View southeast of the intersection of Sylvan Road and Stock Ranch Road.

4.4.1 ENVIRONMENTAL ISSUE

This section analyzes existing and cumulative traffic conditions as well as circulation impacts resulting from the implementation of the proposed project. Impacts on the roadway, transit, and bicycle and pedestrian systems are identified and mitigation measures are recommended to reduce the significance of impacts. This section is based on a traffic study prepared by Fehr & Peers in September 2000.

4.4.2 METHODOLOGY

Level of Service

Level of service (LOS) is a measure of the operating performance of the transportation system. Service levels vary from "A" (the best) to "F" (the worst). Intersections were analyzed using the methodology contained in the *Highway Capacity Manual (HCM) – Special Report 209* (Transportation Research Board, 1994). This methodology determines the level of service by comparing the average delay for all vehicles passing through the intersection to the thresholds shown in **Table 4.4-1.**

Table 4.4-1
Intersection Level of Service Criteria

Level of Service	Signalized (Average Stopped Delay Per Vehicle)	Unsignalized (Average Total Delay Per Vehicle)	Description
A	≤ 5 sec/veh	≤ 5 sec/veh	Very low delay. Most vehicles do not stop.
B	5.1 – 15.0 sec/veh	5.1 – 10.0 sec/veh	Generally good progression of vehicles. Slight delays.
C	15.1 – 25.0 sec/veh	10.1 – 20.0 sec/veh	Fair progression. Increased number of stopped vehicles.
D	25.1 – 40.0 sec/veh	20.1 – 30.0 sec/veh	Noticeable congestion. Large portion of vehicles stopped.
E	40.1 – 60.0 sec/veh	30.1 – 45.0 sec/veh	Poor progression. High delays and frequent cycle failure.
F	> 60.0 sec/veh	> 45.0 sec/veh	Over saturation. Force flow. Extensive queuing.

Source: *Highway Capacity Manual - Special Report 209 (*Transportation Research Board, 1994*).*

Traffic signal warrant analyses were performed at unsignalized intersections using the Peak Hour Volume Warrant (Warrant 11) and Accident Experience Warrant (Warrant 6) contained in the *Traffic Manual* (Caltrans, 1995).

4.4.3 SIGNIFICANCE CRITERIA

For the purposes of this study, the proposed project would have a significant impact on the transportation system if it would:

- Worsen operations at an intersection from LOS C or better to LOS D or worse; *(*paraphrased from *Policy 29.2 of the Draft General Plan)*

- Cause the average delay at an intersection that is already operating (or projected to operate) at LOS D or worse without the project to increase by more than five seconds per vehicle; *(*paraphrased from *Policy 29.2 of the Draft General Plan)*

- Result in traffic volumes on local residential streets that exceed 3,000 vehicles per day or add traffic to a local residential street that already carries over 3,000 vehicles per day *(*paraphrased from *Policy 3.5 of the Draft General Plan);*

- Result in operational deficiencies or queuing problems at the project accesses;

- Interfere with existing or planned transit facilities or services within the City; or

- Interfere with existing or planned bicycle or pedestrian facilities within the City.

- Require that the City acquire right of way from private property owners, particularly if the right of way acquisition would create a nonconforming situation with regard to building setbacks or other development standards.

4.4.4 EXISTING SETTING

The following describes the existing transportation system in the vicinity of the project site including the roadway, transit, and pedestrian and bicycle systems.

Existing Roadway System

The following provides a brief description of the major roadways in the vicinity of the project site.

Greenback Lane – is an east-west arterial between Interstate 80 (I-80) and the Rainbow Bridge in the City of Folsom. Greenback Lane has a posted speed limit of 45 miles per hour (mph) and is six lanes west of Auburn Boulevard, four lanes between Auburn Boulevard and Fountain Square Drive, and six lanes east of Fountain Square Drive. Construction is underway to widen the segment from Van Maren Lane to Fountain Square Drive to six lanes.

Auburn Boulevard – extends northeast from the City of Sacramento to the I-80/Riverside Avenue interchange in Roseville. It has a posted speed limit of 40 mph with two lanes in each direction separated by a center left-turn lane between Van Maren Lane and Carriage Drive. A two-lane frontage road with fronting residences exists directly north of Auburn Boulevard between Carriage Drive and San Tomas Drive. **Figure 4.4-1** displays the existing configuration of Auburn Boulevard along the frontage of the project site.

Sylvan Road – is a north-south arterial from Sylvan Corners (i.e., the Auburn Boulevard/Old Auburn Road/Sylvan Road intersection) to Greenback Lane. It becomes San Juan Avenue south of Greenback Lane. Sylvan Road has a posted speed limit of 45 mph and two lanes in each direction separated by a center left-turn lane.

Stock Ranch Road – is a two-lane collector street with a posted speed limit of 25 mph that extends in a northwest direction from Sylvan Road into Stock Ranch, terminating prior to Arcade Creek. It currently serves various types of residential developments including single-family residences, senior apartments, and a congregate care facility.

View northwest from the intersection of Stock Ranch Road and Sylvan Road.

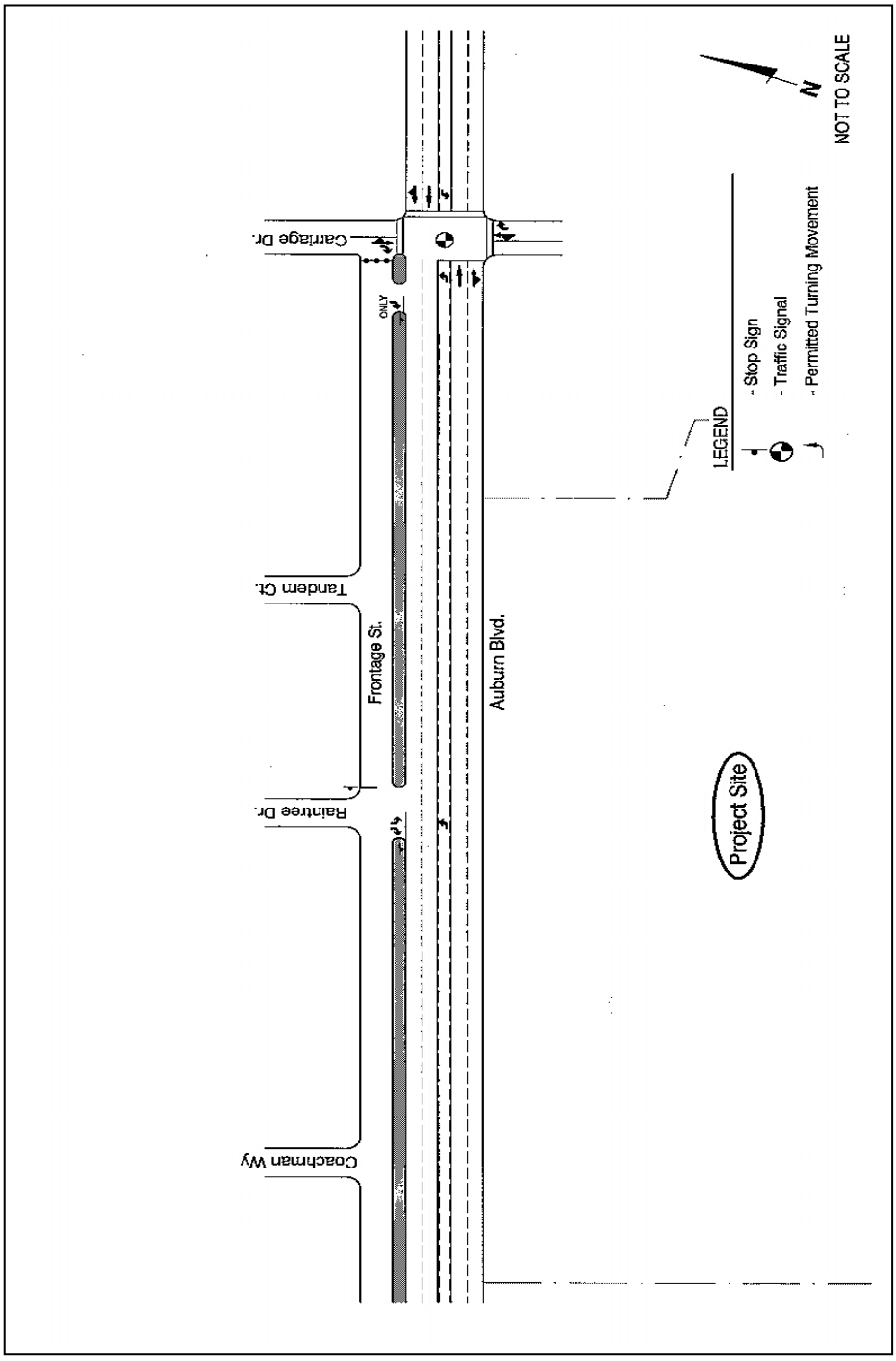
Traffic Volumes

Fehr & Peers Associates performed a.m. (7 – 9 a.m.) and p.m. (4 – 6 p.m.) peak period traffic counts at the following intersections in the vicinity of the project site on Tuesday, May 16, 2000:

- Auburn Boulevard/Van Maren Lane;
- Auburn Boulevard/San Tomas Drive;
- Auburn Boulevard/Raintree Drive;
- Auburn Boulevard/Carriage Drive;
- Auburn Boulevard/Sylvan Road/Old Auburn Road;
- Sylvan Road/Stock Ranch Road;
- Greenback Lane/San Juan Avenue; and
- Greenback Lane/Fountain Square Drive.

The traffic counts were performed while nearby schools (i.e., Mesa Verde High School, Sylvan Middle School) were in session and prior to any widening-related construction activity on Greenback Lane. At the majority of the study intersections, the a.m. peak hour occurred from 7:15 to 8:15 a.m. and the p.m. peak hour occurred from 5:00 to 6:00 p.m. **Figure 4.4-2** displays the existing a.m. and p.m. peak hour traffic volumes at each intersection.

Figure 4.4-1: Existing Configuration Of Auburn Boulevard Along Project Frontage



Source: Fehr & Peers Associates, Inc. 2000

Fehr & Peers Associates also performed daily traffic counts on May 16, 2000 on Auburn Boulevard and Raintree Drive to supplement previous counts (performed for the Citrus Heights General Plan Draft EIR) in 1998-1999 on Sylvan Road and Greenback Lane. **Table 4.4-2** summarizes the existing a.m. peak hour, p.m. peak hour, and daily traffic volumes (both directions) on key roadways in the vicinity of the project site.

As shown in **Table 4.4-2**, traffic volumes on the major roadways surrounding the project site range from about 23,000 vehicles per day on Auburn Boulevard to nearly 44,000 vehicles per day on Greenback Lane.

Table 4.4-2
Traffic Volumes – Existing Conditions

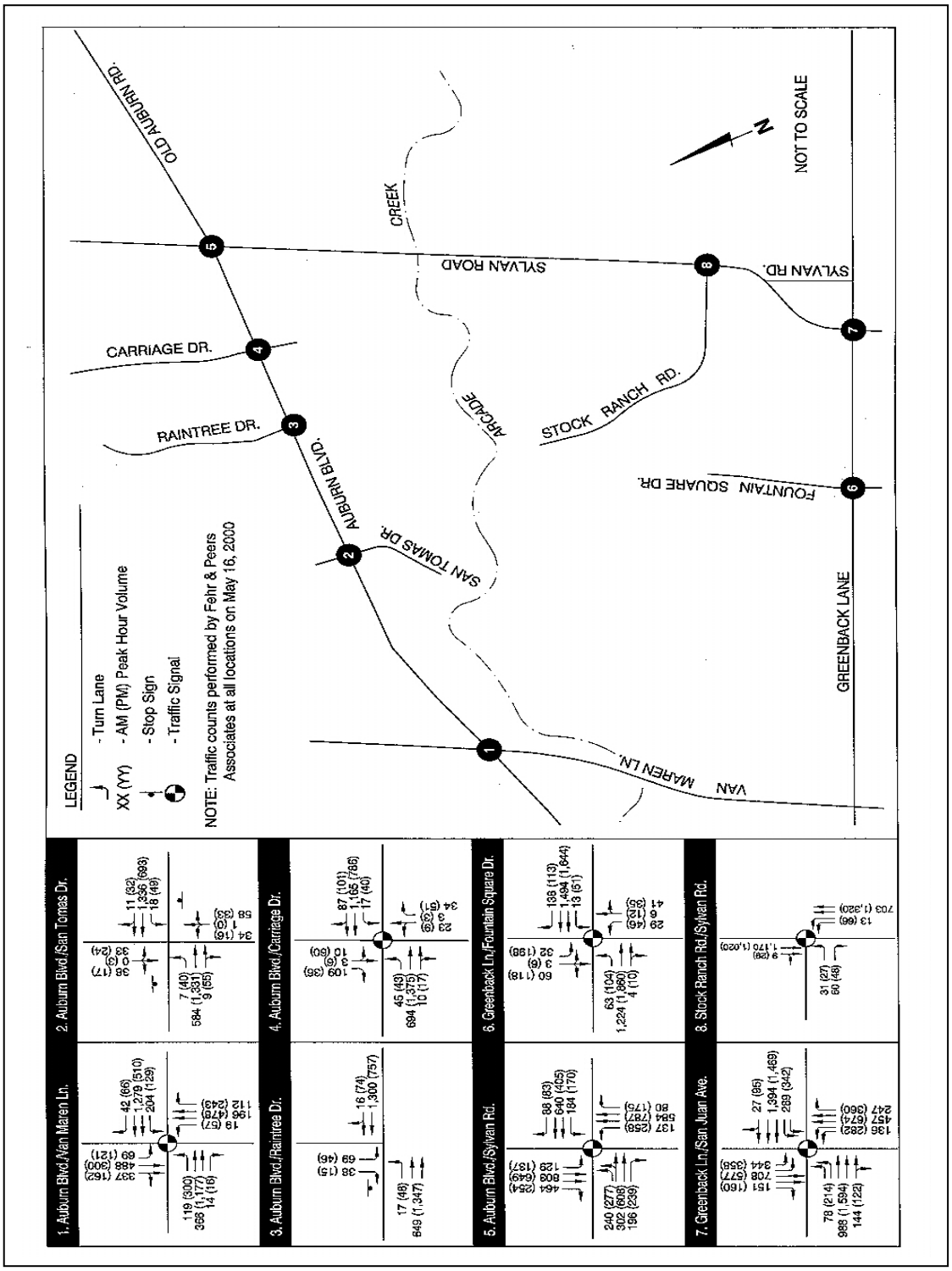
Roadway Segment	Traffic Volume (Both Directions)		
	A.M. Peak Hour	P.M. Peak Hour	Daily
Auburn Boulevard – Van Maren Lane to Raintree Drive	2,010	2,150	22,600
Auburn Boulevard – Raintree Drive to Sylvan Road	2,050	2,270	23,500
Sylvan Road – Auburn Boulevard to Greenback Lane	1,910	2,400	24,300
Greenback Lane – west of Fountain Square Drive	2,870	3,780	42,400
Greenback Lane – east of Fountain Square Drive	2,940	3,900	43,600
Stock Ranch Road	110	170	1,700
Fountain Square Drive	300	550	5,000
Raintree Drive	140	180	1,900
Carriage Drive	260	250	3,300

Source: Based on traffic counts performed by Fehr & Peers Associates on May 16, 2000.

Lane Configurations and Traffic Control Devices

Figure 4.4-2 displays the existing lane configurations and traffic control devices present at each study intersection. All study intersections are currently signalized with the exception of the Auburn Boulevard/San Tomas Drive and Auburn Boulevard/Raintree Drive intersections, which feature stop-control on the side-street approaches to Auburn Boulevard.

Figure 4.4-2: Existing Peak Hour Traffic Volumes And Lane Configurations



Source: Fehr & Peers Associates, Inc. 2000

Levels of Service

The existing a.m. and p.m. peak hour levels of service at each study intersection are shown in **Table 4.4-3** (see **Appendix D** for level of service calculations). The level of service computations consider a broad range of intersection operating characteristics including: traffic volumes, number of approach lanes, peak hour factor, lane widths, traffic signal cycle length and phasing, pedestrian activity, bus turnouts, and adjacent parking.

Table 4.4-3
Peak Hour Intersection Levels of Service – Existing Conditions

Intersection	Control	A.M. Peak Hour		P.M. Peak Hour	
		Delay (sec/veh)	Level of Service	Delay (sec/veh)	Level of Service
Auburn Boulevard/Van Maren Lane	Traffic Signal	31.0	D	29.0	D
Auburn Boulevard/Sylvan Road	Traffic Signal	25.2	D	34.3	D
Auburn Boulevard/Carriage Drive	Traffic Signal	14.8	B	11.3	B
Auburn Boulevard/Raintree Drive	Two-Way Stop	2.3	A	1.1	A
Auburn Boulevard/San Tomas Drive	Two-Way Stop	5.9	B	7.8	B
Greenback Lane/Fountain Square Dr.	Traffic Signal	21.2	C	23.8	C
Greenback Lane/San Juan Avenue	Traffic Signal	24.2	C	29.3	D
Sylvan Road/Stock Ranch Road	Traffic Signal	10.9	B	11.2	B

Source: Fehr & Peers Associates, 2000.

As shown in **Table 4.4-3**, the eight study intersections currently operate at LOS D or better during the a.m. and p.m. peak hours. According to Policy 29.1 of the City's Draft General Plan, LOS D is considered the minimum acceptable level of service for all intersections in the City. Therefore, all study intersections operate acceptably according to this policy.

Signal Warrant Analysis

A traffic signal warrant analysis was conducted at the two unsignalized study intersections using the peak hour volume and accident warrants contained in the *Traffic Manual*. As prescribed in the *Traffic Manual*, the peak hour volume warrant for "rural" areas was utilized because prevailing travel speeds on Auburn Boulevard at San Tomas Drive and Raintree Drive exceed 40 miles per hour. The Auburn Boulevard/San Tomas Drive and Auburn Boulevard/Raintree Drive intersections currently meet the peak hour volume warrant for a traffic signal during the a.m. peak hour (see **Appendix D** for signal warrant worksheet).

4.4 TRANSPORTATION AND CIRCULATION

According to information provided by the City's Traffic Engineering Department, five accidents were reported at the Auburn Boulevard/San Tomas Drive intersection between January 1997 and December 1999. Four accidents were reported at the Auburn Boulevard/Raintree Drive intersection during the same period. Most accidents were broadside or sideswipe collisions involving multiple vehicles. One fatality was reported at the Auburn Boulevard/Raintree Drive intersection. Neither intersection meets the accident warrant described in the *Traffic Manual* because fewer than five accidents of a type correctable by the installation of a traffic signal were reported over a 12-month period. The satisfaction of a warrant is not necessarily justification for a signal.

Delay, congestion, confusion, or other evidence of the need for right-of-way assignment must be shown.

Existing Transit System

Field observations were performed to identify existing transit routes and facilities in the vicinity of the project site. Transit service in the area is provided by Sacramento Regional Transit (RT). Routes 91 and 103 service Auburn Boulevard, while Route 92 services Sylvan Road. The Greenback Lane corridor is served by several transit routes including Routes 1, 23, 80, 92, 106, and 107.

Bus stops are located on both sides of Auburn Boulevard at Raintree Drive, Carriage Drive, and San Tomas Drive. None of these stops provide pedestrian transit shelters or bus turnout lanes. However, benches are provided at several locations.

Route 91 is the City's "Base Shuttle", which operates hourly on weekdays from 7:00 a.m. to 10:00 p.m. and on Saturdays from 8:30 a.m. to 6:30 p.m.

Existing Bicycle and Pedestrian System

Field observations were conducted to identify existing bicycle and pedestrian facilities in the project vicinity. Class II bicycle lanes (on-street delineated lanes with appropriate signing and striping) exist on Sylvan Road and Van Maren Lane. The segment of Auburn Boulevard between Van Maren Lane and Sylvan Road generally has shoulders of sufficient width to accommodate bicycle travel (bicyclists were observed traveling on the shoulder), but no signing or striping is provided.

Sidewalks are provided along limited sections of Auburn Boulevard and Sylvan Road in the vicinity of the project site. Sidewalks do not exist on either side of Auburn Boulevard along the project's frontage. Sidewalks are provided along the segments of Stock Ranch Road with fronting development. Crosswalks with pedestrian-actuation are provided at most signalized study intersections.

4.4.5 PROJECT IMPACTS AND MITIGATION MEASURES

This section describes the assumptions used to conduct the transportation analysis for the proposed project. Following the transportation impact analysis, the impacts of the project on the transportation system are identified and mitigation measures are recommended to lessen those impacts.

Project Description

The Stock Ranch site consists of two sub-areas as described below.

Northern Sub-Area. The northern sub-area, known as the Auburn Commerce District, is located north of Arcade Creek and would be accessed exclusively from Auburn Boulevard. As described in the project description, this document evaluates the environmental impacts of the following two land use scenarios for the Auburn Commerce District:

- Scenario 1 – 385,000 square feet shopping center
- Scenario 2 – 450,000 square feet shopping center

In the following analysis, two scenarios for development of the "Auburn Commerce District" north of Arcade Creek are examined: development with a total of 385,000 square feet of buildings, and development with up to 450,000 square feet of buildings. The Guide to Development examined in this EIR envisions development of up to 450,000 square feet of commercial uses; the lower figure (385,000 SF) is specifically examined because this level of development essentially comprises a threshold for several traffic mitigation measures. As discussed in the Traffic analysis section of this EIR, development in excess of 385,000 square feet requires the implementation of several additional mitigation measures.

Figure 4.4-3 displays the assumed access points from Auburn Boulevard for the two scenarios including turn lanes and vehicle storage. As proposed, the project would be served by three major driveways. The central driveway would be located directly opposite Raintree Drive and permit all turning movements via a new traffic signal to be constructed by the project applicant. The western driveway would permit inbound and outbound right-turns and inbound left-turns, while the eastern driveway would permit right-turns only.

Southern Sub-Area. The southern sub-area is located south of Arcade Creek and would be accessed from Sylvan Road (via Stock Ranch Road) and Greenback Lane (via the extension of Fountain Square Drive to Stock Ranch Road). The southern sub-area could include the following maximum land uses:

- 346 single-family residential units; and
- 12 acres of Sylvan Commerce District zoning (permitting retail, office, and multi-family residential).

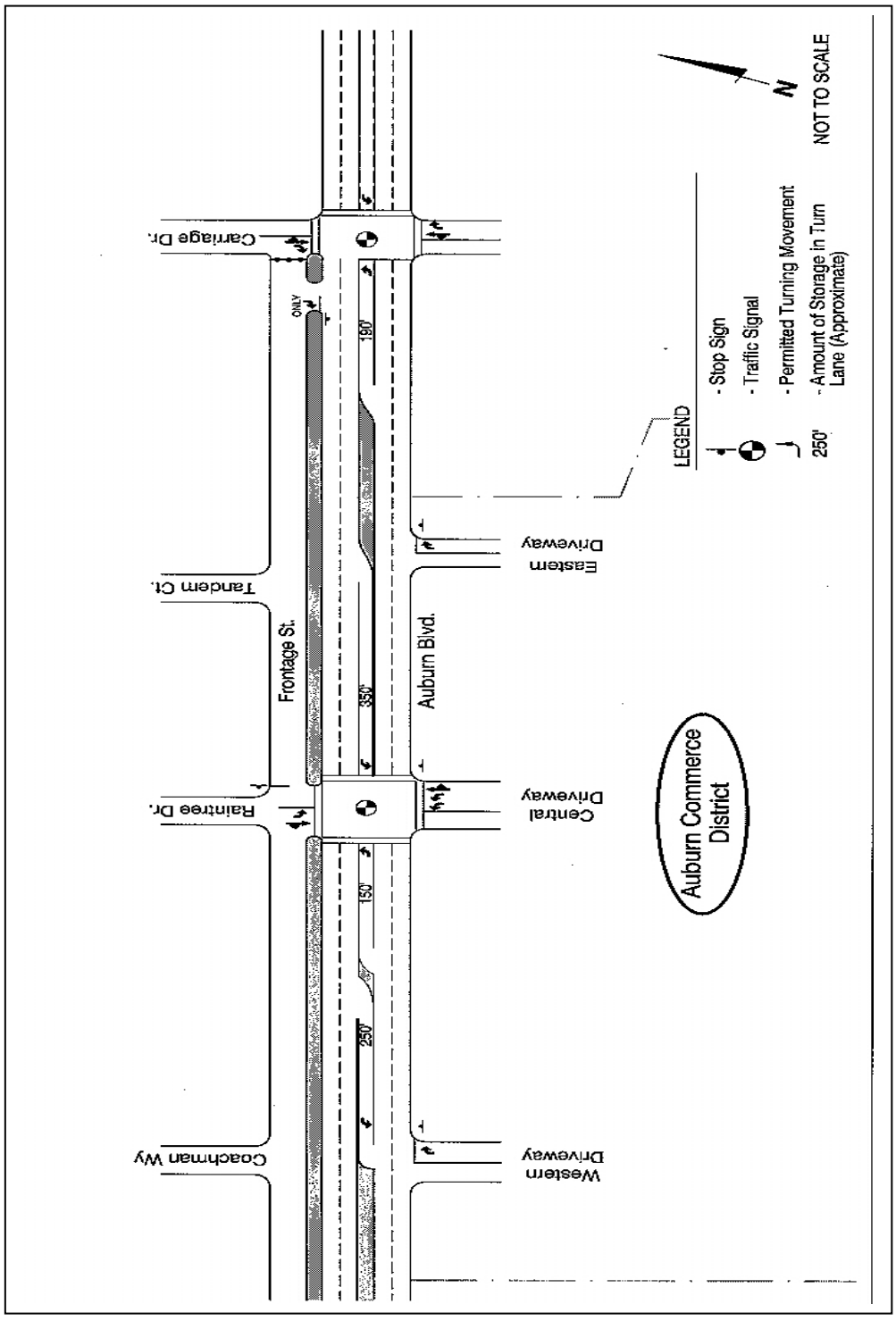
Existing view from the northern terminus of Fountain Square Drive.

4.4 TRANSPORTATION AND CIRCULATION

To represent a "worst-case" analysis of potential off-site impacts, the Sylvan Commerce District-zoning parcels were assumed to develop with retail uses that total 120,000 square feet (i.e., 120 ksf). Access to the Sylvan Commerce District-zone parcels from Sylvan Road was assumed to be provided by right-turn only driveways.

According to the project description, the northern and southern sub-areas would be connected by a pedestrian/bicycle bridge across Arcade Creek. A vehicular connection would not be provided.

Figure 4.4-3: Proposed Access to Auburn Commerce District from Auburn Boulevard



Source: Fehr & Peers Associates, Inc. 2000

Pedestrian Trail and Bicycle Network

The project's development plans includes an open space network that provides a variety of opportunities to encourage people to walk or bicycle. The pedestrian trail network is located within the open space corridors and connects both sides of Arcade Creek. A bridge will span Arcade Creek allowing pedestrian movement between the northern and southern portions of the site. This is an important linkage in that it contributes to the livability and pedestrian quality of the development and also improves the route school children take between the neighborhoods north of Auburn Boulevard and the school to the south of the site.

A trail segment is proposed along the southern side of Arcade Creek. No extensions of that trail are currently planned to the east or west of the Stock Ranch project.

A pedestrian-oriented shopping district is proposed for the northern commercial district. The commercial uses will front sidewalks and a variety of pedestrian supporting uses will occur on these sidewalks. The Stock Ranch trail system will be connected to this pedstiran-oriented area.

The internal bicycle network is the same as the internal pedestrian network described above. The bicycle network also connects to the citywide bicycle system. Adjacent to the Stock Ranch site, the City's Draft General Plan calls for bicycle lanes, paths, and/or routes along Auburn Boulevard, Sylvan Road, Stock Ranch Road, Fountain Square Drive, and Arcade Creek.

Trip Generation

The trip generation of the project was computed based on trip generation rates published in *Trip Generation* (Institute of Transportation Engineers, 1997). **Table 4.4-4** and **4.4-5** display the estimated a.m. peak hour, p.m. peak hour, and daily trip generation of Scenarios 1 and 2, respectively.

The number of trips generated by the retail uses was adjusted to account for "pass-by" trips. A pass-by trip is a trip that is already on the adjacent roadway network and enters the project site en-route to its final destination. According to the *Trip Generation Handbook (*Institute of Transportation Engineers, 1998), pass-by rates of 25 to 40 percent could be expected for retail uses that are comparable in size to those proposed in Stock Ranch. However, slightly lower pass-by rates (see **Table 4.4-4** and **4.4-5** for specific percentages) were assumed for the analysis because existing traffic levels on Auburn Boulevard and Sylvan Road do not support the higher pass-by rates.

Scenario 1 is estimated to generate approximately 22,400 new daily trips, 690 new a.m. peak hour trips, and 2,030 new p.m. peak hour trips. Scenario 2 is expected to generate approximately 23,800 new daily trips, 720 new a.m. peak hour trips, and 2,160 new p.m. peak hour trips, which is an approximate five percent increase over the trip generation of Scenario 1. An additional 160 vehicles would enter or exit the northern commercial area during the p.m. peak hour under Scenario 2.

Table 4.4-4
Trip Generation – Proposed Project (Scenario 1 – 385,000 Shopping Center)

Land Use	Amount	Trip Rate [1]			Trips		
		Daily	A.M. Peak Hour	P.M. Peak Hour	Daily	A.M. Peak Hour	P.M. Peak Hour
Northern Sub-Area – Auburn Commerce District							
Shopping Center	385 ksf	42.13	0.93	3.97	16,220	358	1,528
Southern Sub-Area							
Single-Family Residential	346 d.u.'s	9.57	0.75	1.01	3,311	260	349
Shopping Center	120 ksf	63.92	1.48	5.90	7,670	178	708
Southern Sub-Area Total Trips:					10,981	438	1,057
Northern & Southern Sub-Area Total Trips:					27,201	796	2,585
Pass-By Trips [2]:					- 4,778	- 108	- 554
Northern & Southern Sub-Area New Trips:					22,423	688	2,031

Source: Fehr & Peers Associates, 2000.

Notes: [1] Source: *Trip Generation* (Institute of Transportation Engineers, 1997).

[2] Pass-by rate of 20 percent assumed during a.m., p.m. peak hours, and daily for shopping centers with exception of Southern Commercial Area, where pass-by rate of 35 percent was assumed during the p.m. peak hour.

d.u.'s = dwelling units. ksf = Thousand square feet.

Table 4.4-5
Trip Generation – Proposed Project (Scenario 2 – 450,000 Shopping Center)

Land Use	Amount	Trip Rate [1]			Trips		
		Daily	A.M. Peak Hour	P.M. Peak Hour	Daily	A.M. Peak Hour	P.M. Peak Hour
Northern Sub-Area – Auburn Commerce District							
Shopping Center	450 ksf	39.84	0.87	3.76	17,928	392	1,692
Southern Sub-Area							
Single-Family Residential	346 d.u.'s	9.57	0.75	1.01	3,311	260	349
Shopping Center	120 ksf	63.92	1.48	5.90	7,670	178	708
Southern Sub-Area Total Trips:					10,981	438	1,057
Northern & Southern Sub-Area Total Trips:					28,909	830	2,749
Pass-By Trips [2]:					- 5,120	- 115	- 587
Northern & Southern Sub-Area New Trips:					23,789	715	2,162

Source: Fehr & Peers Associates, 2000.

Notes: [1] Source: *Trip Generation* (Institute of Transportation Engineers, 1997).

[2] Pass-by rate of 20 percent assumed during a.m., p.m. peak hours, and daily for shopping centers with exception of Southern Commercial Area, where pass-by rate of 35 percent was assumed during the p.m. peak hour.

d.u.'s = dwelling units. ksf = Thousand square feet.

Trip Distribution

The expected distribution of project trips was determined based on existing travel patterns and complementary land uses in the area. An assignment of "project-only" trips was also performed using the version of the SACMET 2022 Travel Demand Model that reflects the General Plan land use and roadway network assumptions. The "project-only" assignment estimated the directional distribution of trips to/from the site based on complementary land uses in the area and congestion/delays on the roadway system.

Separate trip distributions were developed for the residential and retail uses in the southern sub-area and the retail uses in the northern sub-area. The expected distribution of project trips is shown on **Figure 4.4-4** and **Figure 4.4-5**.

Trip Assignment

This subsection discusses assignment of project trips to the surrounding roadway system. A series of travel time runs were performed to determine if the local residential streets directly north of Auburn Boulevard are likely to be used to access the northern commercial sub-area. Travel time runs were conducted during a weekday p.m. peak hour between the project site and the Auburn Boulevard/Kanai Avenue intersection for the following routes:

- Route 1: Auburn Boulevard (via Sylvan Corners)
- Route 2: Kanai Avenue-to-Carriage Drive-to-Midnight Way-to-Raintree Drive

The results of the travel time surveys are summarized in **Table 4.4-6**.

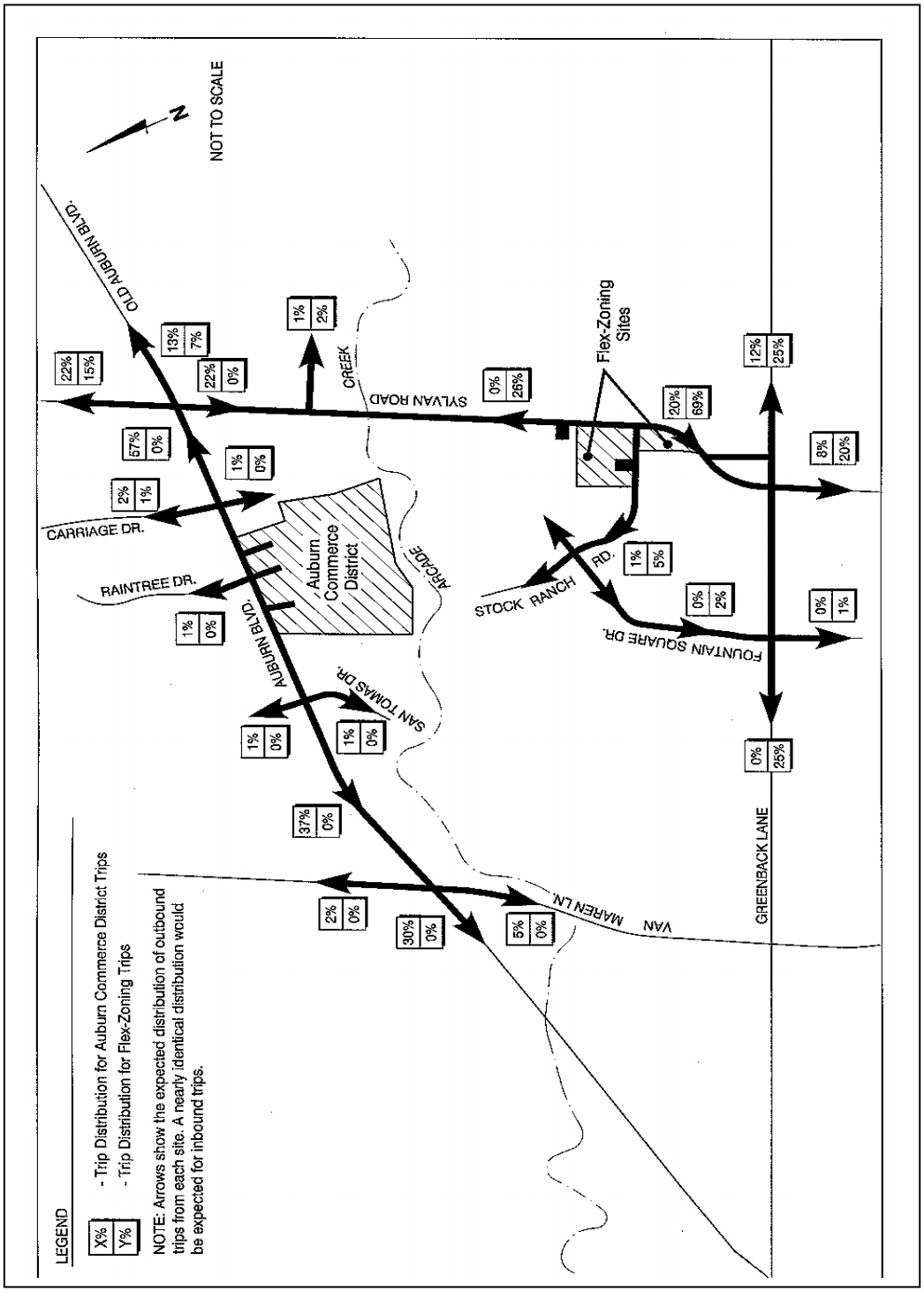
Table 4.4-6 shows that the Auburn Boulevard (via Sylvan Corners) route is about one to two minutes faster (depending on direction) and 0.2 miles shorter than the Kanai Avenue-to-Carriage Drive-to-Midnight Way-to-Raintree Drive route.

Table 4.4-6
Travel Time Survey Results

From	To	Route	Average Travel Time	Travel Distance
Auburn Boulevard/ Kanai Avenue	Auburn Boulevard/ Raintree Drive	1: Auburn Boulevard (via Sylvan Corners)	1:20	0.8 mi.
		2: Kanai Avenue-to-Carriage Drive-to-Midnight Way-to-Raintree Drive	3:15	1.0 mi.
Auburn Boulevard/ Raintree Drive	Auburn Boulevard/ Kanai Avenue	1: Auburn Boulevard (via Sylvan Corners)	2:40	0.8 mi.
		2: Kanai Avenue-to-Carriage Drive-to-Midnight Way-to-Raintree Drive	3:30	1.0 mi.

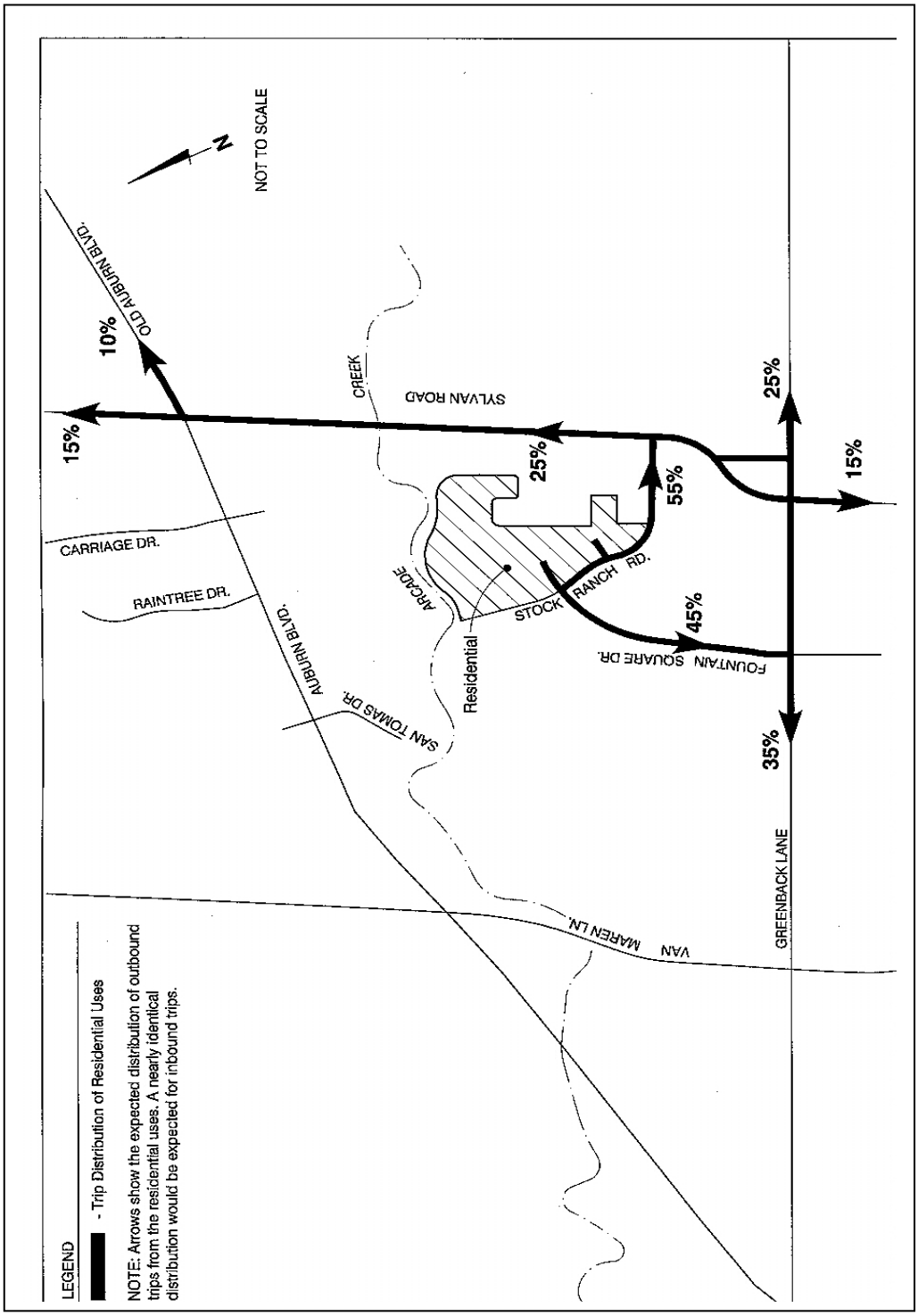
Source: Travel time surveys performed by Fehr & Peers Associates during a weekday p.m. peak hour in August 2000.

Figure 4.4-4: Expected Distribution of Commercial Trips



Source: Fehr & Peers Associates, Inc. 2000

Figure 4.4-5: Expected Distribution of Residential Trips



Source: Fehr & Peers Associates, Inc. 2000