



Memorandum

Date: August 23, 2022
To: Patrick Kallas, David J. Powers & Associates, Inc.
From: Kai-Ling Kuo
Subject: Transportation Analysis for the Proposed Mixed-Use Project at 2655 The Alameda

This memorandum presents the transportation analysis for the proposed residential and retail mixed-use development located at 2655 The Alameda in Santa Clara, California. The project site is a 0.4-acre vacant parcel located at the corner of Park Avenue and The Alameda. The project would develop the site with a four-story building with 39 residential units and 1,540 square feet of retail space. Vehicle access to the parking garage would be provided via two driveways on Park Avenue and The Alameda (see Figure 1). Vehicle parking would be provided within the building on the ground floor and one subgrade level (see Figure 2).

Because the project would generate a small number of new trips during the peak hours, a local transportation analysis to evaluate the project's traffic effects on intersection operations is not required. The transportation analysis includes trip generation estimates, a vehicle miles traveled (VMT) assessment, evaluation of site access and on-site circulation, and effects on pedestrians, bicycles, and transit facilities.

Per California Senate Bill 743 (SB 743) and CEQA Guidelines, all new developments are required to analyze transportation impacts using the VMT metric and to conform the City's VMT Policy. The City's VMT Policy establishes procedures and VMT thresholds of significance for determining project impacts on VMT. The City's VMT Policy also includes screening criteria that are used to identify projects that would not exceed the VMT thresholds of significance. If a project meets the screening criteria, it is then presumed that the project would result in a less-than-significant VMT impact, and a VMT analysis is not required. The project would meet all applicable VMT screening criteria. Therefore, a CEQA VMT analysis is not required for the project.

Project Trip Estimates

Through empirical research, data have been collected that show trip generation rates for many types of land uses. The research is compiled in the ITE *Trip Generation Manual, 11th Edition*. The magnitude of traffic added to the roadway system by a particular development is estimated by multiplying the applicable trip generation rates by the size of the development. The rates published for "Mid-Rise Multifamily Housing" (Land Use Code 221) and "Strip Retail Plaza" (Land Use Code 822) were used to estimate the trips generated by the proposed development (see Table 1). The "Mid-Rise Multifamily Housing" category refers to apartments and condominiums located within the same building that have between four and 10 levels. The "Strip Retail Plaza" category refers to an integrated group of commercial establishments. This category includes the trip data for retail/commercial uses less than 40,000 square feet.





SANTA CLARA UNIVERSITY

THE ALAMEDA

PARK AVENUE

Figure 1 Site Plan

Trip Adjustments and Reductions

Because the project would provide residential units and retail space on site, some residents would patronize the retail business. Per the VTA’s 2014 *Transportation Impact Analysis (TIA) Guidelines*, an internal trip reduction of 15% between retail and residential uses was applied to the project. The trip reduction factor was first applied to the smaller trip generator (retail); then the same trips were subtracted from the larger trip generator (residential) to account for both trip ends.

In addition, trip generation for retail uses are typically adjusted to account for pass-by trips. Pass-by trips are trips that would already be on the adjacent roadways (and are therefore already counted in the existing traffic) but would turn into the site while passing by. Pass-by trips are therefore excluded from the traffic projections (although pass-by traffic is accounted for at the site entrances). An average pass-by trip reduction of 30% was applied to the retail component of the project based on the VTA *TIA Guidelines*.

Project Trips

After applying the trip reductions, it is estimated that the proposed project would generate 214 new daily trips, including 15 new trips (4 inbound and 11 outbound) during the AM peak hour and 19 new trips (11 inbound and 8 outbound) during the PM peak hour (see Table 5).

**Table 1
Project Trip Generation**

Land Use	Size	Daily		AM Peak Hour			PM Peak Hour				
		Trip Rate	Trips	Pk-Hr Rate	Trips		Pk-Hr Rate	Trips			
					In	Out	Total		In	Out	Total
Proposed Residential ¹	39 du	4.54	177	0.37	3	11	14	0.39	9	6	15
- Residential/Retail Internal Capture (15%) ³			-13		0	-1	-1		-1	-1	-2
<i>Sub-Total Residential</i>			164		3	10	13		8	5	13
Retail ²	1,540 s.f.	54.45	84	2.36	2	2	4	6.59	5	5	10
- Residential/Retail Internal Capture (15%) ³			-13		-1	0	-1		-1	-1	-2
- Pass-By Reduction (30%) ⁴			-21		0	-1	-1		-1	-1	-2
<i>Sub-Total Retail</i>			50		1	1	2		3	3	6
Project Trips			214		4	11	15		11	8	19

Source: ITE *Trip Generation Manual, 11th Edition*. VTA *Transportation Impact Analysis Guidelines*, October 2014

Notes:

- 1. Mid-Rise Multifamily Housing (ITE Land Use 221): average trip rates in trips per dwelling unit were used.
- 2. Strip Retail Plaza (Land Use 822): average trip rates in trips per 1,000 s.f. were used.
- 3. Residential/retail internal trip reductions were applied to the project per the VTA’s *TIA Guidelines*.
- 4. An average 30% pass-by trip reduction was applied based the maximum allowable pass-by trip reduction rate in the VTA *TIA Guidelines*.

Vehicle Miles Traveled Analysis

Santa Clara adopted a VMT Transportation Analysis Policy for Environmental Review on June 30, 2020. The Policy sets forth screening criteria that allow various types of developments such as infill developments, small projects, and/or transit supportive projects near major transit stops or high-quality transit corridors to be presumed to have a less than significant impact on VMT. The project would qualify as a transit supportive project since it is located within a half mile of the El Camino Real transit corridor and meets the following criteria:

- 35 minimum dwelling unit/acre for residential uses,
- 0.75 floor area ratio (FAR) for office uses,
- Promotes multimodal transportation,
- Incorporates transit-oriented design,
- Does not propose excessive parking, and
- Does not replace affordable residential uses with market rate residential uses.

Proximity to Transit

The project is located in a transit proximity area because it is located within a half mile of the El Camino Real transit corridor, which is considered a high-quality transit corridor. The VTA Frequent Route 22 runs along El Camino Real with the nearest bus stop approximately 0.26 mile from the site and frequency of 15 minutes during the morning and evening peaks. Route 22 also stops at the Santa Clara Caltrain Station, which is approximately 0.6 mile from the project site.

Density

The project would provide 39 residential units on the 0.4-acre site, which calculates to a density of 98 units per acre, which exceeds the minimum density requirement.

Multimodal Transportation and Transit-Oriented Design Elements

The City Policy requires that transit supportive projects promote multimodal transportation and include transit-oriented design elements. The project would include the following design features that support active and sustainable travel options for residents and visitors:

- Long-term and short-term bicycle parking. The short-term spaces would be racks located near the entrance to the retail space on Park Avenue. The long-term spaces would be in a secure bike room located on the ground floor of the building. These bicycle parking locations are convenient for cyclists.
- Fewer vehicle parking spaces than the City requirements.

Parking

The project would provide 33 vehicle parking spaces at a parking ratio of 0.75 spaces per residential unit (30 residential spaces) and 2 spaces per 1,000 square feet for retail (3 retail spaces). The City of Santa Clara Zoning Code (Section 18.22.260) states that residential units in mixed-use zoning districts are required to provide one parking space for each studio and one bedroom unit; and one and one-half spaces for each two-plus bedroom unit. The project would provide 26 one-bedroom units and 13 two-bedroom units, which requires 46 residential parking spaces. The Zoning Code requires 3 spaces per 1,000 square feet for retail, so the project would require 5 retail spaces. The project would be required to provide 51 parking spaces. Therefore, the project would provide 30% fewer spaces than are required.

According to the Zoning Code (Section 18.90.020), the project would require a variance because it proposes a parking reduction greater than 25%.

Affordable Housing

The site is currently vacant so the project would not replace affordable residential uses with market rate residential uses.

Findings

Per the State's guidance and the City's VMT Policy, the project qualifies as a transit supportive project and is presumed to have a less than significant impact on VMT.

Site Access and Circulation

A review of the project site plan was performed to determine if adequate site access and on-site circulation would be provided and to identify any access or circulation issues that should be improved. This review is based on the site plan, dated August 1, 2022 (see Figure 1) and in accordance with generally accepted traffic engineering standards.

Site Access

Vehicle access to the parking garage would be provided via driveways on Park Avenue and The Alameda. Because the project would generate a low number of project trips, it is not necessary to provide two access points to the site for access and circulation. Increasing the access points would increase the conflicts between pedestrians/bicycles and vehicles. Additionally, as discussed below, because the access ramp to the underground parking garage is next the Park Avenue driveway, vehicles turning out of the driveway would not have adequate sight distance. Therefore, the project should limit the Park Avenue driveway to emergency vehicle access only.

Driveway Design

The project driveways would provide two-way flow and would be 26 feet wide. According to the City of Santa Clara Municipal Code, Chapter 18.74 (Parking Regulations), two-way driveways providing access to 25 or more residential parking spaces should be at least 26 feet wide. The project driveways meet the requirement.

The Alameda driveway shows approximately 20 feet of vehicle stacking space between the sidewalk and the first 90-degree parking stall, which would provide room for one inbound vehicle when vehicles back out of these parking stalls near the driveway. Due to the low volume of project trips and the small number of on-site parking spaces, the probability of two or more inbound vehicles entering the parking garage at the same time would likely be low. Therefore, the inbound stacking space at the driveway is adequate.

The site plan shows that the access ramp to the underground parking garage and the first 90-degree parking stall would be immediately adjacent to the Park Avenue driveway. Access to the underground parking garage would also be gated. Because there is no stacking space between the sidewalk and the first 90-degree parking stall/access ramp, vehicles turning in and out of the driveway would potentially block the sidewalk. Therefore, the Park Avenue driveway should be used only for emergency access.

Sight Distance at Project Driveways

The project driveways should be free and clear of any obstructions to provide adequate sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and vehicles and bicycles traveling on The Alameda. Any landscaping and signage within the sight triangles at the project driveways should be no taller than 3 feet and located in such a way to ensure an unobstructed view for exiting drivers. Providing the appropriate sight distance reduces the likelihood of a collision at a driveway and provides drivers with the ability to locate sufficient gaps in traffic and exit a driveway.

The landscape plan shows street trees would be added along the project frontage on Park Avenue and The Alameda. The type and location of the new street trees would be determined by the City at the implementation stage. Note that street trees have a high canopy and would not obstruct the view of drivers exiting the project driveways.

The posted speed limit on The Alameda is 30 mph. The Caltrans stopping sight distance is 250 feet (based on a design speed of 35 mph). Thus, a driver must be able to see 250 feet in both directions of The Alameda to locate a sufficient gap to turn out of the driveways. There is no roadway curve within 250 feet of the driveways. However, on-street parking is allowed along the project frontage and could obstruct the vision of exiting drivers if there were cars parked next to the driveways. Therefore, the project should provide 15 feet of red curb along both sides of the driveway to prohibit parking.

Traffic Operations at Project Driveways

The project trips, including the pass-by trips, that are estimated to occur at the driveway are 4 inbound trips and 12 outbound trips in the AM peak hour and 12 inbound trips and 9 outbound trips during the PM peak hour. Due to the relatively low number of project-generated trips at the driveway, operational issues related to vehicle queuing and/or vehicle delay are not expected to occur. There is a center-turn lane on The Alameda. Therefore, vehicles could use the turn lane to make left turns in and out the driveway without affecting northbound through traffic on The Alameda or causing vehicle queuing on-site.

Passenger Loading

The site plan does not show any loading zones for dropping off and picking up passengers such as would be using Uber/Lyft or other rideshare apps (e.g., Scoop, Waze Carpool). On-street parking is provided along The Alameda, which could be used for this purpose. An on-site loading zone would not be necessary.

On-Site Circulation

The project would provide 90-degree stalls (9 feet wide and 16 feet long) with a 26-foot two-way drive aisle in the ground floor parking garage and 90-degree standard stalls (9 feet wide and 18 feet long) with a 24-foot two-way drive aisle in the below grade parking garage. According to the City of Santa Clara Municipal Code, Chapter 18.74, standard parking stalls should measure 9 feet wide and 18 feet long with a minimum two-way drive aisle width of 24 feet for 90-degree standard stalls. The proposed parking stalls in the below grade parking garage would meet the requirement. The parking stalls in the ground floor parking garage are 2 feet shorter than the required length for standard stalls. However, because the driveway aisle is 2 feet wider than the required width of 24 feet, standard vehicles parking in the stalls are not expected to block the aisle.

Emergency Vehicle and Truck Access and Circulation

The Alameda and Park Avenue would provide emergency vehicle access to all sides of the project building.

The project would provide a trash enclosure in the ground floor parking garage next to the Alameda driveway. The parking garage entrance would be approximately 15 feet tall. It is expected that the project would coordinate with local solid waste companies to ensure trash collection would occur on-site. Garbage trucks would need to back in or out using the Alameda driveway.

The site plan does not show a freight loading zone for moving and delivery vehicles on The Alameda, Park Avenue, or on-site. The project should designate a curbside loading zone near the

entrance to the building lobby on The Alameda for use by moving vans and delivery vehicles. A timed loading zone could be used for both passenger and freight loading.

Effects on Pedestrians, Bicycles, and Transit Facilities

The following describes the existing transit, pedestrian and bicycle facilities that serve the site and evaluates whether appropriate bicycle and pedestrian access and transit service are provided between the site and nearby destinations.

Pedestrian Facilities

Pedestrian facilities in the study area consist of sidewalks and crosswalks. A continuous network of sidewalks is present along all of the surrounding streets. Crosswalks with pedestrian signal heads are located at all of the signalized intersections in the area. At the The Alameda/Park Avenue intersection, crosswalks are available on the west and south legs of the intersection. There is a midblock crossing on The Alameda at the Safeway driveway south of the site. Pedestrian crossings are present on Park Avenue at unsignalized intersections in the project vicinity.

The project would improve the sidewalks along the project frontage by planting trees in sidewalk wells and providing landscaping along the building frontages. The curb ramps at the The Alameda/Park Avenue intersection along the project frontage do not include truncated domes, and the ramp slopes do not appear to meet the current ADA requirement. The project should improve the curb ramps to meet current ADA standards. The sidewalks and ADA curb ramps would facilitate pedestrian movements between the project site and surrounding points of interest, such as bus stops.

Bicycle Facilities

There are bike lanes on The Alameda south of Park Avenue/Bellomy Street and on all of Park Avenue that connect cyclists from the project site to the surrounding areas. According to the *Santa Clara Bicycle Master Plan Update 2018*, Class IV separated bikeways are planned on El Camino Real, Class II bike lanes are planned on Bellomy Street from Park Avenue westward to connect to the existing bike lanes west of Washington Street, and a Class III bike route is planned on Market Street from The Alameda westward to connect to the existing bike lanes west of Lafayette Street.

The project would provide secure bicycle storage in a bike room on the ground floor of the building with access from The Alameda. The project would also provide bike racks near the entrance to the retail space on Park Avenue.

Transit Services

The VTA Frequent Route 22 runs along the El Camino Real/The Alameda corridor with the nearest bus stop approximately 1,400 feet from the site. Route 22 has a headway of 15 minutes during the morning and evening peaks. Route 22 also stops at the Santa Clara Caltrain Station, which is approximately 0.6 mile from the project site. Due to the proximity of Route 22 to the project site, it is assumed that some residents of the project would utilize the existing transit services.

Conclusions

The Santa Clara VMT Policy establishes screening criteria that allow various types of developments such as infill developments, small projects, and/or transit supportive projects near major transit stops or high-quality transit corridors to be presumed to have a less than significant impact on VMT. The project would qualify as a transit supportive project since it is located within a half mile of the El

Camino Real transit corridor. Therefore, it is presumed to have a less than significant impact on VMT.

The project would not have an adverse effect on the existing pedestrian, bicycle, or transit facilities in the study area. Hexagon has the following recommendations resulting from the site access and circulation evaluation.

- The project would require a variance because it proposes a parking reduction greater than 25%, according to the Zoning Code (Section 18.90.020).
- The project should limit the Park Avenue driveway to emergency vehicle access only. Garbage trucks would need to back in or out using the Alameda driveway.
- The project should provide 15 feet of red curb along both sides of the Alameda driveway to prohibit parking to provide adequate sight distance.
- The project should designate a curbside loading zone near the entrance to the building lobby on The Alameda for use by moving vans and delivery vehicles. The timed loading zone could be used for both passenger and freight loading.
- The project should improve the curb ramps at the The Alameda/Park Avenue intersection along the project frontage to meet current ADA standards.