, Miami Heart Institute, Collins Avenue, Hawthorne Avenue, 96 Street/Harding Avenue
Route S - Downtown (Miami) Bus Terminal, Main Library, Historical Museum, Miami Art Museum, Government Center Metrorail Station, Omni Bus Terminal, MacArthur Causeway, City of Miami Beach, South Beach, Lincoln Road, Collins Avenue, 192 Street Causeway, Aventura, Aventura Mall
Route 120 Beach - Downtown (Miami) Bus Terminal, Main Library, Historical Museum, Miami Art Museum, Government Center Metrorail
Route MAX - Miami-Dade College Wolfson Campus, Omni Bus Terminal, Julia Tuttle Causeway, City of Miami Beach, Collins Avenue, Surfside, Bal Harbour, Haulover Park Marina

Additionally, the Town has its own bus system which complements the Miami-Dade County Transit system. The Town's mini-buses circulate between the business district and residential areas. Therefore, a 10% deduction was taken from the trip generation to account for the pedestrian, transit and mini bus services available to hotel patrons

Project traffic was distributed to the adjacent roadway network. For estimating trip distribution for the project traffic, consideration was given to conditions such as the roadway network accessed by the project traffic, roadways available to travel in the desired direction, and attractiveness of traveling on a specific roadway. Fifty percent of the traffic was assigned to/from the north direction and 50% to/from the south direction. Exhibit 3 shows the trip distribution. The project trips consumption was measured at the following six locations adjacent to the project site:

- Collins Avenue north of 94 Street
- Collins Avenue south of 94 Street
- Collins Avenue south of 95 Street
- Harding Avenue north of 94 Street
- Harding Avenue south of 94 Street
- Harding Avenue south of 95 Street



PROJECT TITLE: Grand Beach Hotel

EXHIBIT TITLE: Trip Distribution

Exhibit 3

Exhibits 4A and 4B show the project trip distribution at the six locations mentioned above for the AM and PM Peak Hours, respectably. A roadway significance analysis was performed for both the AM and PM peak hour traffic conditions to determine the percentage of project trip impact as compared to the capacity threshold for the study roadway. The Level of Service threshold was obtained from the Town of Surfside Comprehensive Plan (January 2010; see Attachment C). The Town of Surfside guidelines establish a three percent significance threshold to determine whether or not a proposed development is significant on a roadway segment. The results of the significance analysis are summarized in Exhibit 5.

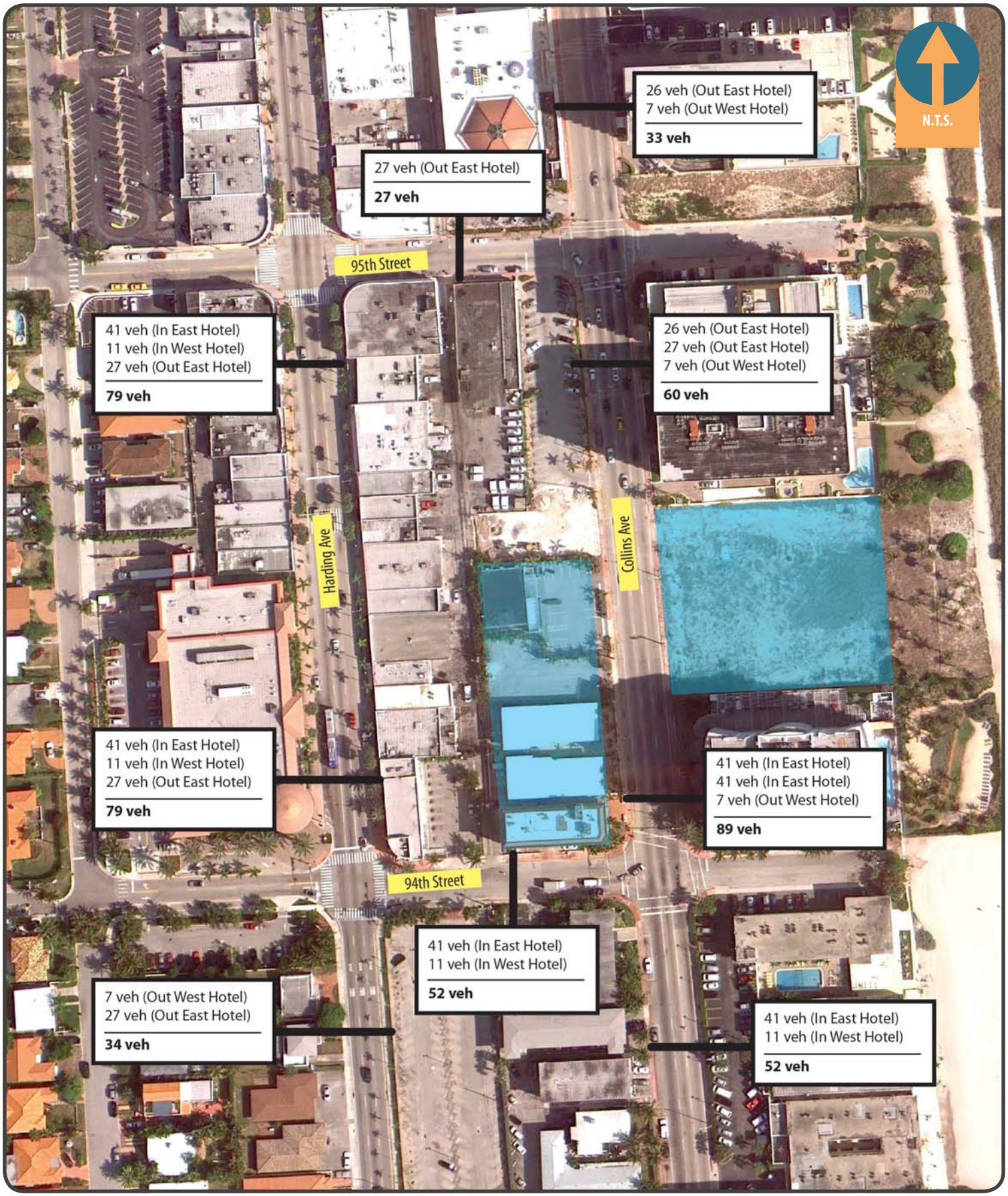
Exhibit 5

AM and PM Peak Hour Significance Analysis

Roadway	Segment	Number of Lanes	Adopted Level of Service [1]	Adopted LOS Capacity [1]	AM Peak Hour			PM Peak Hour		
					Total Project Trips	Project Significance	Project Traffic Significance (> 3%)?	Total Project Trips	Project Significance	Project Traffic Significance (> 3%)?
Collins Avenue	South of 94 Street	3 -One way	E+20%	2,988	52	1.74%	NO	48	1.61%	NO
Collins Avenue	North of 94 Street (S. Project Driveway)	3 -One way	E+20%	2,988	89	2.98%	NO	84	2.81%	NO
Collins Avenue	South of 95 Street (N. Project Driveway)	3 -One way	E+20%	2,988	60	2.01%	NO	76	2.54%	NO
Collins Avenue	North of 95 Street	3 -One way	E+20%	2,988	33	1.10%	NO	42	1.41%	NO
Harding Avenue	South of 94 Street	3 -One way	E+20%	2,988	34	1.14%	NO	43	1.44%	NO
Harding Avenue	North of 94 Street	3 -One way	E+20%	2,988	79	2.64%	NO	81	2.71%	NO
Harding Avenue	South of 95 Street	3 -One way	E+20%	2,988	79	2.64%	NO	81	2.71%	NO

Source: David Plummer &Associates

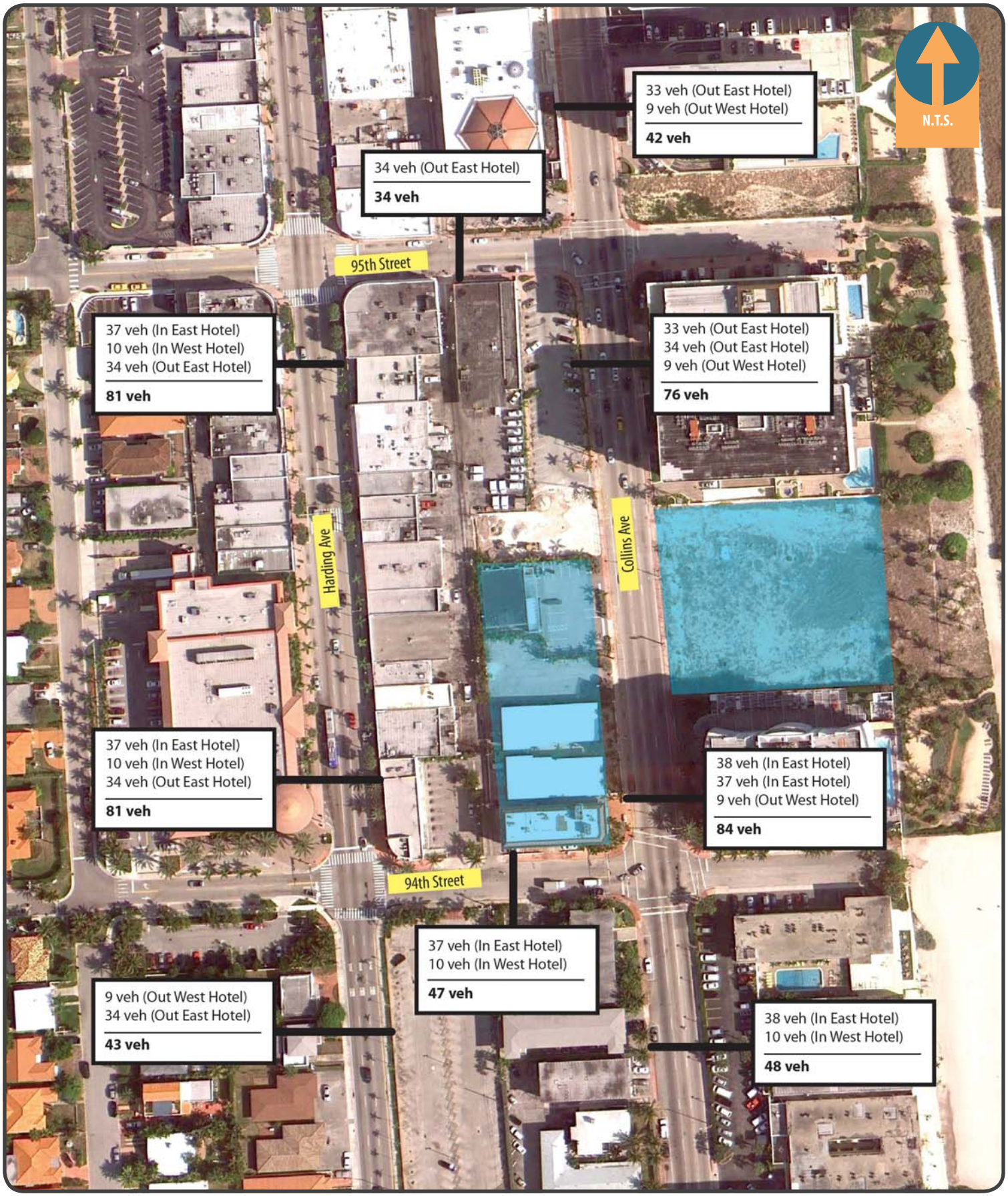
1 Adopted Level of Service and Service Volumes are based on the Town of Surfside Comprehensive Plan (January 2010)



PROJECT TITLE: Grand Beach Hotel

EXHIBIT TITLE: Project Trips AM

Exhibit 4a



PROJECT TITLE: Grand Beach Hotel

EXHIBIT TITLE: Project Trips PM

Exhibit 4b

The significance analysis shows that the proposed development will not have an impact on either Collins or Harding Avenues. Therefore, traffic impacts associated with the proposed development can be considered *de minimis*.

The town requested that roadway segment (link) analysis be performed on the local roads within the study area. The analysis was performed for AM and PM peak hour conditions for project build-out (2012). Twenty-four hour traffic machine counts were collected at 94th and 95th Streets. Additionally, the latest weekly volume adjustment factors were obtained from FDOT to adjust the raw traffic counts. A summary of the traffic counts is included in Attachment D. A background growth rate was obtained from historical counts published by the Florida Department of Transportation (FDOT) for traffic count station 0132, NE 96th Street (SR 922) 400' west of Harding Avenue, and included in Attachment D. Although other historical counts along Collins Avenue and Harding Avenue show a decrease of traffic in the area in the last 5 years, and the counts at station 0132 have fluctuated in recent years, a conservative 1% annual growth rate was used for this analysis. The link analysis is provided in Exhibit 6.

Exhibit 6

AM and PM Peak Hour Local Roadways Segment Analysis

Roadway	Segment	Number of Lanes	Functional Classification	Adopted Level of Service [1]	Adopted LOS Capacity [2]	Existing Volume	Volume w/ Back ground	Project Volume	Total	Meets LOS Std
AM Peak Hour										
94 Street	Collins Av to Harding Av	2 LU	Major Local Road	D	1,330	188	190	52	242	Yes
95 Street	Collins Av to Harding Av	2 LU	Major Local Road	D	1,330	227	229	27	256	Yes
PM Peak Hour										
94 Street	Collins Av to Harding Av	2 LU	Major Local Road	D	1,330	212	214	47	261	Yes
95 Street	Collins Av to Harding Av	2 LU	Major Local Road	D	1,330	267	270	34	304	Yes

Source: David Plummer &Associates

[1] Adopted Level of Service are based on the Town of Surfside Comprehensive Plan (January 2010)

[2] Based on the 2009 FDOT Quality/Level of Service Handbook

QUEUING ANALYSIS

The potential queue at the drop-off area of the valet operations (for both hotels) was calculated based on the peak hour traffic published by the Institute of Transportation Engineers (ITE) trip generation rates and/or equations for the proposed development plan. As calculated in Exhibit 2, Exhibit 6 provides the total project trip generation for the east and west hotel during the weekday PM peak hour conditions (worst case scenario). It should be noted that the proposed hotel will have limited meeting and function space. Therefore, the queuing analysis based on the trip generation for a standard hotel, can be considered a conservative approach.

Exhibit 6

Project Trip Generation

Grand Beach Hotel	Weekday PM Peak Hour		
	In	Out	Total
East Hotel	**75**	**67**	**142**
West Hotel	**20**	**18**	**38**

Source: David Plummer & Associates

For the queuing analysis, a peak hour factor of 0.92 was used to determine the hourly volume that occurs during the peak 15 minutes of the peak hour [142 / (0.92)(4) = 39]. To determine the processing rate for valet operations, data was collected at the valet drop-off area of the existing Grand Beach Hotel located at 4835 Collins Avenue. This hotel is owned and operated by the same developer of the Grand Beach Hotel – Surfside. Data and observations at this hotel were collected on Saturday, August 20, 2011 during the hotel peak check-out time (11:00 AM to 1:00 PM) and during the hotel peak check-in time (3:00 PM to 5:00 PM). Based on the data collected, a processing time for the valet operation was determined. The processing rate was calculated to be 60 seconds per vehicle. The processing time for valet operations is defined as the average time it will take

to process a vehicle from the time it arrives at the valet drop-off until it leaves the drop-off area. The data and processing time calculation is included in Attachment E.

The valet operation at Grand Beach Hotel – Miami Beach is staffed based on occupancy and expected daily movements. Occupancy is defined by rooms nights booked divided by total room inventory. A movement can be defined as a "check-in" or arrival, a "check-out" or departure, or any other event that may result in a spike of guest traffic for the valet operation. Large groups in house can slightly alter the staffing plan; however the chart below is a general guideline of how the hotel staffs this department.

Rooms Sold	***Max. Overnight Cars Parked***	***AM Runners***	***PM Runners***	***Overnight Runners***	***Valet Supervisor***	***One Day Staff***
0-150	70	2	2	1	2	7
151-250	118	3	3	2	2	10
251-330	155	4	4	2	2	12
331-430	200	5	5	3	2	15

Field observations revealed that 49 vehicles were processed by the valet operator during the morning period and 64 vehicles during the afternoon. During the morning observations, a queue of one (1) vehicle was observed only 6 times and a queue of two (2) vehicles only once. During the afternoon observations, a queue of one (1) vehicle was observed only twice. The observed queue never interrupted the valet operations and did not disrupt the traffic patterns.

For the queuing calculation at the proposed hotels, it was assumed that 3 valet attendants will be available (to process vehicles) during the peak hour at the east hotel and 1 valet attendant at the west hotel. This will result in 45 vehicles being accommodated in 15 minutes at the east hotel and 15 vehicles at the west hotel. The calculations are summarized in Exhibit 7.

Exhibit 7

Stacking and Queuing at East Hotel Valet Operations

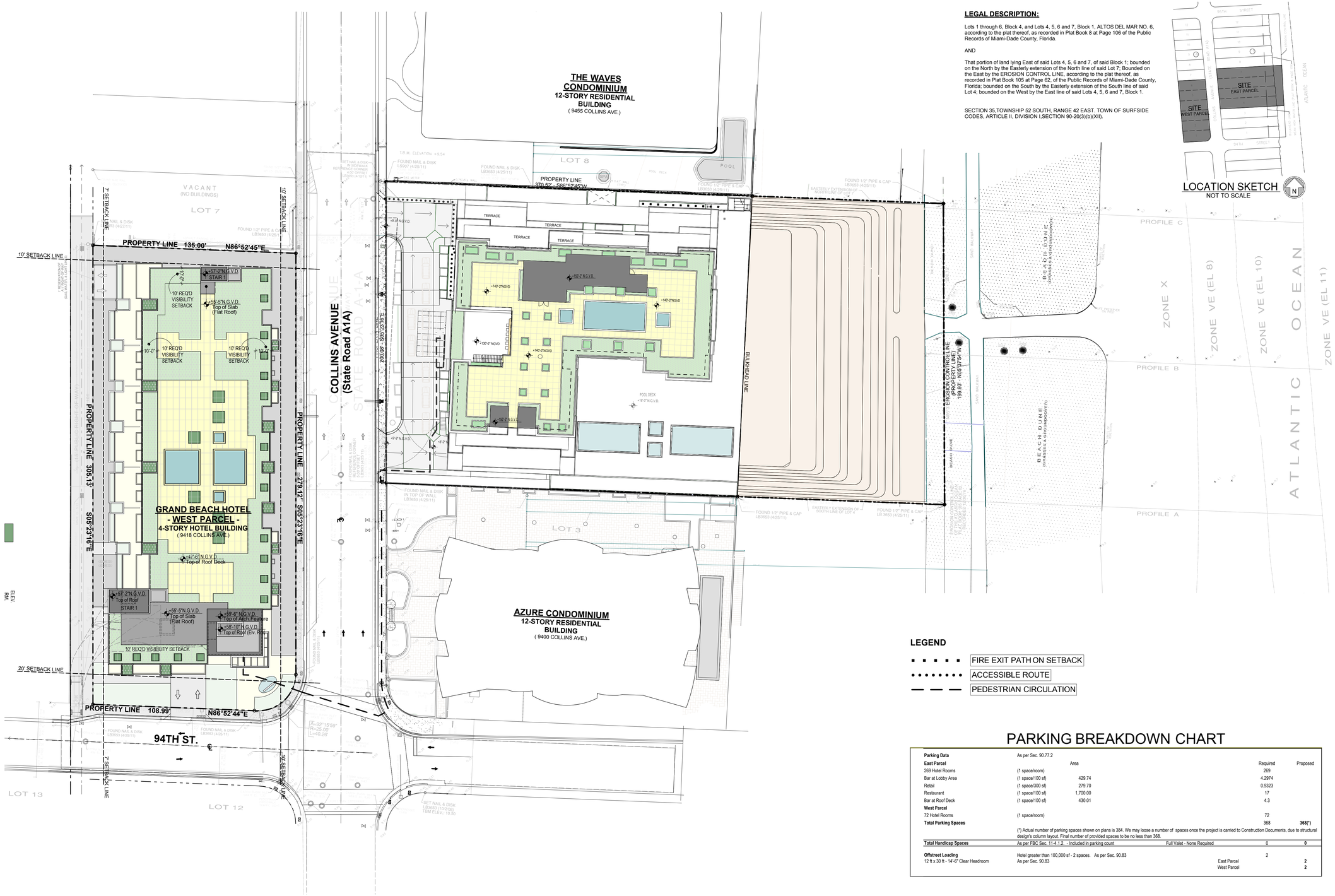
Peak Volume In and Out (vehicles)	Total PM Peak 15 minutes (vehicles)	Process Rate at Valet Operations (veh/min)	Vehicles Processed during Peak 15 minutes (before start of queue)	Length of Queue (vehicles)	Storage Length Available
142	142 / (.92)(4)= 39	1	3 valet attendants x 15 min x 1 veh/min = 45 veh	39 – 45 = 0 veh **No Queue**	300 ft
38	38 / (.92)(4) = 10	1	1 valet attendants x 15 min x 1 veh/min = 15 veh	10 – 15 = 0 veh **No Queue**	100 ft

Source: David Plummer and Associates

The results of the analysis show that with the recommended number of valet attendants processing cars at each hotel, there will be no queue at either drop-off area. In addition, at the east hotel drop-off area there is approximately 300 ft of available storage (2 lanes) that can accommodate approximately 14 vehicles in queue. The west hotel provides approximately 100 ft of available storage that can accommodate approximately 4 vehicles in queue (inside the parking garage).

Attachment A

Site Plan



LEGAL DESCRIPTION:

Lots 1 through 6, Block 4, and Lots 4, 5, 6 and 7, Block 1, ALTOS DEL MAR NO. 6, according to the plat thereof, as recorded in Plat Book 8 at Page 106 of the Public Records of Miami-Dade County, Florida.

AND

That portion of land lying East of said Lots 4, 5, 6 and 7, of said Block 1; bounded on the North by the Easterly extension of the North line of said Lot 7; Bounded on the East by the EROSION CONTROL LINE, according to the plat thereof, as recorded in Plat Book 105 at Page 62, of the Public Records of Miami-Dade County, Florida; bounded on the South by the Easterly extension of the South line of said Lot 4; bounded on the West by the East line of said Lots 4, 5, 6 and 7, Block 1.

SECTION 35 TOWNSHIP 52 SOUTH, RANGE 42 EAST. TOWN OF SURFSIDE CODES, ARTICLE II, DIVISION I,SECTION 90-20(3)(b)(XII).

LEGEND

- FIRE EXIT PATH ON SETBACK
- ACCESSIBLE ROUTE
- PEDESTRIAN CIRCULATION

PARKING BREAKDOWN CHART

				Required	Proposed
Parking Data	As per Sec. 90.77.2				
East Parcel		Area			
269 Hotel Rooms	(1 space/room)			269	
Bar at Lobby Area	(1 space/100 sf)	429.74		4.2974	
Retail	(1 space/300 sf)	278.70		0.9323	
Restaurant	(1 space/100 sf)	1,700.00		17	
Bar at Roof Deck	(1 space/100 sf)	430.01		4.3	
West Parcel					
72 Hotel Rooms	(1 space/room)			72	
Total Parking Spaces				368	**368(*)**
	(*) Actual number of parking spaces shown on plans is 384. We may loose a number of spaces once the project is carried to Construction Documents, due to structural design's column layout. Final number of provided spaces to be no less than 368.				
Total Handicap Spaces	As per FBC Sec. 11-4.1.2. - Included in parking count		Full Valet - None Required	0	**0**
Offstreet Loading	Hotel greater than 100,000 sf - 2 spaces. As per Sec. 90.83			2	
12 ft x 30 ft - 14'-6" Clear Headroom	As per Sec. 90.83		East Parcel		**2**
			West Parcel		**2**

N

1 OVERALL SITE PLAN
SCALE: 1" = 30'

0 30' 60'

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The Contractor Must Check And Verify all Dimensions Of The Job And Be Responsible For Same, Reporting Any Discrepancies to The Architects Before Commencing work. Drawings Not to be Scaled.
File: teamwork:/IRAI BIM Server/1034_Grand Surfside Hotel_COLLINS TOWER - By OValderrama - Date: 7/11/2011

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Luis O. Revuelta
AR 0007972

PROJECT

GRAND BEACH HOTEL II

9418 Collins Avenue and 9449 Collins Avenue
Surfside, FL 33154

OWNER INFORMATION

M.B. Development

4835 Collins Avenue
Miami Beach, FL 33140

DESIGN DEVELOPMENT

Permit Revisions

CONSULTANTS

Date
06-01-2011
Drawing
BP - OV
Check by
BP
Scale
As Shown
Project No.
1034

A-004

Attachment B

Trip Generation Worksheets

Summary of Multi-Use Trip Generation
Average Weekday Driveway Volumes
July 18, 2011

Land Use	Size	24 Hour Two-Way Volume	AM Pk Hour Enter	AM Pk Hour Exit	PM Pk Hour Enter	PM Pk Hour Exit
Hotel	269 Rooms	2198	91	59	83	75
Hotel	72 Rooms	588	24	16	22	20
Total Driveway Volume		2786	115	75	105	95
Total Peak Hour Pass-By Trips			0	0	0	0
Total Peak Hour Vol. Added to Adjacent Streets			115	75	105	95

Note: A zero indicates no data available.

TRIP GENERATION BY MICROTRANS

Summary of Multi-Use Trip Generation
Saturday and Sunday Driveway Volumes
July 18, 2011

		Saturday			Sunday		
		24 Hr 2-Way	Peak Hour		24 Hr 2-Way	Peak Hour	
Land Use	Size	Vol.	Enter	Exit	Vol.	Enter	Exit
Hotel	269 Rooms	2203	108	86	1601	70	81
Hotel	72 Rooms	590	29	23	428	19	22
Total Driveway Volume		2793	137	109	2029	89	103
Total Peak Hour Pass-By Trips			0	0			
Total Pk Hr Vol Added to Adjacent Streets			137	109			

Note: A zero indicates no data available.

TRIP GENERATION BY MICROTRANS

Attachment C

Town of Surfside Comprehensive Plan

(January 2010)

SR A1A/Harding Avenue
SR A1A/Harding Avenue is a major principal arterial which runs parallel to Collins Avenue. The three-lane facility serves only southbound traffic.

SR 922/96th Street
SR 922/96th Street is a minor principal arterial and runs east-west. SR-922/96th Street connects Surfside with Bay Harbor Islands and Bal Harbour.

Primary Local Roads
The collectors are 88th Street, Bay Drive, Dickens Avenue, and Byron Avenue south of 88th Street. The major local roads are 91st Street/ Surfside Boulevard, Abbott Avenue, 95th Street, 94th Street, and 93rd Street. 91st Street/Surfside Boulevard is the only gateway to Indian Creek. A two-lane bridge on the south connects Biscaya Island to the rest of the Town.

Existing Roadway Level of Service
The following table shows the existing level of service for the state arterial roadways in Surfside.

Table 2-1 Roadway Existing Level of Service

Roadway Name	Location		Classification	Adopted Level of Service	Lanes	Adopted LOS E+20 Capacity	Pk Hr Pk Dir Volumes 2007	Existing Level of Service 2007
	From	To						
SR-922/96th Street	Harding Ave	West of Harding Ave	State Minor Arterial	**E+20**	2 lanes in each direction	1,992	1,261	**D**
SR-A1A/Collins Avenue	87th Avenue	SR-922/96th Street	State Major Arterial	**E+20**	3 lanes-one way	2,988	2,256	**D**
SR-A1A/Harding Avenue	88th Avenue	SR-922/96th Street	State Major Arterial	**E+20**	3 lanes-one way	2,988	1,797	**D**
Note:								
1) The peak hour peak direction volume are directly taken from the ***FDOT Traffic Information DVD 2007***.								
2) The adopted level of service standard thresholds are based on the ***FDOT Generalized Table 4-7 for Peak Hour Directional Volumes***.								

Future Level of Service

As shown in Table 2-2, the state roadways within Surfside shall maintain their levels of service through 2030.

Table 2-2 Future (2030) Peak Hour Peak Direction Level of Service Analysis

Roadway Name	Location		Classification	Adopted Level of Service	Lanes	Adopted LOS E+20 Capacity	2030 Daily Volumes	K	D	Pk Hr Pk Dir Volumes 2030	Future Level of Service 2030
	From	To									
SR-922/96th Street	Harding Ave	West of Harding Ave	State Minor Arterial	**E+20**	2 lanes in each direction	1,992	34,454	0.095	0.5500	1,800	**D**
SR-A1A/Collins Avenue	87th Avenue	SR-922/96th Street	State Major Arterial	**E+20**	3 lanes-one way	2,988	27,292	0.095	-	2,593	**D**
SR-A1A/Harding Avenue	88th Avenue	SR-922/96th Street	State Major Arterial	**E+20**	3 lanes-one way	2,988	27,006	0.095	-	2,566	**D**
Note:											
1) The bi-directional volumes are directly taken from the ***Miami Dade County MPO 2030 Long Range Transportation Plan (LRTP).***											
2) The adopted level of service standards are based on the ***FDOT Generalized Table 4-7 for Peak Hour Directional Volumes***.											
3) The peak hour factor (K) and directional factor (D) are directly taken from the ***FDOT Quality/Level of Service Handbook***.											

Attachment D

Historical Counts

DAVID PLUMMER & ASSOCIATES, INC.

24-HOUR COUNTS

Project Name: Grand Beach Hotel
Location: 95th Street between Collins Av & Harding Av
Observer: Traffic Survey Specialists, Inc.

Project No.: 11161
Count Date: 8/19/2011
Day of Week: Friday

BEGIN TIME	EASTBOUND 1st 1/4	2nd 1/4	3rd 1/4	4th 1/4	TOTAL	BEGIN TIME	WESTBOUND 1st 1/4	2nd 1/4	3rd 1/4	4th 1/4	TOTAL	TWO-WAY TOTAL
12:00 AM	7	5	3	4	19	12:00 AM	6	5	5	7	23	42
01:00 AM	2	1	4	0	7	01:00 AM	2	1	0	2	5	12
02:00 AM	0	0	1	0	1	02:00 AM	0	1	0	0	1	2
03:00 AM	0	1	1	1	3	03:00 AM	0	0	0	0	0	3
04:00 AM	0	1	1	1	3	04:00 AM	0	0	0	1	1	4
05:00 AM	0	1	1	0	2	05:00 AM	0	1	1	2	4	6
06:00 AM	3	4	5	4	16	06:00 AM	2	6	2	9	19	35
07:00 AM	6	7	14	25	52	07:00 AM	5	4	6	4	19	71
08:00 AM	16	17	26	29	88	08:00 AM	16	14	18	15	63	151
09:00 AM	30	25	24	34	113	09:00 AM	31	17	33	22	103	216
10:00 AM	32	28	34	33	127	10:00 AM	18	24	10	23	75	202
11:00 AM	27	32	28	31	118	11:00 AM	20	22	24	37	103	221
12:00 PM	44	40	36	33	153	12:00 PM	29	18	24	27	98	251
01:00 PM	27	37	23	40	127	01:00 PM	19	28	31	31	109	236
02:00 PM	34	31	36	27	128	02:00 PM	25	3	0	10	38	166
03:00 PM	32	29	30	35	126	03:00 PM	20	28	30	27	105	231
04:00 PM	34	28	36	54	152	04:00 PM	15	27	26	27	95	247
05:00 PM	31	31	29	25	116	05:00 PM	22	27	27	21	97	213
06:00 PM	28	28	27	22	105	06:00 PM	16	23	17	17	73	178
07:00 PM	20	20	11	16	67	07:00 PM	18	16	13	16	63	130
08:00 PM	16	13	19	7	55	08:00 PM	16	8	22	15	61	116
09:00 PM	13	14	13	16	56	09:00 PM	11	9	14	7	41	97
10:00 PM	6	8	8	9	31	10:00 PM	9	9	4	4	26	57
11:00 PM	5	8	9	2	24	11:00 PM	8	6	8	3	25	49
			24-HOUR TOTAL		1,689				24-HOUR TOTAL		1,247	2,936

DAILY TRAFFIC COUNT SUMMARY

Note: 2010 FDOT Seasonal Weekly Volume Factor = 1.05

AM Peak Hour:	Time:	09:00 AM	Volume:	227
	K-factor:	7.4%	PHF:	0.89
	D-factor:	52.3%		
PM Peak Hour:	Time:	04:30 PM	Volume:	267
	K-factor:	8.7%	PHF:	0.78
	D-factor:	59.8%		

DAVID PLUMMER & ASSOCIATES, INC.

24-HOUR COUNTS

Project Name: Grand Beach Hotel
Location: 94th Street between Collins Av & Harding Av
Observer: Traffic Survey Specialists, Inc.

Project No.: 11161
Count Date: 8/19/2011
Day of Week: Friday

BEGIN TIME	EASTBOUND 1st 1/4	2nd 1/4	3rd 1/4	4th 1/4	TOTAL	BEGIN TIME	WESTBOUND 1st 1/4	2nd 1/4	3rd 1/4	4th 1/4	TOTAL	TWO-WAY TOTAL
12:00 AM	3	6	5	3	17	12:00 AM	6	5	4	4	19	36
01:00 AM	3	4	2	0	9	01:00 AM	2	2	3	1	8	17
02:00 AM	1	1	0	1	3	02:00 AM	0	1	0	4	5	8
03:00 AM	0	0	1	0	1	03:00 AM	1	1	0	0	2	3
04:00 AM	0	0	2	0	2	04:00 AM	0	0	1	2	3	5
05:00 AM	1	0	0	2	3	05:00 AM	1	2	1	3	7	10
06:00 AM	2	1	3	1	7	06:00 AM	3	5	5	3	16	23
07:00 AM	9	4	3	3	19	07:00 AM	13	10	6	16	45	64
08:00 AM	13	13	10	10	46	08:00 AM	19	21	17	20	77	123
09:00 AM	15	14	24	19	72	09:00 AM	22	33	28	24	107	179
10:00 AM	14	24	12	16	66	10:00 AM	13	19	20	26	78	144
11:00 AM	13	16	20	25	74	11:00 AM	14	21	27	28	90	164
12:00 PM	19	24	23	20	86	12:00 PM	24	26	20	18	88	174
01:00 PM	34	12	25	18	89	01:00 PM	23	15	27	25	90	179
02:00 PM	20	19	16	25	80	02:00 PM	23	15	21	25	84	164
03:00 PM	17	16	21	29	83	03:00 PM	29	17	25	34	105	188
04:00 PM	19	31	31	21	102	04:00 PM	20	21	17	17	75	177
05:00 PM	22	21	19	28	90	05:00 PM	22	24	24	17	87	177
06:00 PM	16	16	14	16	62	06:00 PM	18	22	24	19	83	145
07:00 PM	13	9	9	12	43	07:00 PM	12	18	19	11	60	103
08:00 PM	12	9	12	10	43	08:00 PM	19	14	16	14	63	106
09:00 PM	12	5	7	9	33	09:00 PM	12	8	6	4	30	63
10:00 PM	8	8	9	7	32	10:00 PM	11	11	4	4	30	62
11:00 PM	7	4	1	5	17	11:00 PM	4	2	4	5	15	32
			24-HOUR TOTAL		1,079				24-HOUR TOTAL		1,267	2,346

DAILY TRAFFIC COUNT SUMMARY

Note: 2010 FDOT Seasonal Weekly Volume Factor = 1.05

AM Peak Hour:	Time:	09:00 AM	Volume:	188
	K-factor:	7.6%	PHF:	0.86
	D-factor:	59.8%		
PM Peak Hour:	Time:	03:45 PM	Volume:	212
	K-factor:	8.6%	PHF:	0.80
	D-factor:	54.5%		

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2010 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 0525 - SR A1A/COLLINS AV/ONE-WAY PAIR NB, 100' N 87 ST

YEAR	AADT	DIRECTION 1	DIRECTION 2	K FACTOR	D FACTOR	T FACTOR
2010	22500 C	N 22500	0	8.98	99.99	8.80
2009	22500 C	N 22500	0	8.99	99.99	8.40
2008	24500 C	N 24500	0	9.09	99.99	5.30
2007	26000 C	N 26000	0	8.01	99.99	4.90
2006	24000 C	N 24000	0	7.97	99.99	2.20
2005	25000 C	N 25000	S	8.80	99.90	5.50
2004	24000 C	N 24000	S	9.00	99.90	8.20
2003	26500 C	N 26500	S	8.80	99.90	4.90
2002	26000 C	N 26000	S	9.80	99.90	2.60
2001	27000 C	N 27000	S	8.20	99.90	3.00
2000	27500 C	N 27500	S	8.20	99.90	3.50
1999	34000 C	N 34000	S	9.10	99.90	3.20
1998	25000 C	N 25000	S	9.30	99.90	2.50
1997	23000 C	N 23000	S	9.10	99.90	2.70
1996	21000 C	N 21000	S	8.50	99.90	4.10
1995	21500 C	N	S	7.90	62.60	3.90

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; X = UNKNOWN

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2010 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 0132 - SR 922/NE 96 ST. 400' W OF HARDING AVENUE

YEAR	AADT	DIRECTION 1	DIRECTION 2	K FACTOR	D FACTOR	T FACTOR
2010	25500 C	E 14000	W 11500	8.98	54.08	4.20
2009	28500 C	E 15500	W 13000	8.99	53.24	7.20
2008	28000 C	E 15000	W 13000	9.09	55.75	7.90
2007	24000 F	E 13000	W 11000	8.01	54.34	7.20
2006	24000 C	E 13000	W 11000	7.97	54.22	7.20
2005	26000 C	E 14000	W 12000	8.80	53.80	7.80
2004	26500 C	E 13000	W 13500	9.00	53.30	7.80
2003	25000 C	E 12500	W 12500	8.80	53.40	3.20
2002	24500 C	E 12000	W 12500	9.80	52.30	2.80
2001	23500 F	E 11500	W 12000	8.20	53.50	5.40
2000	23500 C	E 11500	W 12000	8.20	53.10	2.20
1999	23500 C	E 11000	W 12500	9.10	52.70	1.20
1998	23000 C	E 11000	W 12000	7.20	52.70	2.70
1997	25000 C	E 12500	W 12500	9.10	64.50	4.10
1996	21500 C	E 11500	W 10000	8.50	53.10	15.30
1995	21000 C	E 11000	W 10000	7.90	62.60	8.70

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; X = UNKNOWN

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2010 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 0520 - SR A1A/HARDING AV/ONE-WAY PAIR SB, 100' N 87 ST

YEAR	AADT	DIRECTION 1	DIRECTION 2	K FACTOR	D FACTOR	T FACTOR
2010	24000 C	S 24000	0	8.98	99.99	8.80
2009	23000 C	S 23000	0	8.99	99.99	8.40
2008	24000 C	S 24000	0	9.09	99.99	5.30
2007	24000 C	S 24000	0	8.01	99.99	4.90
2006	24000 C	S 24000	0	7.97	99.99	2.20
2005	27000 C	S 27000	0	8.80	99.90	5.50
2004	27500 C	S 27500	0	9.00	99.90	8.20
2003	26000 C	S 26000	0	8.80	99.90	4.90
2002	27500 C	S 27500	0	9.80	99.90	2.60
2001	28500 C	S 28500	0	8.20	99.90	3.00
2000	27000 C	S 27000	0	8.20	99.90	3.50
1999	26000 C	S 26000	0	9.10	99.90	3.20
1998	25500 C	S 25500	0	8.20	99.90	2.50
1997	24000 C	S 24000	0	9.10	99.90	2.70
1996	22000 C	S 22000	0	8.50	99.90	4.10
1995	22000 C	S		7.90	62.60	3.90

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; X = UNKNOWN

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2010 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 0540 - SR A1A/COLLINS AV, 200' S END BRIDG/NCL BAL HARB

YEAR	AADT	DIRECTION 1	DIRECTION 2	K FACTOR	D FACTOR	T FACTOR
2010	44000 C	N 22000	S 22000	8.98	54.08	6.10
2009	46500 C	N 23000	S 23500	8.99	53.24	3.90
2008	49500 C	N 24500	S 25000	9.09	55.75	3.90
2007	50500 C	N 25000	S 25500	8.01	54.34	3.90
2006	48500 C	N 23500	S 25000	7.97	54.22	2.90
2005	47500 C	N 23000	S 24500	8.80	53.80	7.50
2004	47500 C	N 23000	S 24500	9.00	53.30	7.50
2003	42500 C	N 21000	S 21500	8.80	53.40	4.50
2002	43000 C	N 21500	S 21500	9.80	52.30	2.70
2001	45000 F	N 25000	S 20000	8.20	53.50	6.00
2000	45000 C	N 25000	S 20000	8.20	53.10	4.00
1999	44000 C	N 24500	S 19500	9.10	52.70	3.90
1998	44500 C	N 22000	S 22500	9.30	52.70	2.70
1997	31400 C	N 8900	S 22500	9.10	64.50	3.40
1996	41500 C	N 21500	S 20000	8.50	53.10	5.60
1995	36000 F	N 19000	S 17000	7.90	62.60	3.90

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; X = UNKNOWN

Attachment E

Processing Time Data and Calculations

Grand Beach Hotel

Date: August 20,2011
Observer: JC Pedrera

Vehicle	In	Out	Type	Arrival Time	Processing Time	Vehicles on Queue	Notes
1	X		Car	3:02 PM	0:01:09	0	Check In
2		X	Car	3:03 PM	0:01:08	0	
3		X	Car	3:04 PM	0:01:40	0	
4		X	Car	3:04 PM	0:00:28	0	
5	X		Car	3:05 PM	0:01:38	1	Check In
6	X		Car	3:05 PM	0:01:57	0	Check In
7	X		Taxi	3:08 PM	0:02:26	0	Check In
8		X	Car	3:12 PM	0:01:26	0	Check Out
9		X	Car	3:13 PM	0:01:48	0	Check Out
10	X		Taxi	3:15 PM	0:00:13	0	
11	X		Taxi	3:18 PM	0:05:20	0	Check In
12		X	Car	3:20 PM	0:00:34	0	
13	X		Taxi	3:21 PM	0:00:41	0	
14	X		Car	3:23 PM	0:00:36	0	
15		X	Car	3:25 PM	0:01:40	0	Check In
16	X		Car	3:30 PM	0:00:37	0	
17	X		Car	3:32 PM	0:00:42	0	
18	X		Car	3:34 PM	0:01:41	0	Check In
19	X		Car	3:34 PM	0:01:18	0	Check In
20	X		Taxi	3:37 PM	0:00:26	0	
21		X	Car	3:39 PM	0:00:38	0	
22		X	Taxi	3:42 PM	0:00:18	0	
23		X	Car	3:47 PM	0:01:24	0	
24	X		Van	3:44 PM	0:00:48	0	
25		X	Taxi	3:45 PM	0:00:29	0	
26	X		Car	3:45 PM	0:00:18	0	
27	X		Car	3:46 PM	0:00:26	0	
28	X		Taxi	3:47 PM	0:00:18	0	
29	X		Car	3:48 PM	0:00:50	0	
30		X	Taxi	3:50 PM	0:00:44	0	Check Out
31		X	Car	3:54 PM	0:00:52	0	
32	X		Car	4:00 PM	0:01:10	0	
33	X		Taxi	4:01 PM	0:00:18	0	
34		X	Car	4:02 PM	0:00:23	0	
35		X	Taxi	4:04 PM	0:01:25	0	Check Out
36	X		Car	4:05 PM	0:01:43	0	Check In
37	X		Car	4:08 PM	0:00:33	0	
38	X		Taxi	4:29 PM	0:01:37	0	Check In
39		X	Car	4:12 PM	0:02:06	0	
40	X		Car	4:13 PM	0:01:22	0	
41	X		Car	4:15 PM	0:00:22	0	
42	X		Car	4:16 PM	0:02:10	1	
43	X		Car	4:16 PM	0:02:25	0	Check In
44	X		Taxi	4:18 PM	0:00:48	0	
45	X		Car	4:20 PM	0:00:18	0	
46	X		Car	4:21 PM	0:00:38	0	
47	X		Car	4:22 PM	0:00:35	0	
48	X		Taxi	4:24 PM	0:00:42	0	Check In
49		X	Taxi	4:25 PM	0:00:26	0	
50	X		Taxi	4:26 PM	0:00:34	0	
51	X		Car	4:27 PM	0:00:18	0	
52	X		Car	4:27 PM	0:00:22	0	
53	X		Car	4:28 PM	0:00:31	0	
54	X		Car	3:32 PM	0:00:40	0	
55	X		Taxi	4:39 PM	0:00:22	0	
56	X		Car	4:42 PM	0:01:06	0	
57	X		Car	4:47 PM	0:00:39	0	
58	X		Car	4:48 PM	0:01:25	0	
59	X		Taxi	4:50 PM	0:02:12	0	Check In
60		X	Taxi	4:52 PM	0:01:15	0	
61	X		Car	4:53 PM	0:00:32	0	
62		X	Car	4:54 PM	0:00:28	0	
63	X		Car	4:55 PM	0:02:50	0	Check In
64	X		Car	4:55 PM	0:01:48	0	Check In
65							
66							

Total Processing Time: **1:08:36**
Average Processing Time: **0:01:04**

Grand Beach Hotel

Date: August 20,2011
Observer: JC Pedrera

Vehicle	In	Out	Type	Arrival Time	Processing Time	Vehicles on Queue	Notes
1		X	Car	11:08 AM	0:00:55	0	
2		X	Car	11:09 AM	0:00:25	0	
3	X		Taxi	11:10 AM	0:01:53	0	Check In
4		X	Car	11:16 AM	0:01:29	0	Check Out
5		X	Car	11:17 AM	0:00:32	1	
6		X	Taxi	11:18 AM	0:00:45	0	
7		X	Car	11:20 AM	0:00:43	0	
8		X	Car	11:21 AM	0:02:06	0	
9	X		Taxi	11:22 AM	0:01:00	1	Check Out
10		X	Car	11:22 AM	0:00:22	0	
11		X	Taxi	11:27 AM	0:02:04	0	Check Out
12	X		Taxi	11:27 AM	0:00:28	1	
13		X	Car	11:28 AM	0:00:33	2	
14		X	Car	11:28 AM	0:00:30	0	
15	X		Car	11:31 AM	0:00:29	1	
16		X	Car	11:31 AM	0:00:41	0	
17		X	Taxi	11:33 AM	0:00:33	0	
18		X	Car	11:34 AM	0:00:27	0	Check Out
19		X	Taxi	11:35 AM	0:01:08	1	Check Out
20		X	Car	11:35 AM	0:01:16	0	Check Out
21	X		Car	11:40 AM	0:00:56	0	Check In
22		X	Car	11:47 AM	0:01:27	0	
23		X	Car	11:48 AM	0:00:52	0	Check Out
24		X	Taxi	11:57 AM	0:00:41	0	Check Out
25	X		Car	11:58 AM	0:00:32	0	
26	X		Taxi	12:00 PM	0:01:04	0	Check In
27		X	Taxi	12:03 PM	0:00:29	0	
28		X	Car	12:07 PM	0:01:50	0	Check Out
29		X	Taxi	12:08 PM	0:01:10	0	
30		X	Car	12:11 PM	0:01:17	0	
31	X		Car	12:12 PM	0:01:13	0	Check In
32	X		Car	12:15 PM	0:00:38	0	
33		X	Taxi	12:21 PM	0:01:12	0	Check Out
34		X	Car	12:22 PM	0:01:38	0	Check Out
35	X		Car	12:23 PM	0:01:22	1	Check In
36		X	Car	12:24 PM	0:00:28	0	
37	X		Taxi	12:30 PM	0:01:04	0	
38	X		Car	12:31 PM	0:01:17	0	Check In
39	X		Taxi	12:34 PM	0:00:22	0	
40		X	Car	12:38 PM	0:01:31	0	Check Out
41		X	Taxi	12:45 PM	0:01:29	0	Check Out
42		X	Car	12:45 PM	0:00:53	0	
43		X	Car	12:47 PM	0:00:22	0	
44	X		Car	12:48 PM	0:01:10	0	Check In
45		X	Taxi	12:50 PM	0:01:24	0	Check Out
46		X	Car	12:53 PM	0:00:22	0	
47		X	Car	12:54 PM	0:00:27	0	
48		X	Car	12:58 PM	0:00:53	0	
49	X		Car	12:59 PM	0:00:23	0	
50							
51							
52							
53							
54							
55							
56							
57							
58							
59							

Total Processing Time: **0:46:45**
Average Processing Time: **0:00:57**