



# HEXAGON TRANSPORTATION CONSULTANTS, INC.

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May 11, 2018  
Ms. Debby Fernandez  
City of Santa Clara  
1500 Warburton Avenue  
Santa Clara, CA 95050

**RE: *Trip Generation Estimates for the Proposed Moonlite Lanes Townhomes Project  
Located at 2780 El Camino Real in Santa Clara, California***

Dear Ms. Fernandez:

This letter provides additional explanation regarding the methodology used to estimate the vehicles trips generated by the proposed Moonlite Lanes Townhomes Project at 2780 El Camino Real in Santa Clara, California.

## **Project Trip Generation Estimates**

Trip generation for the proposed townhomes was estimated using rates published in the Institute of Transportation Engineers (ITE) *Trip Generation Manual, Tenth Edition*. ITE is an international organization of professionals in public agencies, academia, and private companies that facilitates research and an exchange of professional information. The *Trip Generation Manual* provides survey data on the traffic generated by more than 170 different land use types. The ITE data are screened for quality and updated periodically to produce nationally relevant averages. The latest version, the 10<sup>th</sup> Edition, was published in 2017. The *Trip Generation Manual* provides objective trip generation measurements and is by far the most widely used reference for this type of information.

The project trip estimates for the Moonlite Lanes Townhomes Project were prepared based on ITE trip rates for mid-rise multifamily housing (Land Use #221) in general urban/suburban areas (see attached excerpts). This land use category includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units. The mid-rise designation applies to structures with 3 to 10 floors. Based on published ITE rates, the proposed townhomes are estimated to generate a total of 314 daily trips, with 21 trips occurring during the AM peak hour and 26 trips occurring in the PM peak hour. Since the bowling alley is now closed, no trip credits were taken for the existing use. The project trip generation estimates are presented in Table 1.



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

Land Use	Size	Daily		AM Peak Hour			PM Peak Hour				
		Rate <sup>1</sup>	Trips	Peak-Hour Rate <sup>1</sup>	Trips		Peak-Hour Rate <sup>1</sup>	Trips			
					In	Out		Total	In	Out	Total
Proposed Project											
Townhomes <sup>2</sup>	58 units	5.41	314	0.36	5	16	21	0.44	16	10	26

<sup>1</sup> Rates expressed in trips per unit.  
<sup>2</sup> Daily trips calculated from fitted curve equations and peak-hour trips were calculated using average rate in ITE *Trip Generation, 10th Edition "Multifamily Housing Mid-Rise" (Land Use 221)*.

**Trip Distribution by Time of Day**

Based on the ITE trip rates presented in Table 1, it is estimated that approximately 6.7 percent of the daily vehicle trips would occur during the AM peak hour and 8.1 percent of the daily vehicles trips would occur during the PM peak hour. Some Santa Clara Planning Commissioners expressed doubt about the relatively low percentage of daily traffic expected to occur during the peak hours. It should be noted that the daily and peak-hour trip rates published by ITE are not all based on the same data set. The daily trip rates were derived based on an analysis of 27 sites while the AM and PM peak-hour trip rates were calculated based on 53 and 60 sites, respectively. Thus, the percentages listed above may be influenced by variations in the data sets used to derive the daily versus peak-hour rates.

The *Trip Generation Manual, 10<sup>th</sup> Edition*, also provides time of day distribution data for mid-rise multifamily housing in a general urban/suburban setting. This data shows that the AM peak hour averaged 7.5 percent of the daily trips and the PM peak hour averaged 10.1 percent of the daily trips. Although this time of day distribution analysis is only based on 8 sites, the comparison of daily to peak-hour trips is based on a consistent data set for all time periods.

In conclusion, the project trip estimates presented in our traffic operations analysis memorandum dated March 19, 2018 are believed to be accurate or possibly conservative based on published ITE data.

Please do not hesitate to contact us if there are any questions.

Sincerely,

HEXAGON  
 TRANSPORTATION CONSULTANTS, INC.



Michelle Hunt  
 Vice President and Principal Associate