



February 16, 2018

Mr. Clement Balser
Blackpoint Properties, LLC
20 Galli Drive, Suite D
Novato, CA 94949

Focused Traffic and Parking Study for 1385 Santa Rosa Avenue

Dear Mr. Balser;

W-Trans has completed a focused analysis addressing the trip generating potential, parking demand and access conditions associated with a café project to be located at 1385 Santa Rosa Avenue in the City of Santa Rosa. We understand that the project as proposed includes a Starbucks coffee shop with a drive-through window.

Trip Generation

The trip generation for the project was estimated based on standard rates for a Coffee/Donut Shop with Drive-Through Window (LU 937) published by ITE in *Trip Generation Manual*, 10th Edition, 2017. A 2,500 square foot coffee shop with a drive-through would be expected to generate 2,051 trip ends on a daily basis, including 222 during the morning peak hour and 108 during the evening peak hour. Information is also provided regarding the trip generation as a percentage of traffic on the adjacent street, with an average rate of 15 percent for the morning peak hour and 5 percent of the evening peak hour volumes. A review of volumes on Santa Rosa Avenue indicate that the morning trip generation would be substantially lower as 15 percent of the current 1100 vehicles per hour on Santa Rosa Avenue is 165 trips. For the p.m. peak hour the results are similar, with a predicted 97 p.m. peak hour trips based on volumes versus 108 based on store size.

A large portion of the trips associated with a coffee shop are drawn from traffic passing the site and making an interim stop. While the *Trip Generation Handbook*, 3rd Edition, 2017, does not provide pass-by rates for this land use, data for a Coffee/Donut Shop with Drive-Through Window and no Indoor Seating indicates an average pass-by rate of 89 percent. Given that this site is conveniently located in terms of proximity to freeway ramps and along a major cross-town arterial, it is reasonable to assume that trips will be predominantly pass-by trips rather than primary trips. It was therefore assumed that this site would experience a pass-by rate of 80 percent. Based on the applied assumptions, the project would be expected to generate 410 primary trips daily, including 44 during the morning peak hour and 22 during the evening peak hour. These results are shown in Table 1.

Table 1 – Trip Generation Summary

Land Use	Units	Daily		AM Peak Hour				PM Peak Hour			
		Rate	Trips	Rate	Trips	In	Out	Rate	Trips	In	Out
Coffee Shop w/drive-thru	2.5 ksf	820.38	2,051	88.99	222	113	109	43.38	108	54	54
Pass-by		-80%	-1,641	-80%	-178	-90	-88	-80%	-86	-43	-43
Total			410		44	23	21		22	11	11

Note: ksf = 1,000 square feet

It is noted that if the rate based on adjacent street traffic were applied, the project would still generate fewer than 50 trips if the pass-by percentage were reduced to 70 percent. Because these values are below the City's 50-trip threshold indicating need for a full traffic study, an operational analysis was not prepared.

Parking Generation

The project was analyzed to determine whether the proposed parking supply would be sufficient for the anticipated parking demand. The project site as proposed would provide a total of 25 standard parking spaces. The City of Santa Rosa parking supply requirements are based on the City of Santa Rosa Municipal Code, Chapter 20-36.040; Number of Parking Spaces Required. Additionally, the drive-through lane provides enough space for eight vehicles to queue. The Code requires one parking space for every 75 square feet for commercial developments such as cafés, thus the proposed café would require 33 parking spaces.

Parking demand was also estimated using standard rates published by ITE in *Parking Generation*, 4th Edition, 2010. The parking demand of the project was estimated using the published standard rate for Coffee/Donut Shop with Drive-Through (ITE LU #937). The proposed parking supply is not anticipated to adequately accommodate the estimated parking demand. The proposed parking supply, expected demand, and City requirements are shown in Table 2.

Table 2 – Parking Analysis Summary

Land Use	Units	Supply (spaces)	ITE Parking Generation		City of Santa Rosa Requirements	
			Rate	Est. Parking Demand	Rate	Spaces Required
Coffee/Donut Shop w/Drive-Through	2.5 ksf	25	10.40	26	1 space	33
Total		25		26		33

Note: ksf = 1,000 square feet

The City's Code states that a minor reduction or a minor adjustment of up to 25 percent can be applied to the development if it is found that the number of parking spaces approved will be sufficient for its safe, convenient, and efficient operation. A 25 percent reduction of the 33 required spaces translates to 25 spaces, or the proposed supply. The Institute of Transportation Engineers *Parking Generation 4th Edition*, estimates an average demand of 26 spaces for a 2,500 square foot café with a drive-through.

A review of Starbucks' specific data indicates that on average the Starbucks' stores in Santa Rosa serve 59 percent of the customers at the drive-through window. For the peak hour of the store, the 2,500 square foot Starbucks would be expected to generate 245 trips, 120 of which would be inbound. Assuming that 59 percent of these 120 vehicles enter the drive-through, 49 vehicles would need parking. Given that turn-over time for most customers is ten minutes or less, the proposed supply of 25 parking spaces appears to be adequate to accommodate the limited number of customers who would walk in versus drive through as well as employee parking.

Access Analysis

The project site is located on the west side of Santa Rosa Avenue, and just south of its intersection with Flower Avenue. The roadway has two lanes plus bike lanes in each direction as well as a center two-way left-turn lane. Numerous driveways exist nearby, including one directly opposite the proposed project site for the Gas & Mart as well as shared driveways both north and south of the project site that serve multiple commercial ventures. The site's frontage has a curb cut for the future driveway, indicating that future access directly to this parcel from Santa Rosa Avenue was anticipated. The site plan is enclosed for reference.

Sight Distance

At private roads and driveways, a substantially clear line of sight should be maintained between the driver of a vehicle waiting at the crossroad and the driver of an approaching vehicle. Adequate time must be provided for the waiting vehicle to either cross, turn left, or turn right, without requiring the through traffic to radically alter their speed.

Sight distances along Santa Rosa Avenue at the project driveway were evaluated based on sight distance criteria contained in the *Highway Design Manual* published by Caltrans. The recommended sight distances for minor street approaches that are driveways are based on stopping sight distance, with approach travel speeds used as the basis for determining the recommended sight distance. Sight distance should be measured from a 3.5-foot height at the location of the driver on the minor road to a 4.25-foot object height in the center of the approaching lane of the major road. Set-back for the driver on the crossroad shall be a minimum of 15 feet, measured from the edge of the traveled way.

For the posted 35-mph speed limit on Santa Rosa Avenue, the recommended stopping sight distance is 250 feet. Based on a review of field conditions, sight distance at the driveway extends nearly 500 feet to the south to the Baker Avenue overcrossing. To the north, sight distance also extends well beyond 250 feet without the presence of park vehicles along Santa Rosa Avenue; however, when the street parking spaces along the property frontage north of the site are occupied, sight distance is restricted to approximately 150 feet, which is inadequate for the posted speed limit. In this situation, adequate sight lines can be achieved by pulling forward to the edge of the bike lane, but this type of operation is not preferred for extended periods of time.

Finding – Sight distance to the south of the project driveway is more than adequate for the posted speed limit, but sight distance to the north is inadequate when the street parking spaces north of the site are occupied.

Recommendation – The two street parking spaces between the project driveway and the driveway to the property directly north of the site should be removed. This could be achieved by designating the area as a loading zone, so long as limited loading occurs during business hours and the spaces are vacant for the majority of the day.

On-site Circulation

As proposed in the site plan, the drive aisle would extend west from Santa Rosa Avenue and provide access to surface parking located east and north of the coffee shop building. The drive-through lane would start at the west end of the site and loop around the coffee shop in a counter-clockwise direction then connect to the main drive aisle east of the building. As proposed, on-site circulation would be expected to operate acceptably for standard passenger vehicles. To determine if garbage trucks would be able to navigate the site as intended, site circulation was modeled using the AutoTURN application of AutoCAD. Based on the proposed site plan, there would be no anticipated issues with garbage trucks accessing the trash enclosure and turning around on-site. An exhibit showing the expected travel path for garbage trucks is enclosed. It should be noted that delivery truck circulation was not evaluated as it is understood that delivery trucks would park on Santa Rosa Avenue and unload from there.

Finding – Standard passenger vehicles and garbage trucks would be able to navigate the site as intended, though the drive-through queue has the potential to block vehicles parked in the stalls at the northwest corner of the site should it spill into the main drive aisle.

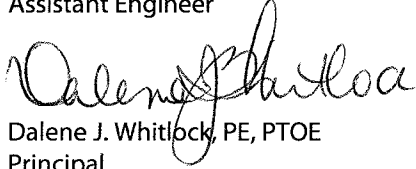
Recommendation – As recommended above, the existing street parking north of the driveway should be converted to a loading zone. In addition to improving sight lines for vehicles exiting the site, this would provide a dedicated loading area for delivery trucks so that they do not obstruct access to the transit stop south of the driveway or interrupt through traffic on Santa Rosa Avenue. Additionally, it is recommended that employees be instructed to park in the stalls at the northwest corner of the site so that that customers do not get blocked in by a potential overflow of the drive-through queue.

We hope this information adequately addresses any questions regarding the potential traffic and parking impacts of the proposed project. Thank you for giving us the opportunity to provide these services.

Sincerely,



Cameron Nye, EIT
Assistant Engineer



Dalene J. Whitlock, PE, PTOE
Principal

DJW/cn/SRO452.L1

Enclosures: Site Plan
AutoTURN Exhibit

