APPENDIX G:
TRANSPORTATION DATA

Hexagon Transportation Consultants, Inc.

Memorandum

Date: January 10, 2020

To: Mr. Ali Mozaffari, Alan Enterprise, LLC

From: Brian Jackson

Subject: Trip Generation Study for a Residential Project on Stevens Creek Bl in Cupertino, CA

Hexagon Transportation Consultants, Inc. has completed a trip generation study for a proposed residential development at 22690 Stevens Creek Boulevard in Cupertino, California. As proposed, the project would demolish an existing convenience market/liquor store and construct 9 three-story residential units. Each single-family residential unit would have a two-car garage. Eight additional parking spaces would be provided on-site.

The purpose of this trip generation study is to document the projected number of net new AM and PM peak hour vehicle trips generated by the proposed residential project. The City of Cupertino typically does not require preparation of a comprehensive transportation impact analysis, including an evaluation of intersection level of service, for projects deemed "small". For small projects, a trip generation analysis usually is sufficient. Based on a preliminary evaluation of the proposed project and the previous use to be replaced, City of Cupertino staff have indicated that a trip generation study will suffice. Additionally, City of Cupertino staff have requested that vehicle miles traveled (VMT) be reported for existing and project conditions for informational purposes.

Project Trip Generation

Hexagon prepared project trip estimates based on trip generation rates obtained from the *ITE Trip Generation Manual, 10th Edition (2017)*. The average weekday daily, AM peak hour, and PM peak hour trip generation rates for Single-Family Housing (Land Use 210) were applied to the proposed project. Single-family detached units have the highest trip generation rate per dwelling unit of all residential uses because they are the largest units in size and have more residents and more vehicles per unit than other residential land uses. Based on the ITE rates for Single-Family Housing, the proposed project would be expected to generate 85 gross daily vehicle trips, with 7 gross trips occurring during the weekday AM peak hour of traffic (one-hour period between 7:00 AM and 9:00 AM) and 9 gross trips occurring during the weekday PM peak hour of traffic (one-hour period between 4:00 PM and 6:00 PM).

Trip credits associated with the existing liquor store/convenience market to be removed can be applied to the project trip generation estimates. The weekday daily, AM peak hour, and PM peak hour vehicular trips generated by the existing building were estimated using standard ITE trip rates for Convenience Market (Land Use 851) because the store closed in December of 2019. The Convenience Market category is defined as markets that are open between 15 and 24 hours per day and that sell convenience foods, newspapers, magazines, and often beer and wine, but do not provide gasoline pumps. Based on the ITE rates for a 2,400 square foot (s.f.) Convenience Market, the previous use is estimated to have generated 1,829 gross daily vehicle trips, with 150 gross trips occurring during the weekday AM peak hour and 118 gross trips occurring during the weekday PM peak hour.

After applying the estimated trip credits associated with the previous use on the site, the 9-unit residential project would be expected to generate 1,744 fewer daily vehicle trips than the previous use, with 143 fewer trips occurring during the AM peak hour and 109 fewer trips occurring during the PM peak hour (see Table 1).

Table 1
Project Trip Generation Estimates

				AM Peak Hour				PM Peak Hour			
Land Use	Size	Daily Rate	Daily Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Use											
Attached Residential [1]	9 DU	9.44	85	0.74	2	5	7	0.99	6	3	9
Existing Use											
Convenience Market [2]	2,400 SF	762.28	1,829	62.54	75	75	150	49.11	60	58	118
Net Project Trips:			**(1,744)**		**(73)**	**(70)**	**(143)**		**(54)**	**(55)**	**(109)**

Notes:

[1] Trip generation based on average rates contained in the ITE Trip Generation Manual, 10th Edition, for Single-Family Housing (Land Use 210), located in a General Urban/Suburban setting. Rates are expressed in trips per dwelling unit (DU).

[2] Convenience Market (Land Use 851) average rates from ITE *Trip Generation, 10th Edition* (2017) were used for the existing building (Bateh Bros. Liquors & MiniMart). The size of the existing building was estimated using the Existing Conditions plan prepared by BKF Engineers.

Transportation Policy Change

Historically, traffic impact analysis has focused on the identification of traffic impacts and potential roadway improvements based on auto delay to relieve traffic congestion that may result due to planned growth. However, with the adoption of the State of California Senate Bill 743 (SB 743), all public agencies will be required by July 2020 to base transportation impacts on vehicle miles traveled (VMT) rather than level of service (LOS). The change in measurement is intended to better evaluate the effects on the state's goals for climate change and multi-modal transportation. In adherence with SB 743 legislation, the City of Cupertino intends to adopt a new Transportation Analysis Policy prior to July 2020. The new City Policy ultimately will establish the thresholds for transportation impacts under CEQA based on VMT rather than intersection LOS. The intent of this change is to shift the focus of transportation analysis under CEQA from vehicle delay and roadway auto capacity to a reduction in vehicle emissions, and the creation of robust multimodal networks that support integrated land uses. Starting in July 2020, all new projects in the City of Cupertino will be required to analyze transportation impacts using the VMT metric. In the interim, automobile delay is still considered the standard metric in determining a significant impact, and the City of Cupertino will continue to apply the current LOS criteria.

VMT Evaluation

VMT is the total miles of travel by personal motorized vehicles a project is expected to generate in a day. VMT measures the full distance of personal motorized vehicle-trips with one end within the project and is a useful metric in understanding the overall effects of a project on the transportation system. Many factors affect travel behavior and trip lengths such as density of land use, diversity of land uses, design of the transportation network, distance to high-quality transit, and demographics. Low-density development separated from other land uses and located in areas with poor access to transit generates more automobile travel and higher VMT compared to development located in

urban areas with more access to transit. The California Emissions Estimator Model (CalEEMod) was used to estimate the VMT for existing and project conditions for informational purposes.

Based on the CalEEMod tool, the existing retail use on the site (a 2,400 s.f. convenience market) has an approximate daily VMT of 3,800 miles. The proposed 9-unit residential project would produce an approximate daily VMT of 538 miles based on the CalEEMod calculations. This equates to a daily reduction of 3,262 VMT for the site with the project.