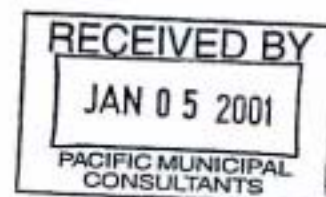

APPENDIX A



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MEMORANDUM

Date: November 21, 2000

To: Colleen McDuffee – City of Citrus Heights

From: John Gard, P.E. – Fehr & Peers Associates JG

Subject: Stock Ranch EIR

1002-1246

Fehr & Peers Associates has completed an analysis of the following issues raised during the November 16th Planning Commission hearing on the Stock Ranch EIR:

- Traffic Operations on Auburn Boulevard With Revised Access Plan
- Trip Generation Comparison for Auburn Commerce District

We analyzed each of these issues based on the revised access plan (see Figure 1) with the following potential quantities of retail development for the site:

- 385,000 square feet;
- 400,000 square feet; and
- 425,000 square feet.

The following describes our analysis and conclusions.

Traffic Operations on Auburn Boulevard with Revised Access Plan

Figure 1 shows that the revised access plan for the Auburn Commerce District (located north of Arcade Creek) includes a signalized project access on the western boundary of the project site and two unsignalized driveways in the middle and eastern portions of the site¹. The middle

¹ By contrast, the access plan analyzed in the *Draft EIR for the Stock Ranch Guide For Development* (PMC, October 2000) included a signalized project access at the Auburn Boulevard/Raintree Drive intersection.



driveway would permit right-turns only, while the eastern driveway would permit left-turn ingress and right-turn movements.

With the revised access plan, the Auburn Boulevard/Raintree Drive intersection would continue to be a full-access, unsignalized intersection. A "refuge" area would be provided in the median of Auburn Boulevard to allow motorists turning left from Raintree Drive to travel east on Auburn Boulevard to cross one direction of traffic at a time.

The proposed signalized project access intersection would be spaced approximately 750 feet east of the San Tomas Drive/Auburn Boulevard intersection. This spacing would not cause traffic to spill back from one intersection to the other and would provide adequate vehicle progression along Auburn Boulevard.

Table 1 displays the p.m. peak hour levels of service, delay, and 95th percentile vehicle queues² at the signalized project driveway on Auburn Boulevard for each of the three potential quantities of development (referred to as 385 KSF³, 400 KSF, and 425 KSF).

Amount of Development	Operations at Signalized Project Access		Westbound Left-Turn Ingress Lane at Eastern Project Driveway	
	Avg. Delay (LOS) ²	95 th Percentile Westbound Left-turn Queue Length (300 Feet Available)	Avg. Delay (LOS) ²	95 th Percentile Queue Length (250 Feet Available)
Existing Plus Project Conditions				
385 KSF ¹	14.1 (B)	260 feet	36.1 (E)	150 feet
400 KSF	14.8 (C)	290 feet	43.6 (E)	150 feet
425 KSF	16.9 (C)	330 feet	60.9 (F)	175 feet
Cumulative Plus Project Conditions				
385 KSF	14.7 (B)	260 feet	47.0 (F)	175 feet
400 KSF	15.4 (C)	290 feet	56.3 (F)	175 feet
425 KSF	17.3 (C)	330 feet	84.0 (F)	200 feet
Notes: ¹ KSF = Thousand Square Feet. ² LOS = Level of Service; Average delay in seconds per vehicle. - Intersection delay and level of service based on methodologies contained in <i>Highway Capacity Manual-Special Report 209</i> (Transportation Research Board, 1994). Source: Fehr & Peers Associates, 2000.				

- 2 The 95th percentile queue represents the length of queue that would have a 5 percent probability of being exceeded during the peak hour.
- 3 KSF = Thousand Square Feet.



The data in Table 1 yields the following conclusions:

- The signalized project access intersection on Auburn Boulevard would operate acceptably (LOS C or better) for each of the three development quantities that were studied.
- A single westbound left-turn lane with 300 feet of vehicle storage would be adequate at the signalized project access under the 385 KSF and 400 KSF scenarios.
- The westbound left-turn lane at the signalized project access would require 330 feet of vehicle storage under the 425 KSF scenario. Although the left-turn lane could be designed with this storage, it would reduce the landscaping that could be provided in the median of Auburn Boulevard along the project's frontage.
- The unsignalized westbound left-turn ingress lane at the eastern project driveway would require between 175 and 200 feet of storage depending on the quantity of development on the site. Since 250 feet of storage is to be provided, adequate storage would be provided in this turn lane under all scenarios.
- The average delay per vehicle in the unsignalized westbound left-turn ingress lane at the eastern project driveway increases substantially as the amount of development on the site increases. For example, average delays under the 385 KSF scenario would be roughly 40 seconds per vehicle, while average delays under the 425 KSF scenario would exceed one minute per vehicle.

Trip Generation Comparison

During the November 16th Planning Commission hearing, I indicated that the trip generation rate (per square foot) for retail uses generally decreases as the size of the retail use increases. This trend is illustrated in Table 2.

According to the data in Table 2, a single big box user would typically generate less traffic than the combined trip generation of several smaller retail pads with the same total square footage. This may not always be the case, however, as the specific uses on-site do influence the trip generating characteristics of the site.



Land Use	P.M. Peak Hour Trip Rate (per 1000 square feet)	Approximate Building Size (square feet)
Home Improvement Store (e.g., Home Depot)	2.87	140,000
Electronics Superstore (e.g., Circuit City)	4.50	40,000
Drug Store (e.g., Walgreens)	7.63	20,000
High-Turnover Sit-Down Restaurant (e.g., Chili's)	10.86	10,000
Fast Food Restaurant with Drive-Through (e.g., McDonalds)	33.48	3,000

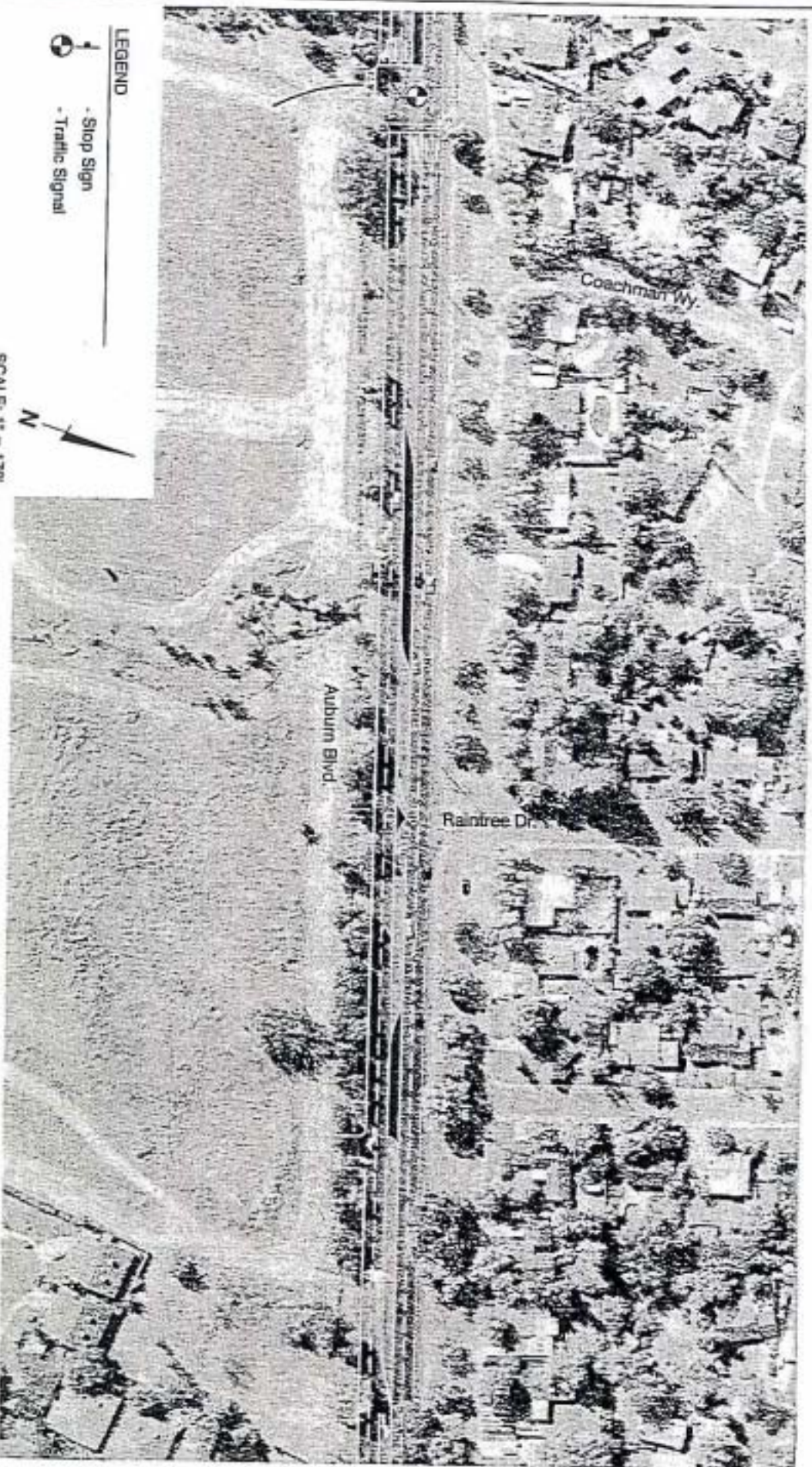
Note: Based on trip generation rates published in *Trip Generation* (ITE, 6th Edition, 1997).

At the November 16th meeting, the Planning Commission discussed whether a second big box should be permitted on-site. Table 3 summarizes the p.m. peak hour trip generation for the 385 KSF, 400 KSF, and 425 KSF development scenarios with a single big box user and with two big box users. It was assumed for the calculation that any remaining square footages not consumed by the big box(es) and grocery store would be supporting retail pads (excluding fast-food restaurants and gas stations).

Amount of Development	P.M. Peak Hour Trip Generation (New Trips)	
	Single Big Box User	Two Big Box Users
385 KSF	1,440	1,220
400 KSF	1,510	1,310
425 KSF	1,650	1,450

Notes: - Both scenarios assume remaining square footage would consist of a grocery store and supporting retail (excluding fast-food restaurants and gas stations).
- Based on trip generation rates contained in *Trip Generation* (ITE, 1997).
Source: Fehr & Peers Associates, 2000.

Table 3 shows that the single big box user concept generates approximately 200 additional p.m. peak hour trips than the two big box user concept for each development scenario. This is because the supporting retail generates trips at a higher rate than the big box.



LEGEND

- Stop Sign
- Traffic Signal

SCALE: 1" = 170'



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Dec 14, 2010 LUF
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REVISED ACCESS PLAN

FIGURE 1