



HEXAGON TRANSPORTATION CONSULTANTS, INC.

January 10, 2020

Mr. Tyler Rodgers
David J. Powers & Associates, Inc.
1611 Telegraph Avenue, Suite 1002
Oakland, CA 94612

Re: *Traffic Operational Analysis for Proposed Carwash Facility at 1299 Piedmont Road in San Jose, California*

Dear Mr. Rogers:

Hexagon Transportation Consultants, Inc. has completed this traffic operational analysis for the proposed carwash facility at 1299 Piedmont Road in San Jose, California. The project proposes to add a 1,341 square foot automatic carwash facility to the existing gas station located in the northwestern corner of the Piedmont Road/Sierra Road intersection.

Based on the City of San Jose's Transportation Analysis Policy (Council Policy 5-1) and the *Transportation Analysis Handbook 2018*, the project is exempt from a CEQA transportation analysis. Because the proposed automatic carwash facility would only generate a small number of new peak-hour vehicle trips, the local transportation analysis of the project includes an analysis of the proposed car wash relative to site access and on-site circulation. Additionally, since automatic carwash facilities are counted as a drive-through facility, this project is required to comply with the City of San Jose's criteria for drive-through uses (Council Policy 6-10).

Project Description

The project proposes to build a 1,341 square-foot automatic carwash facility that includes a 1,121 square-foot carwash tunnel with a 220 square-foot carwash equipment room along the western edge of an existing gas station (Figure 1). In conjunction with the car wash, the project proposes to close the driveway on Piedmont Road that is closest to Sierra Road. The project site is approximately 0.65 acre and currently contains an 800 square-foot food mart and a 2,168 square-foot fueling canopy with 5 fuel dispensers, which will remain unchanged. The hours of operation for the proposed carwash facility are from 6 AM to 10 PM every day, and the existing food mart is open 24 hours. The site currently has two driveways on Piedmont Road and one driveway on Sierra Road. The north-most driveway on Piedmont Road will remain, while the other driveway will be removed. The driveway on Sierra Road will remain unchanged.

Existing Conditions

Traffic conditions were observed in the field during the PM peak period in order to identify any existing operational deficiencies in the immediate vicinity of the project site. The field observations revealed no traffic or circulation issues on site. However, due to southbound vehicle queues during the PM peak period, vehicles occasionally faced delays exiting the driveways on southbound Piedmont Road.



CEQA Transportation Analysis

The City of San Jose’s *Transportation Analysis Handbook* includes screening criteria for projects that are expected to result in less-than-significant CEQA transportation impacts related to vehicle miles traveled (VMT) based on the project description, characteristics and/or location.

Since the City has not established a screening criterion and threshold of significance for car washes, the project’s VMT impact cannot be evaluated directly. Accordingly, based on direction from the City staff, the VMT analysis for the proposed project was conducted by converting vehicle trips generated by the proposed car wash facility to an equivalent retail square footage, for which the City has established a screening criterion and threshold of significance. This is a reasonable approach to VMT analysis since car washes exhibit similar travel patterns and trip length characteristics to that of local-serving retail uses (e.g., both uses typically serve nearby local businesses and residents). Local-serving retail development is considered to have a less than significant impact on VMT. The City has defined retail projects below 100,000 square feet as local-serving retail projects.

Based on the conversion process, the proposed car wash would generate 19 PM peak hour trips, which is equivalent to 5,000 square feet of retail space. This relatively small amount of retail space meets the screening criterion set forth in the *Transportation Analysis Handbook for local-serving retail*. Since the project would meet the screening criteria, no CEQA Transportation Analysis (i.e., VMT analysis) is required.

Project Trip Estimates

PM peak-hour vehicle trips that would be generated by the proposed car wash were estimated using the trip generation rate published in the Institute of Transportation Engineers’ (ITE) *Trip Generation Manual*, 10th Edition, for Automated Car Wash (Land Use 948). Daily and AM peak-hour trip rates are not available in the *Trip Generation Manual*. A daily rate was computed using the daily rate from Car wash and Detail Center (Land Use 949). Based on the ITE trip rate, the proposed car wash would generate 219 daily trips and 19 PM peak-hour trips (see Table 1).

Table 1
Project Trip Generation Estimates

Land Use	Size	Daily ²		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Automated Car Wash ¹	1.341 KSF	163.09	219	n/a	n/a	n/a	n/a	14.20	10	9	19

Note:
 Trip rates are from the ITE Trip Generation Manual, 10th Edition, 2017

- Automated Car Wash (Land Use 948) average rate expressed in trips per 1000 square feet (KSF) is used.
- The ITE Trip Generation Manual does not have a daily rate for Land Use 948. Daily rate from Car Wash and Detail Center (Land Use 949) was used to compute a daily rate for the Automated Car Wash facility.

It should be noted a majority of the trips would be pass-by trips. According to the ITE *Trip Generation Handbook*, 3rd Edition, the average pass-by trips are 56% of total PM peak-hour trips for a gasoline/service station. Although the handbook does not provide a pass-by trip rate for carwash facilities, the proposed car wash is expected to mostly serve people using the gas station.



Therefore, the proposed car wash is expected to generate fewer than 19 new PM peak-hour trips to the adjacent roadways.

Due to the small number of new vehicle trips, the proposed car wash is not expected to adversely affect traffic operations of adjacent intersections. Therefore, the local transportation analysis of the project includes an analysis of the proposed car wash relative to site access and on-site circulation, as described below.

Vehicular Site Access and Circulation

The site access and circulation analysis are based on the July 19, 2019 site plan prepared by M I Architects, Inc. Based on the site plan, the existing north-most driveway on Piedmont Road and existing driveway on Sierra Road will provide full access to the project site location. Field observations were conducted to show that both driveways operate well. When exiting, the driveway on Piedmont Road provides right turns only due to the raised center median. For vehicles entering and exiting off of Sierra Road, there are no issues that arise since there is a left-turn lane that vehicles could use to enter. Also, when exiting onto Sierra Road, vehicles have the option to turn left or right. Based on counts collected by the City of San Jose in 2018, the intersection of Piedmont Road and Sierra Road operates at an acceptable level of service (LOS C) during the PM peak hour. The addition of 19 trips from the car wash in the PM peak hour is not expected to have a substantial effect on the operations of the intersection.

The project would retain the north-most driveway on Piedmont Road and widen it to 32 feet, while the other driveway on Piedmont Road would be removed. The driveway on Sierra Road would remain unchanged with the width of 27.5 feet. Per City standards (City of San Jose Department of Transportation Geometric Guidelines), the typical driveway width with two-way traffic is 26 feet. Therefore, both driveways are wider than a typical driveway. However, at the Piedmont Road driveway, the driveway width of 32 feet would be necessary for fuel trucks to access the site. Therefore, the City allows the driveway to be 32 feet wide.

Recommendation: The project should reduce the driveway width of the driveway on Sierra Road to 26 feet, per City standards (City of San Jose Department of Transportation Geometric Guidelines).

On-site vehicular circulation was reviewed for the proposed project in accordance with generally accepted traffic engineering standards. The site plan shows efficient on-site circulation with no dead-end drive aisles. Figure 1 shows that access and circulation for fuel trucks still could be accomplished with the driveway closure, and fuel trucks could access the site with the 32-foot driveway on Piedmont Road and the 26-foot driveway on Sierra Road. There are 14 parking spaces at the project site location serving the food mart and fueling station. The carwash lane would be accessed along the western edge of the project site and would be orientated north-south. The carwash lane would have vehicles exit facing south towards Sierra Road, but they would have the option to use either the driveway on Sierra Road or on Piedmont Road to exit. There would be no issues with vehicle circulation with the proposed car wash facility since any overflow vehicles attempting to enter the carwash lane could stack along the northern edge of the project site, leaving enough space for vehicles to circulate.



Drive-through Policy Analysis

San Jose City Council Policy 6-10 contains guidelines for the development of establishments with drive-through facilities within the City of San Jose. The Policy sets forth criteria (Traffic Criteria A through G) relating to drive-through location, vehicular ingress and egress, and vehicle stacking.

According to Council Policy 6-10, primary ingress and egress to drive-through type parking lots should be from at least a four-lane major street (Traffic Criterion A). Access to and from the project site is provided via both Piedmont Road and Sierra Road. Piedmont Road is a two-lane roadway with the raised center median in the project proximity. Between the driveway and Sierra Road, Piedmont Road is widened to four lanes. Sierra Road is a four-lane roadway. Therefore, the project would meet this requirement.

Traffic Criterion C states “No ingress and egress points shall conflict with turning movements of street intersections.” The ingress and egress points would be within the site and would not conflict with any street traffic or cause any issues with turning movements at the intersection.

Traffic Criterion D states “No drive-through use shall be approved with ingress or egress driveways within 300 feet of a signalized intersection operating at a Level of Service D, E, or F.” Although the project’s driveways are located within 300 feet of the Piedmont Road/Sierra Road intersection, the intersection operates at LOS C during the AM and PM peak hours according to the City of San Jose’s Traffix database. Therefore, the project would meet this requirement.

The Policy requires a self-service car wash to provide stacking space for at least five vehicles within the drive-through lane, assuming 20 feet per vehicle (Traffic Criterion E). The site plan shows the drive-through lane would provide stacking space for three vehicles.

Recommendation: The project should provide striping to delineate the queue space for an additional two vehicles at the car wash entry.

Any vehicles that would overflow from the stacking lane would spill out on the north side of the gas station and not onto public streets or major aisles at the gas pumps. Therefore, Traffic Criterion B is met. The drive-through lane has no pedestrian crossing; therefore, Traffic Criterion F is met.

Conclusions

The proposed car wash facility design would meet the Council Policy 6-10 guidelines by providing required vehicle stacking space in the drive-through lane, as listed below. There would be no issues regarding general site circulation because any overflow vehicles could stack along the northern edge of the project site location leaving enough space for vehicles to travel within the site. Fuel truck deliveries still could be accomplished with the car wash and with one driveway closed. With the current design and location of the facility, no operational issues are expected to occur on or off the site as a result of the drive-through lane.

Below are recommendations resulting from the site plan review.

- The project should reduce the driveway width of the driveway on Sierra Road to 26 feet, per City standards (City of San Jose Department of Transportation Geometric Guidelines).
- The site plan shows the drive-through lane would provide stacking space for three vehicles. The project should provide striping to delineate the queue space for an additional two vehicles at the car wash entry.



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Sincerely,
HEXAGON TRANSPORTATION CONSULTANTS, INC.

A handwritten signature in black ink, appearing to read 'Gary K. Black', with a long horizontal flourish extending to the right.

Gary K. Black
President