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TRAFFIC GENERATION STATEMENT

THE VINETA HOTEL TOWN OF PALM BEACH, FLORIDA

Prepared for:

363 Cocoanut Propco LLC c/o Zabik and Associates, Inc. 11398 Okeechobee Boulevard Suite 2 Royal Palm Beach, Florida 33411

Job No. 22-173

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This item has been electronically signed and sealed by Anna Lai, P.E., on <u>01/27/2023</u>.

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1.0 SITE DATA

The subject parcel is located at 363 Cocoanut Row in the Town of Palm Beach, Florida and contains approximately 0.43 acres. The Parcel Control Number (PCN) for the subject parcel is 50-43-43-23-05-006-0010. The site is currently vested with a 57 room hotel and 113 seat fine dining restaurant. The site is proposed to be modified, including dining seat reallocation for hotel use, to a total 41 room hotel and 197 seat fine dining restaurant with a project build-out of 2024.

Site access will remain unchanged and is existing via a valet stand on Cocoanut Row on the west side of the site. On-site parking is proposed to continue as employee parking.

Historically, valet has utilized the on-street parking spaces on Chilean Avenue, Australian Avenue, and Cocoanut Row. The proposed site development will utilize a similar operation. Motorists will arrive via Cocoanut Row, drop off their vehicle and the valet attendants will park their vehicle at an available on-street parking space and then return to the site. The valet staff will track available parking spaces to increase efficiency and minimize travel time. For vehicle pick up, valet attendants will utilize Lake Avenue, Cocoanut Row, Hibiscus Avenue, or Chilean Avenue pending the parking spot location. The Valet Circulation Exhibit and the hotel-provided Valet Operation Plan are attached to this report.

For additional information concerning site location and layout, please refer to the Site Plan prepared by Spina O'Rourke + Partners, Inc.

2.0 TRAFFIC GENERATION

The Palm Beach County Unified Land Development Code Article 12 requires that for any application for a site specific development order on property on which there are vested uses shall be subject to the Palm Beach County Traffic Performance Standards to the extent the traffic generation projected for the site specific development order exceeds the traffic generation of the vested uses. The generation rates and capture rates of the vested uses shall be updated to current pro forma traffic generation and passer-by rates and shall be used to calculate vested uses/current approval traffic.

The traffic currently vested to the parcel has been calculated in accordance with the traffic generation rates listed in the *ITE Trip Generation Manual*, *11th Edition* and provided by the Palm Beach County Engineering Traffic Division as shown in Tables 1, 2, and 3 attached with this report. Table 1 shows the daily traffic generation associated with the existing/vested development in trips per day (tpd). Tables 2 and 3 show the AM and PM peak hour traffic generation, respectively, in peak hour trips (pht). The traffic generated by the vested development may be summarized as follows:

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2.0 TRAFFIC GENERATION (CONTINUED)

Existing/Vested Development

Daily Traffic Generation	=	532 tpd
AM Peak Hour Traffic Generation (In/Out)	=	24 pht (15 In/9 Out)
PM Peak Hour Traffic Generation (In/Out)	=	44 pht (24 In/20 Out)

The traffic to be generated by the proposed site modifications has also been calculated in accordance with the traffic generation rates listed in the *ITE Trip Generation Manual, 11th Edition* and rates published by the Palm Beach County Engineering Traffic Division as shown in Tables 4, 5, and 6. Table 4 shows the daily traffic generation associated with the proposed plan of development. Tables 5 and 6 show the AM and PM peak hour traffic generation, respectively. The traffic to be generated by the proposed plan of development may be summarized as follows:

Proposed Plan of Development

Daily Traffic Generation	=	510 tpd
AM Peak Hour Traffic Generation (In/Out)	=	19 pht (11 In/8 Out)
PM Peak Hour Traffic Generation (In/Out)	=	45 pht (27 In/18 Out)

The decrease in traffic generation as a result of the proposed site modifications is shown in Table 7 and may be summarized as follows:

Change to Vested Development

Daily Traffic Generation	=	22 tpd DECREASE
AM Peak Hour Traffic Generation	=	5 pht DECREASE
PM Peak Hour Traffic Generation	=	1 pht INCREASE

3.0 RADIUS OF DEVELOPMENT INFLUENCE

Based on Table 12.B.2.D-7 3A of the Palm Beach County Unified Land Development Code Article 12 – Traffic Performance Standards, for a net trip generation of 1 peak hour trips, the radius of development influence shall be the directly accessed link(s).

For Test 1, a project must address those links within the radius of development influence on which its net trips are greater than 1% of the LOS "D" of the link affected on a peak hour, peak direction basis AND those links outside of the radius of development influence on which its net trips are greater than five percent of the LOS "D" of the link affected on a peak hour, peak direction basis up to the limits set forth in Table 12.B.2.C-1 1A: LOS "D" Link Service Volumes.

For Test 2, a project must address those links within the radius of development influence on which its net trips are greater than 3% of the LOS "E" of the link

3.0 RADIUS OF DEVELOPMENT INFLUENCE (CONTINUED)

affected on a peak hour, peak direction basis AND those links outside of the radius of development influence on which its net trips are greater than five percent of the LOS "E" of the link affected on a peak hour, peak direction basis up to the limits set forth in Table 12.B.2.C-4 2A: LOS "E" Link Service Volumes.

4.0 PROJECT DISTRIBUTION

The project trips were distributed based on the existing and proposed geometry of the roadway network, and on existing and anticipated traffic patterns. Figure 1 presents the trip distribution percentages.

5.0 TEST 1 BUILD-OUT ANALYSIS

Test 1, or the Build-Out Analysis, relates to the build-out period of the project and requires that a project not add traffic within the radius of development influence which would have total traffic exceeding the adopted LOS at the end of the build-out period. Table 8 indicates the project's assignment is less than 1% of the applicable LOS "D" threshold and is insignificant for all links within the project's radius of development influence. This project therefore meets the requirements of Test 1.

6.0 TEST 2 BUILD-OUT ANALYSIS

Test 2, or the Five Year Analysis, relates to the evaluation of project traffic five years in the future and requires that a project not add traffic within the radius of development influence which would result in total traffic exceeding the adopted LOS at the end of the Five Year Analysis Period. Table 9 shows the project's net trip generation is less than 3% of the applicable LOS "E" threshold for all links within the project's radius of development influence. This project therefore meets the requirements of Test 2.

7.0 SITE RELATED IMPROVEMENTS

The AM and PM peak hour turning movement volumes and directional distributions at the project entrances for the overall development are shown in Tables 5 and 6 attached with this report and may be summarized as follows:

DIRECTIONAL DISTRIBUTION (TRIPS IN/OUT)

AM = 12/10PM = 40/25

As previously mentioned, site access will remain unchanged and is existing via a valet stand on Cocoanut Row on the west side of the site. On-site parking is proposed to continue as employee parking. Valet will continue to utilize available

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7.0 SITE RELATED IMPROVEMENTS (CONTINUED)

on-street parking spaces per the existing parking plan. Based on the reduction in trip generation as part of the proposed modifications, no site access modifications are recommended.

8.0 QUEUING

As previously mentioned, historically, valet has utilized the on-street parking spaces on Chilean Avenue, Australian Avenue, and Cocoanut Row. The proposed site development will utilize a similar operation. Motorists will arrive via Cocoanut Row, drop off their vehicle and the valet attendants will park their vehicle at an available on-street parking space and then return to the site. The valet staff will track available parking spaces to increase efficiency and minimize travel time. For vehicle pick up, valet attendants will utilize Lake Avenue, Cocoanut Row, Hibiscus Avenue, or Chilean Avenue pending the parking spot location.

The valet stand is able to process vehicles at approximately 1 vehicle every 2 minutes (30 vehicles/hour). The 2-minute processing rate is based on the following assumptions and calculations:

Drop-off

- 30 seconds for the guest to arrive, get a ticket from the valet attendant and the attendant to get into the vehicle.
- 1 minute average for the attendant to park their vehicle per the Valet Circulation Exhibit. Valet will utilize available on-street parking spaces.
- 30 seconds for the attendant to return to the valet stand.

Pick-up

- 30 seconds for the attendant to travel/run to the vehicle.
- 1 minute average for the attendant to return the vehicle to the valet stand.
- 30 seconds for the guest to get in the vehicle and depart.

Demand is approximately 65 vehicles/hour during the critical PM peak hour.

The queuing analysis was based on the following ratio:

Coefficient of utilization (p) = Average Demand Rate / Average Service Rate

The required queue storage (M) is determined based on the following equation:

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

A 95% confidence rate was used for this analysis. Therefore, the P(x > M) was set to 5%.

8.0 QUEUEING (CONTINUED)

Q = Processing rate = 30 processes per hour q = Demand rate = 65 vehicles per hour N = 4 valet attendants ρ = Utilization factor = q/(NQ) = 65/(4*30) = 0.542 Q_m = Table value = 0.247 M = (ln(0.05) - ln(0.247))/ ln(0.542) - 1 = 1.61, or 2 vehicles.

Therefore the queue for the valet stand is conservatively estimated at 4 vehicles. The calculations are included with more detail as an attachment.

At this site, 4 vehicles can be accommodated in the queuing area. Thus, the queueing capacity at this site is adequate. In the unlikely scenario of queue spillover, additional valet attendants can be used.

9.0 CONCLUSION

As shown in Table 7, the proposed modifications will result in a decrease of 22 daily trips, a decrease of 5 AM peak hour trips, and an increase of 1 PM peak hour trips from the existing development. The proposed peak hour trips are negligible and will have an insignificant impact on the surrounding roadways and is therefore approvable with regard to the Palm Beach County Traffic Performance Standards. As less than 20 peak hour trips are estimated, additional analysis is not required.



11/03/22

EXISTING/VESTED DEVELOPMENT

Landuse	ITE	-	ntensity	Pate/Equation	Dir	Split	Crease Trins	Inter	nalization		Pass	s-by	
Lunddoc	oouc		Intensity	Rate/Equation	m	Out	Gross Trips	%	Iotal	External Trips	%	Trips	Net Trips
Hotel	310	57	Rooms	7.99			455	and a share a	0	455	10%	46	409
Fine Dining Restaurant	931	113	Seats	2.6			294	25.0%	74	220	44%	97	123
			Grand Totals:	and a second second second		-	749	9.9%	74	675	21%	143	532

TABLE 2 - AM Peak Hour Traffic Generation

	ITE	Contraction of the			Dir	Split	G	ross T	rips	Int	ernali	zation		Ext	emal	Trips	Pass	-by		Net Tr	ips
Landuse	Code	ANALE HEL	ntensity	Rate/Equation	In	Out	In	Out	Total	%	In	Out	Total	In	Out	Total	%	Trips	In	Out	Total
Hotel	310	57	Rooms	0.46	0.56	0.44	15	11	26	0.0%	0	0	0	15	11	26	10%	3	14	9	23
Fine Dining Restaurant	931	113	Seats	0.02	0.50	0.50	1	1	2	25.0%	0	1	1	1	0	1	44%	0	1	0	1
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		Grand Totals:	and a second second second second			16	12	28	3.6%	0	1	1	16	11	27	11%	3	15	9	24

TABLE 3 - PM Peak Hour Traffic Generation

	ITE				Dir	Split	Gr	oss T	rips	Int	emali	zation		Ext	ernal	Trips	Pass	-by	1	Net Tri	ips
Landuse	Code		intensity	Rate/Equation	In	Out	In	Out	Total	%	In	Out	Total	In	Out	Total	%	Trips	In	Out	Total
Hotel	310	57	Rooms	0.59	0.51	0.49	17	17	34	0.0%	0	0	0	17	17	34	10%	3	15	16	31
Fine Dining Restaurant	931	113	Seats	0.28	0.67	0.33	21	11	32	25.0%	5	3	8	16	8	24	44%	11	9	4	13
	and a state	and the second second	Grand Totals:	and a second			38	28	66	12.1%	5	3	8	33	25	58	24%	14	24	20	44



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PROPOSED DEVELOPMENT

TABLE 4 - Daily	Traffic Generation
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	ITE			Pete/Equation	Dir	Split	Groce Trine	Inte	emalization	External Trins	Pass	-by	Net Trins
Landuse	Code	Station of the state	ntensity	Rate/Equation	- III	Out	Gloss mps	70	Total	External mps	70	mps	net mps
Hotel	310	41	Rooms	7.99			328		0	328	10%	33	295
Fine Dining Restaurant	931	197	Seats	2.6	- and		512	25.0%	128	384	44%	169	215
			Grand Totals:				840	15.2%	128	712	28%	202	510

TABLE 5 - AM Peak Hour Traffic Generation

	ITE	A BARRIER		and the second	Dir	Split	Gr	oss T	rips	Inte	emalia	zation		Ext	ernal	Trips	Pass	-by	100	Net Tri	ps
Landuse	Code	h	ntensity	Rate/Equation	In	Out	In	Out	Total	%	In	Out	Total	In	Out	Total	%	Trips	In	Out	Total
Hotel	310	41	Rooms	0.46	0.56	0.44	11	8	19	0.0%	0	0	0	11	8	19	10%	2	10	7	17
Fine Dining Restaurant	931	197	Seats	0.02	0.50	0.50	2	2	4	25.0%	1	0	1	1	2	3	44%	1	1	1	2
		-	Grand Totals:	and the second		himi	13	10	23	4.3%	1	0	1	12	10	22	14%	3	11	8	19

TABLE 6 - PM Peak Hour Traffic Generation

The second s	ITE	Charles Charles			Dir	Split	Gr	oss T	rips	Inte	ernaliz	ation	國家議論	Ext	ernal	Trips	Pass	s-by		let Tri	ps
Landuse	Code	I	ntensity	Rate/Equation	In	Out	In	Out	Total	%	In	Out	Total	In	Out	Total	%	Trips	In	Out	Total
Hotel	310	41	Rooms	0.59	0.51	0.49	12	12	24	0.0%	0	0	0	12	12	24	10%	2	11	11	22
Fine Dining Restaurant	931	197	Seats	0.28	0.67	0.33	37	18	55	25.0%	9	5	14	28	13	41	44%	18	16	7	23
			Grand Totals:				49	30	79	17.7%	9	5	14	40	25	65	31%	20	27	18	45

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TABLE 7
TRAFFIC GENERATION DIFFERENCE

		AM F	PEAK H	OUR	PM PEAK HOUR			
	DAILY	TOTAL	IN	OUT	TOTAL	IN	OUT	
EXISTING DEVELOPMENT =	532	24	15	9	44	24	20	
PROPOSED DEVELOPMENT =	510	19	11	8	45	27	18	
DIFFERENCE =	-22	-5	-4	-1	1	3	-2	







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TABLE 8 TEST 1 - PROJECT SIGNIFICANCE CALCULATION PM PEAK HOUR

2024 BUILD OUT DIRECTLY ACCESS LINK(S) TOTAL PM PEAK HOUR PROJECT TRIPS (ENTERING) = 3 TOTAL PM PEAK HOUR PROJECT TRIPS (EXITING) = -2

	ROADWAY	FROM	то	PI E PROJECT DISTRIBUTION	M PEAK HOUR DIRECTIONAL PROJECT TRIPS	EXISTING LANES	CLASS	LOS D STANDARD*	TOTAL PROJECT IMPACT	PROJECT
i.	ROYAL PALM WAY ROYAL PALM WAY ROYAL PALM WAY	FLAGLER DRIVE COCOANUT ROW HIBISCUS AVENUE	COCOANUT ROW HIBISCUS AVENUE S COUNTY ROAD	80% 10% 5%	2 0 0	4D 4D 4D	 	1770 1770 1770	0.11% 0.00% 0.00%	NO NO NO
	S COUNTY ROAD S COUNTY ROAD S COUNTY ROAD	ROYAL PALM WAY AUSTRALIAN AVENUE CHILEAN AVENUE	AUSTRALIAN AVENUE CHILEAN AVENUE WORTH AVENUE	5% 5% 5%	0 0 0	4 4 4	=	1680 1680 1680	0.00% 0.00% 0.00%	NO NO NO
	COCOANUT ROW COCOANUT ROW	ROYAL PALM WAY AUSTRALIAN AVENUE	AUSTRALIAN AVENUE CHILEAN AVENUE	70% 30%	2 1	2 2	Ш	810 810	0.25% 0.12%	NO NO
	HIBISCUS AVENUE HIBISCUS AVENUE	ROYAL PALM WAY AUSTRALIAN AVENUE	AUSTRALIAN AVENUE	15% 15%	0 0	2 2	11 11	810 810	0.00% 0.00%	NO NO
	CHILEAN AVENUE CHILEAN AVENUE	S COUNTY ROAD HIBISCUS AVENUE	HIBISCUS AVENUE COCOANUT ROW	15% 30%	0 1	2 2	11	810 810	0.00% 0.12%	NO NO

Notes: * LOS D Standard based on the Palm Beach County Unified Land Development Code Table 12.B.2.C-1 1A: LOS "D" Link Service Volumes.



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TABLE 9 TEST 2 - PROJECT SIGNIFICANCE CALCULATION PM PEAK HOUR

2024 BUILD OUT DRECTLY ACCESS LINK(S) TOTAL PM PEAK HOUR PROJECT TRIPS (ENTERING) = 3 TOTAL PM PEAK HOUR PROJECT TRIPS (EXITING) = -2

			PM PEAK HOUR DIRECTIONAL TOTAL							
ROADWAY	FR	OM	то	PROJECT DISTRIBUTION	PROJECT TRIPS	EXISTING LANES	CLASS	LOS E STANDARD*	PROJECT	PROJECT SIGNIFICANT
ROYAL PALM WAY ROYAL PALM WAY ROYAL PALM WAY	FL CO HIE	AGLER DRIVE DCOANUT ROW BISCUS AVENUE	COCOANUT ROW HIBISCUS AVENUE S COUNTY ROAD	80% 10% 5%	2 0 0	4D 4D 4D	 	1870 1870 1870	0.11% 0.00% 0.00%	NO NO NO
S COUNTY ROAD S COUNTY ROAD S COUNTY ROAD	RC AU CH	OYAL PALM WAY ISTRALIAN AVENUE IILEAN AVENUE	AUSTRALIAN AVENUE CHILEAN AVENUE WORTH AVENUE	5% 5% 5%	0 0 0	4 4 4	=	1780 1780 1780	0.00% 0.00% 0.00%	NO NO NO
COCOANUT ROW	RO	OYAL PALM WAY ISTRALIAN AVENUE	AUSTRALIAN AVENUE CHILEAN AVENUE	70% 30%	2 1	2 2	II II	860 860	0.23% 0.12%	NO NO
HIBISCUS AVENUE HIBISCUS AVENUE	RO	OYAL PALM WAY ISTRALIAN AVENUE	AUSTRALIAN AVENUE CHILEAN AVENUE	15% 15%	0	2 2	11	860 860	0.00% 0.00%	NO NO
CHILEAN AVENUE CHILEAN AVENUE	S C HIE	COUNTY ROAD BISCUS AVENUE	HIBISCUS AVENUE COCOANUT ROW	15% 30%	0 1	2 2	11 11	860 860	0.00% 0.12%	NO NO

Notes: * LOS E Standard based on the Palm Beach County Unified Land Development Code Table 12.B.2.C-4 2A: LOS "E" Link Service Volumes

X:\Documents\PROJECTS\2022\22-173 Vineta Hotel (Chesterfield)\Traffic\Vineta_Traffic Calcs.rev2.xlsx AL



Queuing Calculations

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

Q = 30 Processing rate (processes per hour)

q = 65 Demand rate (vehicles per hour)

N = 4 Service positions (attendants)

 $\rho = 0.542$ Utilization factor (q/(NQ))

Q_m = 0.247 Table Value

M = 1.61

						and the second se	
	N = 1	2	3	4	6	8	10
0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
0.1	0.1000	0.1820	0.0037	0.0080	0.0000	0.0000	0.0000
0.2	0.2000	0.0666	0.0247	0.0096	0.0015	0.0002	0.0000
0.3	0.3000	0.1385	0.0700	0.0370	0.0111	0.0036	0.0011
0.4	0.4000	0.2286	0.1411	0.0907	0.0400	0.0185	0.0088
0.5	0.5000	0.3333	0.2368	0.1739	0.0991	0.0591	0.0360
0.6	0.6000	0.4501	0.3548	0.2870	0.1965	0.1395	0.1013
0.7	0.7000	0.5766	0.4923	0.4286	0.3359	0.2706	0.2218
0.8	0.8000	0.7111	0.6472	0.5964	0.5178	0.4576	0.4093
0.9	0.9000	0.8526	0.8172	0.7878	0.7401	0.7014	0.6687
1	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Interpolate	Х	Y
Low Number =	0.7000	0.4923
High Number =	0.8000	0.6472



