

ATTACHMENT 4

**Kimley Horn Trip Generation Evaluation Memo
dated December 12, 2018 and February 21, 2019**



February 21, 2019

Mark Stefan
AG-CCRP Public Market, LP
170 Grant Avenue, Sixth Floor
San Francisco, CA 94108
(transmitted via email)

RE: *Emeryville Public Market Parcel B – Traffic Response to Appeal Letter*

Dear Mr. Stefan:

For the proposed Parcel B project in the Emeryville Public Market, an appeal letter from Wareham Development dated February 8, 2019 was submitted to the Mayor and City Council of Emeryville. As it pertains to traffic, Comment #4 states:

The traffic timing and impacts of the proposed office use are very different than those of retail. Office use primarily creates heavy commute-time trips while retail trips re much more dispersed throughout the day. The fact that the staff report says that total traffic counts are slightly less than the prior approval disregards the very real timing impact of those trips. The change of uses proposed with the latest Parcel B proposal deserves such detailed analysis.

Kimley-Horn Response: You are correct that the vehicle trips for an office use occur at different times than for a retail use. However, the trip generation analysis that was conducted in the *Emeryville Public Market Parcel B – Trip Generation Evaluation Final Letter*, dated December 12, 2018 (**Attachment A**) accounts for these differences. While only focusing on the peak hour of traffic in the AM and PM periods, the previous 2008 EIR (which includes 120,000 sf of office and 29,150 sf of retail) and the proposed Parcel B (which includes 181,100 sf of research and development center and 14,100 sf of retail) were compared using trip generation rates from the industry standard Institute of Transportation Engineers (ITE) *Trip Generation Manual*. The trip generation rates are developed based on surveys collecting traffic counts during the AM and PM periods of adjacent street traffic at various sites throughout the country based on the square footage and land use. This evaluation concluded that the proposed Parcel B project would generate fewer AM and PM peak hour trips.

Sincerely,

Ben Huie, P.E.
California Professional Engineer #C76682

Attachments

Attachment A - *Emeryville Public Market Parcel B – trip Generation Evaluation Final Letter*



December 12, 2018

Mark Stefan
 AG-CCRP Public Market, LP
 170 Grant Avenue, Sixth Floor
 San Francisco, CA 94108
 (transmitted via email)

**RE: *Emeryville Public Market Parcel B – Trip Generation Evaluation
 Final Letter***

Dear Mr. Stefan:

A development plan is being proposed for Parcel B in the Emeryville Public Market in Emeryville, CA. Kimley-Horn will conduct an analysis that considers the proposed plans in relation to the 2008 Environmental Impact Report (EIR). The following discusses the methodology, analysis, and results of the traffic and parking assessment.

BACKGROUND

In August 2008, the City of Emeryville approved the Marketplace Preliminary Development Plan (PDP). The PDP planned for 120,000 square feet of office and 29,150 square feet of commercial, and parking. Parcel B is now being proposed to include research and development center square footage instead of office square footage and less retail square footage than before. An updated project description was provided in December 2018 and includes a summary of the new uses for the Parcel B site. It should be noted that the project description includes square footages for servicing and vertical circulation in the gross square footage of the building. **Table 1** summarizes these land uses for Parcel B, as well as the change from the 2008 PDP. The office and research and development center land uses are listed as gross floor area and the retail land use is listed as gross leasable area because those are the metrics used for trip generation purposes. To determine the gross square footage for the research and development center use, the vertical circulation and servicing areas were proportionally assigned to the research and development center and retail components of the project. It should be noted that during the project programming during the EIR process, it was the intent to list the office square footage as leasable office area and not gross square footage.

Table 1 – 2008 EIR and 2018 Proposed Parcel B Land Use Summary

Land Use	2008 PDP	2018 Proposed	Difference
Office Land Use including Research and Development Use (Gross Floor Area)	120,000 SF	181,100 SF	+61,100 SF
Retail Land Use (Gross Leasable Area)	29,150 SF	14,100 SF	-15,050 SF
Total	149,150 SF	195,200 SF	+46,050 SF

PARCEL B TRIP GENERATION COMPARISON

Trip generation is typically estimated by using the Institute of Transportation Engineers (ITE) *Trip Generation Manual*, 10th Edition¹. This is the standard reference in the industry for determining trip generation for potential projects. The land use that best represents the proposed research and development use is Research and Development Center (Land Use 760) and Shopping Center (Land Use 820) for the retail use. The retail use is consistent with the previous trip generation comparisons for this project in the *Emeryville Public Market Trip Generation Evaluation* letter by Kimley-Horn dated October 21, 2013. The average rate for each land use was used to estimate the project trips.

Other trip generation considerations were reviewed. Internal capture reductions, which account for the interaction among different uses in a multi-use development, were determined to be relevant for Parcel B because the project has a mix of retail and office uses. The internal capture reductions follow the methodology stated in the ITE *Trip Generation Handbook*, 3^d Edition². This methodology uses the National Cooperative Highway Research Program (NCHRP) 684 Internal Trip Capture Estimation Tool. This tool uses the raw trip generation calculations for the individual uses from the ITE *Trip Generation Manual* and applies proximity adjustment factors and unconstrained internal trip capture rates to determine the demand between the land uses and then balances these values to estimate the number of external trips for each use.

In addition, the *Marketplace Transportation Assessment* memorandum by Fehr and Peers, dated May 18, 2015, used a trip reduction of 15 percent for external walk/bike trips and a 10 percent reduction for external transit trips. A 30 percent pass-by trip reduction was assumed for the retail uses. To be consistent with this study, the same trip reductions were assumed for this study. **Table 3** shows the expected vehicle trips for the previous 2008 EIR project and **Table 4** shows the expected vehicle trips for the proposed 2018 project.

Table 5 summarizes the difference between the 2008 EIR project trip generation and the 2018 proposed project trip generation. The proposed project is expected to generate 36 fewer AM peak hour trips and 54 fewer PM peak hour trips when compared to the EIR use.

¹ *Trip Generation Manual, 10th Edition*, Institute of Transportation Engineers, Washington, D.C., 2017.

² *Trip Generation Handbook, 3^d Edition*, Institute of Transportation Engineers, Washington, D.C., 2017.

Table 3 – Previous 2008 EIR Parcel B Project Trips

ITE Land Use Code ¹	Land Use	Size	Units	AM Peak				PM Peak			
				Rate	Total	In	Out	Rate	Total	In	Out
710	General Office Building	120	KSF	1.16	139	120	19	1.15	138	22	116
820	Shopping Center	29.150	KSF	0.94	27	17	10	3.81	111	53	58
Total Project Trips					166	137	29		249	75	174
Internal Capture Reduction ²					-16	-8	-8		-10	-5	-5
External Walk/Bike Trip Reduction ³ (15%)					-25	-21	-4		-37	-11	-26
External Transit Trip Reduction ⁴ (15%)					-17	-14	-3		-25	-8	-17
Total External Trips					109	95	14		177	51	126
Pass-By Trip Reduction ⁵ (30%)					-32	-28	-4		-53	-15	-38
Net New Project Trips					77	67	10		124	36	88

¹ Based on ITE *Trip Generation Manual, 10th Edition*

² Based on ITE *Trip Generation Handbook, 3rd Edition*

³ Based on MXD+ model from *Marketplace Transportation Assessment* memorandum from Fehr and Peers

⁴ Based on MXD+ model from *Marketplace Transportation Assessment* memorandum from Fehr and Peers

⁵ Based on *Marketplace Transportation Assessment* memorandum from Fehr and Peers

Table 4 – Proposed 2018 Parcel B Project Trips

ITE Land Use Code ¹	Land Use	Size	Units	AM Peak				PM Peak			
				Rate	Total	In	Out	Rate	Total	In	Out
760	Research and Development Center	181.100	KSF	0.42	76	57	19	0.49	89	13	76
820	Shopping Center	14.100	KSF	0.94	13	8	5	3.81	53	25	28
Total Project Trips					89	65	24		143	39	104
Internal Capture Reduction ²					-8	-4	-4		-6	-3	-3
External Walk/Bike Trip Reduction ³ (15%)					-14	-10	-4		-22	-6	-16
External Transit Trip Reduction ⁴ (15%)					-9	-7	-2		-14	-4	-10
Total External Trips					58	44	14		101	26	75
Pass-By Trip Reduction ⁵ (30%)					-17	-13	-4		-31	-8	-23
Net New Project Trips					41	31	10		70	18	52

¹ Based on ITE *Trip Generation Manual, 10th Edition*

² Based on ITE *Trip Generation Handbook, 3rd Edition*

³ Based on MXD+ model from *Marketplace Transportation Assessment* memorandum from Fehr and Peers

⁴ Based on MXD+ model from *Marketplace Transportation Assessment* memorandum from Fehr and Peers

⁵ Based on *Marketplace Transportation Assessment* memorandum from Fehr and Peers

Table 5 – Parcel B Trip Generation Comparison

Scenario	AM Peak			PM Peak		
	Total	In	Out	Total	In	Out
2008 EIR	77	67	10	124	36	88
2018 Proposed	41	31	10	70	18	52
Difference	-36	-36	0	-54	-18	-36

PUBLIC MARKET LAND USE COMPARISON

In addition to the Parcel B trip generation evaluation, the Public Market, as a whole, was compared with the new proposed Parcel B land uses. **Table 6** shows the land uses for the Public Market, as approved in the PDP in August 2008. As time has passed, Final Development Plans (FDP) have been approved for the various parcels. **Table 6** shows the approved land uses for the Public Market, including the proposed Parcel B project, as of 2018. As shown, with the proposed Parcel B project, the Public Market would consist of 29 fewer residential dwelling units, 108,775 fewer square feet of retail use, 120,000 fewer square feet of office use, and 181,100 additional square feet of research and development center when compared to the approved PDP.

Table 6 – Public Market Land Use Comparison

Parcel	Land Use	Units	Approved PDP (in 2008)	Approved FDP with Parcel B (in 2018)	Difference
A	Residential	Dwelling Units	206	167	-39
	Retail	Square Feet	14,725	14,000	-725
B	Retail	Square Feet	29,150	14,100	-15,050
	Office	Square Feet	120,000	0	-120,000
	R&D Center	Square Feet	0	181,100	+181,100
C	Residential	Dwelling Units	86	66	-20
	Retail	Square Feet	5,000	30,000	+25,000
D	Residential	Dwelling Units	198	223	+25
	Retail	Square Feet	114,500	0	-114,500
E	Residential	Dwelling Units	0	0	0
	Retail	Square Feet	3,500	6,000	+2,500
64 th /Christie	Residential	Dwelling Units	185	190	+5
	Retail	Square Feet	6,000	0	-6,000
Retail Pads	Retail	Square Feet	7,000	7,000	0
Public Market Total	Residential	Dwelling Units	675	646	-29
	Retail	Square Feet	179,875	71,000	-108,775
	Office	Square Feet	120,000	0	-120,000
	R&D Center	Square Feet	0	181,100	+181,100

A trip generation evaluation was conducted to determine if the increase in research and development land use is offset by the decrease in residential, retail, and office uses. The latest ITE *Trip Generation Manual* was used to estimate the difference in vehicle trips based on the differences in units for each land use between the approved PDPs in the EIR and the approved FDPs with the proposed Parcel B shown in **Table 6**. The residential uses were assumed to be ITE *Trip Generation Manual* land use code 221a, multifamily housing (mid-rise) in a dense multi-use urban area. The retail and office uses were assumed to be the same land uses as above for the Parcel B analysis. **Table 7** shows the expected difference in vehicle trips. As shown, the total Public Market trip generation with the proposed Parcel B project would result in 171 fewer AM peak hour trips and 468 fewer PM peak hour trips when compared to the approved PDP in 2008.

Table 7 – Difference in Public Market Trip Generation

ITE Land Use Code ¹	Land Use	Size	Units	AM Peak				PM Peak			
				Rate	Total	In	Out	Rate	Total	In	Out
221a	Multifamily Housing (Mid-Rise)	-29	DU	0.20	-6	-1	-5	0.18	-5	-4	-1
710	General Office Building	-120.00	KSF	1.16	-139	-120	-19	1.15	-138	-22	-116
760	Research and Development Center	181.10	KSF	0.42	76	57	19	0.49	89	13	76
820	Shopping Center	-108.775	KSF	0.94	-102	-63	-39	3.81	-414	-199	-218
Net Difference in Project Trips					-171	-127	-44		-468	-212	-256

¹ Based on ITE *Trip Generation Manual*, 10th Edition

CONCLUSIONS

The land uses in Parcel B are expected to generate 36 fewer AM peak hour trips and 54 fewer PM peak hour trips when compared to the EIR use in 2008. In addition, the total Public Market trip generation with the proposed Parcel B project would result in 171 fewer AM peak hour trips and 468 fewer PM peak hour trips when compared to the approved PDP in 2008. Therefore, the proposed land uses in Parcel B should not result in any additional impacts than the impacts identified in the EIR.

Sincerely,

Ben Huie, P.E.
California Professional Engineer #C76682