

MEMORANDUM

Date: October 8, 2007
To: Susan Cronk – Simeon Properties
From: Eddie Barrios, P.E. – Fehr & Peers
Subject: **Updated Mt. Eden Shops Site Plan Review**

WC07-2408

This memorandum updates the information presented in the *Mt. Eden Shops Site Plan Review* dated March 1, 2007. The memorandum has been updated to reflect the drive-through window queue observations for an existing Starbucks in Santa Clara, California. For completeness and easier reference, all of the information presented in the previous memorandum is included in this memorandum.

Fehr & Peers performed a site plan review for the Mt. Eden Shops development. The reviewed site plan is dated February 16, 2007. The Mt. Eden Shops development consists of two retail pads (Retail A and Retail B). Retail A is approximately 8,250 square feet, while Retail B is approximately 1,838 square feet. Retail B is anticipated to be occupied by a Starbucks that will provide a drive-through window. To estimate the extent vehicle queuing at the drive-through window for Retail B, queuing surveys were performed at three existing Starbucks with drive-through windows. The morning peak period was selected for analysis because it represents the period with the highest level of activity based on field observations and a previous trip generation survey performed by Fehr & Peers¹. Surveys were performed from 7:00 AM to 9:00 AM at the following Starbucks locations with drive-through windows:

- Starbucks in San Leandro (15555 E. 14th Street, San Leandro, CA)
- Starbucks in Concord (4125 Concord Boulevard, Concord, CA)
- Starbucks in Santa Clara (3605 El Camino Real, Santa Clara, CA)

DRIVE-THROUGH WINDOW QUEUE SURVEY RESULTS

The surveyed drive-through facilities are designed with an ordering station in advance of the pick-up window. Data at each site was recorded at one minute intervals between 7:00 AM and 9:00 AM. The results are summarized in Table 1. The detailed data is attached to this memorandum.

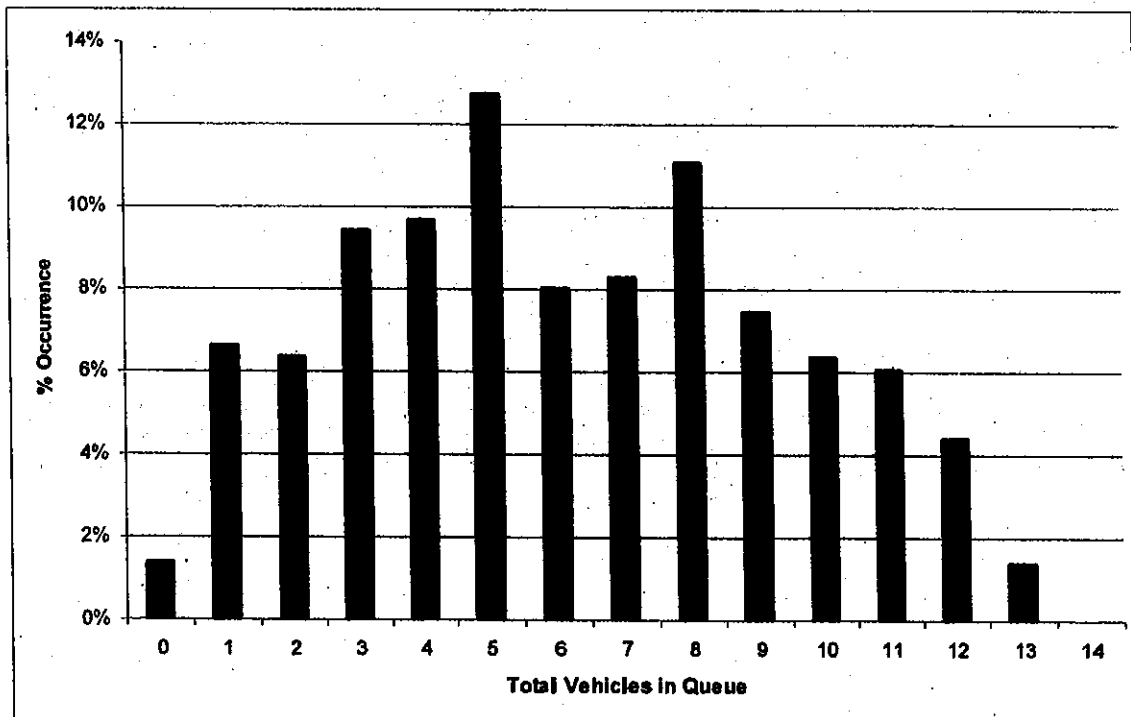
¹ A trip generation survey was performed by Fehr & Peers in 2001 for a Starbucks in Orinda, California. The results indicated that the midday and PM peak hour trip generation was less than half that of the AM peak hour.

Location	Average Queue		85 th Percentile Queue		Maximum Queue	
	Order	Pick-Up	Order	Pick-Up	Order	Pick-Up
San Leandro Starbucks	3	4	6	6	7	6
Concord Starbucks	2	2	4	4	8	5
Santa Clara Starbucks	3	3	6	4	9	4

Source: Fehr & Peers, 2007

Because the length of the queue at the pick-up window is limited by the actual distance provided between the pick-up window and the ordering station, both the pick-up window queue and ordering station queue should be considered together to determine the total length of the queue. Based on the results presented in Table 1, the maximum total queue was observed to be 13 vehicles, while the average queue ranged between 4 and 8 vehicles depending on location.

The data from all three locations was combined to estimate queuing characteristics for the proposed Mt. Eden Shops Starbucks. At all locations the queues at the ordering station and pick-up window were added together to determine the total queue. The chart below presents the percentage of time (percent occurrence) that individual queues were observed during the AM peak period. As shown below, the maximum queue (13 vehicles) was observed for only about 2 percent of the time which represents about 2.4 minutes (= 0.02*120 minutes).



SITE PLAN REVIEW

A project site plan review was performed to determine if adequate site access, circulation, and drive-through window vehicle storage would be provided by the project. The review is presented below.

Project Site Access

The project proposes to provide access via two driveways on Industrial Boulevard. The main project driveway is located on the northern project site boundary and is controlled by a traffic signal. The second driveway located between the main project driveway and the Highway 92 westbound on-ramp is side-street stop controlled where project traffic stops and yields to traffic on Industrial Boulevard. This driveway will be restricted to right-turn in/right-turn out. Both driveways will be at least 40 feet wide which is adequate for two-way travel and emergency vehicle access.

On-Site Vehicle Circulation

The project proposes to provide standard 90 degree parking with parking stall dimensions of 9 feet by 19 feet which is consistent with the City of Hayward Municipal Code. The parking aisles will be at least 26 feet wide which is adequate for 90 degree parking and two-way vehicle circulation. The two proposed internal drive aisles that do not provide direct parking will be 20 feet wide which is adequate for two-way vehicle circulation and emergency vehicle circulation.

The on-site vehicle turning radii including the drive-through lane appear to be adequate for all passenger vehicles. Based on information received from Simeon Properties all deliveries are anticipated to occur by either a single-unit truck (i.e. UPS, FedEx, etc.) or a semi-truck trailer. Based on information provided by the architect, the delivery circulation pattern will be to enter from the main project driveway, make a left-turn behind Retail B, and then another left-turn into the loading area which is located between the two retail pads. To exit, trucks would go straight towards the second driveway on Industrial Boulevard and make a right-turn. A turning radii analysis was performed to determine the largest truck that could maneuver within the site. The turning radii analysis indicates that both the single-unit truck and the WB 40 semi-truck trailer (about 41 feet in length) could maneuver within the site to load/unload. However, because truck circulation would require the temporary use of opposing travel lanes and would block one of the internal drive-aisles for an extended period of time, deliveries should be restricted to off-peak hours to avoid impacts to on-site vehicle circulation.

Pedestrian Circulation

Adequate on-site pedestrian circulation is provided by the project through several design features that include raised curb, new sidewalk, and marked crosswalks throughout the site. We understand that the City has raised concerns about the marked crosswalk at the drive-through lane that connects the two retail pads and about the lack of sidewalk on the Industrial Boulevard project site frontage. Based on the site layout, the marked crosswalk across the drive-through lane appears to be a reasonable location to connect the two retail pads for pedestrians. Pedestrians usually choose the path of least resistance. The location of the marked crosswalk is likely to be the location where pedestrians cross even if the marked crosswalk was not present. The current design allows drivers at the drive-through window to have an unobstructed view of pedestrians on the crosswalk. Vehicle and pedestrian conflicts could be minimized by making the crosswalk highly visible through the use of color and textured pavement.

The project proposes to provide sidewalk along the Industrial Boulevard frontage between the main project driveway and the right-turn in/right-turn out driveway. It does not propose to provide sidewalk along the Industrial Boulevard project site frontage south of the right-turn in/right-turn out driveway. This is because no sidewalk or crossing opportunities are provided on the west side of Industrial Boulevard across the Highway 92 interchange. Sidewalk is also not provided on the west side of Industrial Boulevard for at least 1,000 feet south of the interchange. Sidewalk along the Industrial Boulevard project site frontage south of the right-turn in/right-turn out driveway is not needed based on the existing setting. Furthermore, sidewalk may encourage illegal pedestrian activity across the Highway 92 interchange on the west side. We recommend that no sidewalk be provided along the Industrial Boulevard project site frontage south of the right-turn in/right-turn out driveway.

Drive-Through Vehicle Storage

Based on the site plan, the drive-through lane will store about 11 vehicles before the queue impacts on-site vehicle circulation. Based on the surveys, the estimated vehicle queues at the Mt. Eden Shops Starbucks are expected to exceed the vehicle storage (11 vehicles) about 6 percent of the time during the AM peak period. Assuming that all drive-through vehicles enter from the signalized Main Project Driveway/Industrial Boulevard intersection then impacts to the intersection are anticipated to occur when the queue reaches 13 vehicles or longer. This is anticipated to occur about 2 percent of the time (2.4 minutes) during the AM peak period. Queuing impacts to on-site circulation and at the Main Project Driveway/Industrial Boulevard intersection are not anticipated to occur outside the AM peak period.



QUEUE SURVEY DATA

Starbucks Queue Survey

Location: 4125 Concord Av., Concord

Date: Tuesday, 1/30/2007

Time	# of Cars in Queue to:		Time	# of Cars in Queue to:		Time	# of Cars in Queue to:	
	order	pick up		order	pick up		order	pick up
7:00 AM	1	2	7:45 AM	2	3	8:30 AM	2	3
7:01 AM	1	1	7:46 AM	2	2	8:31 AM	1	3
7:02 AM	0	1	7:47 AM	1	2	8:32 AM	0	3
7:03 AM	0	2	7:48 AM	0	1	8:33 AM	1	0
7:04 AM	1	2	7:49 AM	1	2	8:34 AM	3	1
7:05 AM	0	2	7:50 AM	0	1	8:35 AM	1	2
7:06 AM	0	1	7:51 AM	1	1	8:36 AM	2	2
7:07 AM	0	0	7:52 AM	0	2	8:37 AM	3	2
7:08 AM	0	0	7:53 AM	1	2	8:38 AM	1	2
7:09 AM	0	1	7:54 AM	1	2	8:39 AM	0	2
7:10 AM	0	1	7:55 AM	2	2	8:40 AM	1	1
7:11 AM	1	2	7:56 AM	1	3	8:41 AM	1	2
7:12 AM	1	2	7:57 AM	1	4	8:42 AM	1	3
7:13 AM	2	3	7:58 AM	3	3	8:43 AM	0	2
7:14 AM	2	2	7:59 AM	2	3	8:44 AM	0	1
7:15 AM	2	3	8:00 AM	1	4	8:45 AM	0	0
7:16 AM	4	4	8:01 AM	2	3	8:46 AM	1	0
7:17 AM	3	4	8:02 AM	2	3	8:47 AM	2	1
7:18 AM	3	4	8:03 AM	3	3	8:48 AM	3	2
7:19 AM	4	4	8:04 AM	3	3	8:49 AM	3	1
7:20 AM	2	4	8:05 AM	4	3	8:50 AM	1	3
7:21 AM	2	2	8:06 AM	3	3	8:51 AM	3	3
7:22 AM	1	3	8:07 AM	4	2	8:52 AM	2	3
7:23 AM	1	2	8:08 AM	4	3	8:53 AM	2	2
7:24 AM	2	3	8:09 AM	4	3	8:54 AM	1	1
7:25 AM	1	1	8:10 AM	6	3	8:55 AM	0	2
7:26 AM	0	1	8:11 AM	5	4	8:56 AM	0	1
7:27 AM	0	1	8:12 AM	8	3	8:57 AM	1	1
7:28 AM	1	1	8:13 AM	7	3	8:58 AM	2	1
7:29 AM	1	2	8:14 AM	5	5	8:59 AM	1	1
7:30 AM	2	3	8:15 AM	4	4	9:00 AM	0	2
7:31 AM	2	3	8:16 AM	5	3			
7:32 AM	3	3	8:17 AM	6	3			
7:33 AM	2	3	8:18 AM	4	4			
7:34 AM	2	3	8:19 AM	3	3			
7:35 AM	1	2	8:20 AM	2	4			
7:36 AM	2	4	8:21 AM	2	5			
7:37 AM	3	3	8:22 AM	5	4			
7:38 AM	3	4	8:23 AM	4	5			
7:39 AM	2	3	8:24 AM	4	3			
7:40 AM	2	3	8:25 AM	5	4			
7:41 AM	1	3	8:26 AM	4	4			
7:42 AM	1	2	8:27 AM	4	3			
7:43 AM	0	1	8:28 AM	2	4			
7:44 AM	2	2	8:29 AM	1	4			

Starbucks Queue Survey

Location: 15555 E. 14th St., San Leandro

Date: Wednesday, 1-31-07

Time			Time			Time		
# of Cars in Queue to:			# of Cars in Queue to:			# of Cars in Queue to:		
order	pick up		order	pick up		order	pick up	
7:00 AM	1	1	7:45 AM	5	6	8:30 AM	6	6
7:01 AM	1	2	7:46 AM	3	5	8:31 AM	4	6
7:02 AM	0	2	7:47 AM	2	5	8:32 AM	4	6
7:03 AM	0	3	7:48 AM	1	4	8:33 AM	4	6
7:04 AM	0	1	7:49 AM	2	4	8:34 AM	5	5
7:05 AM	1	2	7:50 AM	0	6	8:35 AM	5	6
7:06 AM	1	2	7:51 AM	0	5	8:36 AM	6	5
7:07 AM	0	1	7:52 AM	2	5	8:37 AM	6	5
7:08 AM	1	0	7:53 AM	3	5	8:38 AM	7	5
7:09 AM	0	1	7:54 AM	2	6	8:39 AM	7	6
7:10 AM	0	2	7:55 AM	2	6	8:40 AM	7	6
7:11 AM	0	2	7:56 AM	3	5	8:41 AM	6	6
7:12 AM	1	1	7:57 AM	3	5	8:42 AM	6	6
7:13 AM	0	1	7:58 AM	6	5	8:43 AM	6	6
7:14 AM	1	0	7:59 AM	5	5	8:44 AM	6	5
7:15 AM	3	1	8:00 AM	6	5	8:45 AM	6	6
7:16 AM	2	2	8:01 AM	5	6	8:46 AM	5	6
7:17 AM	4	2	8:02 AM	4	6	8:47 AM	4	6
7:18 AM	3	2	8:03 AM	3	5	8:48 AM	5	6
7:19 AM	3	2	8:04 AM	2	5	8:49 AM	4	6
7:20 AM	1	4	8:05 AM	4	6	8:50 AM	4	5
7:21 AM	3	5	8:06 AM	3	6	8:51 AM	3	5
7:22 AM	3	5	8:07 AM	3	6	8:52 AM	4	5
7:23 AM	3	4	8:08 AM	7	6	8:53 AM	7	5
7:24 AM	1	5	8:09 AM	7	6	8:54 AM	6	5
7:25 AM	1	4	8:10 AM	7	6	8:55 AM	7	5
7:26 AM	1	3	8:11 AM	6	6	8:56 AM	7	5
7:27 AM	3	3	8:12 AM	5	6	8:57 AM	6	5
7:28 AM	2	3	8:13 AM	6	6	8:58 AM	6	4
7:29 AM	1	3	8:14 AM	4	6	8:59 AM	6	5
7:30 AM	1	3	8:15 AM	3	6	9:00 AM	5	6
7:31 AM	0	3	8:16 AM	3	6			
7:32 AM	1	2	8:17 AM	5	6			
7:33 AM	1	2	8:18 AM	6	6			
7:34 AM	0	3	8:19 AM	5	6			
7:35 AM	1	2	8:20 AM	4	6			
7:36 AM	2	1	8:21 AM	3	6			
7:37 AM	2	3	8:22 AM	3	6			
7:38 AM	2	3	8:23 AM	3	6			
7:39 AM	0	4	8:24 AM	4	5			
7:40 AM	1	3	8:25 AM	4	6			
7:41 AM	3	3	8:26 AM	2	6			
7:42 AM	2	5	8:27 AM	3	5			
7:43 AM	4	6	8:28 AM	4	5			
7:44 AM	3	5	8:29 AM	5	6			

Starbucks Queue Survey

Location: 3605 El Camino Real, Santa Clara

Date: Tuesday, 9-25-07

Time	# of Cars in Queue to:		Time	# of Cars in Queue to:		Time	# of Cars in Queue to:	
	order	pick up		order	pick up		order	pick up
7:00 AM	0	1	7:45 AM	5	4	8:30 AM	2	3
7:01 AM	1	1	7:46 AM	5	4	8:31 AM	4	3
7:02 AM	1	1	7:47 AM	6	3	8:32 AM	7	3
7:03 AM	0	1	7:48 AM	5	3	8:33 AM	6	3
7:04 AM	1	1	7:49 AM	4	3	8:34 AM	6	4
7:05 AM	1	2	7:50 AM	2	4	8:35 AM	7	3
7:06 AM	0	1	7:51 AM	2	3	8:36 AM	6	3
7:07 AM	0	0	7:52 AM	1	3	8:37 AM	7	3
7:08 AM	0	0	7:53 AM	0	3	8:38 AM	7	4
7:09 AM	0	1	7:54 AM	2	2	8:39 AM	7	4
7:10 AM	1	0	7:55 AM	2	3	8:40 AM	8	4
7:11 AM	2	1	7:56 AM	0	3	8:41 AM	9	3
7:12 AM	2	2	7:57 AM	0	2	8:42 AM	8	4
7:13 AM	2	3	7:58 AM	1	2	8:43 AM	6	2
7:14 AM	2	2	7:59 AM	2	3	8:44 AM	9	3
7:15 AM	3	2	8:00 AM	2	3	8:45 AM	8	2
7:16 AM	4	3	8:01 AM	4	3	8:46 AM	5	3
7:17 AM	3	4	8:02 AM	3	4	8:47 AM	5	3
7:18 AM	2	2	8:03 AM	3	3	8:48 AM	4	3
7:19 AM	2	1	8:04 AM	4	3	8:49 AM	3	2
7:20 AM	3	2	8:05 AM	3	3	8:50 AM	3	3
7:21 AM	2	2	8:06 AM	2	3	8:51 AM	2	3
7:22 AM	3	3	8:07 AM	1	3	8:52 AM	1	3
7:23 AM	2	4	8:08 AM	0	2	8:53 AM	1	3
7:24 AM	3	4	8:09 AM	1	3	8:54 AM	5	2
7:25 AM	4	3	8:10 AM	2	3	8:55 AM	5	3
7:26 AM	4	3	8:11 AM	2	4	8:56 AM	5	3
7:27 AM	3	2	8:12 AM	2	3	8:57 AM	7	3
7:28 AM	3	3	8:13 AM	3	3	8:58 AM	6	4
7:29 AM	4	2	8:14 AM	1	3	8:59 AM	8	3
7:30 AM	5	4	8:15 AM	1	3	9:00 AM	7	2
7:31 AM	5	2	8:16 AM	1	2			
7:32 AM	6	3	8:17 AM	2	3			
7:33 AM	5	3	8:18 AM	0	2			
7:34 AM	6	2	8:19 AM	2	2			
7:35 AM	5	3	8:20 AM	2	3			
7:36 AM	5	3	8:21 AM	3	2			
7:37 AM	6	2	8:22 AM	4	4			
7:38 AM	6	2	8:23 AM	4	4			
7:39 AM	5	3	8:24 AM	4	4			
7:40 AM	4	3	8:25 AM	4	4			
7:41 AM	5	3	8:26 AM	3	4			
7:42 AM	4	3	8:27 AM	5	4			
7:43 AM	5	3	8:28 AM	5	4			
7:44 AM	4	4	8:29 AM	4	4			