Appendix F

Alternatives Traffic Memorandum

FEHR PEERS

MEMORANDUM

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Subject: 100 E. Ocean Traffic Study – Alternatives Analysis

OC16-0475

Fehr & Peers prepared a traffic study in 2019 as part of the environmental impact report for the 100 E. Ocean hotel project in Long Beach, CA (100 E. Ocean Transportation Impact Study, May 2019, hereafter referred to as the 2019 Traffic Study). There are five proposed alternatives to the Project. This document summarizes the trip generation for each alternative and assesses the likelihood for fewer or additional impacts.

PROJECT DESCRIPTION

The Project as analyzed in the 2019 Traffic Study includes the following uses:

- 429 Hotel Rooms
- 23.512 KSF Restaurant (consisting of 4.236 KSF Kitchen, 14.282 Indoor Seating, 4.994 Outdoor Patio)
- 26.847 KSF Banquet Space (consisting of 10.670 KSF Ballroom, 10.123 KSF Pre-Function Space, and 6.054 KSF Meeting Rooms)

The five land use variations currently being proposed as alternatives including the following:

- Alternative 1 (No Project/No Build): In accordance with the CEQA Guidelines, the No Project Alternative for a development project on an identifiable property consists of the circumstance under which the project does not proceed. Accordingly, for purposes of this analysis, Alternative 1, the No Project/No Build Alternative, assumes that the Project would not be approved and no new development would occur within the Project Site.

- Alternative 2 (Mixed-Use Alterative): Mixed Use hotel, apartments, office, retail, and restaurant space with 200 hotel rooms
- Alternative 3 (Reduced Mixed-Use Alternative): Mixed Use hotel, apartments, office, retail, and restaurant space with 160 hotel rooms
- Alternative 4 (PD6 Zoning Compliant Residential Alternative): 450 residential units with 15 KSF retail and restaurant space
- Alternative 5 (PD6 Zoning Compliant Office Alternative): 265 KSF office building with 27 KSF restaurant and retail

The Project and four alternative land use options are summarized in **Table 1** below.

TABLE 1 – ALTERNATIVES LAND USE SUMMARY

Land Uses	***Project***	***Alt 1***	***Alt 2***	***Alt 3***	***Alt 4***	***Alt 5***
Residential	-	-	115 units	92 units	450 units	-
Office Uses	-	-	70 KSF	56 KSF	-	265 KSF
Restaurant	23.512 KSF	-	26 KSF	20.8 KSF	-	-
Retail Uses	-	-	45 KSF	36 KSF	15 KSF	27 KSF
Hotel Uses	429 rooms	-	200 rooms	160 rooms	-	-

PROJECT TRIP GENERATION ESTIMATES

As analyzed in the 2019 Traffic Study, the Project would generate 4,905 daily trips, 319 AM peak hour trips, and 372 PM peak hour trips. The 2019 Traffic Study concluded that no impacts would occur due to project traffic, including intersection levels of service; the regional transportation system; emergency access; and public transit, bicycle, and pedestrian facilities.

TABLE 2 – PROJECT TRIP GENERATION

Land Use	***Units[1]***	***ITE Code***	***Daily***	***AM Peak Hour***			***PM Peak Hour***		
				In	***Out***	***Total***	***In***	***Out***	***Total***
Hotel[2]	429 RM	310	3,586	119	83	202	131	126	257
Restaurant/Bar	23.512 KSF	932	2,638	129	105	234	143	87	230
Subtotal			*6,224*	*248*	*188*	*436*	*274*	*213*	*487*
Restaurant/Bar Pass-by Reduction (-25%)			(659)	(32)	(26)	(58)	(35.5)	(22)	(57.5)
Restaurant/Bar Internalization (-25%)			(659)	(32)	(26)	(58)	(35.5)	(22)	(57.5)
Total Project Trips			**4,906**	**184**	**136**	**320**	**203**	**169**	**372**

Notes:
1. RM = Rooms, KSF = 1,000 square feet.
2. The ITE Trip Generation Manual (10th Edition) considers Banquet Space as part of the hotel land use and only requires number of rooms in generating the trip generation estimate

Source: ITE Trip Generation Manual, 10th Edition, 2017; Fehr & Peers, 2019.

A trip generation analysis was conducted for each of the alternatives. The analyses are summarized below.

Alternative 1:

Since Alternative 1 would maintain the existing uses currently occupying the Project Site and would not include any new development, no new trips are generated.

Alternative 2:

Alternative 2 would result in 5,003 daily trips, an increase of two percent compared to the Project. During the AM peak hour, Alternative 2 would generate 342 trips, an increase of seven percent compared to Alternative 1. During the PM peak hour, Alternative 2 would generate 434 trips, an increase of 17 percent compared to the Project.

TABLE 3 – ALTERNATIVE 2 PROJECT TRIP GENERATION

Land Use	Units[1]	ITE Code	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Apartment	115 Units	222	512	8	28	36	25	16	41
Office	70 KSF	710	682	70	12	82	13	67	80
Restaurant	26 KSF	932	2,917	142	116	258	157	97	254
Retail	45 KSF	820	1,699	26	16	42	82	89	171
Hotel	200 RM	310	1,672	55	39	94	61	59	120
Subtotal			*7,481*	*301*	*211*	*512*	*338*	*328*	*666*
Restaurant & Shopping Center Pass-by Reduction (-25%)			(1,154)	(42)	(33)	(75)	(60)	(47)	(106)
Restaurant, Shopping Center & Office Internalization (-25%)			(1,324)	(60)	(36)	(96)	(63)	(63)	(126)
Total Project Trips			**5,003**	**200**	**142**	**342**	**215**	**218**	**434**

Notes:
1. RM = Rooms, KSF = 1,000 square feet.

Source: ITE Trip Generation Manual, 10th Edition, 2017; Fehr & Peers, 2019.

Alternative 3:

Alternative 3 would result in 4,002 daily trips, a reduction of 18 percent compared to the Project. During the AM peak hour, Alternative 3 would generate 272 trips, a reduction of 15 percent compared to the Project. During the PM peak hour, Alternative 3 would generate 347 trips, a reduction of seven percent compared to the Project.

TABLE 4 – ALTERNATIVE 3 PROJECT TRIP GENERATION

Land Use	Units[1]	ITE Code	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Apartment	92 Units	222	409	7	21	28	20	13	33
Office	56 KSF	710	545	56	9	65	10	54	64
Restaurant	20.8 KSF	932	2,333	114	93	207	126	77	203
Retail	36 KSF	820	1,359	21	13	34	66	71	137
Hotel	160 RM	310	1,338	44	31	75	49	47	96
Subtotal			*5,985*	*242*	*167*	*409*	*271*	*262*	*533*
Restaurant & Shopping Center Pass-by Reduction (-25%)			(923)	(34)	(27)	(60)	(48)	(37)	(85)
Restaurant, Shopping Center & Office Internalization (-25%)			(1,059)	(48)	(29)	(77)	(51)	(51)	(101)
Total Project Trips			**4,002**	**161**	**112**	**272**	**173**	**175**	**347**

Notes:
1. RM = Rooms, KSF = 1,000 square feet.

Source: ITE Trip Generation Manual, 10th Edition, 2017; Fehr & Peers, 2019.

Alternative 4:

Alternative 4 would result in 2,286 daily trips, a reduction of 46 percent compared to the Project. During the AM peak hour, Alternative 4 would generate 147 trips, a reduction of 46 percent compared to the Project. During the PM peak hour, Alternative 4 would generate 191 trips, a reduction of 51 percent compared to the Project.

TABLE 5 – ALTERNATIVE 4 PROJECT TRIP GENERATION

Land Use	Units[1]	ITE Code	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Restaurant/Retail	20.8 KSF	820	2,003	34	106	140	99	63	162
Apartment	450 Units	222	566	9	5	14	27	30	57
Subtotal			*2,569*	*43*	*111*	*154*	*126*	*93*	*219*
Restaurant/Retail Center Pass-by Reduction (-25%)			(142)	(2)	(1)	(4)	(7)	(8)	(14)
Restaurant/Retail Internalization (-25%)			(142)	(2)	(1)	(4)	(7)	(8)	(14)
Total Project Trips			**2,286**	**39**	**109**	**147**	**113**	**78**	**191**

Notes:
1. RM = Rooms, KSF = 1,000 square feet.

Source: ITE Trip Generation Manual, 10th Edition, 2017; Fehr & Peers, 2019.

Alternative 5:

Alternative 5 would result in 2,445 daily trips, a reduction of 50 percent compared to the Project. During the AM peak hour, Alternative 5 would generate 243 trips, a reduction of 24 percent compared to the Project. During the PM peak hour, Alternative 4 would generate 280 trips, a reduction of 25 percent compared to the Project.

TABLE 6 – ALTERNATIVE 5 PROJECT TRIP GENERATION

Land Use	Units[1]	ITE Code	Daily	AM Peak Hour			PM Peak Hour		
				In	Out	Total	In	Out	Total
Restaurant/Retail	27 KSF	820	1,019	16	9	25	49	54	103
Office	265 KSF	710	2,581	264	43	307	49	256	305
Subtotal			*3,600*	*280*	*52*	*332*	*98*	*310*	*408*
Restaurant/Retail Center Pass-by Reduction (-25%)			(255)	(4)	(2)	(6)	(12)	(14)	(26)
Restaurant/Retail & Office Internalization (-25%)			(900)	(70)	(13)	(83)	(25)	(78)	(102)
Total Project Trips			**2,445**	**206**	**37**	**243**	**61**	**219**	**280**

Notes:
1. RM = Rooms, KSF = 1,000 square feet.

Source: ITE Trip Generation Manual, 10th Edition, 2017; Fehr & Peers, 2019.

IMPACT ANALYSIS

Alternatives 1, 3, 4, and 5 are anticipated to generate fewer trips than the Project and therefore no impacts are anticipated with respect to the regional transportation system, emergency access, public transit, bicycle, or pedestrian facilities.

Alternative 2 is expected to generate more trips than the Project. Therefore, level of service (LOS) calculations were prepared for this scenario to determine if any additional impacts would occur with the increase in trips associated with Alternative 2. As shown in **Table 7**, two intersections result in a V/C change that triggers City of Long Beach impact criteria. Vehicle trips are estimated to be higher than the Project, however no additional impacts are anticipated with respect to the regional transportation system, emergency access, public transit, bicycle, or pedestrian facilities.

TABLE 7 – OPENING YEAR PLUS ALTERNATIVE 2 PROJECT INTERSECTION LEVEL OF SERVICE

Intersection		Control	Peak Hour	Opening (2022) Year No Project		Opening (2022) Plus Buildout Project		V/C Change	Significant Impact
				V/C	LOS	V/C	LOS		
10	Alamitos Avenue/Shoreline Drive & Ocean Boulevard	Signal	AM	0.772	C	0.787	C	0.015	No
			PM	**1.046**	**F**	**1.067**	**F**	**0.021**	**Yes**
13	Alamitos Avenue & 4th Street	Signal	AM	0.86	D	0.872	D	0.012	No
			PM	**1.121**	**F**	**1.141**	**F**	**0.020**	**Yes**

Notes: Intersection operations below acceptable LOS D are shown in **bold.**
Source: *Fehr & Peers, 2019.*

MITIGATION MEASURES

The impact under Alternative 2 at Intersection 10 can be eliminated by adding a northbound right-turn overlap phase with the westbound left-turn, reducing the V/C to 0.994. The impact under Alternative 2 at Intersection 13 cannot be mitigated with signal timing changes but can be mitigated with intersection geometry improvements, such as a dedicated northbound right-turn lane. However, given the right-of-way constraints at the intersection, this impact would be considered significant and unavoidable.

SUMMARY

The 2019 Traffic Study determined that the Project would not result in transportation impacts. Alternatives 1, 3, 4, and 5 would result in lower trip generation than the Project. As such, the potential impacts from Alternatives 1, 3, 4, and 5 would be equal to or less than those previously disclosed in the 2019 Traffic Study.

Alternative 2 is estimated to generate more trips than the Project, and is expected to result in impacts at two intersections. Mitigation measures were recommended for those potential impacts, but given right-of-way constraints, one intersection impact would be considered significant and unavoidable.