



# HEXAGON TRANSPORTATION CONSULTANTS, INC.

## Draft Memorandum

**Date:** October 21, 2019

**To:** Rendell Bustos, City of San Mateo

**From:** Ollie Zhou  
Daniel Choi

**Subject:** Trip Generation and Parking Analysis for the Proposed Development at 180 E.3<sup>rd</sup> Avenue

Hexagon Transportation Consultants, Inc. has completed a trip generation and parking study for the proposed mixed-use office and retail development at 180 E.3<sup>rd</sup> Avenue in San Mateo, California. The site is located at southwest corner of S. Ellsworth Avenue and 3<sup>rd</sup> Avenue in San Mateo, California (see Figure 1). The project site is currently occupied by an 11,289 square foot (s.f.) retail store and 1,550 s.f. of office space. The proposed project would remove the existing retail store and office and build a new three-story building including 19,608 s.f. of office space and 3,380 s.f. of ground-floor retail space (see Figure 2). As a project located within the Central Parking and Improvement District (CPID), the project proposes no parking on-site and will request to pay the in-lieu fees. As a result, employees and guests may park in any parking garage, lot, or on-street space and will be encouraged to use other transportation modes encouraged in the project's TDM plan. It is assumed most employees and guests would park in the Central Parking Garage due to its proximity just south of the project site.

## Project Trip Generation

The standard trip generation rates can be applied to predict the future traffic increases that would result from a new development. The standard trip generation rates come from the publication titled Institute of Transportation Engineers (ITE) *Trip Generation, 10<sup>th</sup> Edition*.

Project trip generation was estimated by applying to the size and uses of the development to the appropriate trip generation rates obtained from the ITE *Trip Generation Manual, 10<sup>th</sup> Edition* (2017). The average trip generation rates for General Office Building (Land Use 710) and Shopping Center (Land Use 820) were applied to the project. The ITE Trip Generation Manual has limited general-purpose retail categories. Therefore, "shopping center" is typically used when the retail tenants are unknown.

An evaluation of the project's trip generation was conducted for the weekday AM and weekday PM peak hours. Table 1 shows that, without accounting for any trip reduction measures, the project would generate 3 new inbound AM peak hour trips. It is also estimated that the project would generate 7 fewer outbound AM peak hour trips, 16 fewer inbound PM peak hour trips, and 7 fewer outbound PM peak hour trips. Overall, the project is estimated to generate no net new peak hour trips.

**Table 1**  
**Project Trip Generation**

Land Use	ITE Land	Size		Rate	AM Peak Hour			Rate	PM Peak Hour		
					In	Trip Out	Total		In	Trip Out	Total
Proposed Uses											
Office <sup>1</sup>	710	19,608	Square Feet	0.83	14	2	16	0.87	3	14	17
Retail <sup>2</sup>	820	3,380	Square Feet	2.41	4	4	8	4.92	8	9	17
Existing Uses											
Retail <sup>2</sup>	820	11,289	Square Feet	2.41	15	13	27	4.92	27	29	56
Office <sup>1</sup>	710	1,550	Square Feet	0.83	1	0	1	0.87	0	1	1
Net Trip Generation:					3	(7)	(4)		(16)	(7)	(23)
Source: ITE Trip Generation Manual, 10th Edition											
<sup>1</sup> Land Use Code 710: General Office Building, Dense Multi-Use Urban (average rates, expressed in trips per 1,000 s.f.)											
<sup>2</sup> Land Use Code 820: Shopping Center, Dense Multi-Use Urban (average rates, expressed in trips per 1,000 s.f.)											

## Parking

The parking demand generated by the proposed project was estimated using rates obtained from counts at three office buildings in downtown San Mateo. The retail component of the project is estimated to generate no new parking demand because it will be replacing the larger, existing store on the site.

According to the Institute of Transportation Engineers (ITE) publication *Parking Generation, 5th Edition*, office parking demand typically peaks between 10 AM and 2 PM. Hexagon conducted parking counts at three office buildings in downtown San Mateo between 10 AM and 2 PM in October 2016 on a regular weekday (see Table 2) to determine the peak parking demand rates for office land uses in downtown San Mateo. Based on the peak parking demand at the three studied office buildings, it is estimated that the average peak on-site parking demand for an office building in downtown San Mateo is approximately 1.94 parking spaces per 1,000 s.f. On-street parking for office employees is expected to be minimal because on-street parking in the downtown area is limited to either one hour or three hours.

**Table 2**  
**Observed Peak Parking Demand for Offices in Downtown San Mateo**

Building	Size	Unit	Parking Supply	Parking Demand	Parking Demand Ratio
101 S. Ellsworth	98.3	ksf	219	181	1.84
181 2nd Avenue	72.3	ksf	299	174	2.41
400 S. El Camino Real	141.4	ksf	253	221	1.56
Average:					1.94
<b>Notes:</b>					
<sup>1</sup> Based on Parking Counts conducted in October 2016, see Table 2.					

Table 3 shows that the proposed office space is estimated to generate a peak parking demand of 38 spaces, which would occur between 10 AM and 2 PM.

**Table 3**  
**Project Peak Parking Demand**

Land Use	Size	Peak Parking Demand	
		Rate	Spaces
<u>Proposed Uses</u>			
Office <sup>1</sup>	19.608 ksf	1.94	38
<u>Notes:</u>			
<sup>1</sup> Based on Parking Counts conducted in October 2016, see Table 2.			

Because employees in the office portion of the project would likely require long-term parking (10-hour parking), the project's impact on the nearby Central Garage was analyzed. The analyses in this memo assume a worst-case scenario in which all of the new parking demand will occur in the Central Garage. Table 4 shows recent parking data received from the City of San Mateo on a typical weekday. The Central Garage has 121 short term (3-hour) spaces, 259 long term (10 hour) spaces, 11 ADA spaces, and 4 EV spaces.

At its peak hour during paid hours (before 6 PM), the maximum number of parked vehicles in long term spaces (10-hour spaces) was 219 vehicles at 12 PM. Monthly parking permits, which are available for downtown employees, allow users to park in any 10-hour space within the Central Garage. Assuming 38 additional vehicles generated by the employees of the proposed project were parked in the 10-hour spaces, this would bring the total up to 257 parked vehicles in the 10-hour parking. As previously mentioned, the Central Garage has 259 10-hour parking spaces, therefore the Central Garage is expected to have sufficient capacity to accommodate an additional 38 vehicles associated with the project on a typical weekday.

**Table 4**  
**Parking Occupancy Counts from City**

	Central Garage				
	Spot Type				
	Total	3 HR	10 HR + PERMIT	ADA	EV
7:00 AM	60	20	38	0	0
8:00 AM	85	20	62	0	1
9:00 AM	152	28	119	0	2
10:00 AM	224	47	171	0	3
11:00 AM	262	60	197	0	3
12:00 PM	326	101	219	0	3
1:00 PM	346	116	218	0	4
2:00 PM	300	86	206	0	2
3:00 PM	262	71	186	0	0
4:00 PM	250	63	181	0	1
5:00 PM	280	103	170	0	1
6:00 PM	298	114	177	0	4
7:00 PM	327	115	203	1	2
Supply		121	259	11	4