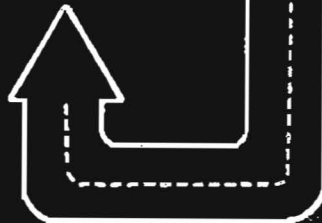




executive summary

OLYMPIC
IMPACT
REPORT



HE
310
.L7
049
1985
c.1

S.C.R.T.D. LIBRARY

OLYMPICS IMPACT REPORT:
EFFECTIVENESS OF TRANSPORTATION STRATEGIES
IMPLEMENTED DURING THE 1984 SUMMER GAMES
IN LOS ANGELES

EXECUTIVE SUMMARY

MAY, 1985

Prepared by

The Southern California Association of Governments in conjunction with the City of Los Angeles Department of Transportation, the Southern California Rapid Transit District, and Commuter Transportation Services, and in cooperation with Caltrans, the Los Angeles Police Department, the California Highway Patrol, and the Los Angeles County Transportation Commission.

The preparation of this report was financed in part through a grant from the U.S. Department of Transportation, Urban Mass Transportation Administration under the Urban Mass Transportation Act of 1964, as amended.

S.C.R.T.D. LIBRARY

Olympics Impact Report Executive Summary

Introduction

In 1982 affected public agencies began to develop plans for the 1984 Summer Games in Los Angeles. The immediate concerns of the planning groups were security planning and Olympic-family transportation. Soon 20 separate subcommittees were functioning to coordinate the entire set of arrangements necessary to accommodate this massive event. The group charged with coordinating the transportation plans was the Traffic Control Subcommittee. Its membership included the California Highway Patrol (CHP), Caltrans, Los Angeles Department of Transportation (LADOT), Los Angeles County Road Department, the Los Angeles Police Department (LAPD), and the Southern California Rapid Transit District (SCRTD). Because of the number of agencies involved in the implementation of transportation programs, a policy-making committee was established in 1983. The Olympics Advisory Group was established to develop policies, assure cooperation, and facilitate implementation. This group was composed of the directors and managers of the agencies on the Traffic Control Subcommittee, as well as those from the Los Angeles Olympics Organizing Committee (LAOOC), the Southern California Association of Governments (SCAG), the Los Angeles County Transportation Commission (LACTC) and Commuter Transportation Services (CTS).

From the two-year planning effort a transportation system evolved that relied almost entirely on demand management strategies, and transportation system management. These low-cost strategies had to be used almost exclusively because of a public referendum that prohibited the expenditure of tax revenue on any Olympic improvements.

Plan Development Methodology

The transportation plans for the Olympics were developed by each agency once the venues for the various events had been selected. Inventories were taken of venue spectator capacity, event schedules, estimated attendance, parking supply, and street capacities. At the same time, background traffic conditions were projected for the regional system. Based upon the spectator demand at venues and upon the supply of parking and street capacity, it became evident that transit mode-split goals had to be set for the mitigation of potential problems. Once the target mode splits were developed, SCRTD developed service type splits for park-and-ride, express, and shuttle service. Finally, a bus deployment plan was developed for each venue. Utilizing the mode split information, attendance figures, and projected background traffic, traffic management plans were developed for each venue to deal with autos, Olympic service buses, charter buses, taxis and limousines.

Following an extensive evaluation and review process, projected traffic congestion maps of the regional freeway system were developed by time of day and by day of the week. Based on these congestion maps, plans for the private sector were developed with suggestions for modifying work

schedules, deliveries, and routes. Finally, an extensive public communications effort was developed to assist the public in responding to the expected Olympics congestion.

Transportation Strategies

Most of the strategies implemented during the Games were labor intensive rather than capital extensive. The projects that were implemented were mainly oriented around the venue sites. Only a few were implemented regionwide, but the total demand management package had major impacts on the regional system.

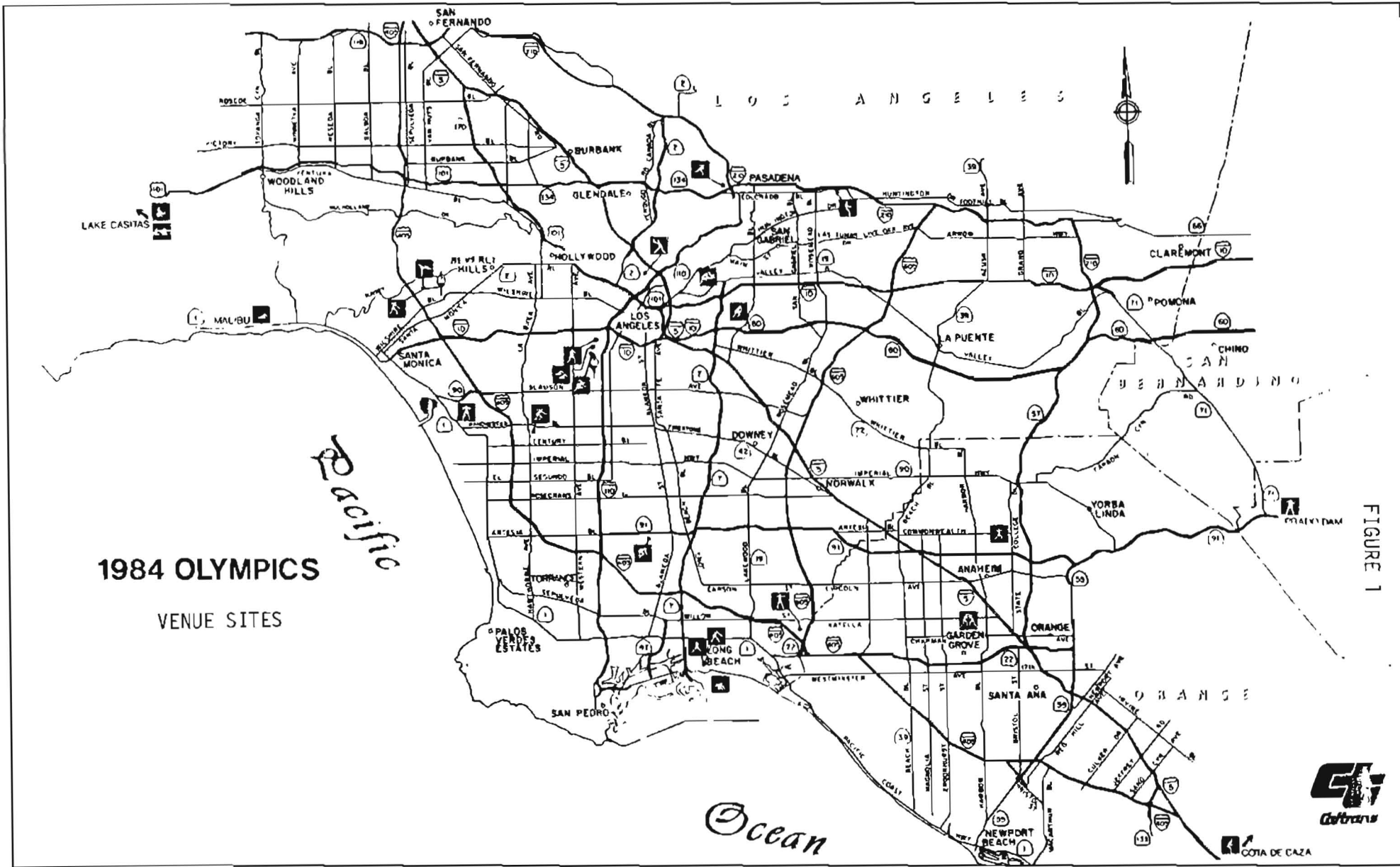
SCRTD Special Olympic Bus Service

During 1984, SCRTD acquired 500 buses as replacements for its regular fleet. These were held for extra service for the duration of the Games. Additional buses were required because the regular fleet of 2,161 peak hour buses operates at up to 200% of seated capacity in the downtown area and around most of the westside venues. Figure 1 illustrates the dispersed venue sites that had to be served. Table 1 shows the mode split target for each venue and Figure 2 shows the RTD Olympic bus routes that were implemented to meet the mode split targets.

Table 1 -- Transit Mode Splits by Venue
(with Capacity and Parking Supply included)

<u>VENUE SITE</u>	<u>EVENT</u>	<u>SPECTATOR SEATING CAP.</u>	<u>SPECTATOR PARK SUPPLY</u>	<u>TARGETED MODE SPLIT</u>
LA Coliseum	Track/Field	88,000	wkday: 17,861	40%
Sports Arena	Boxing	16,000	wkend: 18,767	
Swim Stadium	Swimming	11,000		
Dodger Stad.	Baseball	52,500	15,000	5%
The Forum	Basketball	17,500	5,000	5%
Sta. Anita Pk.	Equestrian	34,650	22,000	10%
Rose Bowl	Football	104,700	18,000	15%
CS Los Angeles	Judo	4,000	2,500	10%*
E. LA College	Field Hockey	19,200	6,000	10%
Pepperdine U.	Water Polo	5,000	2,000	5%
Loyola M. U.	W'tlifting	4,200	1,900	25%
CS Fullerton	Handball	4,000	1,737	10%*
Pauly Pavilion	Gymnastics	9,000	day: 2,700	40%
Tennis Stadium	Tennis	9,000	night: 10,000	
L.B. Arena	Volleyball	11,000		
L.B. Conv. Ctr.	Fencing	3,000	N/A	55%
C.S. Dominguez Hls	Cycling	5,250	N/A	5%*
Anaheim	Wrestling	7,770	N/A	20%

* Mode splits for regular SCRTD services.








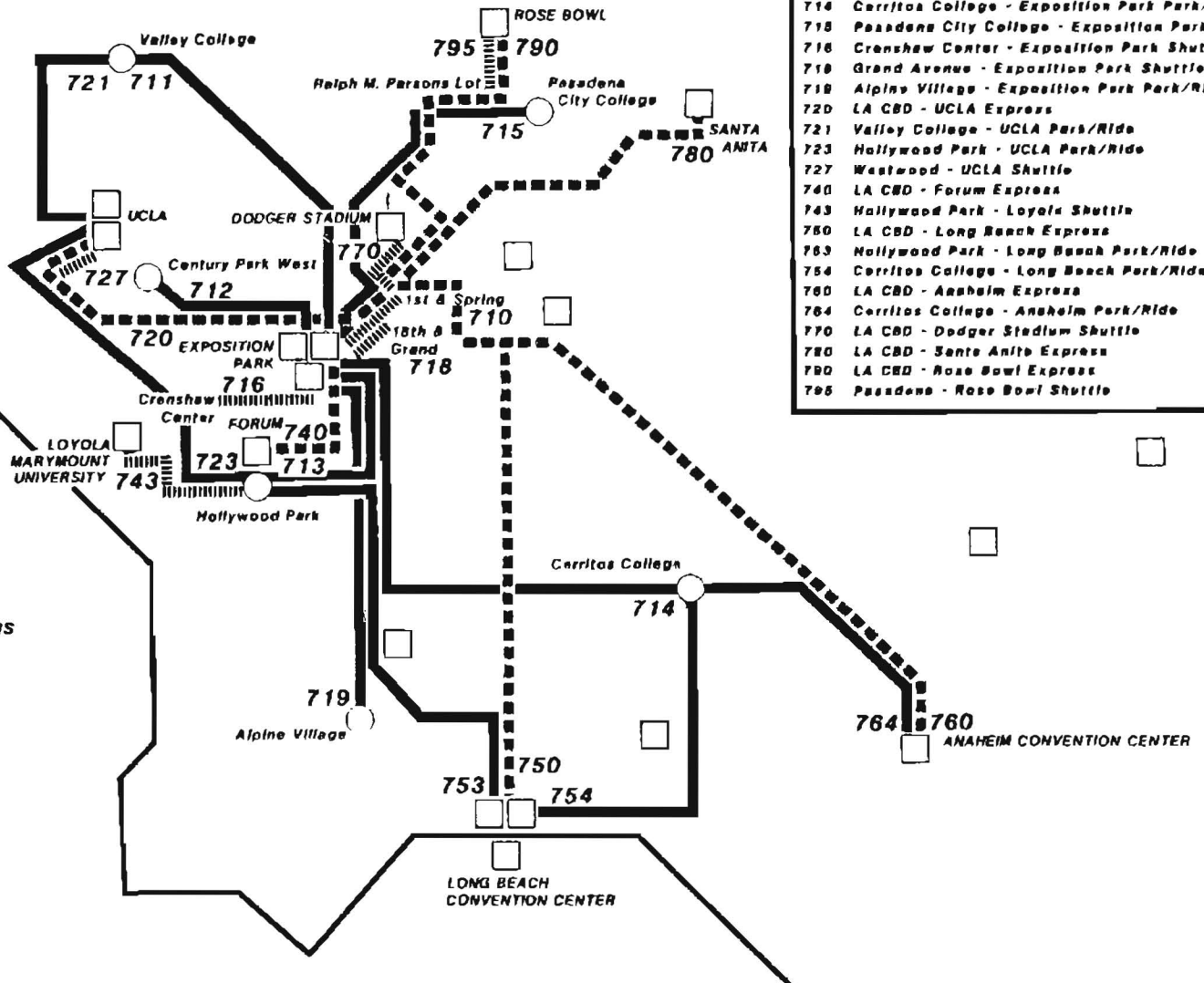
1984 OLYMPICS
VENUE SITES

FIGURE 1



COTA DE CAZA

-  Venue Site
-  Park/Ride Locations
-  Park/Ride Service
-  Express Service
-  Shuttle Service



- 710 LA CBD - Exposition Park Shuttle
- 711 Valley College - Exposition Park Park/Ride
- 712 Century City - Exposition Park Park/Ride
- 713 Hollywood Park - Exposition Park Park/Ride
- 714 Cerritos College - Exposition Park Park/Ride
- 715 Pasadena City College - Exposition Park Park/Ride
- 716 Crenshaw Center - Exposition Park Shuttle
- 718 Grand Avenue - Exposition Park Shuttle
- 719 Alpine Village - Exposition Park Park/Ride
- 720 LA CBD - UCLA Express
- 721 Valley College - UCLA Park/Ride
- 723 Hollywood Park - UCLA Park/Ride
- 727 Westwood - UCLA Shuttle
- 740 LA CBD - Forum Express
- 743 Hollywood Park - Loyola Shuttle
- 750 LA CBD - Long Beach Express
- 753 Hollywood Park - Long Beach Park/Ride
- 754 Cerritos College - Long Beach Park/Ride
- 760 LA CBD - Anaheim Express
- 764 Cerritos College - Anaheim Park/Ride
- 770 LA CBD - Dodger Stadium Shuttle
- 780 LA CBD - Santa Anita Express
- 790 LA CBD - Rose Bowl Express
- 795 Pasadena - Rose Bowl Shuttle



RTD SERVICE FOR THE XXIIIrd OLYMPIAD



FIGURE 2

The SCRTD Board of Directors required that fares pay for the cost of any special bus service. Thus, one-way fares for special RTD services were set at \$2.00 for shuttle, \$4-6.00 for express, and \$6.00 for park/ride service. All-day passes were available for \$10.00.

Other Transit Service

Because many of the venues are normal activity centers, most sites were served by regularly scheduled service from one or more of the many local transit agencies.

The LAOOC leased 990 buses for a 30-day period to handle all of the official transportation requirements of the athletes, coaches, press and LAOOC employees. These services were available for specific travel on a 24-hour basis. The LAOOC also provided shuttle service for spectators between remote parking places and the events at Lake Casitas, Coto de Caza, Prado Dam, and East Los Angeles College.

Charter operators managed much of the shuttle service for the LAOOC. Additionally, they were responsible for carrying about 25% of spectator traffic to the Coliseum/Exposition Park area. Charter operators operated about 750 full-sized coaches during the games and carried the majority of the Olympic Sponsors (10% of total spectators). They also carried members of the Olympic family to nonofficial functions, transported youth groups to events, and contracted with hotels for last minute charters.

The LAOOC constructed two bus terminals in Exposition Park adjacent to the Coliseum that could accommodate 50 buses for loading and unloading spectators. A temporary bus station was established in downtown Los Angeles near the Civic Center to facilitate staging for the express service and a bus loading lane was created in Westwood Village.

Finally, all ticket holders were mailed detailed transit information on how to get to each venue and urging them to use the buses.

Surface Street Improvements

The cities within Southern California were responsible for implementing the venue plans within their jurisdictions. LADOT was responsible for planning and implementing local street modifications around Exposition Park, UCLA-Westwood, California State University at Los Angeles, Loyola Marymount University, and Dodger Stadium. The plans included strategies to increase traffic capacity and reduce total travel demand. The major types of improvements were:

- o Street closures -- Around Exposition Park streets were closed mainly to insure the safety of athletes and, in some cases, to reduce the potential for traffic congestion and for traffic safety. In all cases, local access to private property was maintained and traffic diversion plans were developed. In Westwood, streets were closed on a contingency basis as congestion became severe.

- o One-Way street operation -- Five streets in the Exposition Park area were converted to temporary one-way operations to increase their traffic carrying capacity in order to facilitate traffic flow, bus operations, and turning movements. Major access routes to most venues were also converted to reversible lane operations to facilitate in-bound and out-bound traffic.
- o Bus priority treatment -- Several streets were converted to handle "Bus Only" operation or bus lanes in order to provide travel time savings and convenience to the variety of buses operating around Exposition Park and Westwood. Some bus priority treatments were in effect only during peak periods for spectator traffic. Special bus treatments included: Bus-only freeway ramps, exemption from turning prohibitions, reserved parking and loading areas, spectator traffic diversion from bus routes, bus-only streets, and bus-only lanes.
- o Restriping and channelization -- To facilitate expected traffic movements around most of the venues double right- and left-turn lanes were striped and signed at freeway off-ramps and arterials were restriped to accommodate additional lanes for either through traffic or turning movements.
- o Parking prohibitions -- Parking and stopping prohibitions were implemented on many arterial streets to increase their traffic carrying capacity. Signs were used to indicate the effective days and times of the prohibitions to minimize the business disruption. Illegally parked cars were immediately towed away.
- o Automated Traffic Surveillance and Control (ATSAC) -- 120 intersections around Exposition Park were equipped with a real-time monitoring system of traffic operations that allowed for instant changes in signal timing from a remote location to respond to changes in traffic condition.
- o Traffic signal modification -- In all venue areas signal modifications, and modernizations were made to improve the signal interconnection to better accommodate traffic flow and travel time.
- o Guide signing -- 650 distinctive signs were used to direct all spectator traffic off freeways to the venue sites along the pre-planned routes.
- o Curb loading zones -- New curb-side loading zones had to be developed to accommodate the needs of buses, taxis, limousines, and private autos at all the venues.

Freeway Improvements

The freeway improvements that were made all focused on controlling and managing traffic. The Traffic Operations Center at Caltrans (TOC) utilized a totally automated map of the freeway system, tied to electronics sensors in the freeway pavement, to monitor traffic conditions. This information was continually monitored by the Traffic Control Center (TCC), where representatives from Caltrans, SCRTD, LADOT, CHP, and LAPD could make

instantaneous, coordinated decisions about any observed incident. Observations from the field and decisions from the TCC were relayed back and forth via shortwave radio. Other major improvements are described below:

- o Freeway ramp metering was extended to operations between 6 a.m. and 8 p.m.
- o 50 permanent changeable message signs were installed on the freeway to provide directional and congestion information.
- o 12 truck mounted message signs were available to be dispatched to locations as needed.
- o 86 temporary park and pool lots were set up by Caltrans in unused school parking areas to help with temporary carpools.
- o Selected freeway ramps were manned by CHP officers to close them off as necessary to help dry up any localized congestion.

Traffic Control and Enforcement

The CHP assigned over 800 additional officers to Southern California during the Olympics to provide security for the Olympics family and assist in traffic enforcement. The LAPD assigned 80% of its civilian traffic officers to Olympics operation. Their function was aimed at removing impediments to traffic flow. Their activities along with Caltrans and LADOT created traffic control response teams to deal with situations that were either dangerous or that would impede traffic flow. These groups also provided the manpower for the street closures and traffic control necessary for the safe operations of the torch relay, the marathons, the walk event and the bicycle races.

Governmental Actions

The State of California passed the following resolutions:

- o Urging all governmental agencies to work 4/40 compressed work weeks.
- o Moving the state holiday, Admission's Day, to Monday August 6.
- o Allowing night delivery of alcoholic beverages.

The city of Los Angeles passed two ordinances that impacted transportation during the Olympics.

- o A temporary ban was placed on all construction and repair activities that could result in traffic lane blockages.
- o Through a permit process, property owners in the Exposition Park area were allowed to rent parking spaces to spectators.

Communications Efforts

The private sector was targeted for a major communication effort by CTS, LADOT, CHP, Caltrans and the media. Ten thousand information packets were distributed to companies and their employees. The packets included expected congestion maps, route closure information, venue site analyses, recommendations for staggered work hours and traffic impact summaries by area. A mobile unit containing similar information visited 41 sites urging people to take measures to reduce travel during the games. "Operation Breezeway" was conducted by the CHP and the California Trucking Association, and it was aimed at getting truckers to divert activities away from peak hours and venue sites. Finally, numerous presentations were made to businesses and community groups to explain the proposed plans for the many venues.

Venue plans

(These are attached at the end of this Summary in Attachment A.)

The Olympics Experience

During the period between Saturday, July 28, and Sunday, August 12, 1984, 5,069,017 spectators attended events in the Los Angeles area. Over 650,000 visitors came to Southern California to witness the Games. Over 200,000 tickets were sold to events in the Exposition Park area on some days. The events were spread over 17 venues and on Sunday, August 5, over half a million people attended the games.

SCRTD Olympic Service carried a total of 1,130,000 riders during the Games. This service is summarized below.

Table 2 -- Olympic Transit Service by Venue

<u>Venue</u>	<u>Target Mode Split</u>	<u>Highest Mode Split</u>
Exposition Park	40%	45%
Westwood	40%	35%
Rose Bowl	15%	9%
Dodger Stadium	5%	2%
Santa Anita	10%	3%
Long Beach	55%	30%

Table 3 -- Ridership by Type of Service

<u>Type of Service</u>	<u>Boardings</u>	<u>%</u>
Park and Ride	438,578	39%
Express	127,311	11%
<u>Shuttle</u>	<u>564,528</u>	<u>50%</u>
<u>Total</u>	<u>1,130,417</u>	<u>100%</u>

Regular SCRTD service was not expected to carry a great deal of Olympics traffic, however estimates suggest that boardings around some of venues increased about 10% due to spectators. On the weekends SCRTD estimated that some locations had double the boardings during the Games. Weekday ridership on regular service ranged between 1.26 million and 1.56 million during the Games.

The Los Angeles freeway system normally operates under heavily congested conditions. As the Olympics began the system was operating virtually congestion free and the total traffic volumes were down by 2-3% from normal August conditions. The a.m. peak period was 7% flatter and shifted 30 to 45 minutes earlier. However, as the Olympic period progressed peak hour patterns slowly began to return to normal conditions, although the system continued to operate with less congestion than normal. By the end of second week of the games the freeways were carrying 11% more traffic than normal and still operated with only moderate congestion during the peak periods. Actual levels of congestion were down 90% at the start of the games and by the end of the events (even with 11% more traffic) congestion was still 35% below normal levels. Overall vehicle occupancy rates did not change on the freeways, i.e., they remained at about 1.18 persons/vehicle, however in time periods prior to events occupancy rates were observed as high as 1.29.

Local traffic around the Exposition Park area showed an overall increase of about 10% during the Games. Streets which were designated as primary access routes for Olympic spectators experienced as much as a 75% increase in traffic. The hourly differences in volumes around the Coliseum are shown in Figure 3. This figure shows while overall volumes were up, peak hour traffic was down significantly. Speeds decreased significantly on all streets in this area. Average speeds were down 25% during the midday and down 26% in the evening peak. The most drastic drop in speed was on Figueroa Street and has to be attributed to high levels of pedestrian activity around the Coliseum. Vehicle occupancy counts on the local streets around the Coliseum ranged between 2.49 and 2.69 persons/vehicle.

Detailed local traffic analysis was also done around the Westwood area, where total daily traffic during the Games was 6% below normal. Tremendous decreases in traffic on Wilshire Blvd. accounted for nearly all of the decrease in the area. The Westwood area showed an excellent awareness of the recommendations to shift travel times and routes. Figure 4 presents the hourly distribution of trips in the area for both before and during the Olympics.

In the Los Angeles Downtown area the mix of Olympic spectator traffic and commute patterns can be seen. Figure 5 profiles the hourly variations in downtown travel patterns. Overall 24-hour volumes are approximately the same as before and during the Olympics. Both peak periods reveal about a 14% decline in trips. North/south streets connecting the Downtown to the Coliseum show 14-30% increases in traffic. Most of the major east/west streets, which normally carry heavy commuter trips display up to 29% reduction in traffic. Generally peak hour speeds were much higher around downtown.

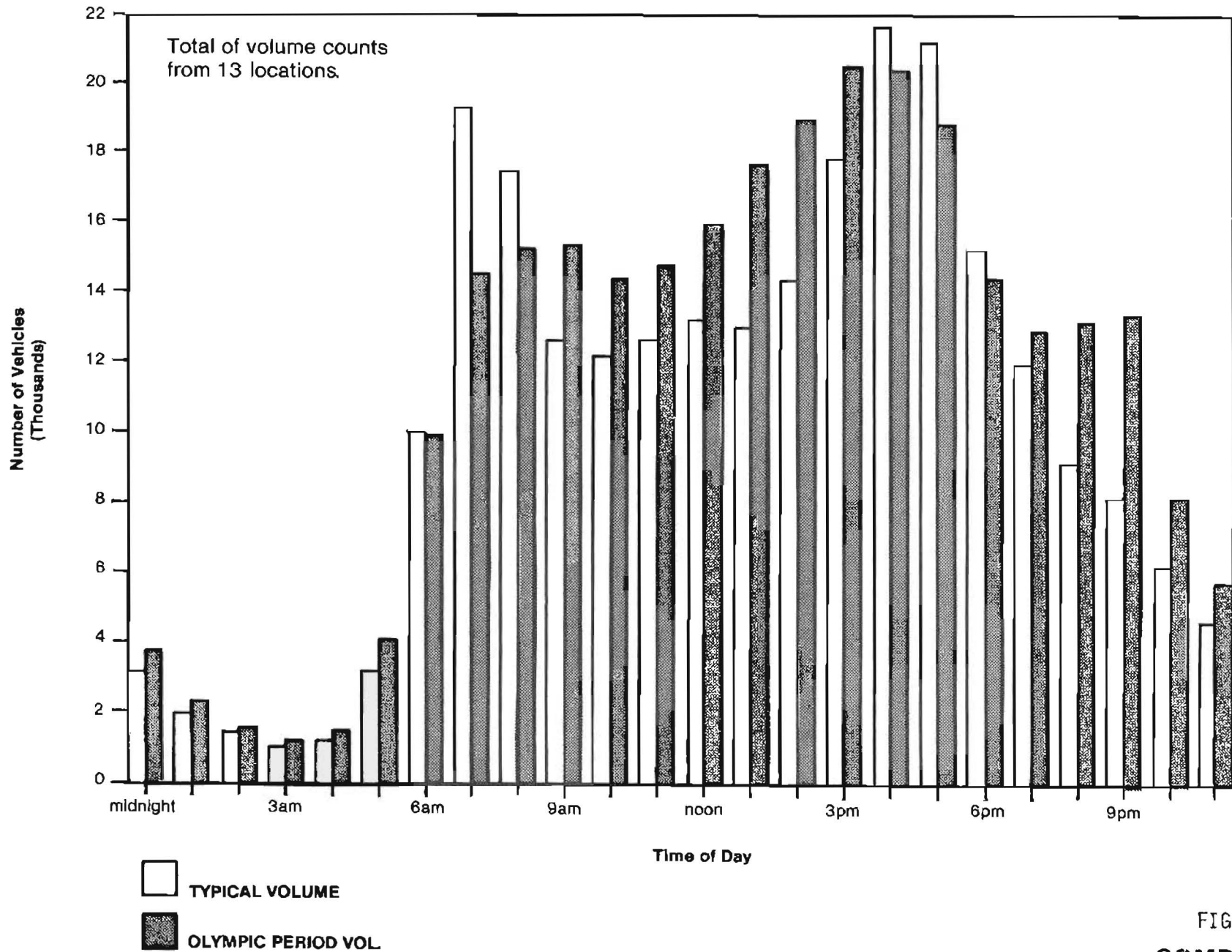


FIGURE 3
COMPARISON OF
HOURLY TRAFFIC
VOLUMES
COLISEUM AREA

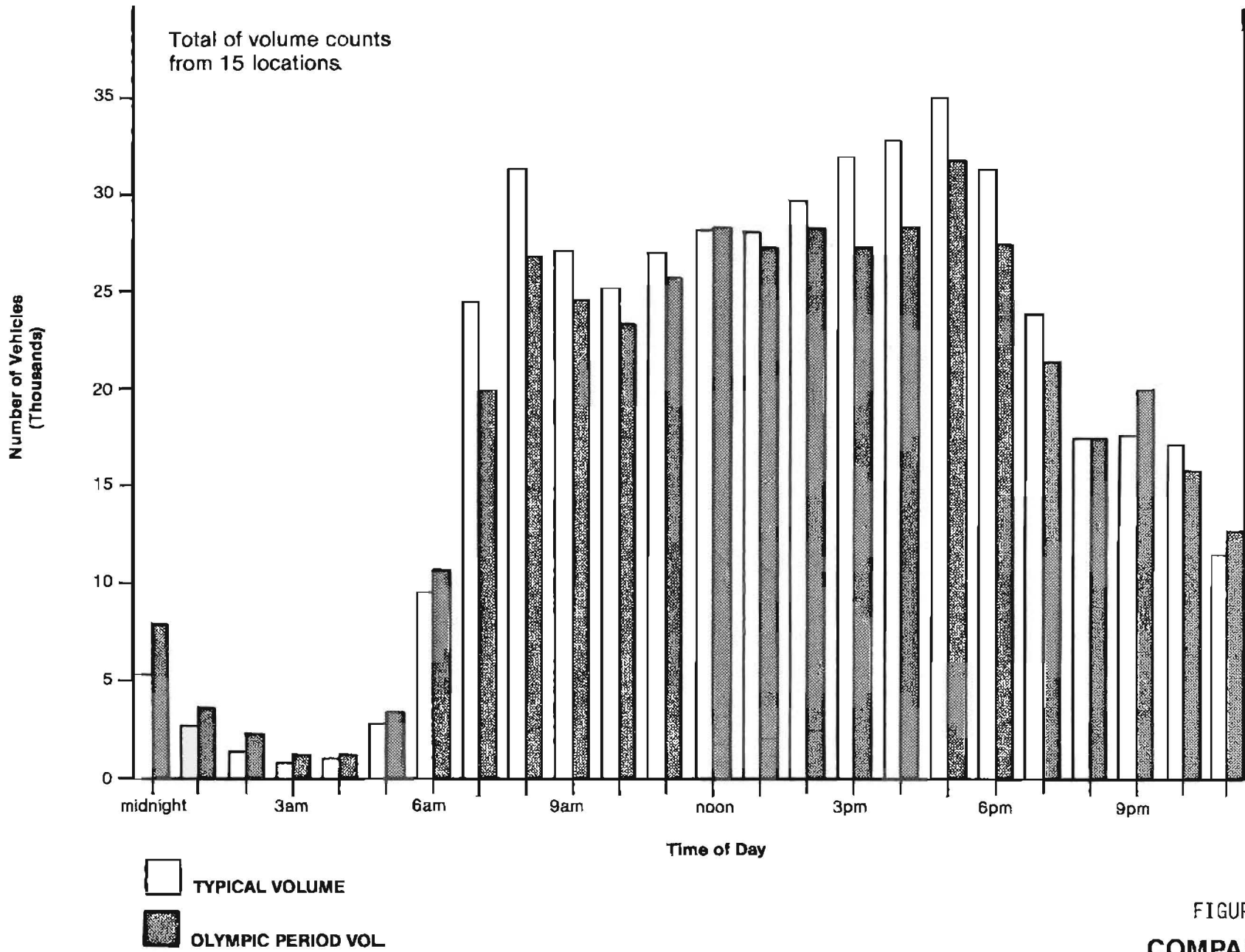


FIGURE 4
COMPARISON OF
HOURLY
TRAFFIC VOLUMES
WESTWOOD AREA

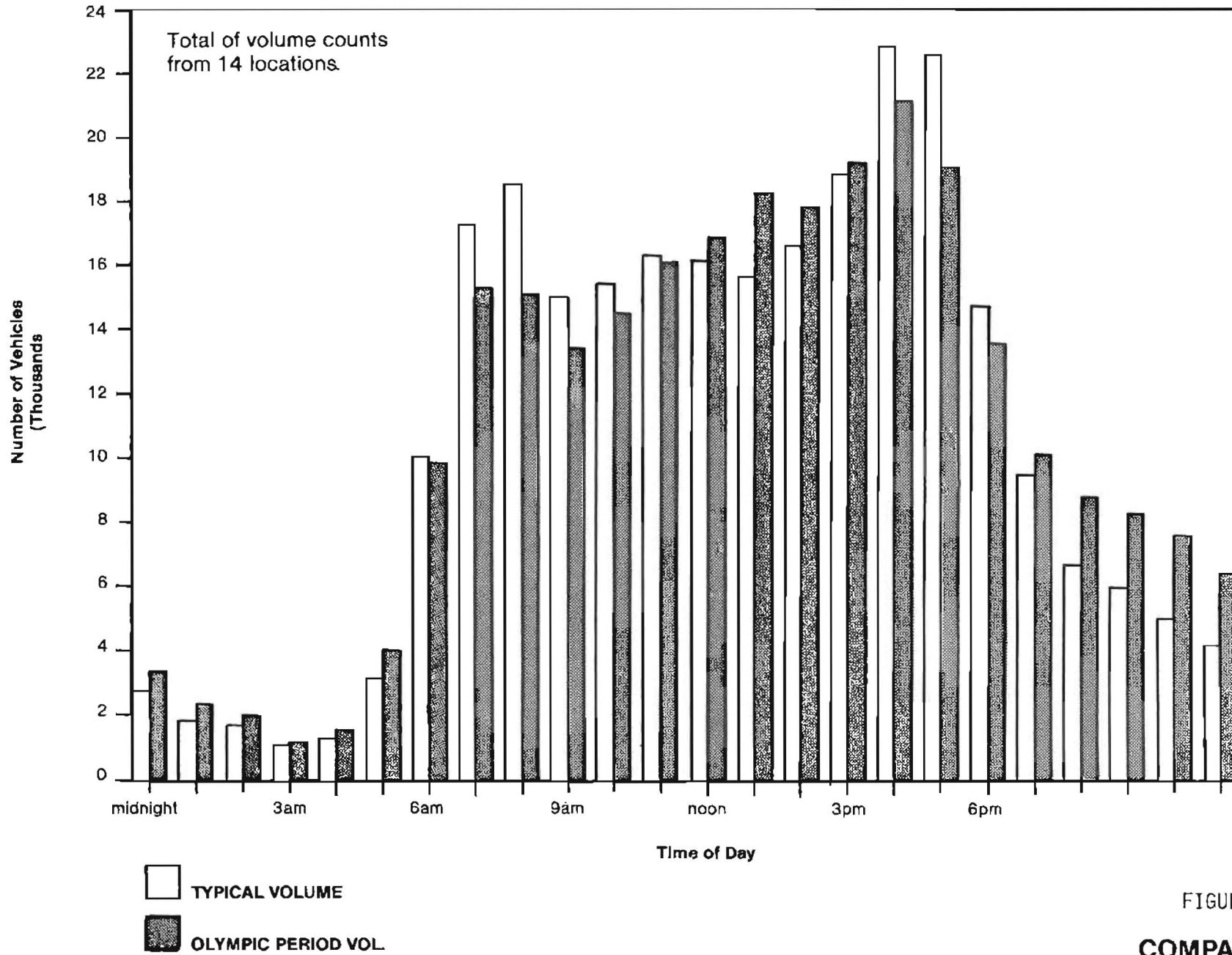


FIGURE 5
COMPARISON OF
HOURLY
TRAFFIC VOLUMES
CENTRAL CITY AREA

Table 4 summarizes the Olympic Traffic Variations by day.

Truck operations during the Olympics strongly revealed the influence of "Operation Breezeway". CHP truck scales around Southern California showed that truck operations were 10% higher in August than during the rest of the year. Caltrans observation around Central Los Angeles showed a 15% decrease in truck traffic. On an hourly basis truck traffic was down 5% in the a.m. peak, down 15% in the midday, down 23% in the p.m. peak and up 60% in the evening. These figures show that while trucking operations did not decline in the area during the Olympics, they definitely rerouted their trips away from Central Los Angeles and switched their hours of operations.

Private Sector Response

A survey was undertaken to determine what private and public employers and their employees did to alter their travel patterns. The results of 260 employers are summarized below.

- o 92% of the companies distributed ridesharing information.
- o 16% sponsored vanpools and 5% sponsored buspools (no change).
- o 12% of the companies normally have staggered shifts--during the Games 24% had staggered shifts.
- o 19% normally offer flextime--during the Games 33% did.
- o 6% of the respondents are on the 4/40 work week--during the Olympics 11% used this strategy.
- o 7% normally work five days with unusual hours--during the Games 21% switched to unusual hours.
- o 22.7% actively encouraged scheduling vacation time.
- o 30% changed their delivery and/or receiving schedules.
- o 22% stock piled goods to avoid the need for deliveries.
- o 48% made attempts to reduce business-related travel.
- o 1.5% shut down entirely during the games.

A survey returned by 6,325 employees at major work centers is highlighted below. Though not representative of Los Angeles County as a whole, their responses reveal a great deal about the changed traffic patterns during the Olympics.

- o 20% took an average of 5 days of vacation leave.
- o 25% of the Downtown workers took an average of 6 days of vacation.
- o 3.8% of the sample took 2.4 days of sick leave.

Table 4
 Variation By Day for Major Segments
 of the Olympic Transportation System
 (all figures in Thousands)

Date	Attendance	Special Bus	% ¹ Spectators	Local Bus	% ² Variations	Freeway ³	% ⁴ Variation
Sat. 7/28	92.6	59.9	32.0%	977	0	495	-25%
Sun. 7/29	396.8	37.3	4.6%	685	+ 6%	495	-25%
Mon. 7/30	182.2	29.9	8.0%	1,563	+ 8%	640	- 3%
Tue. 7/31	258.4	31.4	6.0%	1,517	+ 5%	653	- 1%
Wed. 8/1	276.4	15.7	2.8%	1,266	-13%	660	0
Thur. 8/2	250.4	26.2	5.2%	1,268	-13%	660	0
Fri. 8/3	385.8	94.8	12.3%	1,414	- 2%	673.2	+ 2
Sat. 8/4	410.3	108.8	13.3%	973	- 1%	620.4	- 6
Sun. 8/5	509.4	103.0	10.0%	688	+ 6%	574.2	-13
Mon. 8/6	392.1	101.2	12.9%	1,454	0	693	+ 5
Tues. 8/7	228.8	30.6	6.7%	1,433	- 1%	693	+ 5
Wed. 8/8	418.1	101.3	12.1%	1,433	- 1%	712.8	+ 8
Thur. 8/9	261.1	85.2	16.3%	1,406	- 3%	712.8	+ 8
Fri. 8/10	425.5	110.8	13.0%	1,461	+ 1%	732.6	+11
Sat. 8/11	423.8	132.4	15.5%	1,037	+ 6%	—	—
Sun. 8/12	145.8	61.2	21.0%	701	+ 8%	—	—

¹ Assumes two-way trips.

² From August 1984 Average for Weekdays, Saturdays and Sundays.

³ For the 42-Mile Freeway Loop

⁴ From August 1983 Average.

- o 5% of the sample took 2 days off because of modified work weeks.
- o 2% of the sample took the Admissions Day Holiday.
- o On The average the individuals surveyed took 1.4 days off from work.
- o Worker took off the following number of days in each center during the Games: Pasadena - 1.7, Mid Wilshire - 1.7, Westwood - 1.67, Downtown - 1.6, and Long Beach - 1.4 .
- o Less than 2% of the time was worked at home, at alternative sites or in the field.
- o Carpool size, generally between 2.5 and 2.9, did not vary significantly during the Games.
- o 20% of the surveyed employees in downtown took the bus to work--18% normally.
- o 22% of the surveyed employees in downtown carpooled--26% normally.
- o Overall carpooling and bus ridership rates did not change dramatically during the Games.

The prime strategy for the private sector was to encourage modified work hours. The following graphs show how employees shifted their hours in response to the Olympics.

Findings from the Olympics

Travel time savings--

<u>Center</u>	<u>Miles To Work</u>	<u>Normal Minutes To Work</u>	<u>% Savings To Work</u>	<u>Normal Minutes From Work</u>	<u>% Savings From Work</u>
Downtown	20	40	25%	46	15%
Westwood	14	25	12%	30	--
Mid Wilshire	17	35	14%	40	25%
Pasadena	15	25	20%	30	16%
El Segundo	16	25	16%	38	21%
Long Beach	16	20	--	25	--

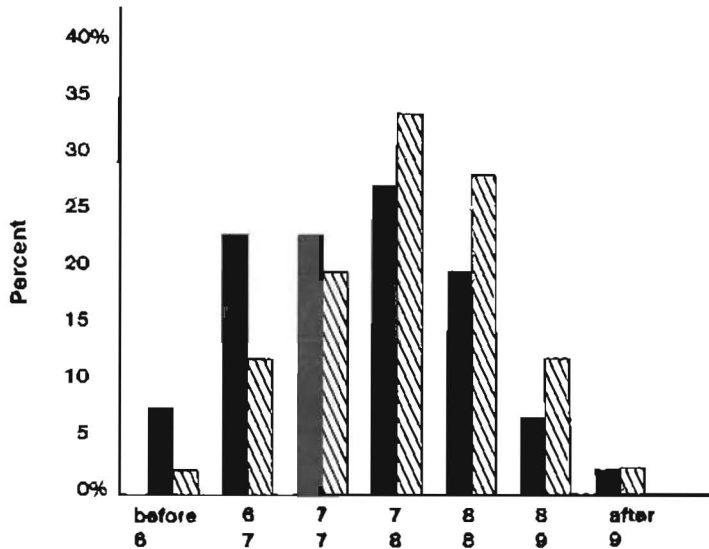
Accidents

- o 16% decline in all accidents during the Olympics.
- o 67% decline in truck accidents.

Air Quality

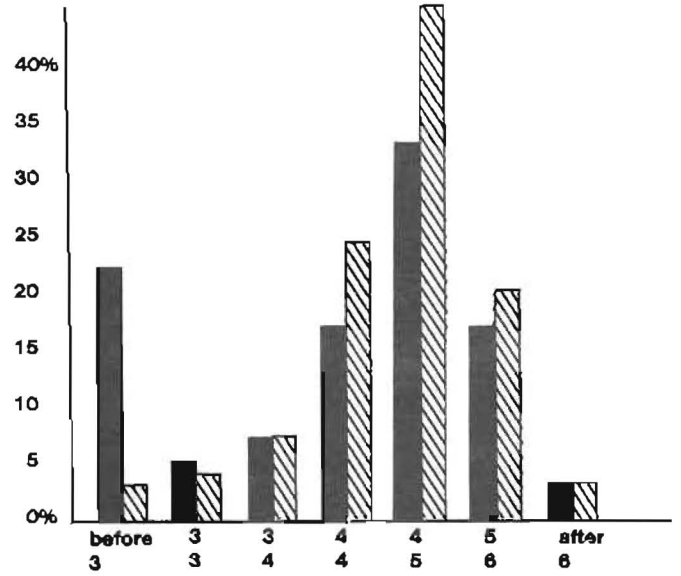
- o 14% decline in level of Ozone concentrations in the basin.

USUAL TIME ARRIVED AT WORK



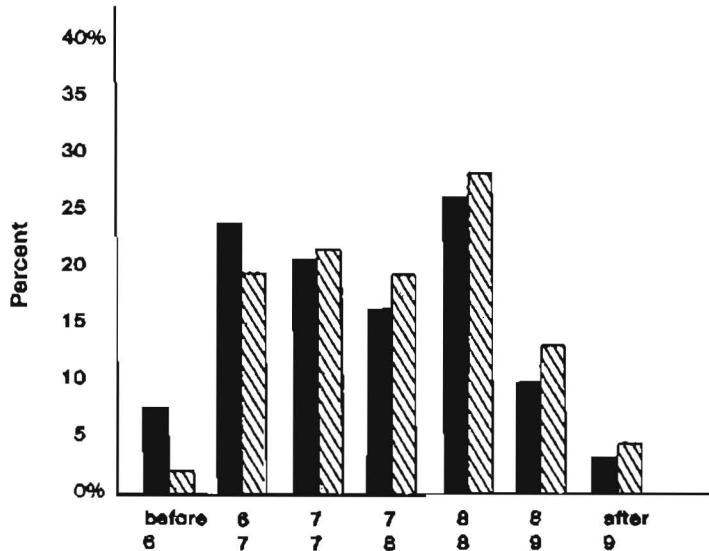
Time of Day

USUAL TIME LEFT WORK



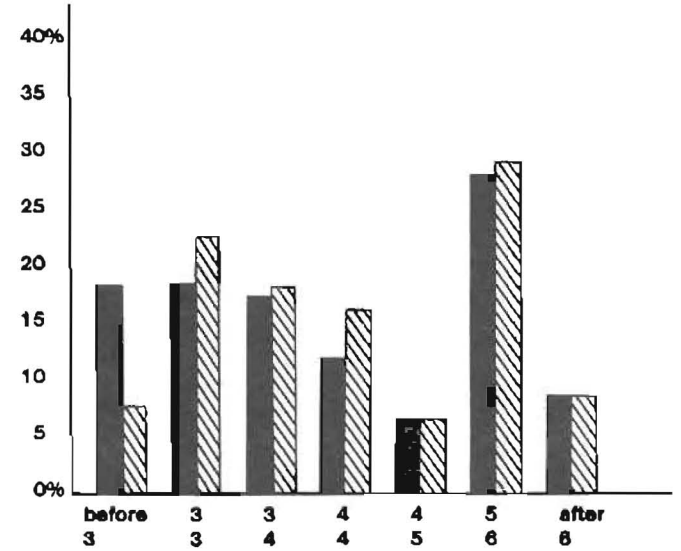
WORK HOURS: DOWNTOWN

USUAL TIME ARRIVED AT WORK



Time of Day

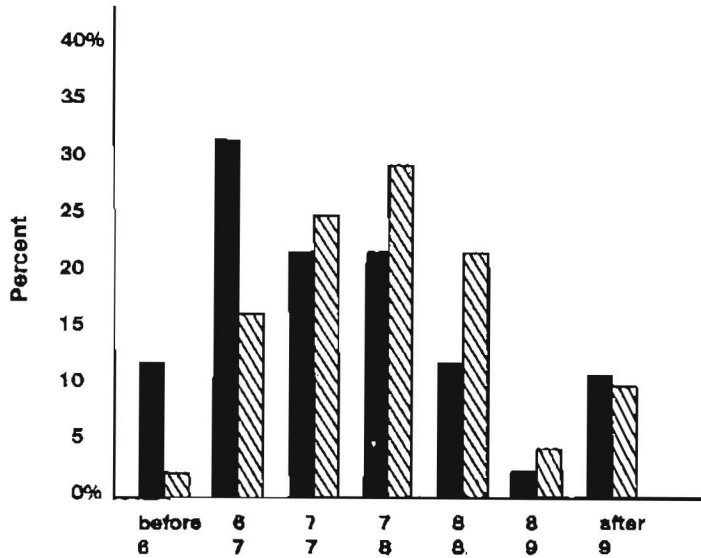
USUAL TIME LEFT WORK



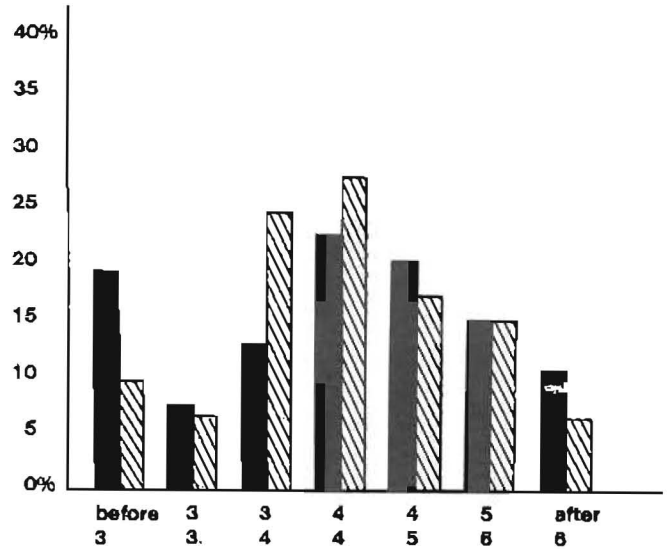
WORK HOURS: WESTSIDE



USUAL TIME ARRIVED AT WORK



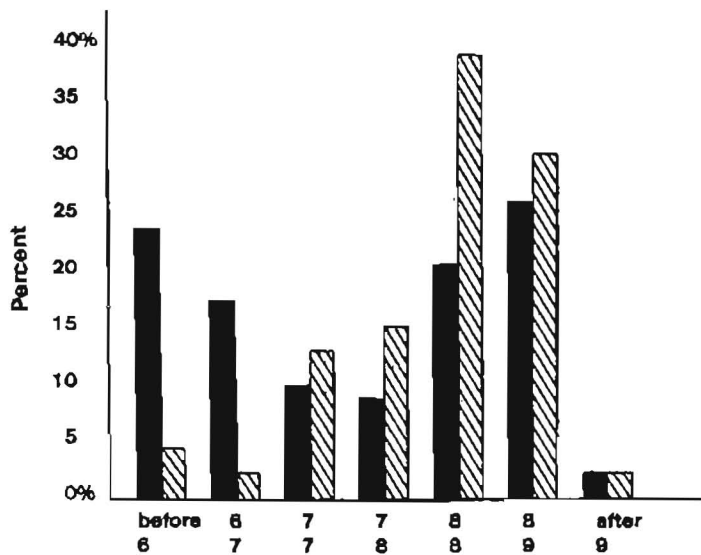
USUAL TIME LEFT WORK



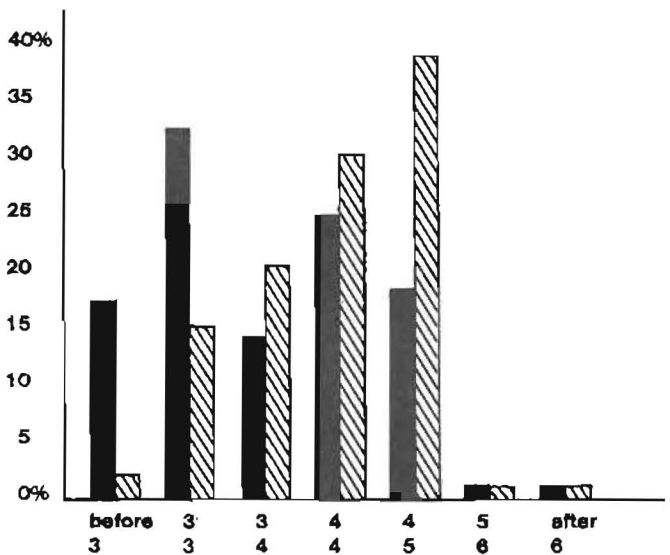
Time of Day

WORK HOURS: MID-WILSHIRE

USUAL TIME ARRIVED AT WORK



USUAL TIME LEFT WORK

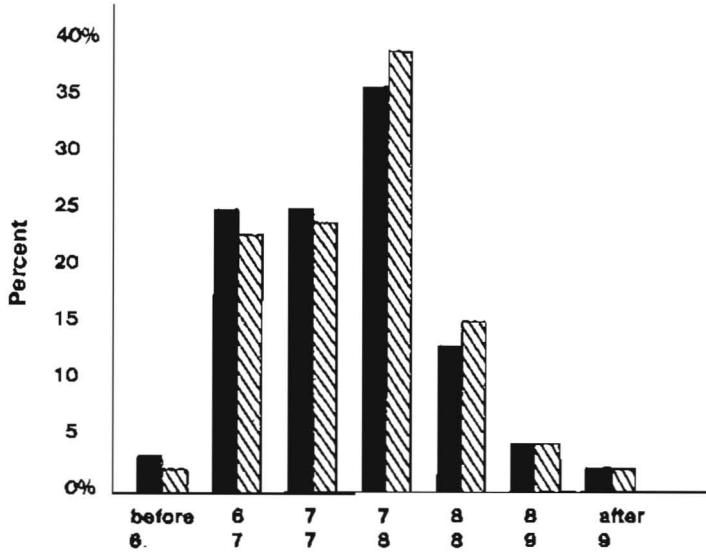


Time of Day



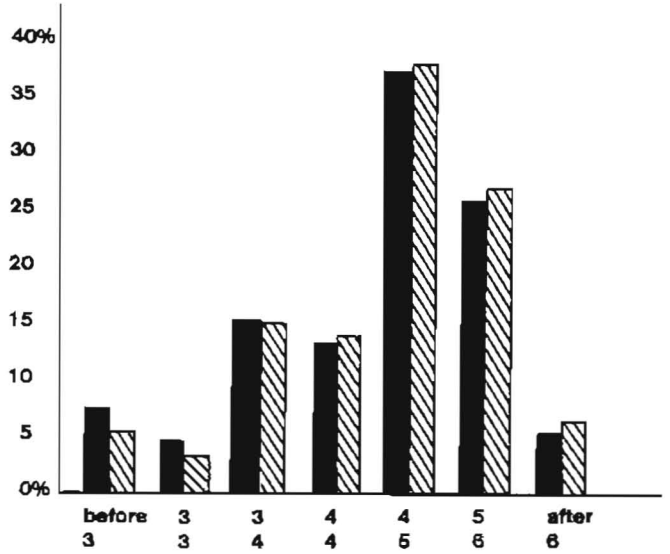
WORK HOURS: PASADENA

USUAL TIME ARRIVED AT WORK



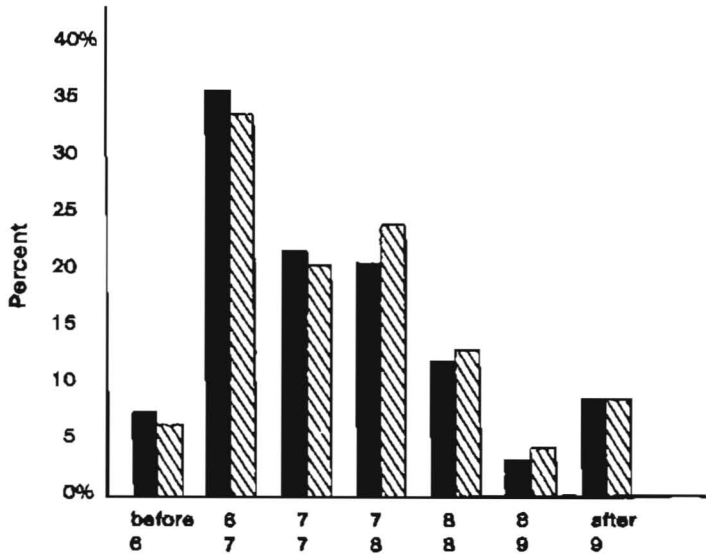
Time of Day

USUAL TIME LEFT WORK



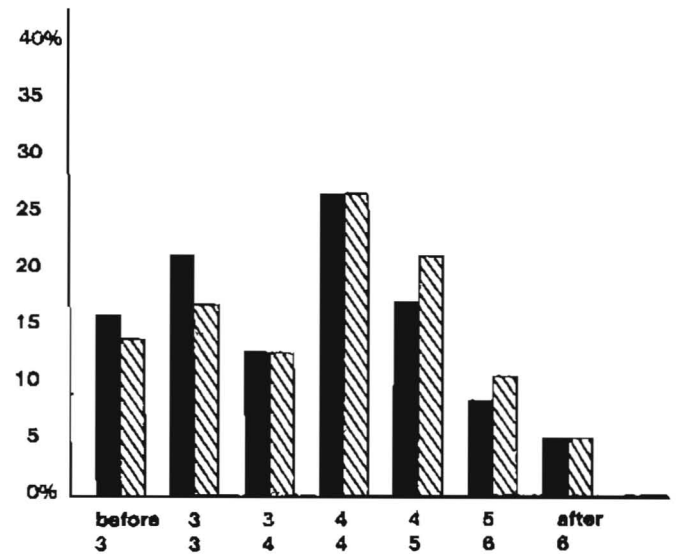
WORK HOURS: EL SEGUNDO

USUAL TIME ARRIVED AT WORK



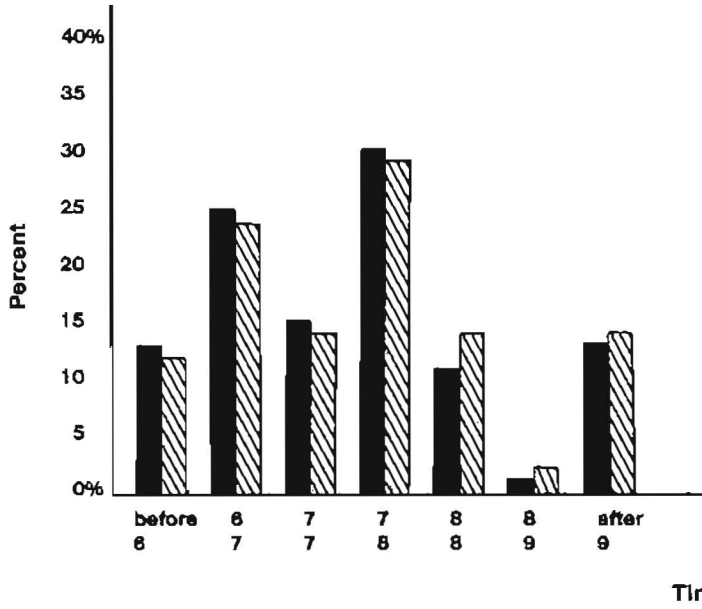
Time of Day

USUAL TIME LEFT WORK

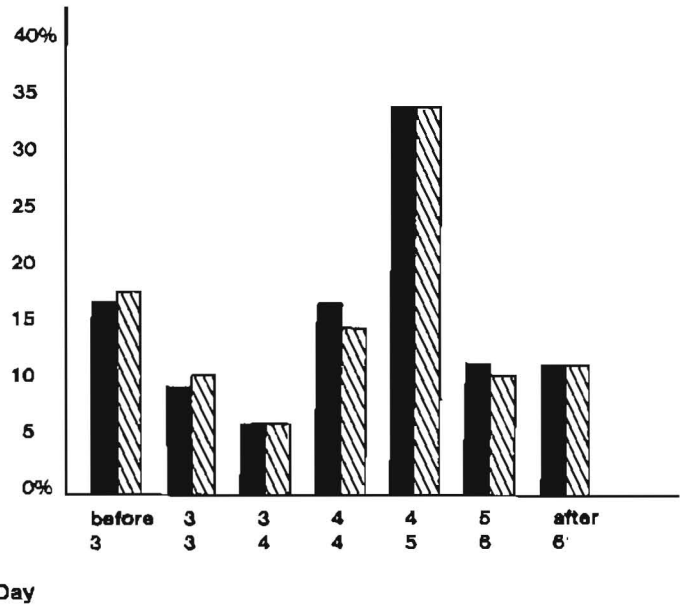


WORK HOURS: LONG BEACH

USUAL TIME ARRIVED AT WORK



USUAL TIME LEFT WORK



 Before Olympics
 During Olympics

WORK HOURS: COMMERCE

Transit

- o Ridership was highest to venues with perceived limited parking.
- o 50% of the ridership was on 2-3 mile shuttles from peripheral parking areas.
- o High ticket prices did not deter ridership, as buses operated at or above capacity.
- o Bus ridership effectively reduced congestion as much as 25% in some areas on local streets.

Bus Priority Treatment

- o The downtown terminal allowed the loading of 10,000 people/hour on to buses.
- o The Coliseum's terminals accommodated the loading and unloading of 250 buses each per hour--up to 17,000 people/hour.
- o The bus-only lanes proximate to Exposition Park moved 17,500 people/hour in two lanes (in normal use two lanes can carry a maximum of 3,520).
- o Total bus priority treatment accommodated the loading and unloading of 30,000 passengers in under two hours.

Impact of Day Off

- o Peak period traffic on the freeways was down 10%.
- o Peak period volumes downtown were down 14%.
- o Peak period traffic was down 25% in Westwood.
- o Peak period speeds in the peak direction were 22% better than normal

Impact of Modified Schedules

- o Freeway volumes were 30% higher between 6:00 a.m. and 6:30 a.m. than normal during the same time period.
- o The sharpest peak in commuter traffic occurred between 6:30-7:00 a.m. rather than the usual 7:00 a.m. to 7:30 a.m. peak.
- o On surface streets traffic was 13-28% heavier than normal between 6:00 a.m. and 7:00 a.m.
- o Traffic was 11-24% lighter than normal on surface streets between 7:00 a.m. and 9:00 a.m.
- o No significant congestion occurred on the freeway system during the peak hours.

- Rapid clearance of accidents due to surveillance kept the freeways levels of operation high.
- Removal of illegally parked vehicles increased one-way road capacity by about 400 vehicles per hour--30% increase in capacity.
- The computerized traffic signal synchronization system increased roadway capacity at least 10%.
- The Olympics events would have generated approximately 10,500,000 additional vehicles miles traveled per day.
- All transit service during the games reduced that daily VMT by 20%.

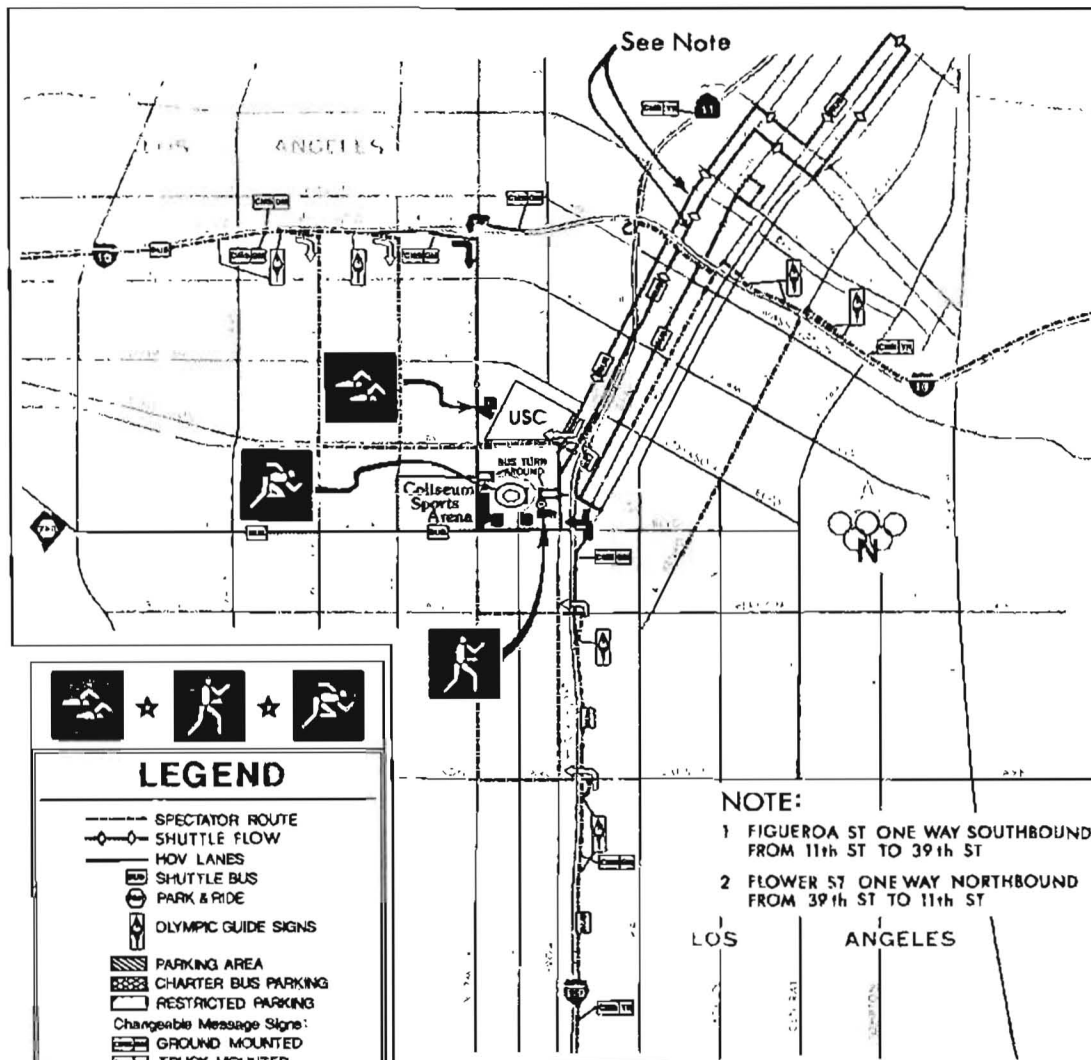
Recommendations

Policy and financial support should be given to operating agencies for the continued implementation of measures and techniques proven to improve traffic capabilities. Public agencies should also develop an interagency planning process for improved communications and implementation capabilities. It is recommended that the following strategies be studied for implementation, because their workability and merit were proved during the 1984 Summer Olympic Games.

- Increase communications efforts with both public officials and the private sector.
- Integrate agency venue planning for major events, including the creation of traffic control response teams comprised of the staffs of operational and law enforcement agencies.
- Develop transportation specific plans for activity centers that include demand management strategies, and detail how the plans should be managed.
- Continue promotion of flextime as a traffic mitigation measure.
- Actively enforce parking and stopping restrictions, where warranted.
- Expand computer controlled traffic signal systems.
- Implement one-way streets, where warranted and feasible.
- Implement preferential bus lanes in activity centers, where warranted and feasible.
- Expand application of peripheral parking and shuttle service in activity centers.
- Initiate feasibility studies on the impact of restricting truck delivery hours in activity centers.

- Expand park-and-ride and park-and-pool systems to employment centers.
- Expand use of freeway conditions advisements.
- Study the congestion mitigation effects of restricting through-trucking operations to certain routes during the peak periods.
- Seek legislative exemptions from overtime pay requirements due to certain modified work schedules.

APPENDIX A
VENUE PLAN MAPS



1984 OLYMPICS Coliseum Area






TRAFFIC PLAN

 **DIVING & SWIMMING**
USC Swim Stadium















 **BOXING**
L.A. Memorial Sports Arena

 **ATHLETICS**
L.A. Memorial Coliseum

© 1984 L.A. Olympic Organizing Committee

LEGEND

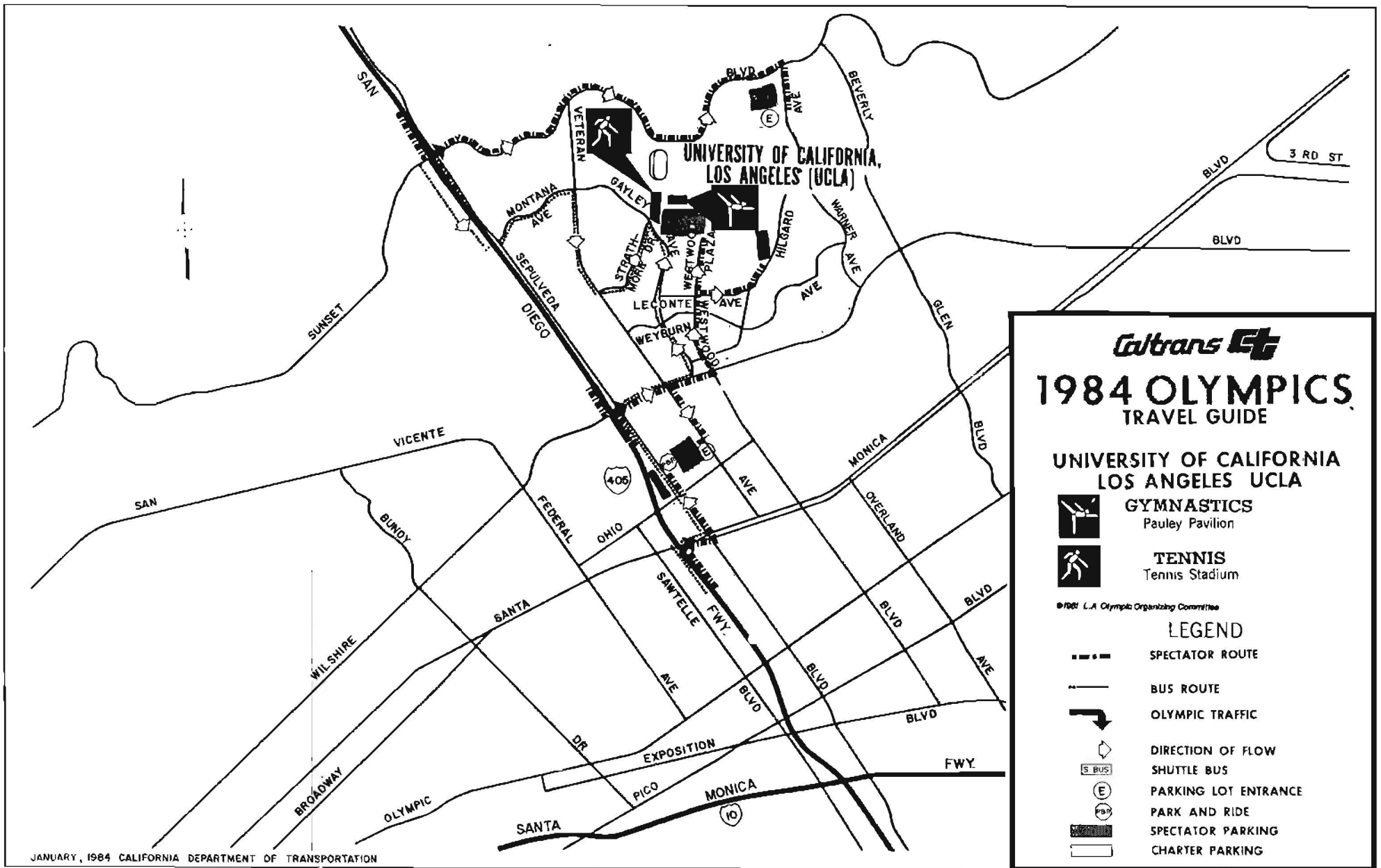
-  SPECTATOR ROUTE
-  SHUTTLE FLOW
-  HOV LANES
-  SHUTTLE BUS
-  PARK & RIDE
-  OLYMPIC GUIDE SIGNS
-  PARKING AREA
-  CHARTER BUS PARKING
-  RESTRICTED PARKING
- Changeable Message Signs:
-  GROUND MOUNTED
-  TRUCK MOUNTED
-  TRAILOR MOUNTED
-  BUS ROUTE
-  AUTOMOBILE ROUTE

NOTE:
 1 FIGUEROA ST ONE WAY SOUTHBOUND FROM 11th ST TO 39th ST
 2 FLOWER ST ONE WAY NORTHBOUND FROM 39th ST TO 11th ST

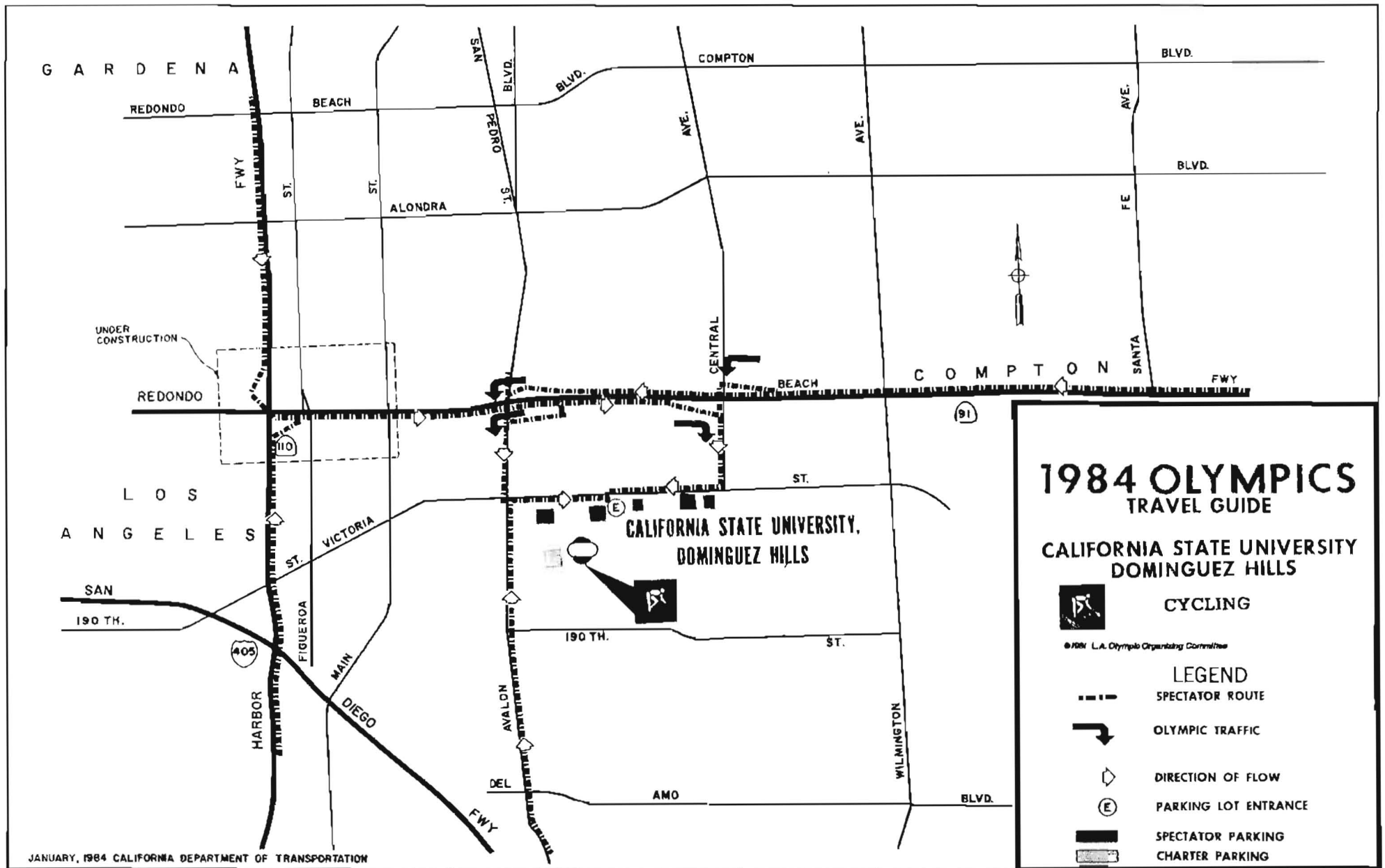
FEB 1984
MAP SUBJECT TO CHANGE


CALIFORNIA DEPARTMENT OF TRANSPORTATION
OCT 87

Copyright © 1984 by Commuter Computer
The design, maps and text of this publication are copyrighted. It is unlawful to copy or reproduce any part thereof for resale.



Copyright © 1984 by Commuter Computer
 The design, maps and text of this publication
 are copyrighted. It is unlawful to copy or
 reproduce any part thereof for resale.



1984 OLYMPICS TRAVEL GUIDE







CALIFORNIA STATE UNIVERSITY DOMINGUEZ HILLS



CYCLING

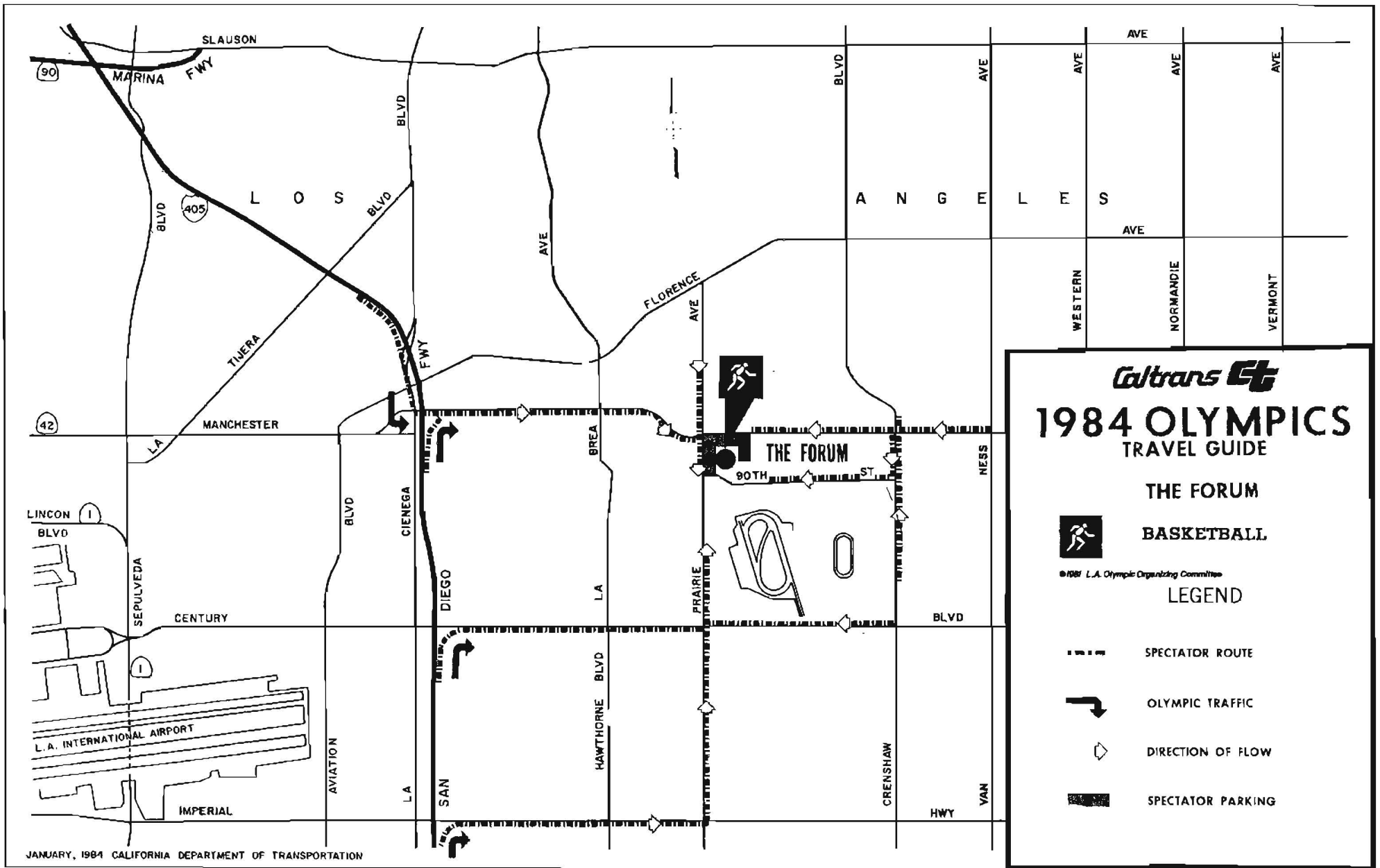
© 1984 L.A. Olympic Organizing Committee

LEGEND

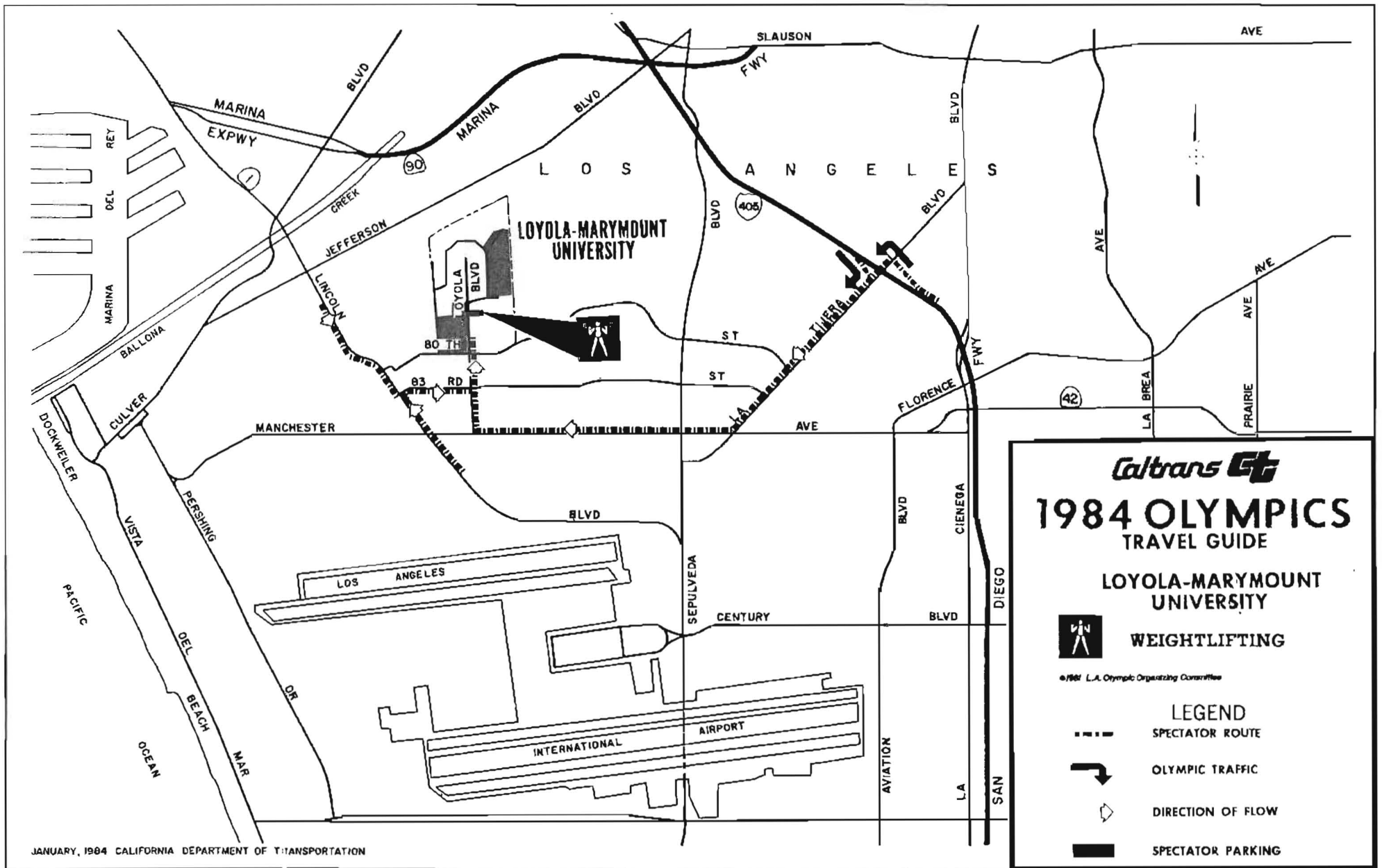
-  SPECTATOR ROUTE
-  OLYMPIC TRAFFIC
-  DIRECTION OF FLOW
-  PARKING LOT ENTRANCE
-  SPECTATOR PARKING
-  CHARTER PARKING

JANUARY, 1984 CALIFORNIA DEPARTMENT OF TRANSPORTATION

Copyright © 1984 by Commuter Computer
The design, maps and text of this publication
are copyrighted. It is unlawful to copy or
reproduce any part thereof for resale.

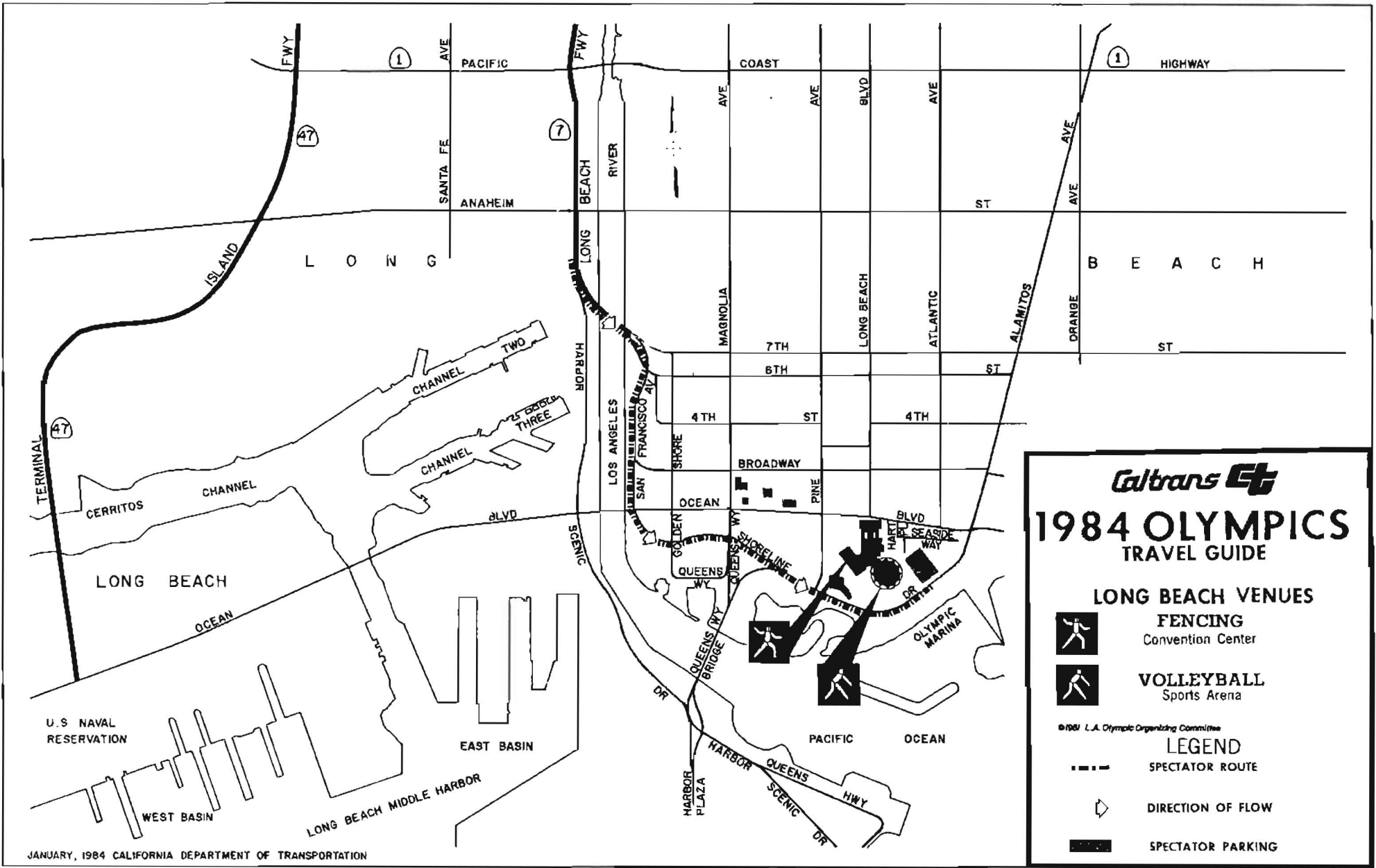


Copyright © 1984 by Commuter Computer
 The design, maps and text of this publication
 are copyrighted. It is unlawful to copy or
 reproduce any part thereof for resale.

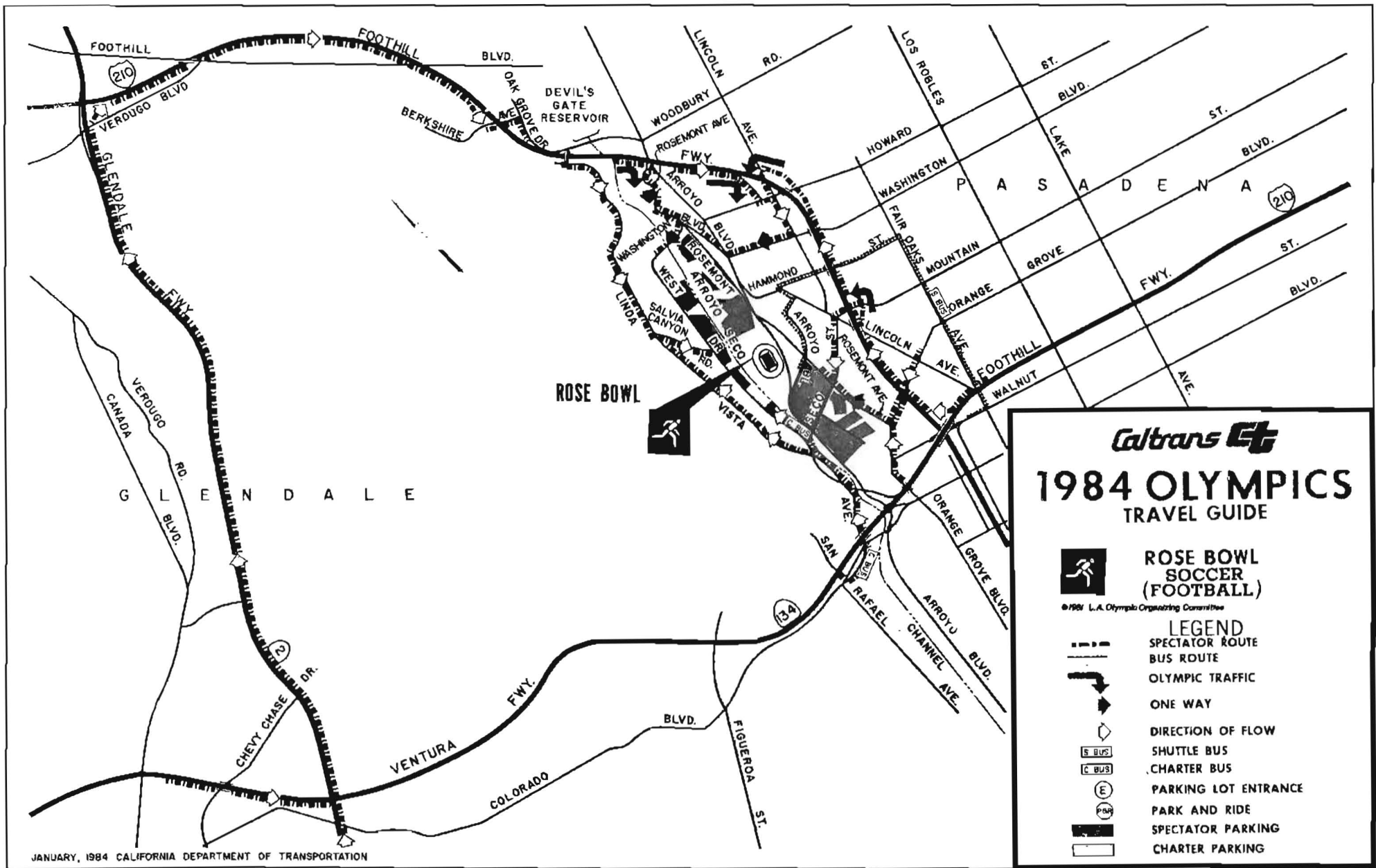


JANUARY, 1984 CALIFORNIA DEPARTMENT OF TRANSPORTATION

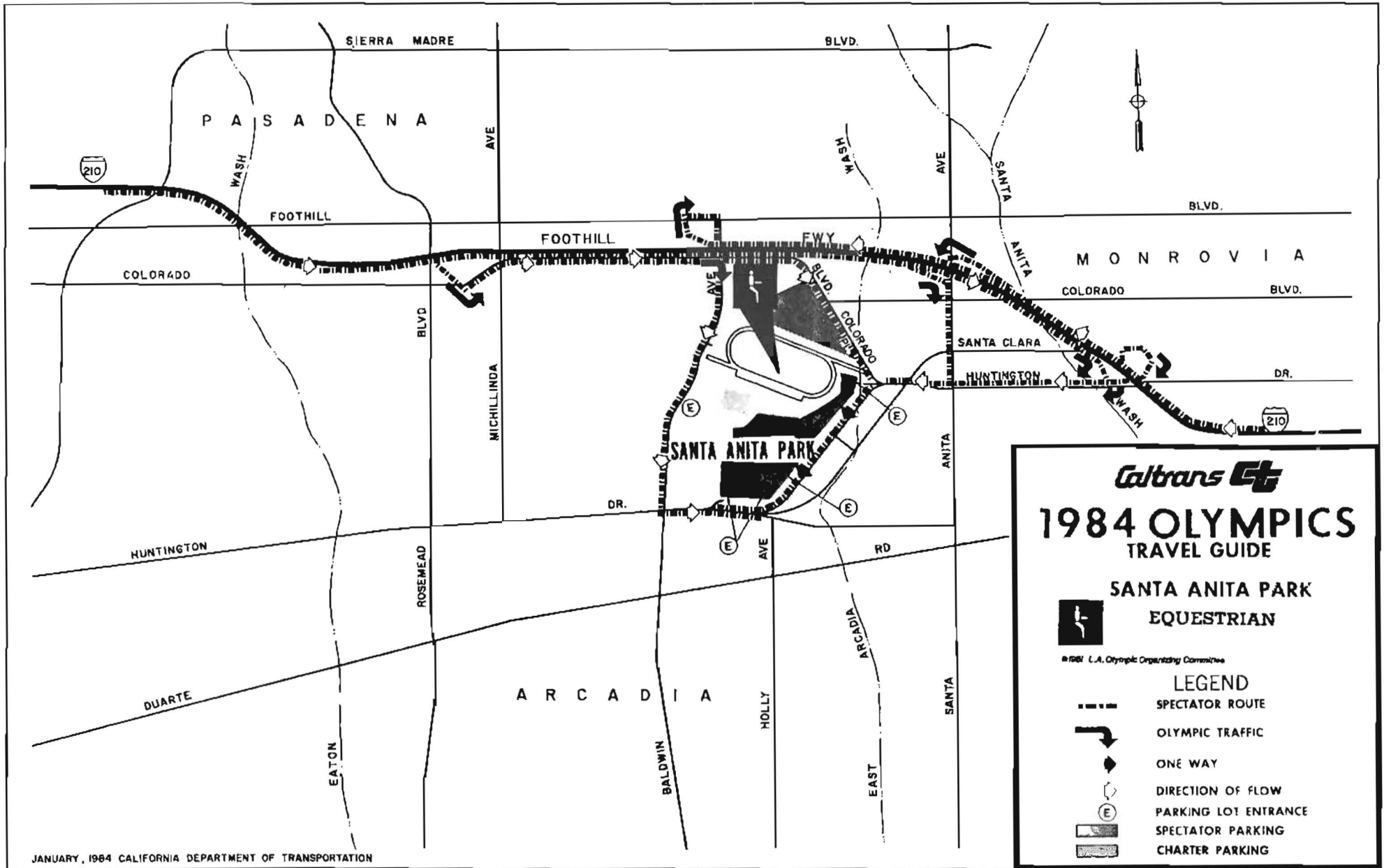
Copyright © 1984 by Commuter Computer
 The design, maps and text of this publication
 are copyrighted. It is unlawful to copy or
 reproduce any part thereof for resale.



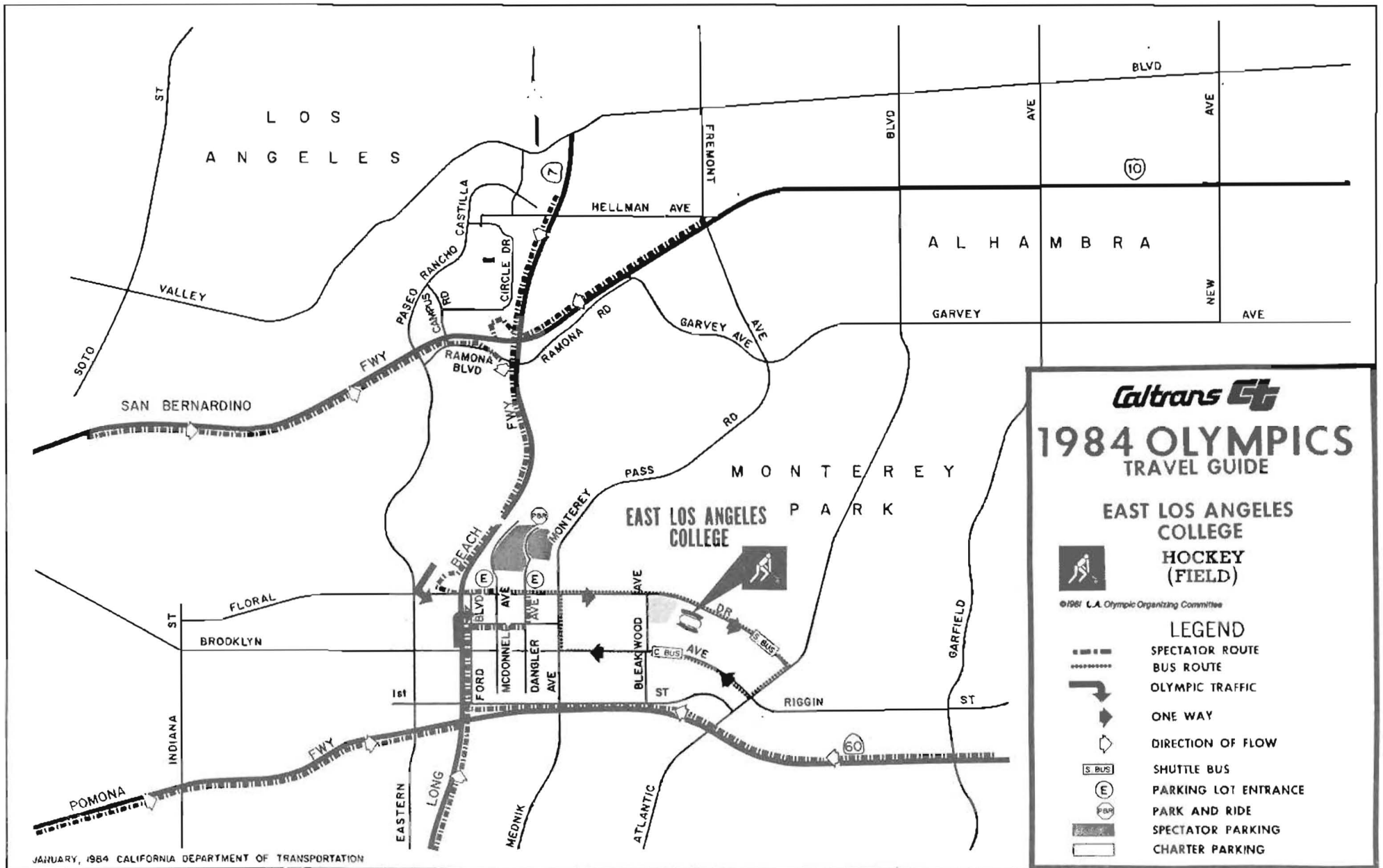
Copyright © 1984 by Commuter Computer
 The design, maps and text of this publication
 are copyrighted. It is unlawful to copy or
 reuse any part thereof for resale.



Copyright © 1984 by Commuter Computer
 The design, maps and text of this publication
 are copyrighted. It is unlawful to copy or
 reproduce any part thereof for resale.



Copyright © 1984 by Commuter Computer
 The design, maps and text of this publication
 are copyrighted. It is unlawful to copy or
 reproduce any part thereof for resale.



Copyright © 1984 by Commuter Computer
 The design, maps and text of this publication
 are copyrighted. It is unlawful to copy or
 reproduce any part thereof for resale.

CAL-STATE UNIVERSITY LOS ANGELES

LOS ANGELES

ALHAMBRA

MONTEREY PARK

Caltrans 1984 OLYMPICS TRAVEL GUIDE






CALIFORNIA STATE UNIVERSITY LOS ANGELES

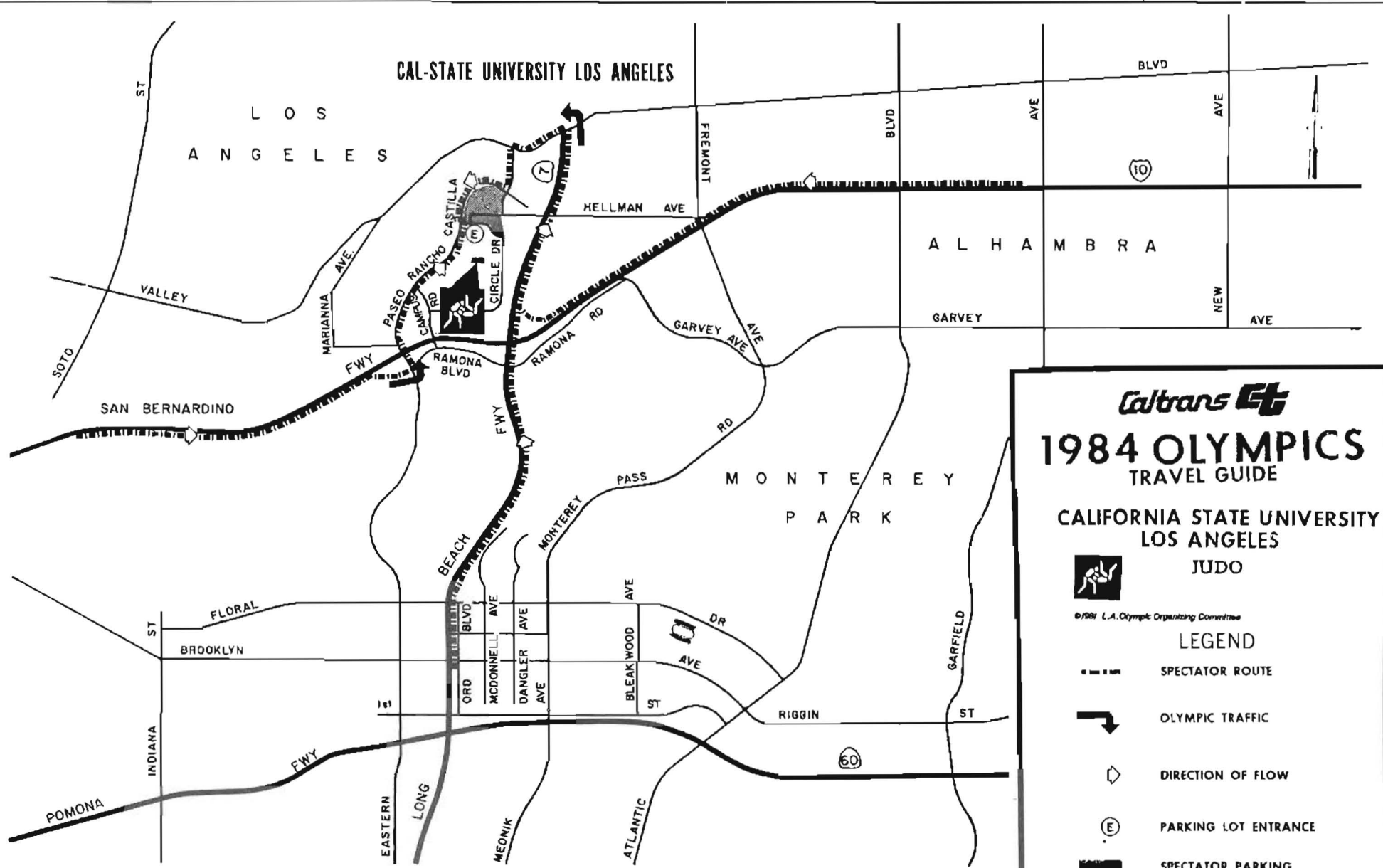
JUDO



© 1984 L.A. Olympic Organizing Committee

LEGEND

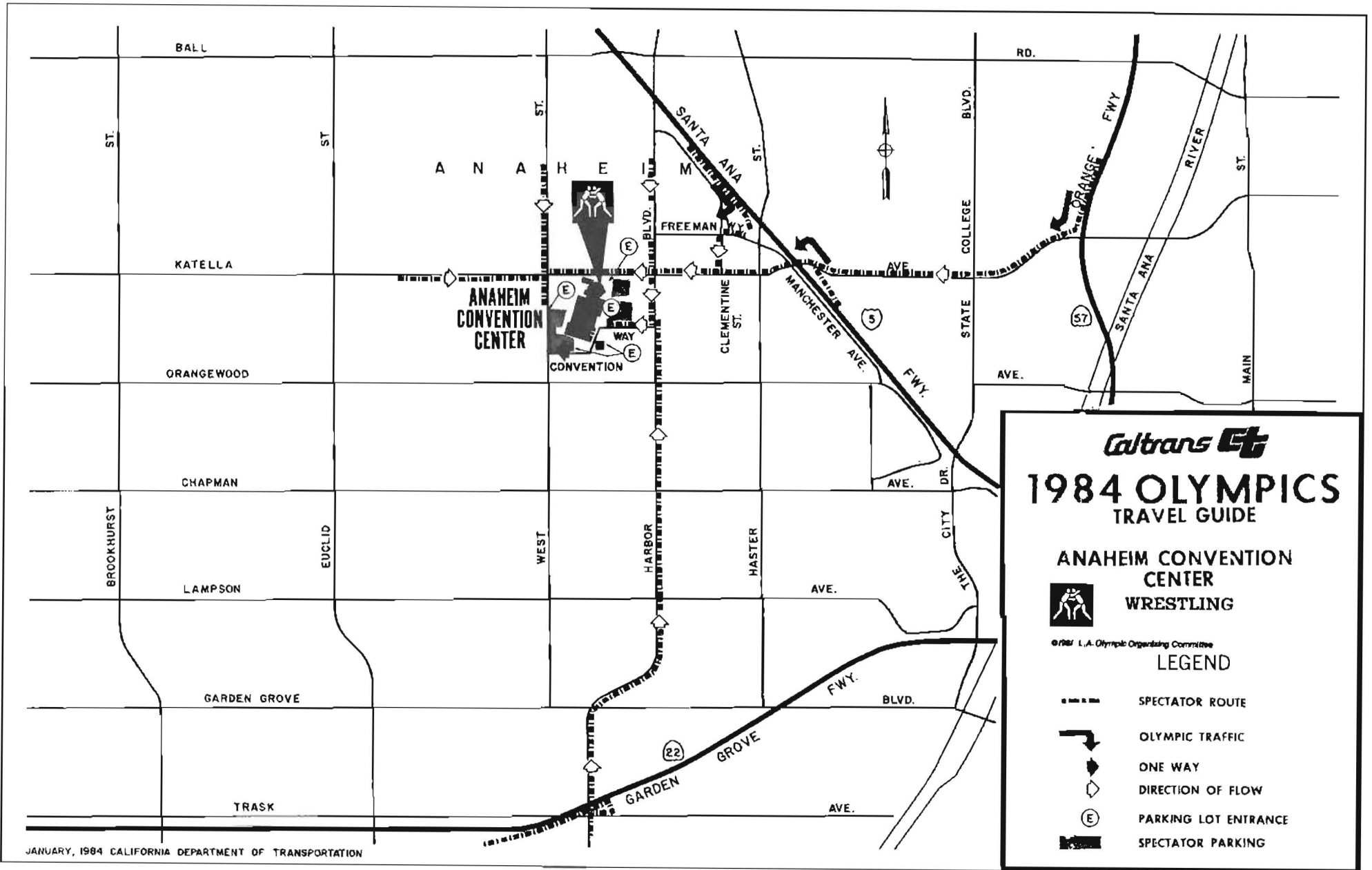
-  SPECTATOR ROUTE
-  OLYMPIC TRAFFIC
-  DIRECTION OF FLOW
-  PARKING LOT ENTRANCE
-  SPECTATOR PARKING



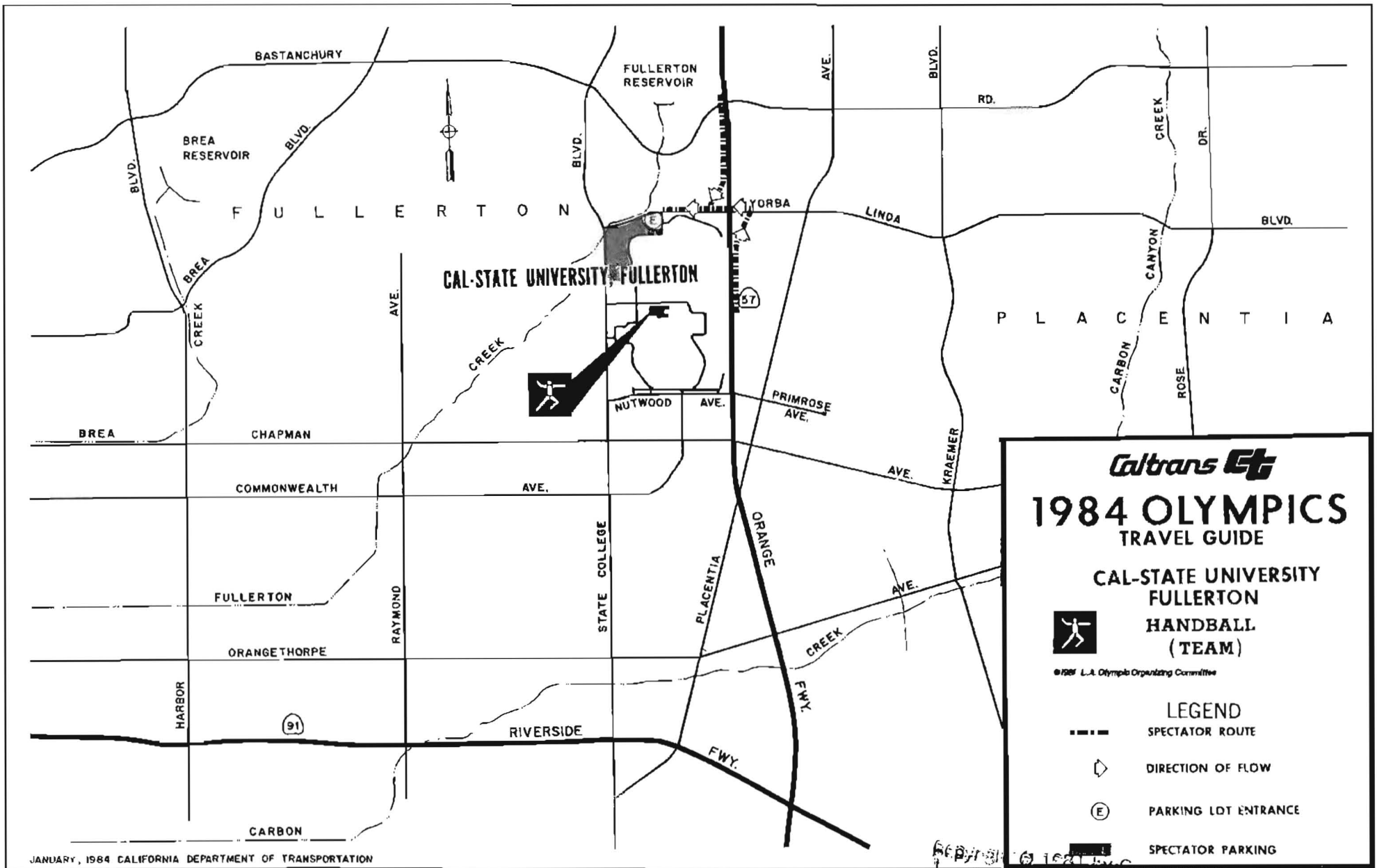
JANUARY, 1984 CALIFORNIA DEPARTMENT OF TRANSPORTATION

FOR REDUCED MAPS ORIGINAL SCALE IS 1" = 1 MILE

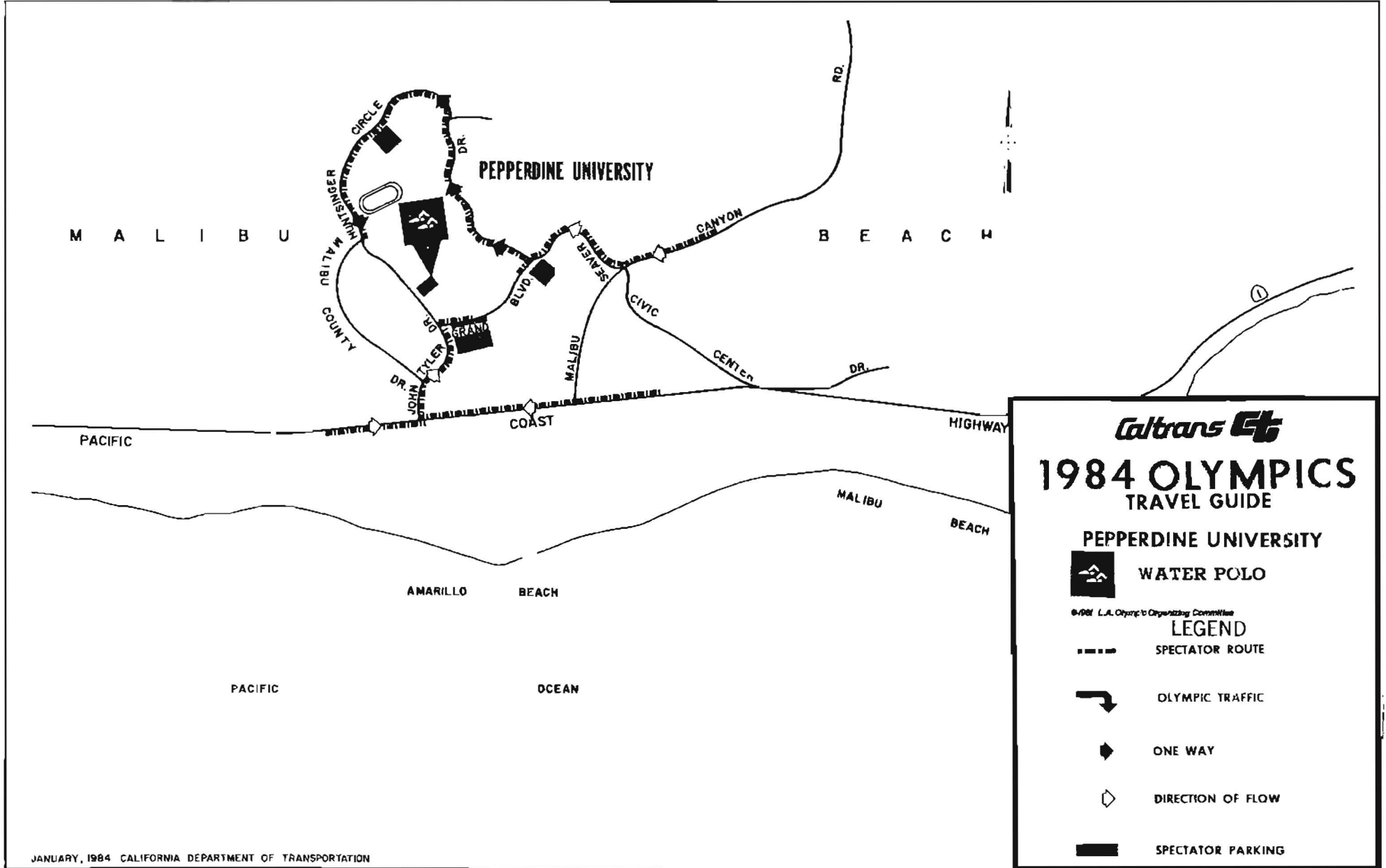
Copyright © 1984 by Computer Computer are copyrighted. It is unlawful to copy or reproduce any part thereof for resale.



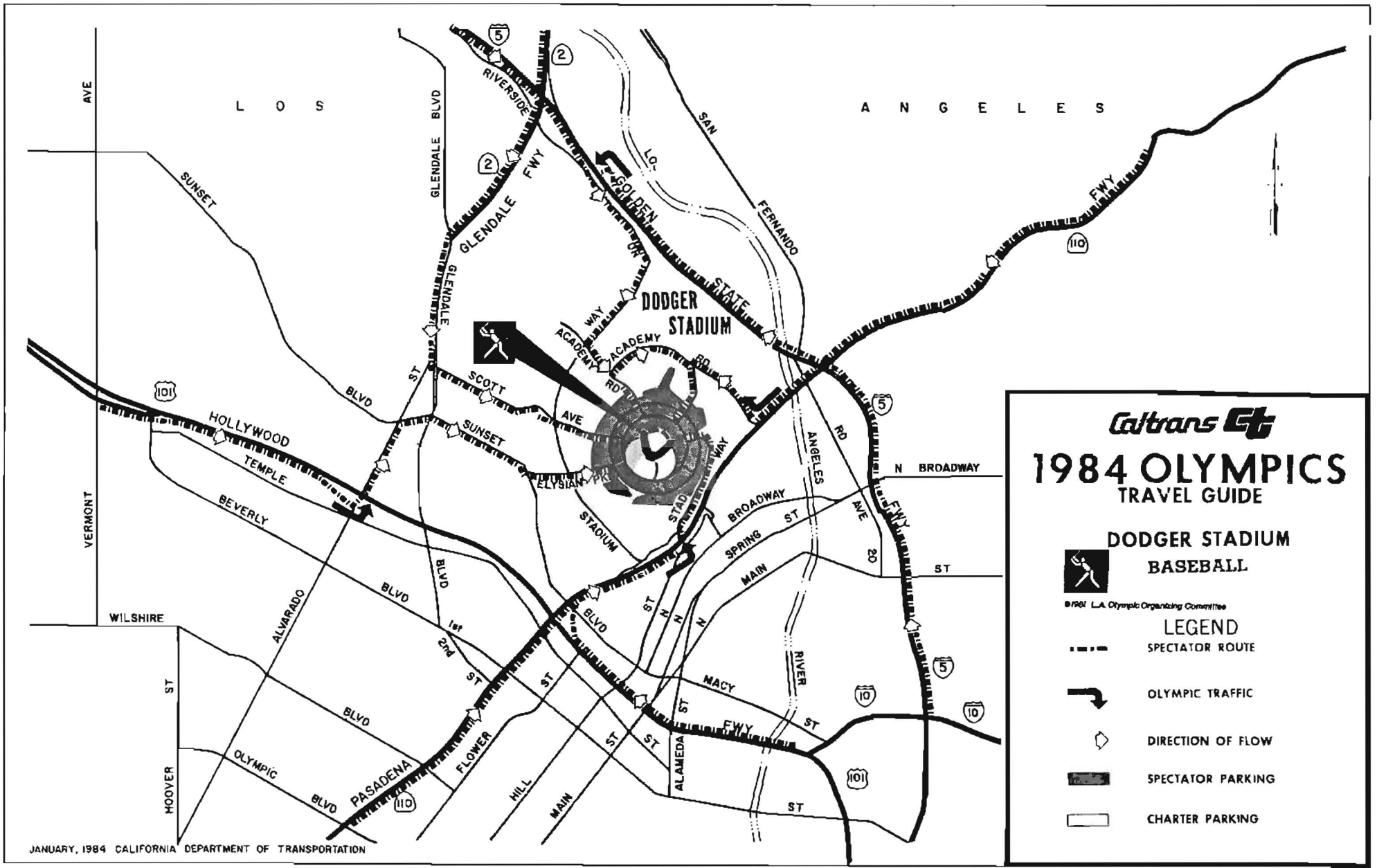
Copyright © 1984 by Commuter Computer
 The design, maps and text of this publication
 are copyrighted. It is unlawful to copy or
 reproduce any part thereof for resale.




Reprinted © 1984 by Computer Computer
 The design, maps and text of this publication
 are copyrighted. It is unlawful to copy or
 reproduce any part thereof for resale.




Copyright © 1984 by Commuter Computer
 The design, maps and text of this publication
 are copyrighted. It is unlawful to copy or
 reproduce any part thereof for resale.



Caltrans 






1984 OLYMPICS TRAVEL GUIDE

DODGER STADIUM

 **BASEBALL**

© 1984 L.A. Olympic Organizing Committee

LEGEND

-  SPECTATOR ROUTE
-  OLYMPIC TRAFFIC
-  DIRECTION OF FLOW
-  SPECTATOR PARKING
-  CHARTER PARKING

JANUARY, 1984 CALIFORNIA DEPARTMENT OF TRANSPORTATION

Copyright © 1984 by Computer Computer
The design, maps and text of this publication
are copyrighted. It is unlawful to copy or
reproduce any part thereof for resale.

ACKNOWLEDGEMENTS

Specific Thanks for Contributions
By The Following Individuals:

The Committee:

Rick Richmond - LACTC
Heinz Heckeroth - Caltrans
Don Howery - L.A. DOT
Dr. John Dyer - SCRTD
Commander Jim Jones - LAPD
Chief Ray Johnson - CHP
Tad Widby - Commuter Computer

SCAG Staff:

Mark Pisano - Executive Director
Jim Gosnell - Director of
Transportation
Renee Simon - Deputy Director
of Transportation
Larry Foutz - Program Manager
Viggen Davidian - Transportation
Planner
Carol Hunt - Transportation
Planner

And Agency Staff:

Steve Perry - SCRTD
Byron Lee - SCRTD
Alice Lepis - City of Los Angeles, DOT
Ed Rowe - City of Los Angeles, DOT
Bob Camus - City of Los Angeles, DOT
Chuck O'Connell - Caltrans
Don Juge - Caltrans
Dave Roper - Caltrans
Patty Chaplin - Commuter Computer
Adele Pearlstein - Commuter Computer
Lt. Gary Townsend - CHP
Jim Sims - LACTC