

**TASK 5 STUDY
FOR THE
EXPOSITION-SANTA MONICA TRANSIT STUDY**

Prepared by:

David Evans and Associates, Inc.
1000 East Garvey Avenue South, Suite 250
West Covina, CA 91790

Prepared for:

BRW Inc.
620 "C" Street, Suite 300
San Diego, CA 92101

and

Los Angeles County Transportation Commission

March 19, 1992

TABLE OF CONTENTS

SECTION 1: INTRODUCTION	1-1
1.1 OVERVIEW OF PROJECT	1-1
1.2 PURPOSE OF THIS PRELIMINARY ENVIRONMENTAL ASSESSMENT	1-2
SECTION 2: PROJECT DESCRIPTION	2-1
2.1 PROJECT LOCATION	2-1
2.2 ENVIRONMENTAL SETTING	2-1
2.3 PROJECT DESCRIPTION	2-1
SECTION 3: ENVIRONMENTAL ASSESSMENT	3-1
3.1 EARTH	3-1
3.2 AIR QUALITY	3-4
3.3 WATER AND HYDROLOGY	3-9
3.4 PLANT AND ANIMAL LIFE	3-11
3.5 NOISE	3-13
3.6 LIGHT AND GLARE	3-18
3.7 LAND USE	3-20
3.8 NATURAL RESOURCES	3-29
3.9 RISK OF UPSET	3-30
3.10 POPULATION AND HOUSING	3-33
3.11 TRAFFIC/CIRCULATION	3-39
3.12 PUBLIC SERVICES	3-41
3.13 ENERGY	3-43
3.14 UTILITIES	3-45
3.15 HUMAN HEALTH	3-47
3.16 AESTHETICS	3-48
3.17 RECREATION	3-50
3.18 CULTURAL RESOURCES	3-51
SECTION 4: SENSITIVE LAND USES	4-1
SECTION 5 LIST OF PREPARERS/REFERENCES	5-1
5.1 PREPARERS OF THE ENVIRONMENTAL ASSESSMENT	5-1
5.2 REFERENCES	5-1
SECTION 6 INITIAL STUDY AND CHECKLIST	6-1

LIST OF TABLES

TABLE 2-1	PROPOSED PROJECT ALTERNATIVES MATRIX	2-3
TABLE 3-1	GEOLOGY AND EARTH IMPACTS MATRIX	3-3
TABLE 3-2	AIR QUALITY FOR THE LOS ANGELES AND WEST LOS ANGELES STATIONS	3-6
TABLE 3-3	AIR QUALITY IMPACT MATRIX	3-8
TABLE 3-4	WATER IMPACTS MATRIX	3-11
TABLE 3-5	PLANT AND ANIMAL LIFE IMPACT MATRIX	3-12
TABLE 3-6	EXISTING ROADWAY NOISE LEVELS	3-15
TABLE 3-7	NOISE IMPACTS MATRIX	3-17
TABLE 3-8	LIGHT AND GLARE	3-19
TABLE 3-9	CUMULATIVE PROJECTS LIST	3-25
TABLE 3-10	LAND USE IMPACTS MATRIX	3-27
TABLE 3-11	NATURAL RESOURCES IMPACTS MATRIX	3-29
TABLE 3-12	HAZARDOUS SITES IN PROJECT AREA - CERCLIS SITES ..	3-31
TABLE 3-13	RISK OF UPSET IMPACTS MATRIX	3-32
TABLE 3-14	DEMOGRAPHIC CHARACTERISTICS	3-36
TABLE 3-15	POPULATION FIGURES BY ROUTE	3-36
TABLE 3-16	EMPLOYMENT: 2010	3-37
TABLE 3-17	POPULATION AND HOUSING IMPACTS MATRIX	3-38
TABLE 3-18	TRAFFIC IMPACTS MATRIX	3-40
TABLE 3-19	PUBLIC SERVICE IMPACTS MATRIX	3-42
TABLE 3-20	PROPOSED PROJECT ALTERNATIVES MATRIX: ENERGY .	3-44
TABLE 3-21	PROPOSED PROJECT ALTERNATIVES MATRIX: UTILITIES	3-46
TABLE 3-22	PROPOSED PROJECT ALTERNATIVES MATRIX: HUMAN HEALTH	3-47
TABLE 3-23	PROPOSED PROJECT ALTERNATIVES MATRIX: AESTHETICS	3-49
TABLE 3-24	PROPOSED PROJECT ALTERNATIVES MATRIX: RECREATION	3-50
TABLE 3-25	PROPOSED PROJECT ALTERNATIVES MATRIX: CULTURAL RESOURCES	3-52
TABLE 4-1	SENSITIVE LAND USES	4-1

LIST OF EXHIBITS

	Follows <u>Page</u>
EXHIBIT 2-1	REGIONAL PERSPECTIVE 2-1
EXHIBIT 3-1	LOCATION OF MAJOR FAULTS IN CALIFORNIA 3-1
EXHIBIT 3-2	UNDERLYING FAULTS IN PROJECT AREA 3-2
EXHIBIT 3-3	SCAQMD MONITORING STATIONS 3-4
EXHIBIT 3-4	FLOODING 3-10
EXHIBIT 3-5	ACOUSTICAL SCALE 3-14
EXHIBIT 3-6	NOISE COMPATIBILITY 3-14
EXHIBIT 3-7	STUDY SEGMENTS 3-20
EXHIBIT 3-8	EXISTING LAND USE-SEGMENT A 3-20
EXHIBIT 3-9	EXISTING LAND USE-SEGMENT B 3-21
EXHIBIT 3-10	EXISTING LAND USE-SEGMENT C 3-21
EXHIBIT 3-11	EXISTING LAND USE-SEGMENT D 3-21
EXHIBIT 3-12	EXISTING LAND USE-SEGMENT E 3-21
EXHIBIT 3-13	EXISTING LAND USE-SEGMENT F 3-22
EXHIBIT 3-14	EXISTING LAND USE-SEGMENT G 3-22
EXHIBIT 3-15	EXISTING LAND USE-SEGMENT H 3-22
EXHIBIT 3-16	PLANNED LAND USE-SEGMENT A 3-22
EXHIBIT 3-17	PLANNED LAND USE-SEGMENT B 3-22
EXHIBIT 3-18	PLANNED LAND USE-SEGMENT C 3-23
EXHIBIT 3-19	PLANNED LAND USE-SEGMENT D 3-23
EXHIBIT 3-20	PLANNED LAND USE-SEGMENT E 3-23
EXHIBIT 3-21	PLANNED LAND USE-SEGMENT F 3-23
EXHIBIT 3-22	PLANNED LAND USE-SEGMENT G 3-24
EXHIBIT 3-23	PLANNED LAND USE-SEGMENT H 3-24
EXHIBIT 3-24	CENSUS TRACT MAP 3-33
EXHIBIT 3-25	CONCEPTUAL CROSS-SECTIONS 3-48
EXHIBIT 3-26	CONCEPTUAL CROSS-SECTIONS 3-48
EXHIBIT 3-27	CONCEPTUAL CROSS-SECTIONS 3-48
EXHIBIT 4-1	SENSITIVE LAND USES-SEGMENT A 4-1
EXHIBIT 4-2	SENSITIVE LAND USES-SEGMENT B 4-1
EXHIBIT 4-3	SENSITIVE LAND USES-SEGMENT C 4-1
EXHIBIT 4-4	SENSITIVE LAND USES-SEGMENT D 4-1
EXHIBIT 4-5	SENSITIVE LAND USES-SEGMENT E 4-1
EXHIBIT 4-6	SENSITIVE LAND USES-SEGMENT F 4-1
EXHIBIT 4-7	SENSITIVE LAND USES-SEGMENT G 4-1
EXHIBIT 4-8	SENSITIVE LAND USES-SEGMENT H 4-1

SECTION 1: INTRODUCTION

1.1 OVERVIEW OF PROJECT

This Environmental Assessment examines the potential environmental impacts of the alternative mass transit proposals presently being considered for the Exposition Transit Corridor study. The Los Angeles County Transportation Commission (LACTC) recently acquired the right-of-way along Exposition Boulevard between Vermont Avenue near Exposition Park and 16th Street in the City of Santa Monica. The LACTC proposes to use this 12-mile right of way as a means to connect and provide efficient public transit service between downtown Los Angeles and the Westside.

The project area is located in the western portion of Los Angeles County. Four alignment alternatives are under consideration in the Exposition Corridor study. The four alternatives begin at the Vermont Avenue-Exposition Boulevard intersection in Los Angeles. Route 1 follows Exposition Boulevard through portions of Los Angeles and Santa Monica, terminating at 17th Street in Santa Monica. The other three routes also utilize the eastern portion of Exposition Boulevard and then deviate at the Venice/Robertson Boulevard intersection. The alignments then follow Venice Boulevard to Pacific Avenue or the I-10 and I-405 freeways. A regional location map is shown in Exhibit 2-1.

This Task 5 study is designed to provide Agency staff, elected officials, and other decisionmakers with an evaluation of potential environmental impacts that may occur with the construction and operation of the project alternatives under consideration. This study is also designed to serve as a preliminary environmental assessment for future environmental review which will be required pursuant to the California Environmental Quality Act (CEQA). This report is formatted to consider all of the environmental issues that are included in CEQA's initial study checklist. As a result, this report will indicate the focus of future environmental analysis which will need to be completed in upcoming studies.

The LACTC is the Lead Agency for the project, as defined by Section 21067 of the CEQA Law and Guidelines. The Lead Agency is the public agency which has the principal responsibility for carrying out or approving a project which may have a significant effect upon the environment. The LACTC, as the Lead Agency, shall have the authority for project approval.

1.2 PURPOSE OF THIS PRELIMINARY ENVIRONMENTAL ASSESSMENT

The Environmental Assessment prepared for the proposed Exposition Light Rail Transit Corridor Project is contained in Section 3 of this document. The purpose of the Environmental Assessment as stated in Section 15063 of the CEQA Guidelines includes:

- To identify potential environmental impacts arising from the implementation of the proposed transit project.
- To provide the Los Angeles County Transportation Commission, the designated Lead Agency, with information to use as the basis for deciding whether to prepare an environmental impact report or negative declaration for the project.
- To enable an applicant or Lead Agency to modify a project, mitigating adverse impacts before an EIR is prepared, thereby enabling the analysis to be more focused.
- To provide documentation for the findings in a negative declaration that a project will not have a significant effect on the environment.
- To eliminate unnecessary environmental impact reports.

1.3 FORMAT OF THIS STUDY

The remainder of this report includes a description of the project alternatives being considered, an evaluation of potential impacts, a description of possible mitigation measures, and a summary. Finally, an Initial Study Checklist for future environmental review is included in the Appendix.

SECTION 2: PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The Exposition Right-of-Way Transit Project is located in the western portion of Los Angeles County, within the cities of Los Angeles, Santa Monica, and Culver City. The study alignment begins at the Vermont Avenue and Exposition Boulevard intersection (immediately south of the University of Southern California (USC) and north of Exposition Park) and continues west along the existing railroad line to its intersection with Venice and Robertson Boulevards. All four of the route alternatives utilize this eastern portion of the alignment, separating at Venice and Robertson Boulevards. The first alternative continues along the exposition alignment to its terminus at 17th Street in Santa Monica. The second alternative follows Venice Boulevard west to its intersection with Sepulveda Boulevard and returns to the right-of-way in West Los Angeles. The third alternative follows the I-10 and I-405 freeways south and north respectively, before returning to the right-of-way. The final alternative follows Venice Boulevard west to its intersection with Pacific and Main Avenues.

A map indicating the study area in a regional perspective is provided in Exhibit 2-1.

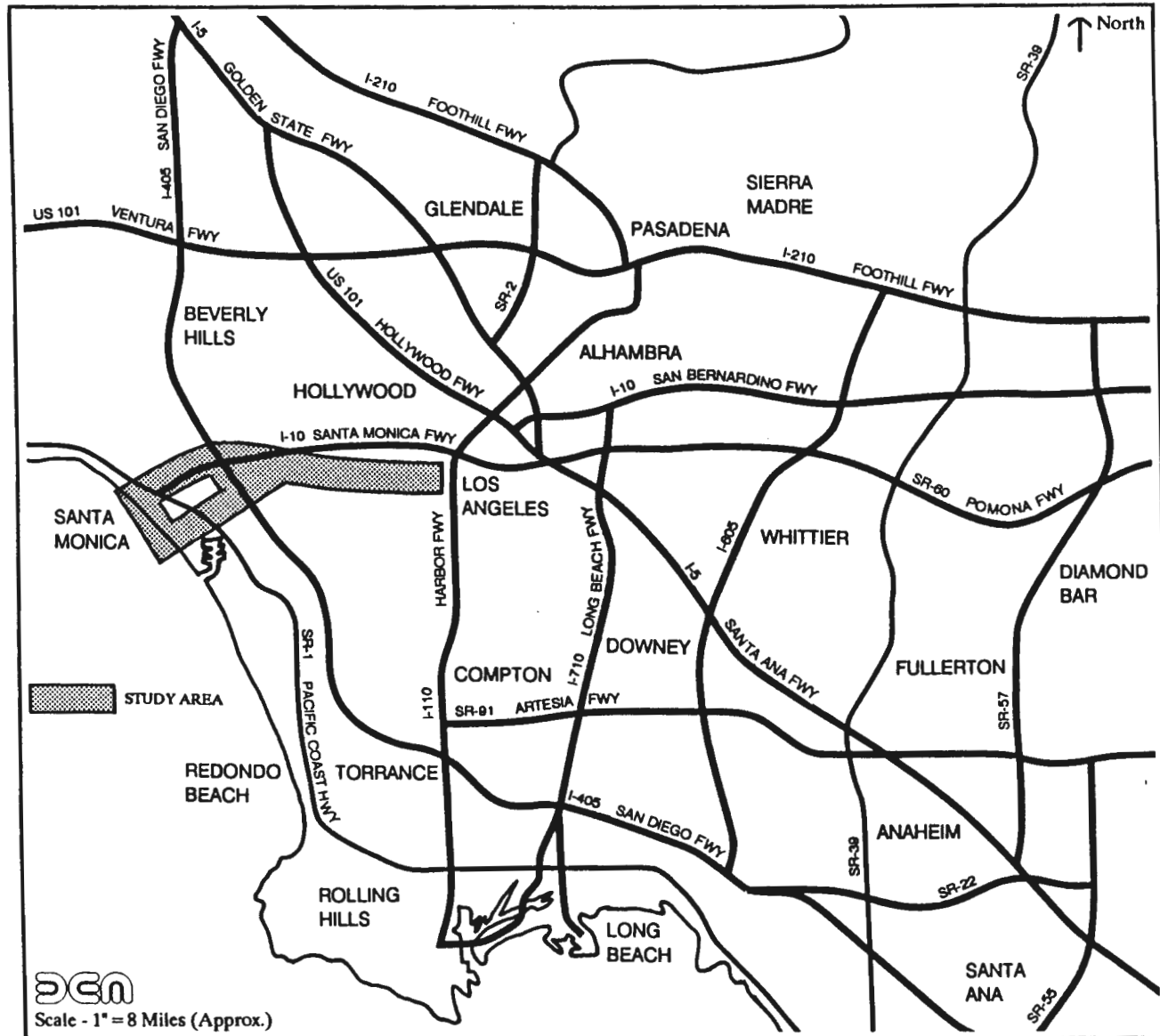
2.2 ENVIRONMENTAL SETTING

The project area is located within the Los Angeles metropolitan area. The area is bounded by the Santa Monica Mountains to the north, the San Gabriel Mountains to the east, Baldwin Hills and Palos Verdes Hills to the south, and the Pacific Ocean to the west. The project area is urbanized, with remaining open space generally limited to parks and scattered vacant lots. As an established metropolis, there is considerable variation in land uses. Residential development ranges from single-family neighborhoods to high density multiple-family housing. Commercial uses, likewise, range from small commercial establishments to large scale commercial and employment centers that serve a regional market. Industrial uses are located close to thoroughfares, and ideally removed from single-family neighborhoods.

2.3 PROJECT DESCRIPTION

The Los Angeles County Transportation Commission is studying the feasibility of constructing and operating a 12 mile public transit facility that would provide a continuous connection between the Exposition Park area and West Los Angeles.

The LACTC, as part of this study, is seeking to identify the transit mode that will most efficiently meet the Agency's and community objectives. Four possible transportation modes are presently being considered:



SOURCE: David Evans and Associates, Inc.

- **Light Rail Transit.** The equipment and operations would be similar to the Blue Line which is currently in operation between Long Beach and downtown Los Angeles. Light rail transit typically consists of 2 and 3 car trains, which function quietly while carrying approximately 100 passengers per car at speeds up to 50 miles per hour. LRT operates in reserved right-of-way and is usually operated at ground level except where over- or undercrossings are needed. A 30 foot wide right-of-way is generally required, with 50-60 feet needed at stations.
- **Electrified Trolley Buses.** Trolley buses also use electric power from overhead wires, but operate on roadways without tracks. Trolley buses can operate on a separate roadway or in mixed flow traffic and typically operated on city streets.
- **Transitway.** The transitway uses a separate roadway lane dedicated to carpools, vanpools and/or buses. A transitway typically contains additional facilities such as stations and stops, traffic signal prioritization and overhead wires if trolleys are to provide service. The transitway would require a right-of-way width of 40 to 50 feet would be required for 2 travel lanes, slightly widening at stops or stations or passing zones.
- **Bikeway.** The bikeway will be designed for bicyclists as a separate route or adjacent to existing roads or transitways. Bike paths require a 10 to 15 foot wide right-of-way and have access points to other bike routes or streets. Bicyclists are typically not given priority through intersections. The bikeway would be constructed adjacent to the LRT line.

In addition to the alternative transit modes being considered, the LACTC has been asked to consider a number of additional *route* alternatives over and above the Exposition railroad right of way. Originally, the study considered six possible route alignments (refer to Exhibit 2-2). As part of the route refinement, the number of route options were narrowed down to four alignments. As a result, the route alternatives being considered in this environmental assessment now include the following:

- **Route 1: Exposition between Vermont and 17th.** The proposed right-of-way is designated Alternative 1 and would utilize the Exposition Boulevard right-of-way completely. The right-of-way is unimproved, and with freight service ceasing in the mid 1960's, commercial and industrial activities have encroached upon the right-of-way in a few portions of the middle and western segments. This alignment alternative would use the existing right-of-way, with additional space at key intersections for stations and transit line support

operations. Additionally, signage, storage areas, parking lots, and other improvements that have encroached into the alignment would require removal.

- **Route 2: Exposition via Venice, Sepulveda.** This alternative uses the eastern portion of the Exposition Boulevard alignment, detours at the Robertson-Venice Boulevard intersection, using Venice and Sepulveda Boulevard and returning to the right-of-way from Sepulveda Boulevard to Santa Monica.
- **Route 4: Exposition via I-10, I-405.** This alternative utilizes the eastern portion of the right-of-way, detours at Motor Avenue using the Santa Monica (I-10) and the San Diego (I-405) freeways, returns to the right-of-way from the San Diego Freeway and continues to Santa Monica.
- **Route 5: Venice to the Coast, North/South.** This alternative uses the eastern portion of the right-of-way, detours at the Robertson-Venice Boulevard intersection using Venice Boulevard and Main Avenue. This alternative offers an option of using Main Street and Pacific Avenue as a couplet for one-way service.

The project team, LACTC Staff, and the Project Review Team examined those modes that were being considered (LRT, trolley-bus, transit way, and bikeway) and determined that some modes would only be feasible for certain alignments. For example, the LRT is only feasible for two of the four route alignments. The project alternatives being considered in this study are summarized in Table 2-1.

TABLE 2-1 PROPOSED PROJECT ALTERNATIVES MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	●		●	
Trolley-Bus	●	●		●
Bikeway	● ¹			
¹ . The bikeway would be constructed adjacent to the LRT line.				

SECTION 3: ENVIRONMENTAL ASSESSMENT

This section analyzes the potential environmental impacts associated with the construction and operation of the various transit alternatives being considered in this study. All of the environmental issue areas listed in the CEQA Law and Guide are evaluated in this section including the following:

- Earth - Seismic and Geological Impacts
- Air Quality - Mobile and Stationary Emissions
- Water - Flooding, Hydrology, and Drainage
- Plant Life and Animal Life
- Noise - Mobile and Stationary Noise Impacts
- Light and Glare
- Land Use - Land Use Conflicts, Planned Land Use, and Displacement
- Natural Resources - Nonrenewable Resources Used in Construction/Operation
- Risk of Upset - Risk of Explosion or Release of Hazardous Materials
- Population and Housing - Growth-Inducing Impacts and Displacement
- Transportation/Circulation
- Public Services - Police and Fire Services
- Energy - Electrical and Natural Gas Consumption
- Utilities - Consumption/Generation Rates and Relocation
- Human Health - Public Safety Concerns
- Aesthetics
- Recreation - Demands on Parks and Recreation Facilities/Services
- Cultural Resources - Historic, Archaeological, and Cultural Features

Each impact area is discussed individually in Sections 3.1 through 3.18 and contains a description and analysis of the existing conditions and an environmental assessment. The existing conditions contains a discussion of land uses, facilities, services and environment within the designated 1/2 mile study corridor surrounding the route alternatives.

3.1 EARTH

Environmental Setting

The project area is located on the central Coastal Plain of Los Angeles County, and is surrounded by the Santa Monica and San Gabriel Mountains, and Baldwin Hills. The Exposition right-of-way is vacant with sparse weed growth much of the way. Scattered portions of the alignment are used for storage, loading and other commercial and industrial activities. The ground surface is essentially flat. All other alternatives lie with the right-of-way of existing arterial roadways and freeways.

Earthquake Faults in Project Area

Faults in Southern California are categorized as active, potentially active, and inactive. *Active* faults are those faults that have exhibited movement within the past 11,000 years; and *potentially active* faults show evidence of movement within the last 750,000 years (modified to 750,000 years by USGS, 1985 and adopted by Los Angeles County, 1990). The locations of major faults in Southern California are shown in Exhibit 3-1.

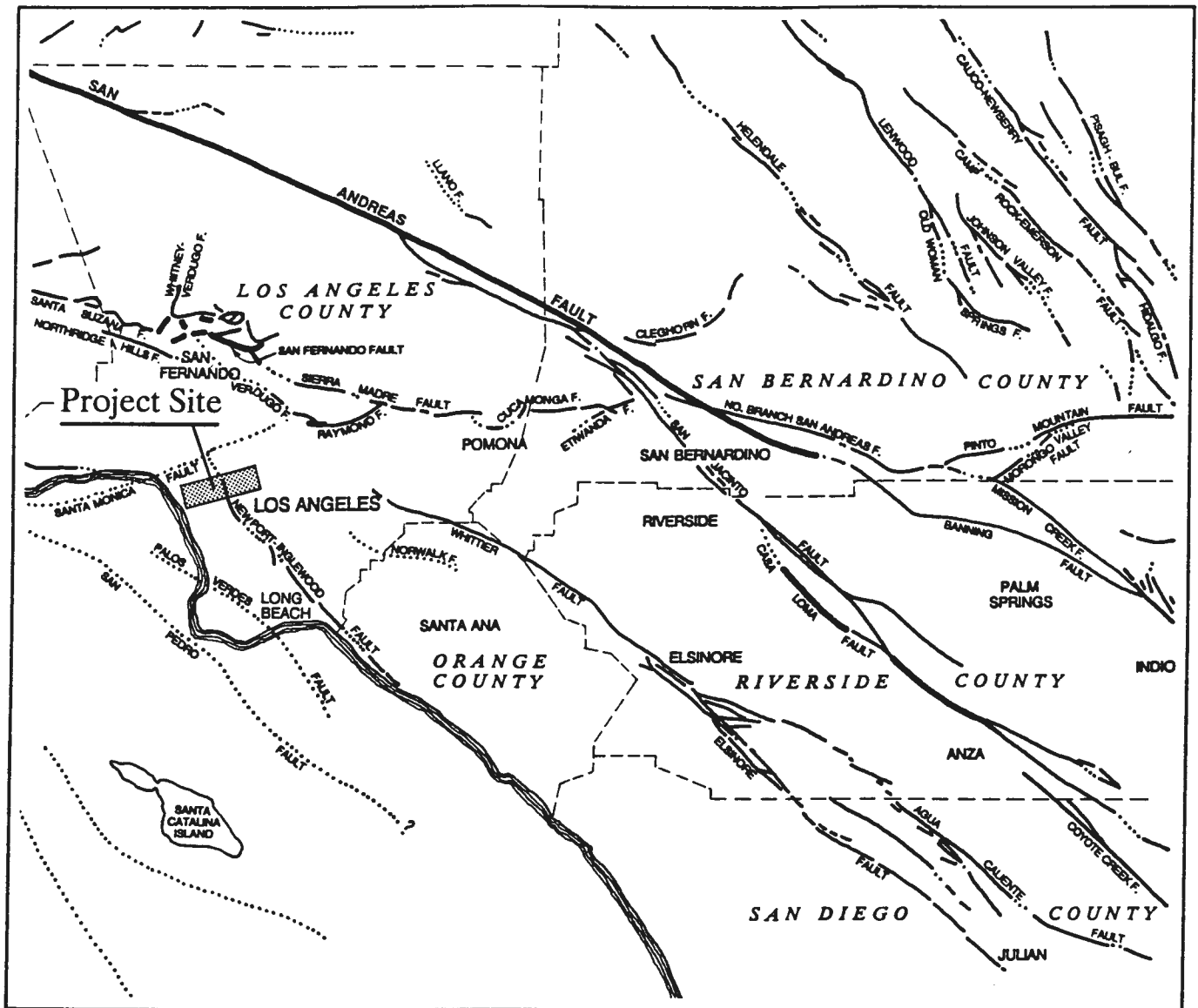
The closest major active fault to the site is the Newport-Inglewood Fault Zone, located approximately 4.0 miles south of the site. The Newport-Inglewood Fault Zone is a broad zone of discontinuous faults extending southeastward from Beverly Hills to Newport Bay. A near-shore segment of the Newport-Inglewood Fault Zone was the source of the 1933 Long Beach earthquake. This zone represents a major hazard to the densely populated Los Angeles basin. Two other faults exhibiting activity during the Late Quaternary include the Charnock Fault and Overland Avenue Fault. Faults underlying the project area are shown in Exhibit 3-2.

Other nearby active faults not known to traverse the project area include the Hollywood, Malibu Coast, Palos Verdes Hills, Raymond Hill, Redondo Canyon, and Anacapa Fault Zones. The closest potentially active fault is the Santa Monica Fault located 4 miles north of the study corridor. Other nearby potentially active faults include the Eagle Rock (11 miles northeast) and the San Pedro Fault Zone (24 miles southwest). Geologists recently recommended the Santa Monica be reclassified to an active fault based on evidence of Quaternary activity.

Seismic Affects

The geologic hazards at the study corridor are essentially limited to those caused by earthquakes and the resulting ground motion.

- **Ground Shaking.** Ground shaking from a major earthquake in the region would occur not only immediately adjacent to the earthquake epicenter, but for many miles in all directions. According to generalized study conducted for the Los Angeles basin (U.S.G.S. 1985), the project area is largely underlain by Holocene alluvial sediment. Of the five categories of underlying geology found in the Southern California region, the Holocene sediments and expected to experience the most severe levels of ground shaking in the event of a major earthquake.
- **Liquefaction.** Liquefaction potential has been found to be the greatest where the ground water level is shallow and loose fine sands occur within a depth



EXPLANATION

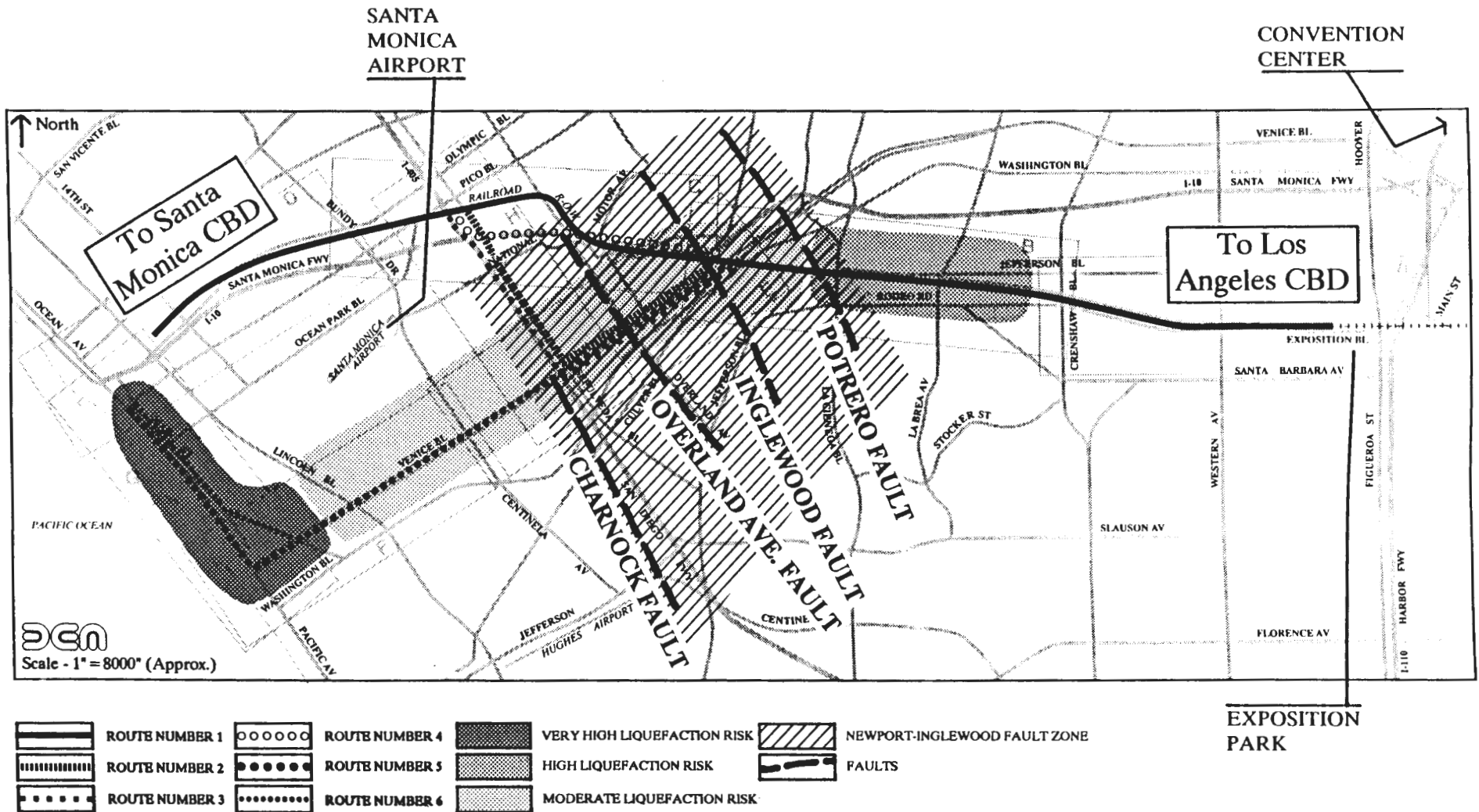
ACTIVE FAULTS

- Total length of fault zone that breaks Holocene deposits or that has had seismic activity
- Fault segment with surface rupture during an historic earthquake, or with aseismic fault creep

SOURCE: David Evans and Associates, Inc.

EXPOSITION
 RIGHT OF WAY PRELIMINARY PLANNING STUDY
 • ENVIRONMENTAL ASSESSMENT •

EXHIBIT 3-1
 Major Faults in Southern California



SOURCE: U.S.G.S. Professional Survey Paper 1360, 1985

of about 50 feet or less. The liquefaction susceptibility study of the Los Angeles Region indicates the risk of liquefaction in the project area is generally low. A greater potential for liquefaction exists in portions of the study corridor located near Ballona Creek and the Venice and Santa Monica beach areas. Finally, an area west of Jefferson Boulevard is described as having a high liquefaction potential.

- **Subsidence.** Seismic settlement often occurs when loose to medium dense granular soils densify during ground shaking. If settlement were uniform beneath a given structure, damage would be minimal. Due to variations in distribution, density, and confining conditions of the soils, such settlement is generally non-uniform and can cause serious structural damage. Differential settlement may result from ground failures such as liquefaction, flow slides, and surface ruptures.
- **Surface Rupture.** Surface rupture occurs when there is physical movement along a fault trace. This movement can involve lateral movement along a fault trace or thrust motion where one side of the fault is thrust over the other side. Surface rupture can be extremely damaging to structures or improvements traversing the fault trace. Portions of the alignments presently under consideration cross the Newport-Inglewood fault zone just east of the Santa Monica freeway. A number of related faults are found in the vicinity of the Baldwin Hills including the Inglewood and Potrero faults. Finally, the Charnock and Overland faults are found in the project area.
- **Slope Failure.** The subject project area is relatively flat with a slopes between 2 and 5 percent in most portions of the study corridor; Rancho Park and the coastal areas have some variation in topography. No known landslides are present in the study corridor or in the immediate vicinity. Drainage concerns are limited to a small sector of Rancho Park where the alignment is below grade and surrounded by steep slopes. The essentially flat lying topography at the project area precludes both stability problems and the potential for lurching (earth movement at right angles to a cliff or steep slope during ground shaking).

Environmental Assessment

All facility design and construction will comply with State seismic safety building code requirements. The construction of the proposed alternatives under consideration will not expose residents to any geologic or seismic hazards beyond those already present throughout the region. The numerous active earthquake faults in the region may produce significant

groundshaking which could disrupt operations for a time. Special consideration must be given to those active faults in the project area and other seismic risks present in the area (refer to Exhibit 3-2).

An earthquake planning scenario for the Newport-Inglewood fault indicated that major damage to the Southland would occur with an earthquake along this fault. An aerial or freeway related structure must withstand potential strong ground motion and surface rupture impacts. Potential geologic and seismic impacts for each of the transit alternatives are summarized in Table 3-1.

TABLE 3-1 GEOLOGY AND EARTH IMPACTS MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Operations could be disrupted by seismic activity in short-term. Surface rupture hazard from local fault. Stoppage due to electrical failure.		Operations could be disrupted by seismic activity. Surface rupture hazard from local faults. Stoppage due to electrical failure.	
Trolley-Bus	Operations could be disrupted by seismic activity. Stoppage due to electrical failure.	Operations could be disrupted by seismic activity. Stoppage due to electrical failure.		Operations could be disrupted by seismic activity. Stoppage due to electrical failure.
Transitway	Impact related to traffic congestion.		Potential disruption due to surface rupture. Potential disruption due to freeway impacts.	
Bikeway	Minimal impacts anticipated with this option.			

3.2 AIR QUALITY

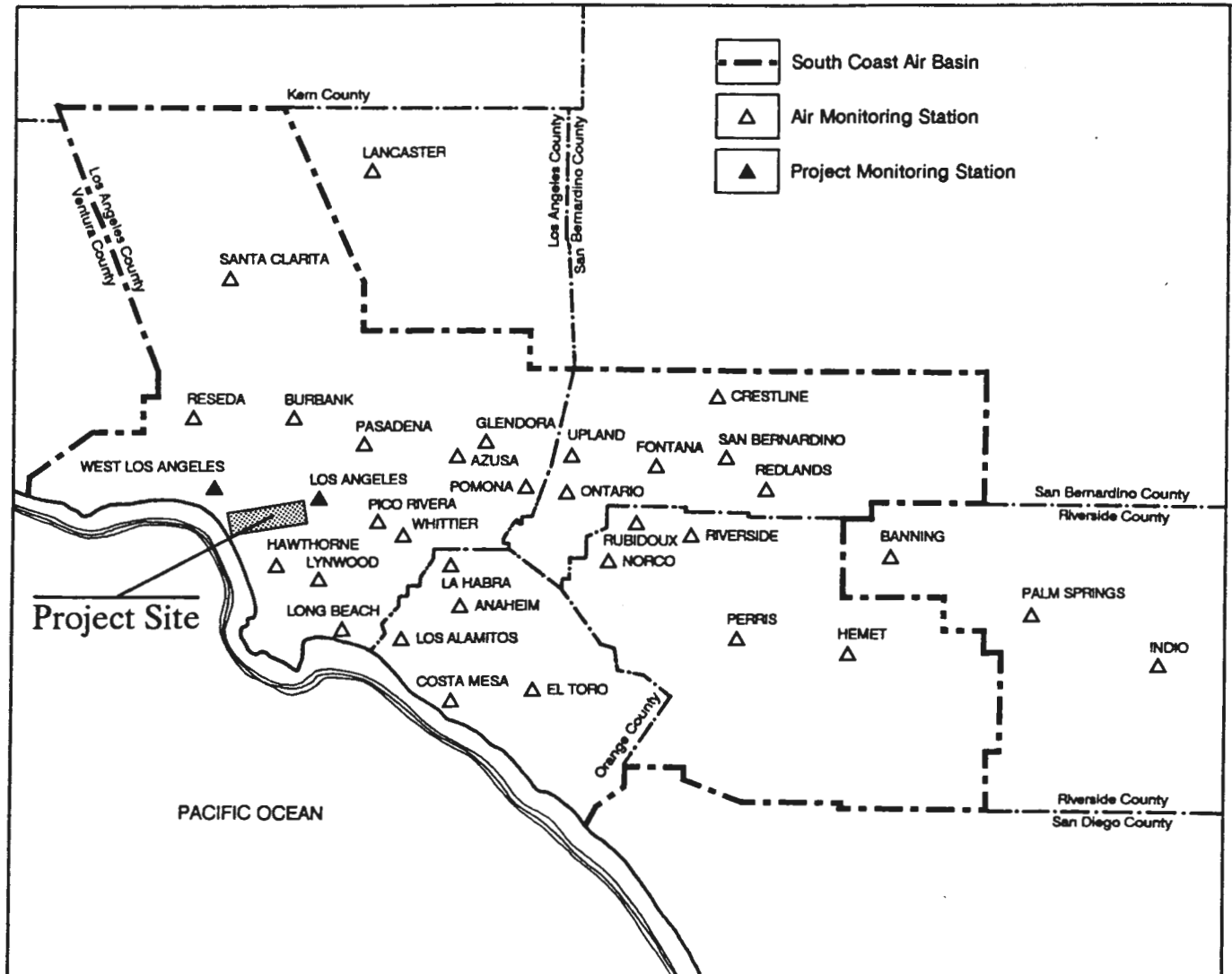
Environmental Setting

The project area is located in the South Coast Air Basin which includes Orange County and portions of Los Angeles, Riverside, and San Bernardino Counties. The 6,000 square mile South Coast Air Basin is bounded by the Pacific Ocean on the west, the San Gabriel, San Bernardino, and San Jacinto mountains to the north and east, and the Transverse Ranges to the west. The South Coast Air Basin and SCAQMD monitoring stations are shown in Exhibit 3-3.

Regional Air Quality Characteristics

Generally, the climate of the South Coast Air Basin may be described as semi-arid, characterized by moist, mild winters and hot, dry summers. Westerly winds predominate in the summer months, and northeasterly winds blow in the winter months. Regional climatic conditions create summertime temperature inversions which trap pollutants within the Basin and contribute to regional air quality problems.

Throughout the air basin, and particularly in the greater Los Angeles area, the combination of climate and high levels of pollutant emissions results in poor air quality conditions. Air quality data for 1985 through 1990 provided by the SCAQMD for the West Los Angeles and Los Angeles stations indicate that ozone concentrations, particulate emissions, and nitrogen dioxide emissions are continuing problems though the levels have declined in the past year. Recent statistics compiled by the SCAQMD indicate that the region experienced improved air quality. Table 3-2 indicates the number of days these state and federal standards have been exceeded at both monitoring stations along with the corresponding state and federal clean air standards.



SOURCE: David Evans and Associates, Inc.

TABLE 3-2
AIR QUALITY FOR THE LOS ANGELES AND WEST LOS ANGELES STATIONS
CONCENTRATION IN PPM/NO. OF DAYS STATE STANDARD EXCEEDED

Pollutant (State Standard)	1986		1987		1988		1989		1990	
	WLA	LA	WLA	LA	WLA	LA	WLA	LA	WLA	LA
Carbon Monoxide Max. 1 hr concentration ^a State Standards Exceeded Federal Standard Exceeded	11 ppm 0 days 0 days	13 ppm 0 days 0 days	13 ppm 0 days 0 days	15 ppm 0 days 0 days	15 ppm 0 days 0 days	16 ppm 0 days 0 days	12 ppm 0 days 0 days	14 ppm 0 days 0 days	15 ppm 0 days 0 days	13 ppm 0 days 0 days
Ozone Max. 1 hr concentration State Standards Exceeded Federal Standard Exceeded	.20 ppm 81 days 30 days	.22 ppm 99 days 48 days	.28 ppm 58 days 16 days	.22 ppm 91 days 36 days	.24 ppm 60 days 16 days	.21 ppm 68 days 24 days	.25 ppm 65 days 15 days	.25 ppm 76 days 34 days	.16 ppm 30 days 8 days	.20 ppm 70 days 8 days
Nitrogen Dioxide Max. 1 hr concentration State Standards Exceeded Federal Standard Exceeded % above std.	.24 ppm 0 days 0 %	.33 ppm 7 days 14.6%	.27 ppm 1 day 0 %	.42 ppm 4 days .56%	.26 ppm 1 day 0 %	.54 ppm 6 days 14.8%	.22 ppm 0 days 0 %	.28 ppm 1 days 3.3%	.20 ppm 0 days 0 %	.28 ppm 3 days 0 %
Suspended Particulates Max. 24 hr concentration State Standards Exceeded Federal Standard Exceeded	NM NM NM	178 ppm 79.7 days N/A	NM NM NM	158 ppm 36 days 1 day	NM NM NM	130 ppm 33 days 0 days	NM NM NM	137 ppm 33 days 0 days	NM NM NM	152 ppm 31 days 1 day

^a. concentrations given in ppm = parts per million. NM = Not monitored N/A = Not available.

Note: Total suspended particulates and lead and sulfates were not monitored. PPM concentrations are for 1 hour period.

Source: South Coast Air Quality Management District.

Environmental Assessment

A primary objective of this transit study is to evaluate potential operational systems that would effectively move large numbers of residents through this corridor. Freeways and major roadways in the study area are among the most heavily travelled in the southland. An efficient transit system through the corridor would ease existing traffic congestion overall, thus reducing vehicle emissions. There would be a potential for some localized air quality impacts though these impacts would be largely offset by the reduction of vehicle emissions throughout the corridor.

The SCAQMD and the Southern California Association of Governments (SCAG) have identified a number of Air Quality Management Plan Control Strategies that would be effective in reducing vehicle emissions. In addition to more stringent vehicle emissions standards and requiring the use of cleaner fuels, a number of other transportation and land use control strategies are identified. These include rail electrification, congestion reduction through increased use of high occupancy vehicle (HOV) lanes, and regional transportation facilities. The alternatives being considered in this study would, in varying degrees, work towards implementing SCAG's and SCAQMD's plans.

Some potential air quality impacts would result with the construction and operation of those alternatives being considered in this study. These impacts would be related to the following activities:

- **Short-term Construction Emissions.** The construction of any transit system would involve the use of heavy equipment which would generate diesel emissions. The level of emissions would depend on the duration of construction activities and the amount and types of equipment used. Short term impacts would cease when the construction was complete.
- **Local Vehicle Emissions.** Those alternatives involving some vehicle usage would result in a diversion of traffic within the corridor. For example, increased traffic in and around stations could lead to increased emission concentrations in the vicinity of stations. Given the existing background traffic (and the resulting emissions levels), the increases are not anticipated to be significant.
- **Long-term Stationary Emissions.** The LRT and trolley bus alternatives would involve significant amounts of electrical usage to power their respective equipment. This off-site electrical power generation would result in emissions at the source of power generation. The major impact would be at those power generating plants within the South Coast Air Basin using oil or gas to

generate the power. Approximately 20% of the power produced by the Los Angeles Department of Water and Power (LADWP) is produced by oil and gas fired plants. An addition 60% of LADWP's power is provided by nuclear and coal powered plants located outside the Basin and the remainder (20%) is generated by hydroelectric plants.

The potential impacts for each alignment alternative are summarized in Table 3-3.

TABLE 3-3 AIR QUALITY IMPACT MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	LRT will contribute to improved regional air quality through VMT ¹ reductions. Local air quality impacts around stations. Stationary emissions from power generation. Substantial short-term construction emissions.		LRT will contribute to improved regional air quality through VMT reductions. Local air quality impacts around station. Stationary emissions from power generation. Substantial short-term construction emissions.	
Trolley-Bus	Trolley-bus will contribute to improved regional air quality through VMT reduction. Stationary impacts due to power generation.	Trolley-bus will contribute to improved regional air quality through VMT reduction. Stationary impacts due to power generation.		Trolley-bus will contribute to improved regional air quality through VMT reductions. Stationary impacts due to power generation.

**TABLE 3-3
AIR QUALITY IMPACT MATRIX**

Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
Transitway	The project will relieve some congestion. Vehicles using transitway will generate mobile emissions.		The project will relieve some congestion. Vehicles using transitway will generate mobile emissions. Substantial short-term construction emissions.	
Bikeway	Project is a non-polluting alternative in terms of air quality. Some exposure risk to users of bikeway.			

1. VMT = Vehicle miles traveled.

3.3 WATER AND HYDROLOGY

Environmental Setting

The Los Angeles Department of Water and Power (LADWP) supplies water for the communities of Los Angeles. LADWP is entitled to draw from three main water sources for its supply: the San Fernando Groundwater Basin, the Los Angeles aqueducts and the Metropolitan Water District. Other water supply agencies in the study area includes the City of Santa Monica and the West Basin Metropolitan Water District. The MWD is a wholesale distributor of water from the Colorado River and the State Water Project. It is not expected that the LACTC transit project would significantly impact existing water supplies.

Los Angeles County is subject to a wide range of flood hazards, including those caused by earthquakes, intense storms and failure of man-made structures. Two damaging regional tsunamis caused by the 1812 Santa Barbara and the 1927 Point Arguello earthquakes indicate faults off the coast of Southern California are capable of producing large local

tsunamis. The tsunami concern is heightened because the short historical record does not adequately characterize long term tsunami risk.

Portions of the study area are located within the Federal Emergency Management Agency (FEMA) designated flood plain though the risk for flood is not any greater than that for most areas of the central Los Angeles Basin. The flood potential areas depicted on FEMA's Flood Insurance Rate Maps are shown in Exhibit 3-4.

Environmental Assessment

The transit alternatives considered in this study would result in varying degrees of water consumption related to the following activities:

- **Short-term Consumption.** The SCAQMD's Regulation IV requires that exposed earth be periodically watered to reduce particulate dust emissions. This consumption would occur during grading and excavation phases of construction.
- **Landscaping.** All of the development scenarios will involve some form of landscaping which will involve water consumption.
- **Operational Consumption.** Water consumption related to system operation and maintenance would place an additional demand on water supplies.

Within the established study corridor, Ballona Creek (East segment) and the Sepulveda Flood Channel (Central segment) are major sources of drainage for the study corridor as well as local area. Soil Conservation Service maps indicate that local soils are moderately to well drained, with ground water elevations in most portions located 60 inches below ground level. Site visits to the study corridor supported this research; additionally, the entire corridor is urbanized and contains drainage infrastructure.

Portions of the existing Exposition railroad right-of-way are below grade and some flooding is possible in the absence of any mitigation. In addition, localized ponding or flooding may occur in areas where grade separations have been recommended in the absence of appropriate mitigation.

Support facilities (station locations, parking areas, maintenance facilities) would be subject to National Pollutant Discharge Elimination System (NPDES) requirements. Appropriate drain and filtering equipment and possibly retention basins would be required. The degree and extent of the required improvements will not be known until subsequent phases of design and engineering are complete.

Potential impacts on water supplies and drainage are summarized in Table 3-4.

TABLE 3-4 WATER IMPACTS MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Landscaping along right-of-way and stations will require water usage. Substantial quantity of water used for operation and maintenance.		Landscaping of at-grade portions and station use water. Substantial quantities of water used for operations and maintenance.	
Trolley-Bus	Landscaping along Exposition portions right-of-way will require water usage.	Landscaping along Exposition portions right-of-way will require water usage.		Landscaping of at-grade portions along Exposition will require water usage.
Transitway	Landscaping along Exposition portions of right-of-way will require water usage. Minimal consumption anticipated.		Landscaping of at-grade portions will require water usage. Minimal consumption anticipated.	
Bikeway	Landscaping along Exposition right-of-way will require water usage.			

3.4 PLANT AND ANIMAL LIFE

Environmental Setting

The study corridor surrounding each of the routes, with the exception of interspersed vacant parcels, is completely urbanized. Animal life in the area is limited to common bird, reptile and mammal species commonly found in an urban setting. The Exposition right-of-way is subject to heavy traffic thus limiting the variety of rodent and or domestic animal species that may inhabit or frequent the area within the study right-of-ways.

Environmental Assessment

No significant adverse impact on existing animal life is expected with project implementation. The existing vegetation in the area largely consists of introduced plant species. In addition to the existing landscaping, trees and shrubs will be planted as needed throughout the chosen transportation corridor as accents to residences, commercial and industrial properties.

Portions of the Exposition Boulevard right-of-way are landscaped. Trees and shrubs may need to be removed where they are too close to the chosen transportation corridor. The project, however, will not result in the removal of any significant varieties of plants or trees. A segment of the Exposition Boulevard right-of-way between Vermont Avenue and Normandie Avenue has been planted with palm trees which would require removal with most of the development scenarios. The majority of the transit corridor will be landscaped as will the station and parking areas. The impacts of the project on plant and animal life should be considered beneficial and not adverse. Potential impacts are summarized in Table 3-5.

TABLE 3-5 PLANT AND ANIMAL LIFE IMPACT MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Plant life too close to the right-of-way will be removed prior to transit development; landscaping will be provided.		Plant life too close to the right-of-way will be removed prior to transit development; landscaping will be provided.	

TABLE 3-5 PLANT AND ANIMAL LIFE IMPACT MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
Trolley-Bus	Plant life too close to the Exposition right-of-way will be removed prior to development. Landscaping will be provided.	Plant life too close to the Exposition right-of-way will be removed prior to development. Landscaping will be provided.		Plant life too close to the Exposition right-of-way will be removed prior to development. Landscaping will be provided.
Transitway	Plant life too close to the Exposition right-of-way will be removed prior to development. Landscaping will be provided.		Plant life too close to the Exposition right-of-way will be removed prior to development. Landscaping will be provided.	
Bikeway	Some plant life may be removed prior to construction. Landscaping will be provided. Minimal impacts anticipated.			

3.5 NOISE

Environmental Setting

Before beginning a discussion of the existing and future noise environment of the project area, some understanding of the various techniques used in measuring noise levels must be explained. Noise levels are typically measured using the decibel (dB) scale where 0 dB represents the threshold of hearing up to higher levels where permanent damage to hearing can occur (see Exhibit 3-5). Measurement scales are complicated because they must reflect our sensitivity to noise at different times of the day. For example, noise levels that are not perceived to be a problem during daytime hours are often troublesome during the late evening and early morning hours when people are sleeping. As a result, noise scales are

generally *weighted* to reflect increased sensitivity to noise at different hours of the day. Exhibit 3-5 illustrates the decibel acoustical scale and some typical noise levels associated with various activities.

Human sensitivity to certain types of noise over other types further complicate our understanding of the affects of noise on individuals. Continuous sounds may not be perceived as annoying as periodic sounds that elicit a startle response. For example, individuals living near a freeway or busy road may adjust to the sound of continuous traffic noise over long periods of exposure. However, a periodic siren or unmuffled car is likely to create an annoyance.

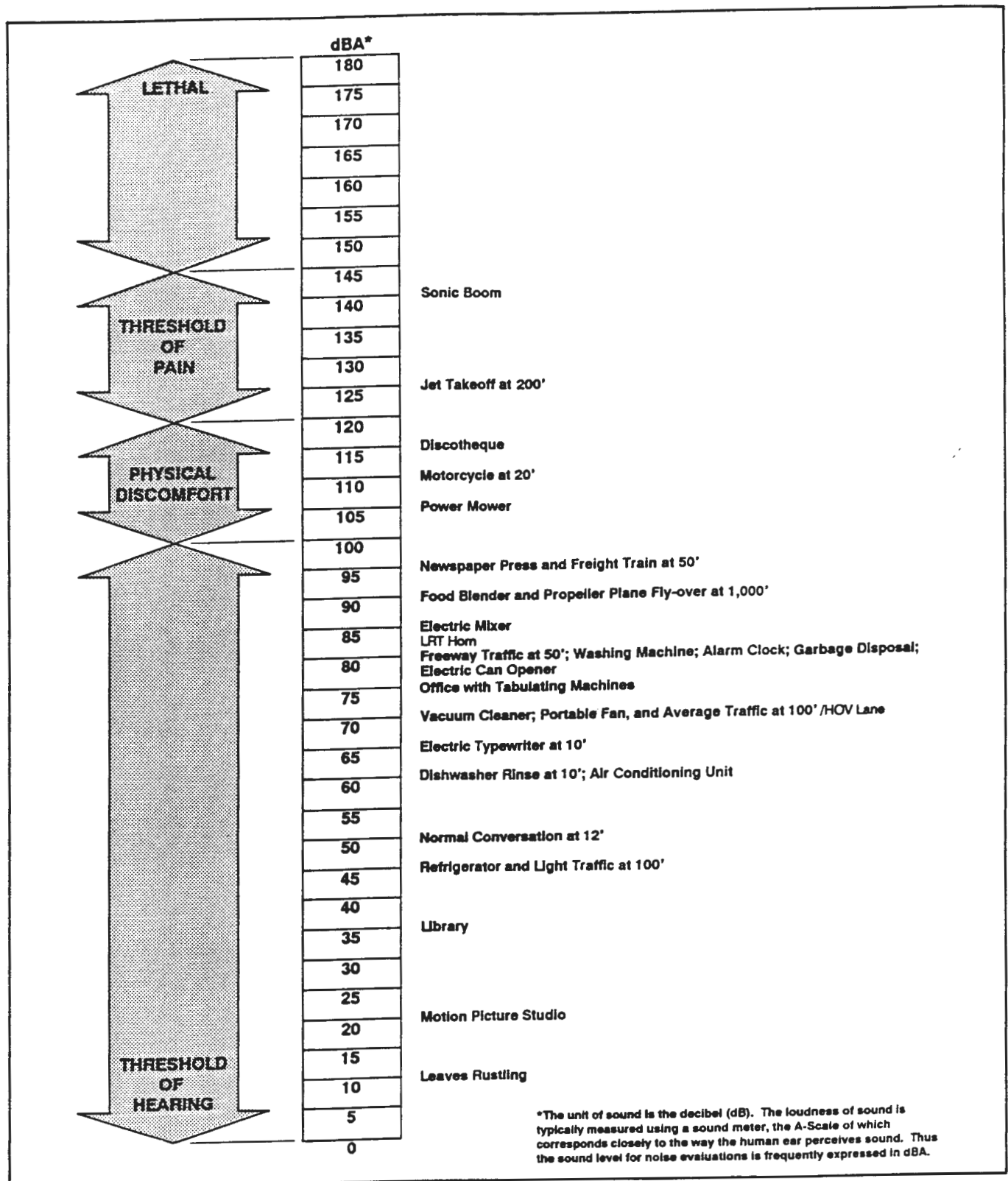
The State of California and the U. S. Department of Housing and Urban Development have prepared *Land Use and Noise Compatibility Guidelines* relating land use to noise exposure. The purpose of these guidelines is to indicate the appropriate ambient noise exposure for various types of land uses. These guidelines are designed to assist local governments in recognizing noise impacts on land use in future land use planning. For example, the guidelines indicate that acceptable ambient noise exposure within residential areas should not exceed 60 dB.

The Compatibility guidelines use a modified noise measurement system based on the decibel scale referred to as the Community Noise Equivalent Level or *CNEL*. *CNEL* includes a 5 dBA penalty for events occurring in the evening (7 p.m. to 10 p.m.) and a 10 dBA penalty for events occurring in late evening and early morning hours (between 10 p.m. and 7 a.m.). As a result, this measurement recognizes increased sensitivity to noise during the evening, night, and early morning hours. For residential land uses, an outdoor standard of 65 *CNEL* and an interior noise standard of 45 *CNEL* have been established. The State guidelines specify an exterior standard of 65 *CNEL* for active recreation areas and 50 *CNEL* for interior noise levels in office spaces. The *CNEL* land use compatibility standards are shown in Exhibit 3-6.

Existing Noise Environment

The project area is in an urbanized setting and is subject to substantial levels of noise throughout the day. To estimate and predict traffic noise levels, existing traffic noise levels were calculated using the Federal Highway Administration (FHWA) Traffic Noise Prediction Model (FHWA-RD-77-109, December 1978), as modified to generate *CNEL* values. This computer noise model was used to calculate traffic noise on the following roadway intersections:

- **Exposition Boulevard/Western Avenue**



SOURCE: David Evans and Associates, Inc.

LAND USE CATEGORY	COMMUNITY NOISE EXPOSURE L _{dn} OR CNEL, dB					
	55	60	65	70	75	80
RESIDENTIAL-LOW DENSITY SINGLE FAMILY, DUPLEX MOBILE HOMES	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
RESIDENTIAL- MULTI FAMILY	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
TRANSIENT LODGING- MOTELS, HOTELS	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
SCHOOLS, LIBRARIES CHURCHES, HOSPITALS, NURSING HOMES	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
AUDITORIUMS, CONCERT HALLS, AMPITHEATRES	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
SPORTS ARENA, OUTDOOR SPECTATOR SPORTS	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
PLAYGROUNDS, NEIGHBORHOOD PARKS	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
GOLF COURSES, RIDING STABLES, WATER RECREATION, CEMETERIES	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
OFFICE BUILDINGS, BUSINESS, COMMERCIAL AND PROFESSIONAL	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
INDUSTRIAL, MANUFACTURING, UTILITIES, AGRICULTURE	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX

LEGEND



NORMALLY ACCEPTABLE

Specified land use is satisfactory, based upon the assumption that any buildings involved are of normal conventional construction, without any special noise insulation requirements.



CONDITIONALLY ACCEPTABLE

New construction or development should be undertaken only after a detailed analysis of the noise reduction requirements is made and needed noise insulation features included in the design. Conventional construction, but with closed windows and fresh air supply systems or air conditioning will normally suffice.



NORMALLY UNACCEPTABLE

New construction or development should generally be discouraged. If new construction or development does proceed, a detailed analysis of the noise reduction requirements must be made and needed noise insulation features included in the design.



CLEARLY UNACCEPTABLE

New construction or development should generally not be undertaken.

CONSIDERATIONS IN DETERMINATION OF NOISE-COMPATIBLE LAND USE

A. NORMALIZED NOISE EXPOSURE DESIRED

Where sufficient data exists, evaluate land use suitability with respect to a "normalized" value of CNEL or L_{dn}. Normalized values are obtained by adding or subtracting the constants described in Table 1 to the measured or calculated value of CNEL or L_{dn}.

B. NOISE SOURCE CHARACTERISTICS

The land use-noise compatibility recommendations should be viewed in relation to the specific source of the noise. For example, aircraft and railroad noise is normally made up of higher single noise events than auto traffic but occurs less frequently. Therefore, different sources yielding the same composite noise exposure do not necessarily create the same noise environment. The State Aeronautics Act uses 65dB CNEL as the criterion which airports must eventually meet to protect existing residential communities from unacceptable exposure to aircraft noise. In order to facilitate the purposes of the Act, one of which is to encourage land uses compatible with the 65dB CNEL criterion wherever possible and in order to facilitate the ability of airports to comply with the Act, residential uses located in Community Noise Exposure Areas greater than 65dB should be discouraged and considered located within normally unacceptable areas.

C. SUITABLE INTERIOR ENVIRONMENTS

One objective of locating residential units relative to a known noise source is to maintain a suitable interior noise environment at no greater than 45 dB CNEL of L_{dn}. This requirement, coupled with the measured or calculated noise reduction performance of the type of structure under consideration, should govern the minimum acceptable distance to a noise source.

D. ACCEPTABLE OUTDOOR ENVIRONMENTS

Another consideration, which in some communities is an overriding factor, is the desire for an acceptable outdoor noise environment. When this is the case, more restrictive standards for land use compatibility, typically below the maximum considered "normally acceptable" for that land use category, may be appropriate.

SOURCE: David Evans and Associates, Inc.

- Venice/Robertson Boulevard
- Exposition Boulevard/Overland Avenue
- Olympic/Cloverfield Boulevard

Information required to operate the traffic noise model included average daily traffic levels, roadway gradients, day/evening/night percentages of autos, percentage of medium and heavy trucks, vehicle speeds, ground attenuation factors, and roadway widths. Traffic volume assumptions used in this analysis (for existing conditions) were provided by the Katz Okitsu Associates.

The noise model, summarized in Table 3-6, indicates that much of the project area is subject to considerable levels of traffic noise. The noise model did not consider any obstructions to the noise path, such as shielding due to buildings or changes in topography, and are therefore considered a worst-case representation. As a result, the actual noise levels at these locations may be generally less than the estimated noise levels.

TABLE 3-6 EXISTING ROADWAY NOISE LEVELS				
Distance from Roadway Centerline to CNEL (in feet)				
Roadway Segment	70 CNEL	65 CNEL	60 CNEL	CNEL at 50 Feet From Roadway Centerline
Exposition/Western	0	132	404	67.2
Venice/Robertson	99	305	962	71.5
Exposition/Overland	60	178	559	69.1
Olympic/Cloverfield	0	105	326	66.7
0.0 - noise levels are less than 70 & 65 CNEL or the 70 & 65 CNEL noise contours are less than 50 feet from the roadway centerline. Source: David Evans and Associates, Inc., 1991.				

Environmental Assessment

While the existing ambient noise environment in much of the project area presently exceeds those levels recommended by the aforementioned guidelines, there are large numbers of noise sensitive uses that will need to be considered in future design and engineering. Single family and residential neighborhoods line much of the corridors being considered in this study. These uses will be most sensitive to noise impacts during the evening, night-time, and

morning hours. On the other hand, there are a number of schools and specialized activities that will be especially sensitive to additional noise impacts during the daytime.

There is a potential for adverse noise impacts with all of the project alternatives being considered. These impacts would be related to the following activities:

- **Short-term Construction Noise.** The construction of any transit system would involve the use of heavy equipment which would generate significant levels of noise. The noise impacts would depend on the duration of construction activities and the amount and types of equipment used. Short term noise impacts would cease when the construction was complete.
- **Traffic Noise.** Those alternatives involving some vehicle usage would result in a diversion of traffic within the corridor. For example, the transitway alternative may lead to increased traffic noise over the existing levels. Increased traffic in and around stations for the LTR option may lead to increased traffic noise in the vicinity of stations.
- **Long-term Stationary Noise.** Certain types of equipment and facilities required for operations may result in localized stationary noise impacts. These facilities could include gate equipment, traffic signal devices, transformers, etc.
- **Long-term Mobile Noise.** Depending on the type of mass transit equipment used, there will be a potential for mobile noise impacts. For example, the HOV transitway will result in increased levels of traffic noise while the LRT alternative's noise impacts would be related to frequency of operation, rail noise, and signal devices on the individual trains.

Unlike many of the environmental issues considered in this study, noise impacts can be effectively mitigated using relatively simple measures. Sound walls can reduce noise levels as much as 10 dB. Additional insulation in housing construction (now required under Title 24) is another effective way of reducing noise. Other measures, including directional noise shields, mufflers, and other devices can reduce noise impacts.

Development of the project will result in short-term noise impacts (construction-related) and the long-term exposure of persons to ambient noise levels exceeding 65 decibels (dBA). During project construction, heavy machinery will be capable of generating periodic peak noise levels ranging from 70 to 95 dBA at a distance of 50 feet from the source. Once construction ends, the potential noise impacts will vary depending on the type of facility selected, topography, and distance to noise sensitive uses. There have been a number of

complaints concerning the loud horns on the Blue Line which operates between downtown Los Angeles to Long Beach. Originally, the trains were equipped with horns that were around 80 dBA. Following a number of accidents at crossings, the RTD replaced the original horns with horns that were considerably louder (100+ dBA). The cars are being retrofitted with either louder horns or with shielding to reduce spillover noise. In addition, train operators are being requested to use these horns as prescribed by operations. The potential impacts for each alignment alternative are summarized in Table 3-7.

TABLE 3-7 NOISE IMPACTS MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Development of the proposed project will contribute ambient noise levels; train bells and signal warnings will affect noise sensitive uses; short-term construction noise impacts will be substantial.		Train bells and signal warnings will contribute to ambient noise levels; ambient noise levels along the freeway portions of this route will be dominated by freeway traffic noise. Short-term construction noise impacts will be substantial.	
Trolley-Bus	Development of the proposed project is not likely to contribute to increased ambient noise levels. Short-term noise impacts during construction will be minimal.	Development of the proposed project is not likely to contribute to increased ambient noise levels. Short-term noise impacts during construction will be minimal.		Development of the proposed project is not likely to contribute to increased ambient noise levels. Short-term noise impacts during construction will be minimal.

**TABLE 3-7
NOISE IMPACTS MATRIX**

Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
Transitway	Development of the proposed project will contribute to higher traffic noise levels; Short-term construction noise impacts during construction.		Development of the proposed project will contribute to higher traffic noise levels; Potentially greatest noise impacts are from this alternative. Short-term construction noise impacts substantial along freeway portion.	
Bikeway	Minimal or no noise impact.			

3.6 LIGHT AND GLARE

Environmental Setting

The study corridor is fully urbanized and subject to light and glare normally found in an urban setting. In addition, most of the alignments are located within or near major roadways and subject to lighting from vehicles, street lights, signage, and structural lighting. Residences that are typically sensitive to excessive levels of light and glare are located throughout the corridor and many are located adjacent to commercial areas and major roadways.

Environmental Assessment

Light and glare impacts are not a significant concern in areas adjacent to the alignment developed as manufacturing or commercial. Warehouse and manufacturing activities located west of La Brea Avenue (Segment B), west of Sepulveda (Segment C), and west of Bundy Drive in Santa Monica (Segment D) would not be adversely impacted by additional lighting.

In addition, the alignments following Venice Boulevard traverse a commercial area where substantial amounts of lighting are present.

The areas where light and glare impacts are of a major concern include the single family neighborhoods located in the vicinity of the study alignments. The greatest concentrations of single family homes are located along the eastern portion of Exposition Boulevard (Segments A and B) and west of Venice Boulevard (Segment C).

There is a potential for light and glare impacts at the local level, depending on the type of transit facility ultimately selected. Lighting will be necessary to ensure users of the facility will have adequate lighting to see and be seen. In addition, lighting will be required in parking areas and at stations with the LRT alternative. With the exception of the bikeway alternative, vehicles using the facility will have lighting. For most areas, this additional lighting will not be excessive given the existing lighting in the area.

Design and mitigation measures may be required to ensure that lighting from facility operations do not interfere with train operations and light sensitive uses. Potential light and glare impacts from each mode is characterized in Table 3-8.

TABLE 3-8 LIGHT AND GLARE IMPACTS MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Lighting along the right-of-way, flashing signals and station facilities lighting will add light and glare to certain locations.		Lighting along the right-of-way, flashing signals and station facilities will add light and glare to the area.	
Trolley-Bus	Some light and glare lighting along the Exposition right-of-way and from operating buses.	Minimal lighting impacts along the right-of-way and from operating buses.		Little or no light and glare impact from operating buses.

**TABLE 3-8
LIGHT AND GLARE IMPACTS MATRIX**

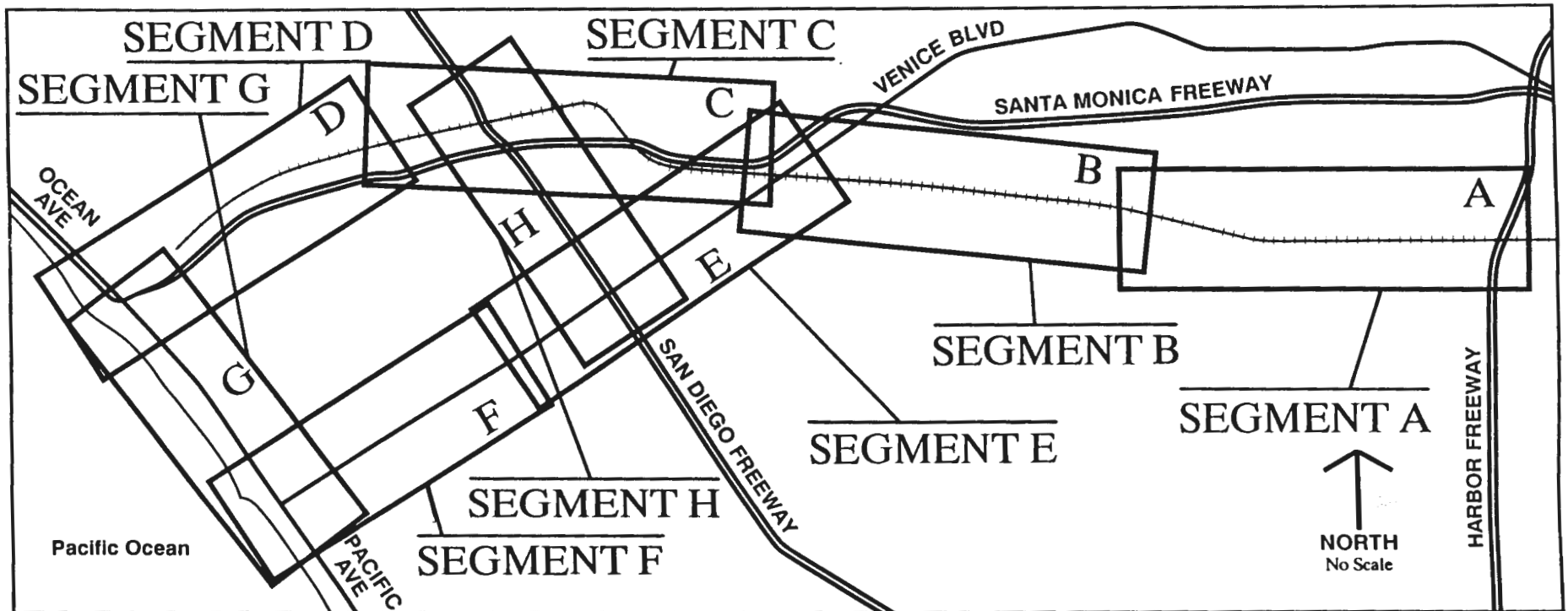
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
Transitway	Lighting along the right-of-way and from operating vehicles. Some potential light and glare impacts along portions of existing Exposition right-of-way.		Lighting along the right-of-way and from operating vehicles. Some potential light and glare impacts along portions of existing Exposition right-of-way.	
Bikeway	Minimal light and glare impacts anticipated.			

3.7 LAND USE

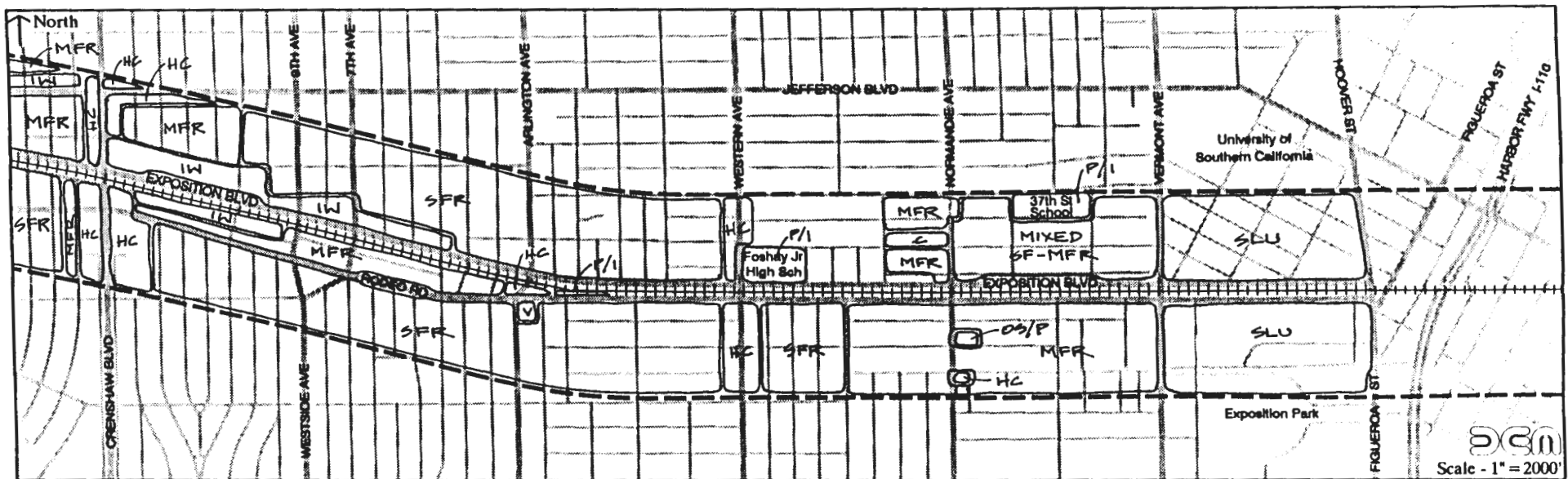
Environmental Setting

The project area is urbanized with a considerable variety in the types and character of development. For purposes of characterizing land use within the study corridor, the corridor was divided into eight segments, (referred to as Segments A through H). As shown in Exhibit 3-7, each segment is bounded by major thoroughfares and includes some overlapping of the adjacent segment. The land use characteristics for each segment is discussed below:

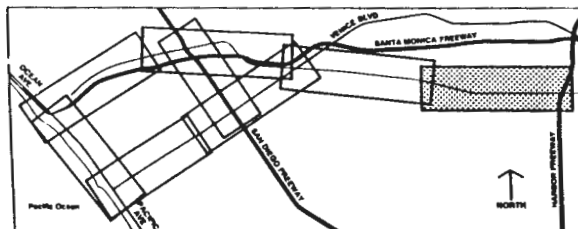
- **Segment A:** Land uses in this segment are characterized by institutional and specialized land uses (The University of Southern California and Exposition Park) at the eastern-most portion of the segment, and a mix of single- and multiple-family neighborhoods in the western portion of the segment. Commercial uses are located along several of the major thoroughfares. Industrial uses front Exposition Boulevard at the western portion of the Segment. The existing land uses for this segment are shown in Exhibit 3-8.
- **Segment B:** Land uses in Segment B contain a mix of multi-family and industrial uses. The eastern portion of the segment includes smaller single-family neighborhoods interspersed among multi-family, public/institutional and open space uses. The western portion of the segment is characterized by



SOURCE: David Evans and Associates, Inc.



SFR	SINGLE FAMILY RESIDENTIAL
MS/MR	MIXED SINGLE & MULTI FAMILY
MFR	MULTI-FAMILY RESIDENTIAL
HC	HIGHWAY COMMERCIAL
IW	INDUSTRIAL WAREHOUSING
P/I	PUBLIC/INSTITUTIONAL
OS/P	OPEN SPACE/PARKS
SLU	SPECIALTY LAND USE
V	VACANT

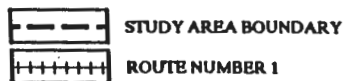
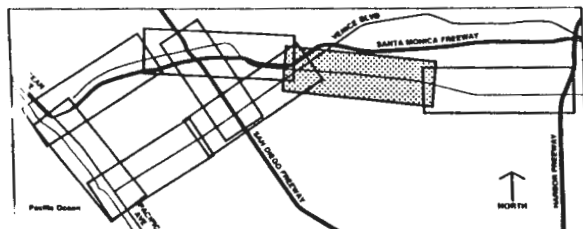
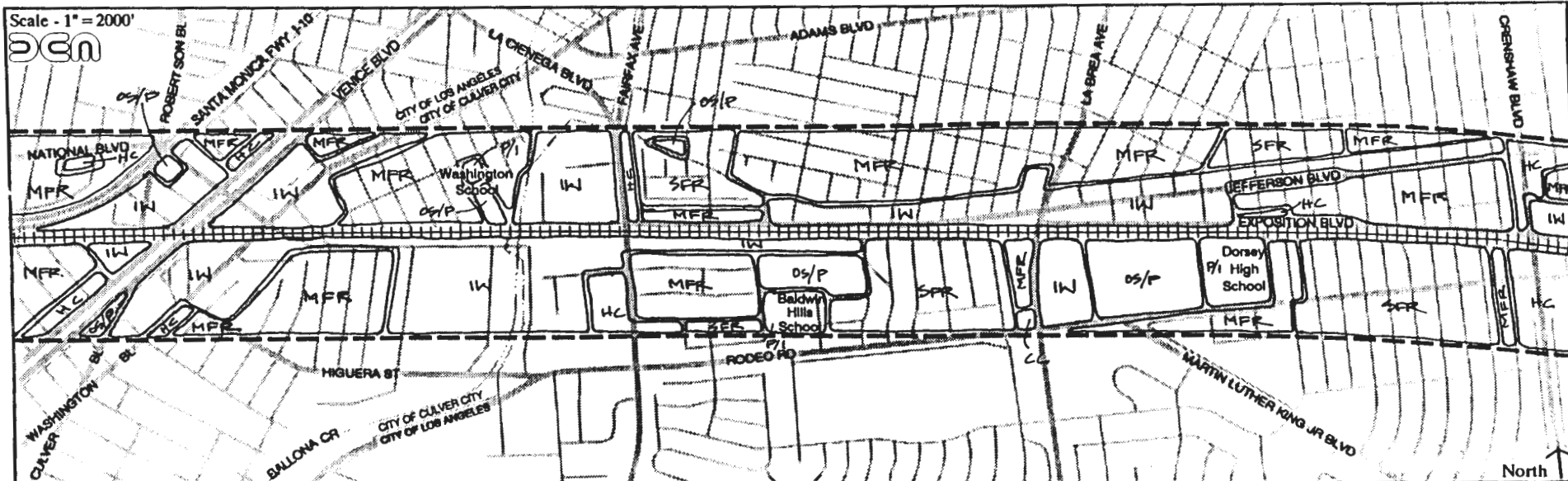


---	STUDY AREA BOUNDARY
+++++	ROUTE NUMBER 1

SOURCE: David Evans and Associates, Inc.

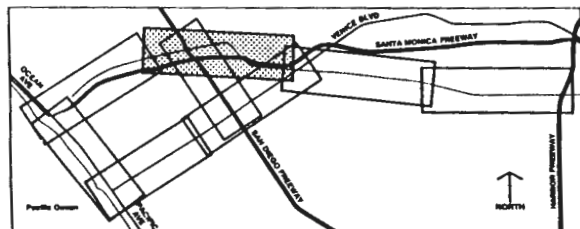
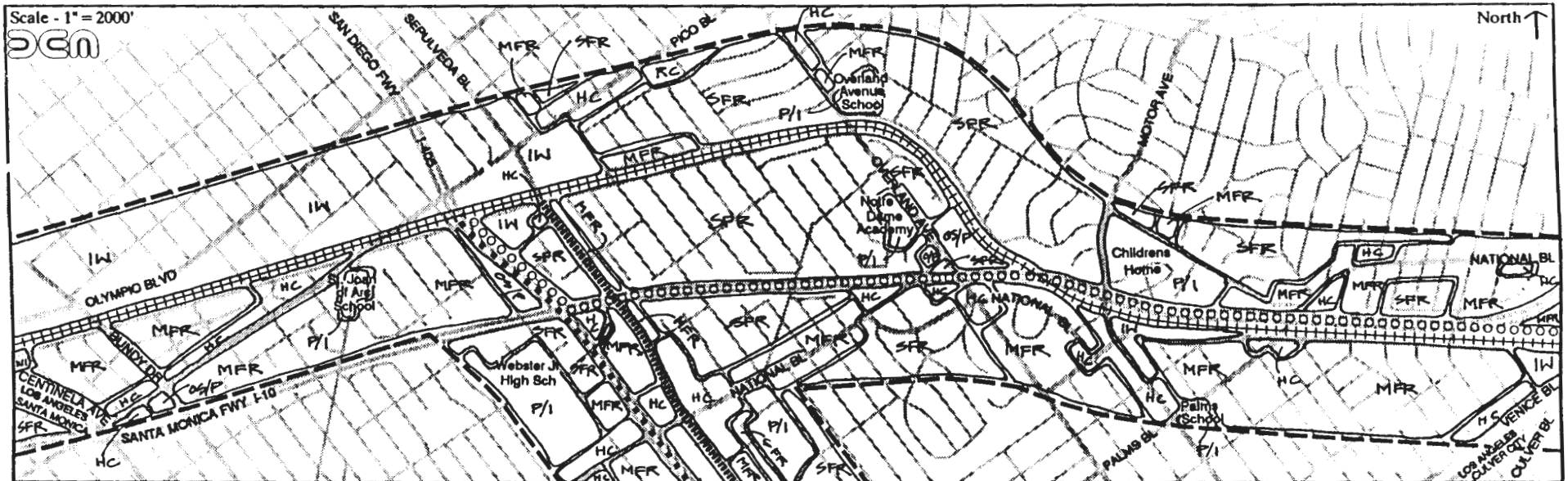
large industrial areas located near multi-family developments. Highway commercial, public/institutional, and some open space are found along Venice and Exposition Boulevards. Existing land uses for this segment are shown in Exhibit 3-9.

- **Segment C:** Multiple-family developments are the dominant land use in the eastern portion of Segment C. The community of Rancho Park, located west of Motor Avenue and continuing to Sepulveda Boulevard, is characterized by single-family homes. West of Sepulveda Boulevard, industrial and warehousing activities front the north side of Exposition Boulevard, while the south side contains single- and multi-family uses and highway commercial developments. Public/institutional uses are interspersed throughout this portion of the segment. Exhibit 3-10 illustrates existing land uses in this corridor segment.
- **Segment D:** Industrial/warehousing and office/professional uses comprise the majority of the segment with single-family neighborhoods and a combination of multi-family and community commercial uses located at the eastern and western portions of the segment, respectively. Throughout Segment D, the alignment is narrow and travels between industrial and commercial uses, except where crossing arterials and thoroughfares. Exhibit 3-11 depicts existing land uses in this segment.
- **Segment E:** This segment shows Alternate routes 2 and 5 as well as portions of the Exposition alignment. Industrial uses at the Venice Boulevard/Robertson Boulevard intersection are surrounded by multi-family uses. The alignments using Venice Boulevard are surrounded by multi-family developments east of Sepulveda Boulevard, and single-family neighborhoods west of Sawtelle Boulevard. Segment E also includes the San Diego Freeway. Multi-family uses are located adjacent to the freeway. Exhibit 3-12 illustrates existing land uses within this segment.
- **Segment F:** This segment contains Route 5, the Venice Boulevard/Pacific and Main Avenue route options. Land uses in Segment F are characterized by multi-family uses fronting Venice Boulevard, and the multiple-family development, in turn, is surrounded by single-family neighborhoods west of Lincoln Boulevard and north and south of the Venice Boulevard/Pacific Avenue intersection. Public institutional facilities are also interspersed throughout the segment. In a typical portion of this segment, commercial uses are found along major thoroughfares, while multiple-family units, including UCLA married student housing located along Sawtelle and Sepulveda



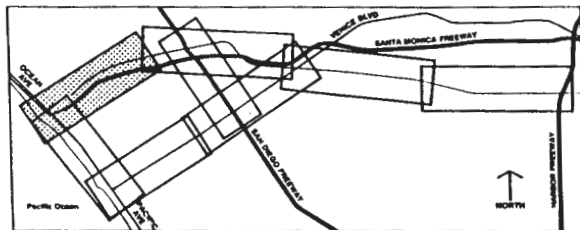
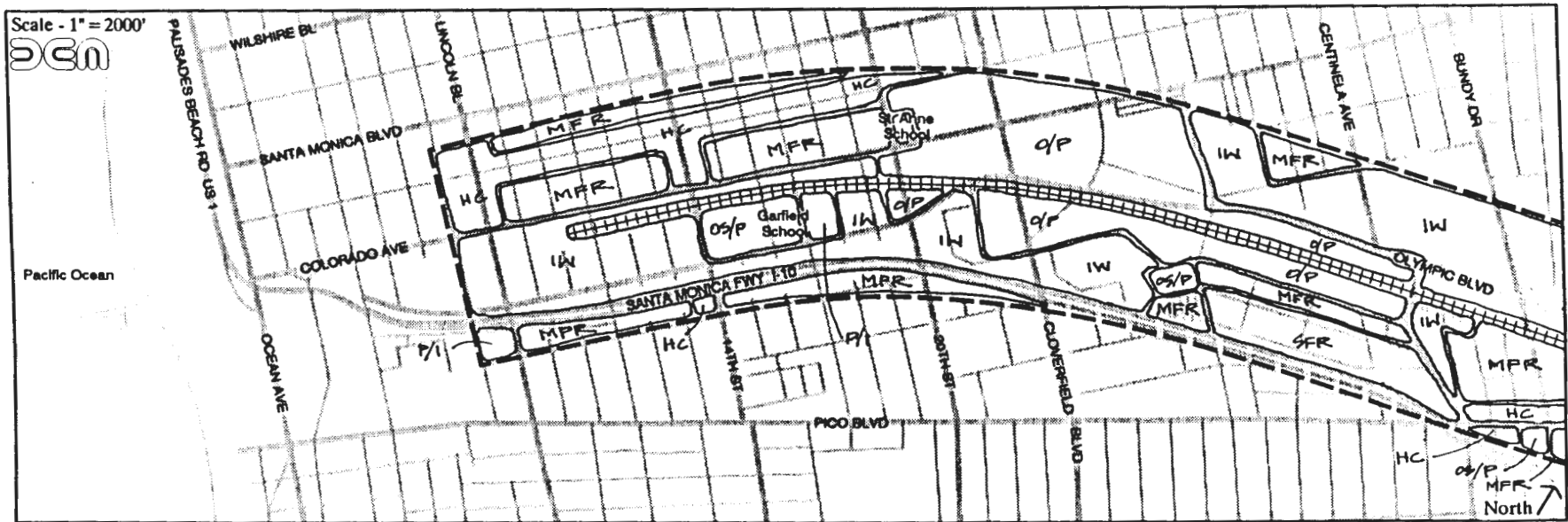
SFR	SINGLE FAMILY RESIDENTIAL
MFR	MULTI-FAMILY RESIDENTIAL
HC	HIGHWAY COMMERCIAL
CC	COMMUNITY COMMERCIAL
IW	INDUSTRIAL WAREHOUSING
P/I	PUBLIC/INSTITUTIONAL
OS/P	OPEN SPACE/PARKS

SOURCE: David Evans and Associates, Inc.



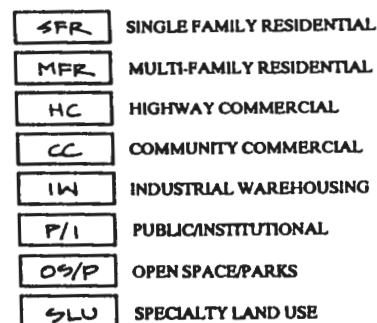
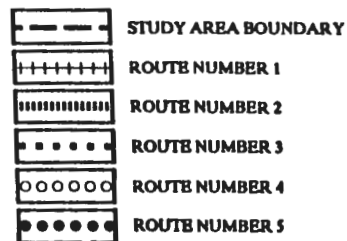
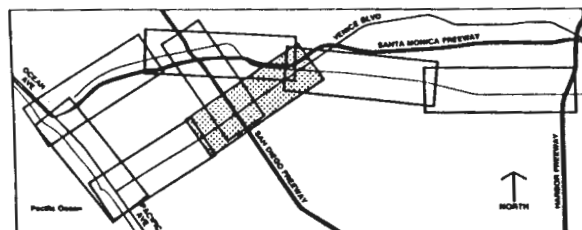
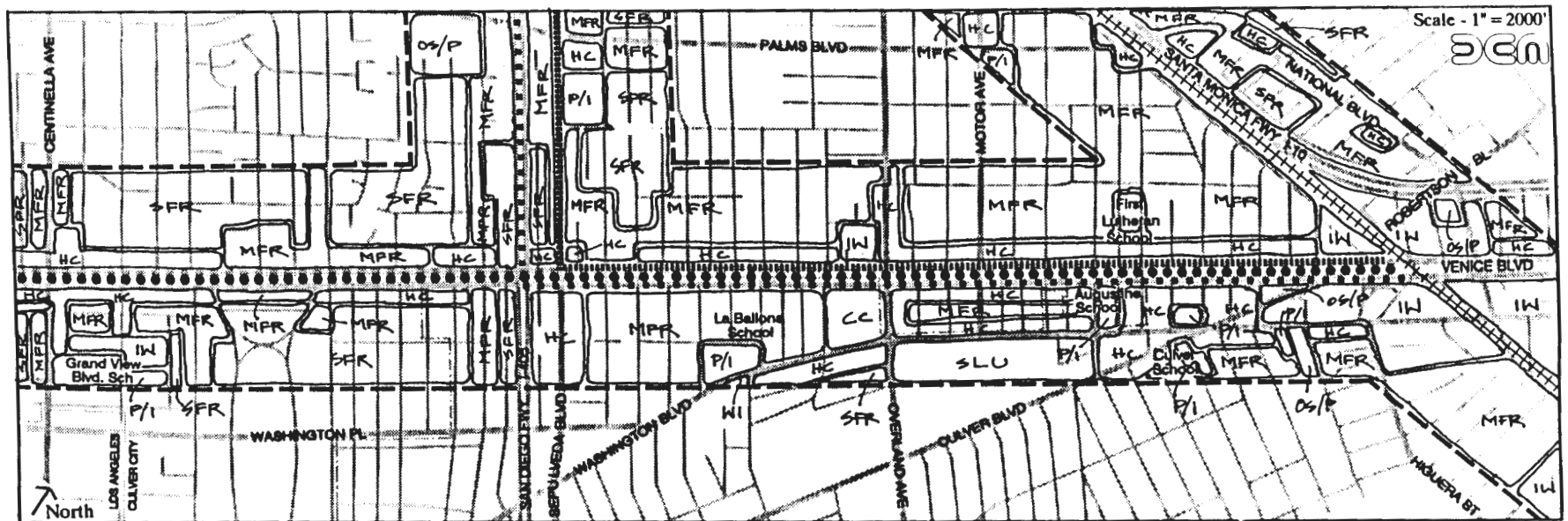
	STUDY AREA BOUNDARY		SINGLE FAMILY RESIDENTIAL
	ROUTE NUMBER 1		MULTI-FAMILY RESIDENTIAL
	ROUTE NUMBER 2		HIGHWAY COMMERCIAL
	ROUTE NUMBER 3		REGIONAL COMMERCIAL
	ROUTE NUMBER 4		INDUSTRIAL WAREHOUSING
			PUBLIC/INSTITUTIONAL
			OPEN SPACE/PARKS

SOURCE: David Evans and Associates, Inc.



SFR	SINGLE FAMILY RESIDENTIAL
MFR	MULTI-FAMILY RESIDENTIAL
HC	HIGHWAY COMMERCIAL
O/P	OFFICE/PROFESSIONAL
IW	INDUSTRIAL WAREHOUSING
P/I	PUBLIC/INSTITUTIONAL
OS/P	OPEN SPACE/PARKS
---	STUDY AREA BOUNDARY
+++++	ROUTE NUMBER 1

SOURCE: David Evans and Associates, Inc.



SOURCE: David Evans and Associates, Inc.

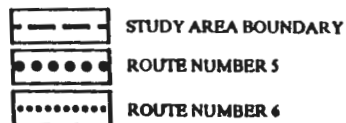
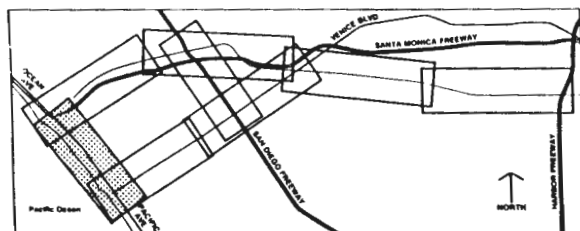
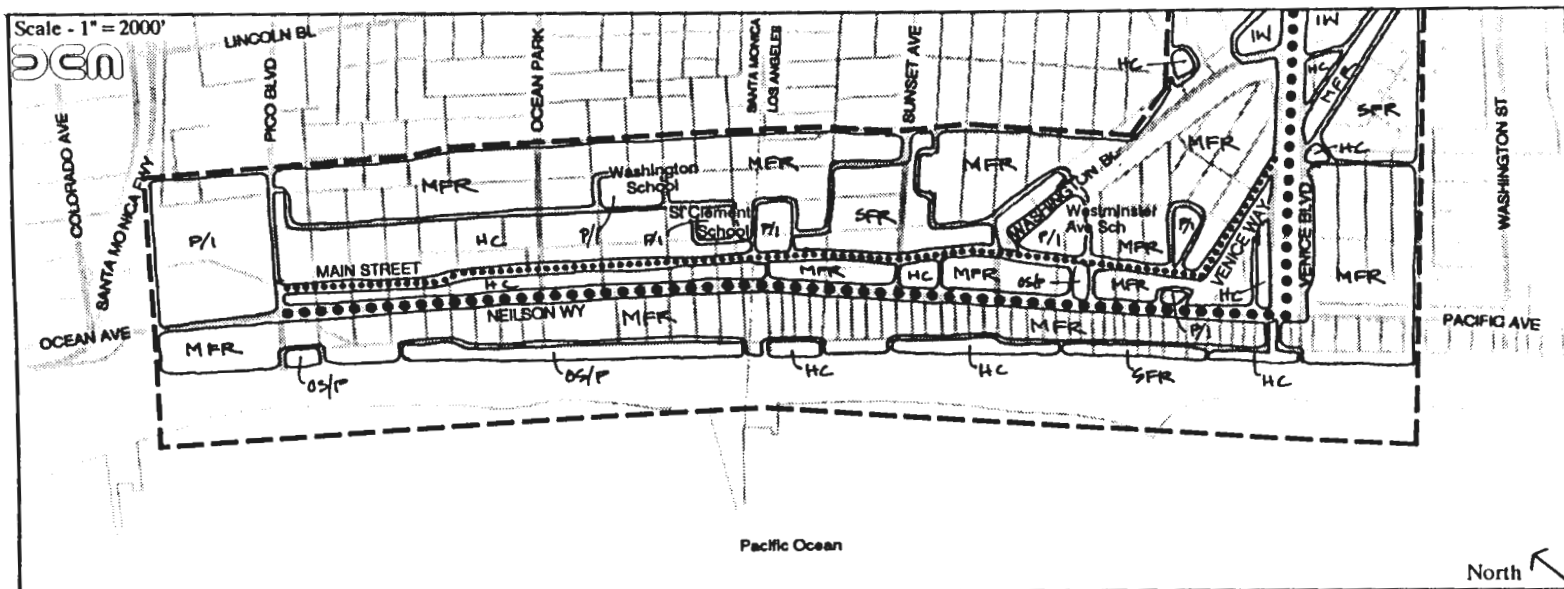
Boulevards. Single-family neighborhoods are located to the east and west of these thoroughfares. The existing land uses along Segment F are shown in Exhibit 3-13.

- **Segment G:** This segment includes route number 5. The City of Los Angeles boundary line separates the Venice community from the City of Santa Monica, dividing the segment into nearly equal halves. The Venice portion contains a large number of multi-family neighborhoods separated by single-family neighborhoods, clusters of highway commercial developments and public/institutional uses, all south of Washington/Abbott Kinney Boulevard. In the City of Santa Monica, multi-family uses are located west of Neilson Way, highway commercial is present east of Neilson Way and the Santa Monica Civic Center is located at the most northern portion of the segment. Existing land uses in this corridor segment are shown in Exhibit 3-14.
- **Segment H:** Segment H includes all of the routes currently being considered and presents the greatest diversity of development. Multi and single-family uses dominate the eastern and western areas of the Venice Boulevard segment, respectively. Multi-family uses are located adjacent to the San Diego Freeway with single-family neighborhoods located in the interior areas. Single-family uses predominate east of Sepulveda Boulevard with industrial/warehousing uses comprising a majority of the land southwest of this major arterial. Exhibit 3-15 illustrates existing land uses in the area.

Planned Land Uses

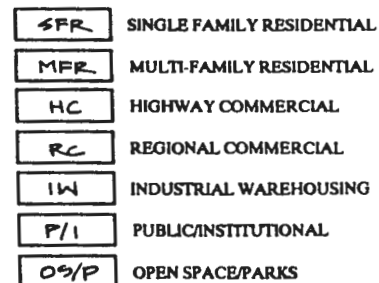
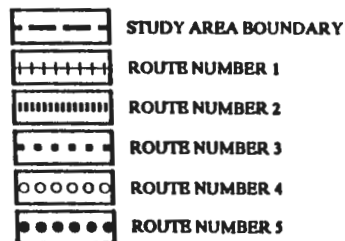
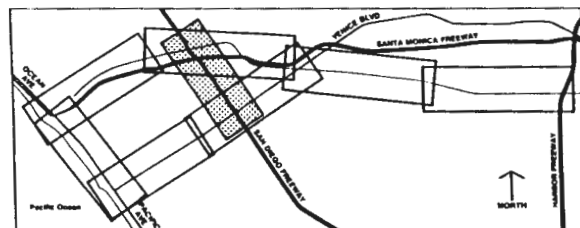
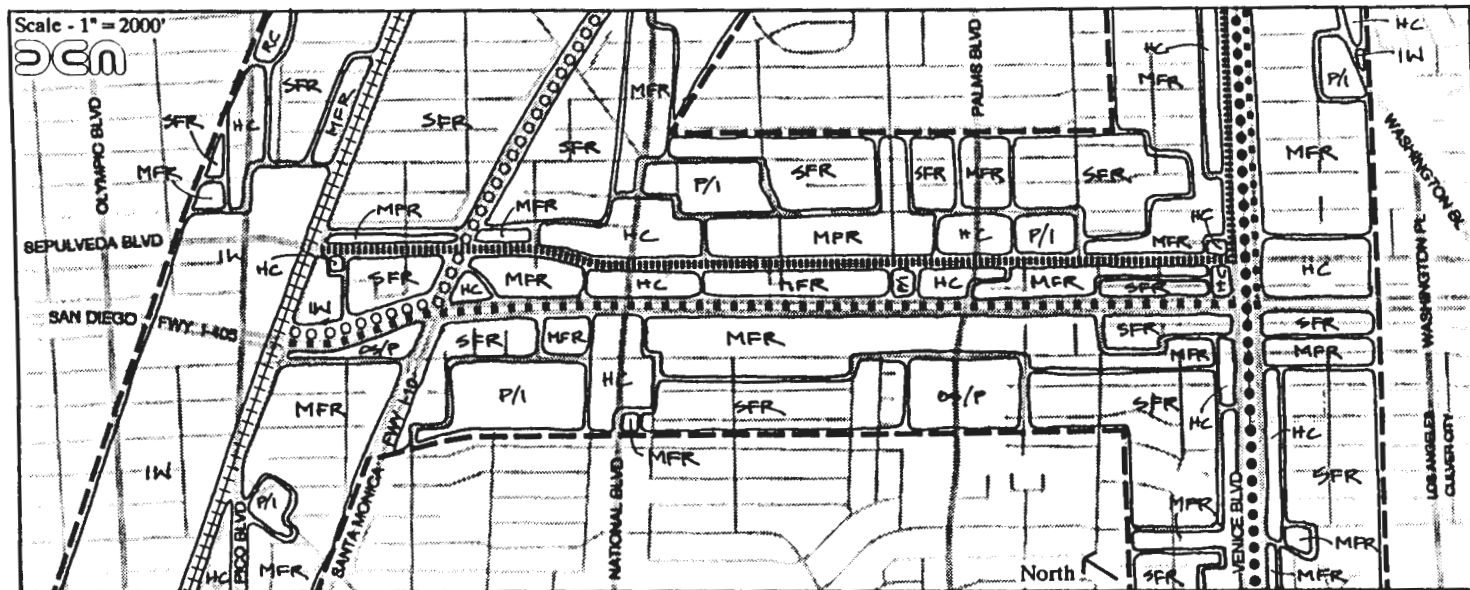
Under the State of California planning, zoning and development laws, the general plan governs the character, location, and extent of future development. The Land Use Element, one of seven mandatory elements, includes a map or diagram indicating location and extent of future land uses. This map, together with the standards contained in the Element, indicate the type of development likely to occur in the future.

- **Segment A:** Exhibit 3-16 illustrates the general plan designations for the Segment A study area. The City of Los Angeles General Plan (South Central Community Plan) governs land uses within this study segment. The general plan designations correspond to existing development found within the study area. Major specialty land uses including Exposition Park and the University of Southern California are reflected in the Community Plan designations.
- **Segment B:** Exhibit 3-17 indicates the general plan designations for the Segment B study area. The City of Los Angeles General Plan (West Adams-

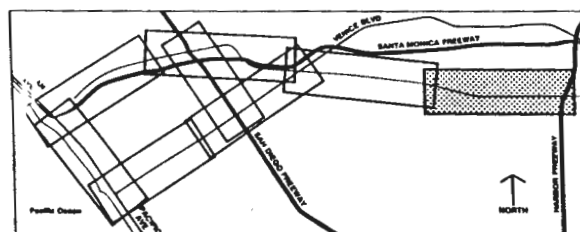
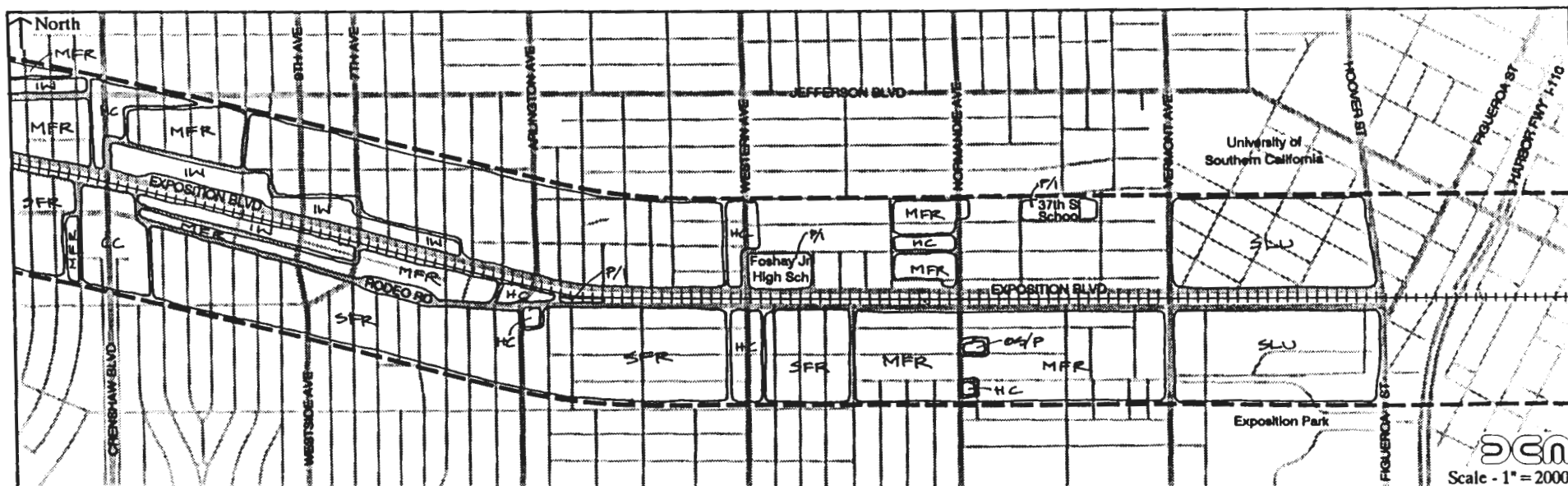


SFR	SINGLE FAMILY RESIDENTIAL
MFR	MULTI-FAMILY RESIDENTIAL
HC	HIGHWAY COMMERCIAL
IW	INDUSTRIAL WAREHOUSING
P/I	PUBLIC/INSTITUTIONAL
OS/P	OPEN SPACE/PARKS

SOURCE: David Evans and Associates, Inc.

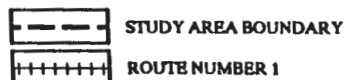
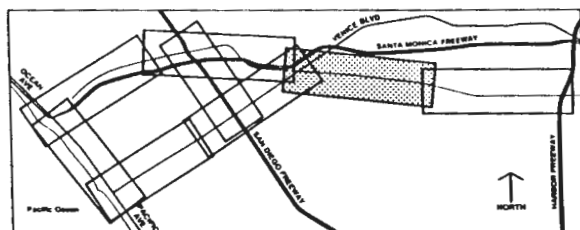
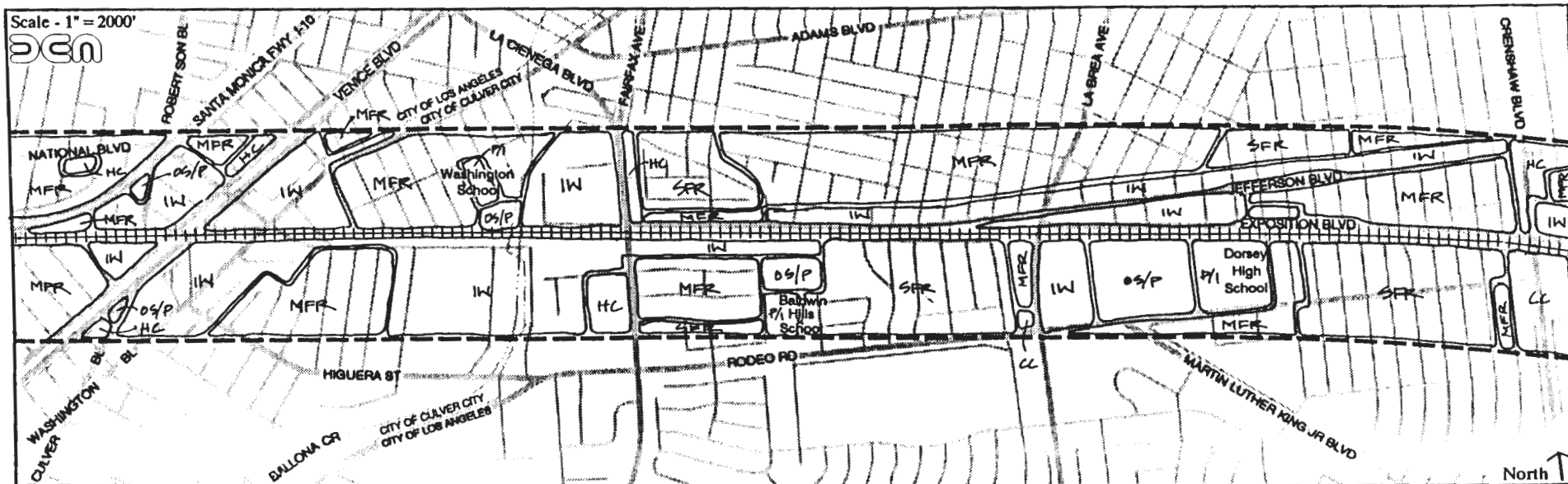


SOURCE: David Evans and Associates, Inc.



SOURCE: David Evans and Associates, Inc.

SFR	SINGLE FAMILY RESIDENTIAL
MFR	MULTI-FAMILY RESIDENTIAL
HC	HIGHWAY COMMERCIAL
CC	COMMUNITY COMMERCIAL
IW	INDUSTRIAL WAREHOUSING
P/I	PUBLIC/INSTITUTIONAL
OS/P	OPEN SPACE/PARKS
SLU	SPECIALTY LAND USE
---	STUDY AREA BOUNDARY
+++++	ROUTE NUMBER 1

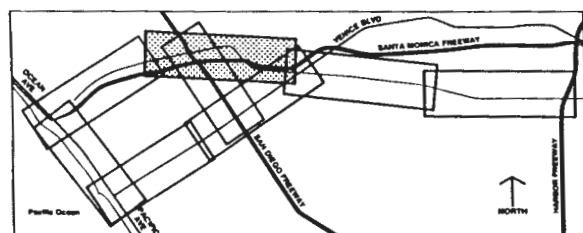
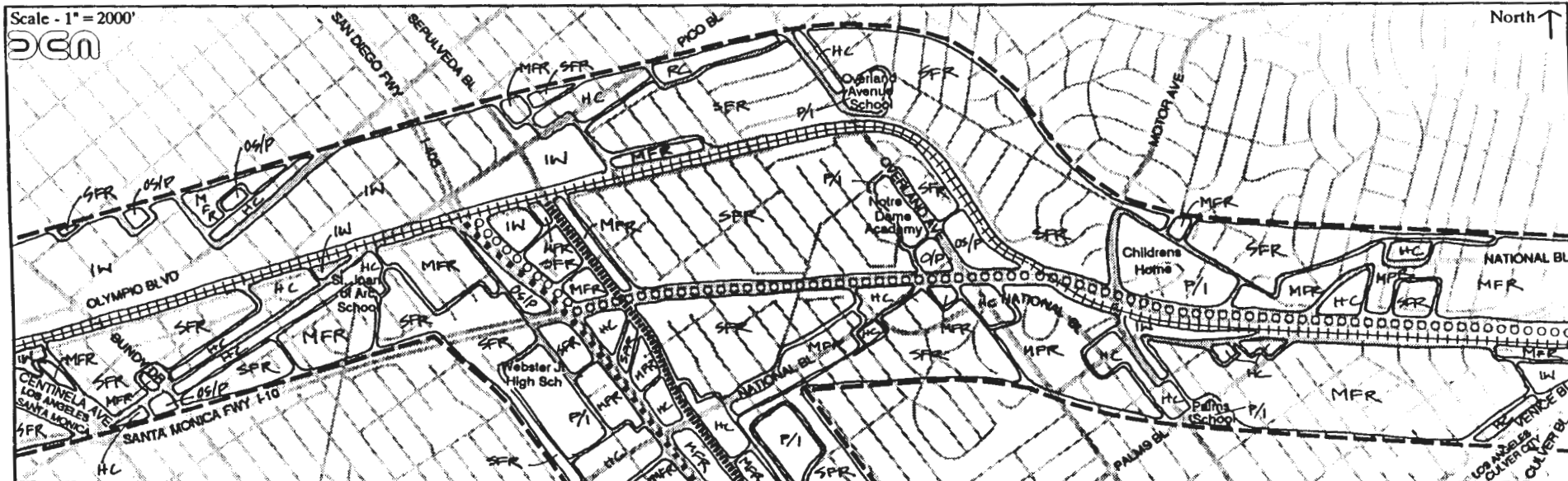


SFR	SINGLE FAMILY RESIDENTIAL
MFR	MULTI-FAMILY RESIDENTIAL
HC	HIGHWAY COMMERCIAL
CC	COMMUNITY COMMERCIAL
IW	INDUSTRIAL WAREHOUSING
P/I	PUBLIC/INSTITUTIONAL
OS/P	OPEN SPACE/PARKS

SOURCE: David Evans and Associates, Inc.

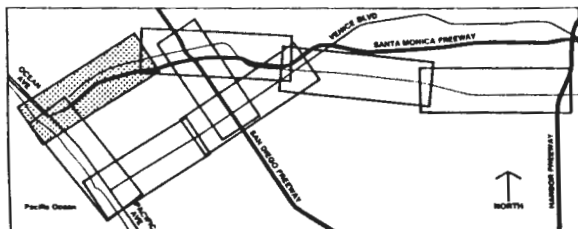
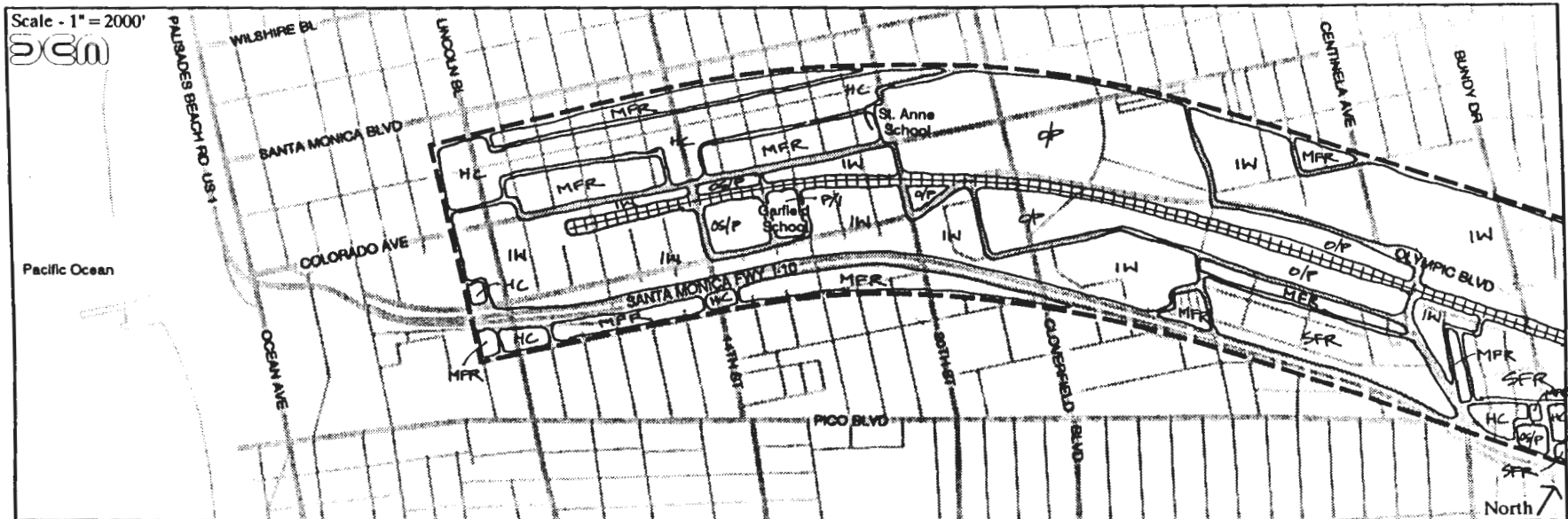
Baldwin Hills-Leimert District and South Central Community Plans) and the City of Culver City govern land uses within this study segment. There is a considerable mix in the plan designations that apply to this segment which is largely a reflection of the distribution of existing development.

- **Segment C:** Exhibit 3-18 illustrates the general plan designations for the Segment C study area. The City of Los Angeles General Plan (West L.A. and Palms-Mar Vista-Del Rey Community Plan) governs land uses with this study segment. Although there is considerable variation in land uses across the entire segment, particular portions show discernible patterns.
- **Segment D:** Exhibit 3-19 indicates the general plan designation for the Segment D study area. The City of Los Angeles General Plan (West Los Angeles Community Plan) governs land east of Centinela Avenue and the City of Santa Monica governs land west of the arterial. The eastern portion of the segment is a mix of office/professional and industrial/warehousing uses, with small areas of single- and multi-family neighborhoods located at the most eastern portion of the segment. West of 20th Street, industrial/warehousing uses surround the right-of-way, and multi-family neighborhoods and highway commercial uses are planned towards the outskirts of the established study corridor. Planned land uses closely parallel existing development in this segment.
- **Segment E:** Exhibit 3-20 indicates the general plan designations for the Segment E study area. The City of Los Angeles General Plan (West Adams Baldwin Hills-Leimert District Community Plan) and the City of Culver City governs land uses within this study segment. There is a considerable mix in the plan designations that apply to this segment. Higher density residential development and commercial development fronts Venice Boulevard. West of the San Diego Freeway, the interior neighborhoods are designated for higher density residential development while lower density (single-family) designations are located west of the San Diego Freeway.
- **Segment F:** Exhibit 3-21 illustrates the general plan designations for the Segment F study area. The City of Los Angeles General Plan (Venice Community Plan) governs land uses within this study segment. The study area follows route alignment number five which travels along Venice Boulevard to Main and Pacific Avenue where the alignment turns in a northwesterly direction. The general plan designations generally correspond to the character and location of existing development in the area. Planned land uses



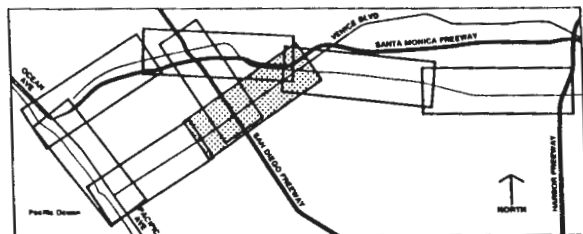
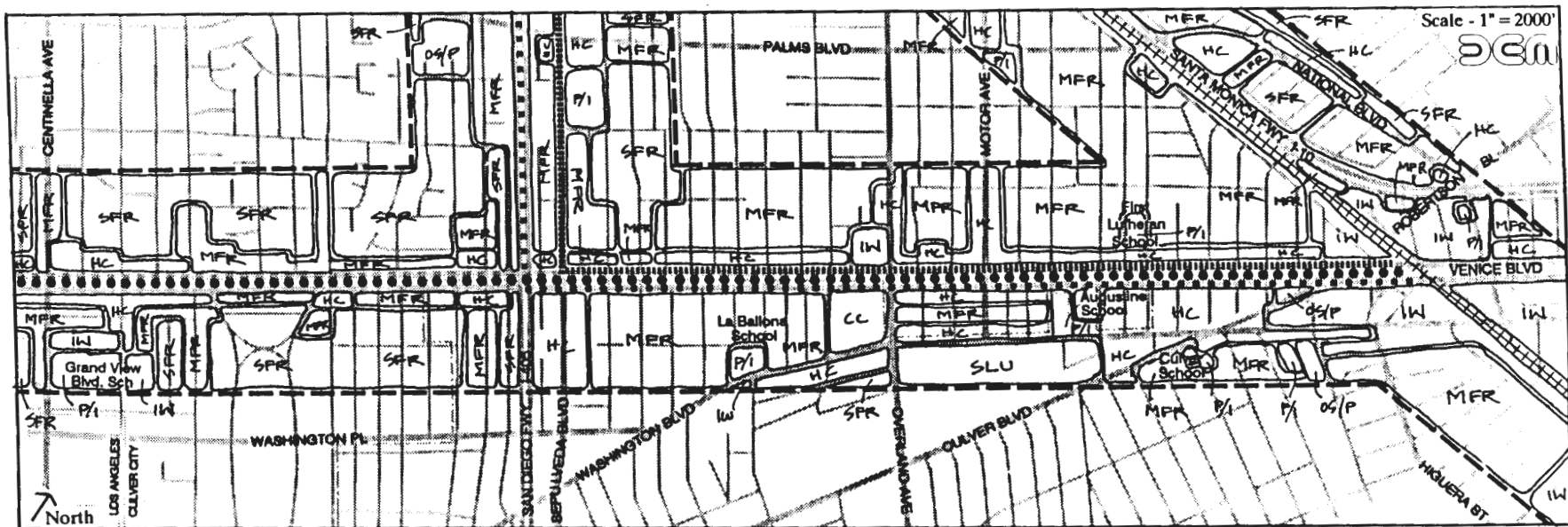
	STUDY AREA BOUNDARY		SINGLE FAMILY RESIDENTIAL
	ROUTE NUMBER 1		MULTI-FAMILY RESIDENTIAL
	ROUTE NUMBER 2		HIGHWAY COMMERCIAL
	ROUTE NUMBER 3		REGIONAL COMMERCIAL
	ROUTE NUMBER 4		OFFICE/PROFESSIONAL
			INDUSTRIAL WAREHOUSING
			PUBLIC/INSTITUTIONAL
			OPEN SPACE/PARKS

SOURCE: David Evans and Associates, Inc.



	STUDY AREA BOUNDARY		SINGLE FAMILY RESIDENTIAL
	ROUTE NUMBER 1		MULTI-FAMILY RESIDENTIAL
			HIGHWAY COMMERCIAL
			OFFICE/PROFESSIONAL
			INDUSTRIAL WAREHOUSING
			PUBLIC/INSTITUTIONAL
			OPEN SPACE/PARKS

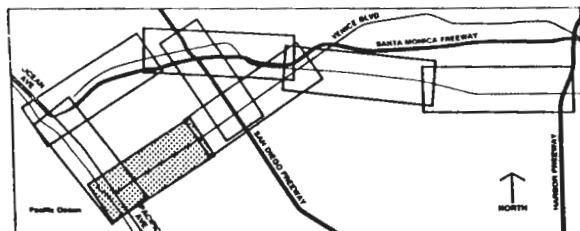
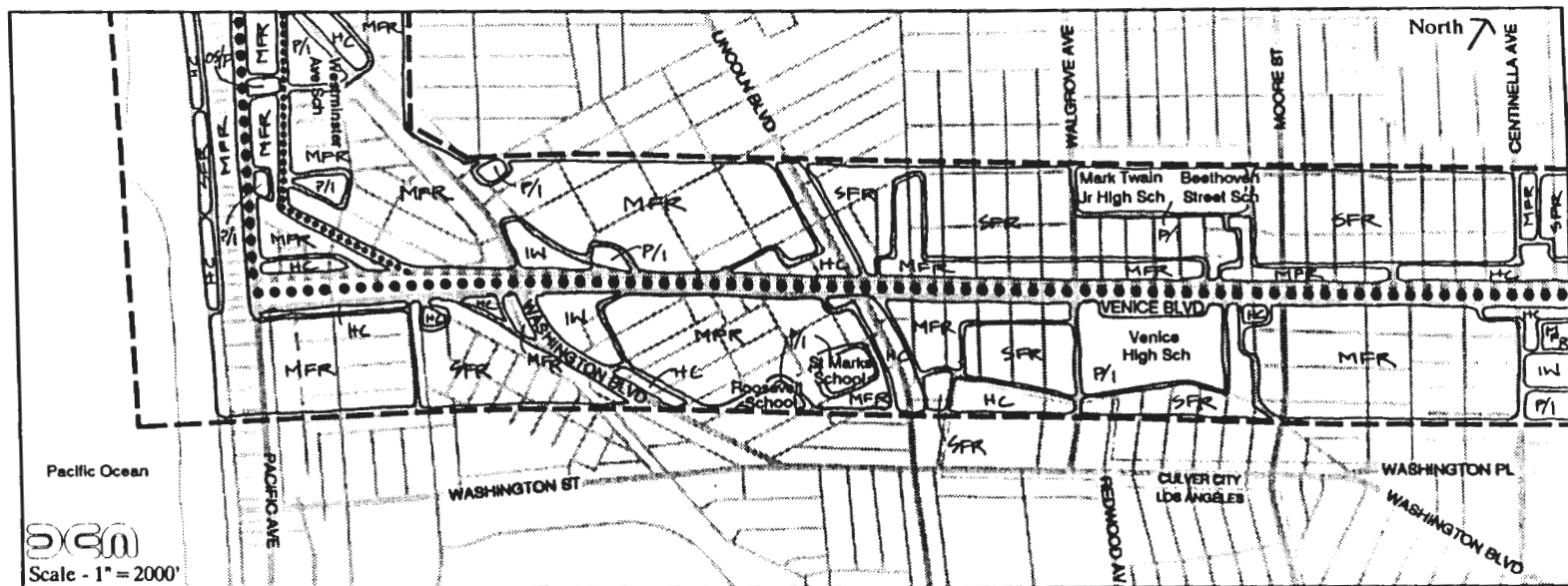
SOURCE: David Evans and Associates, Inc.



	STUDY AREA BOUNDARY
	ROUTE NUMBER 1
	ROUTE NUMBER 2
	ROUTE NUMBER 3
	ROUTE NUMBER 4
	ROUTE NUMBER 5

	SINGLE FAMILY RESIDENTIAL
	MULTI-FAMILY RESIDENTIAL
	HIGHWAY COMMERCIAL
	COMMUNITY COMMERCIAL
	INDUSTRIAL WAREHOUSING
	PUBLIC/INSTITUTIONAL
	OPEN SPACE/PARKS
	SPECIALTY LAND USE

SOURCE: David Evans and Associates, Inc.



	STUDY AREA BOUNDARY		SINGLE FAMILY RESIDENTIAL
	ROUTE NUMBER 5		MULTI-FAMILY RESIDENTIAL
	ROUTE NUMBER 6		HIGHWAY COMMERCIAL
			INDUSTRIAL WAREHOUSING
			PUBLIC/INSTITUTIONAL
			OPEN SPACE/PARKS

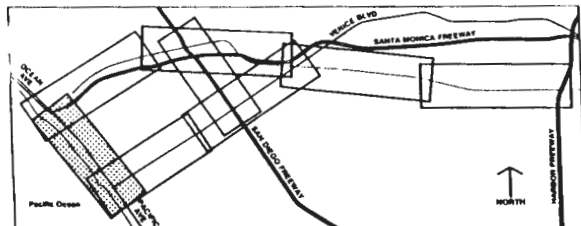
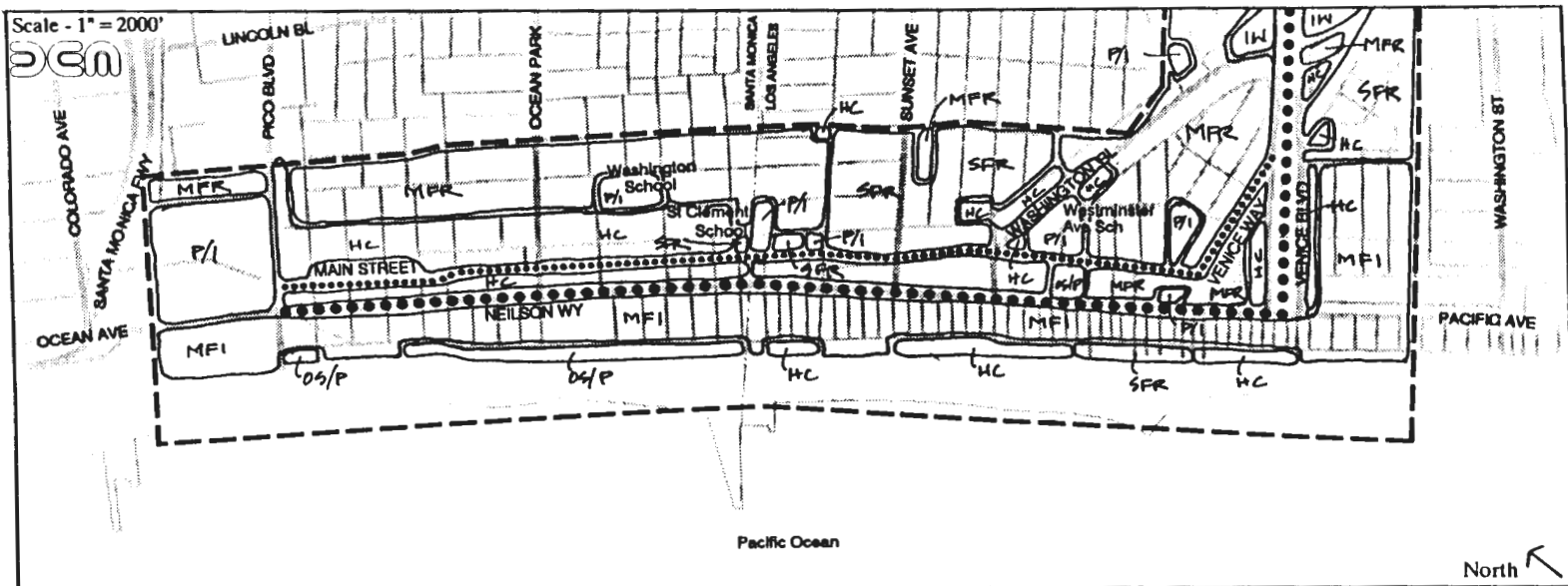
SOURCE: David Evans and Associates, Inc.

immediately adjacent to the corridor include a mix of multiple-family residential development and highway commercial uses.

- **Segment G:** Exhibit 3-22 indicates the general plan designations for the Segment G study area. The Santa Monica General Plan and the City of Los Angeles General Plan (Venice Community Plan) were consulted to identify the planned land uses along the route alternative number five. The general plan land use designations along the route (Venice Boulevard to Ocean Avenue and then northwest) correspond very closely with the types and mix of existing land uses. Multiple-family residential designations front the alignment along Venice Boulevard and along both sides of Pacific Avenue and Neilson Way between Venice Boulevard and City of Santa Monica Boundary. Continuing in a northwesterly direction, the areas to the east of Pacific Avenue are designated as highway commercial and multiple-family residential designations are located along the western side of Pacific Avenue and Neilson Way.
- **Segment H:** Exhibit 3-23 indicates the general plan designations within the Segment H study area. In general, the land use designations contained in the City of Los Angeles General Plan (Palms-Mar Vista-Del Rey Community Plan) for this area correspond to the existing types and distribution of development. Higher density residential uses are permitted along alternative route 2 (Sepulveda Boulevard), alternative route 3 (Venice Boulevard to the San Diego Freeway), and alternative route 5 (Venice Boulevard). Along the Exposition right-of-way, lower density residential development is planned north of Sepulveda Boulevard, and industrial/warehousing uses are planned south of this thoroughfare.

Major Development (Planned and Existing)

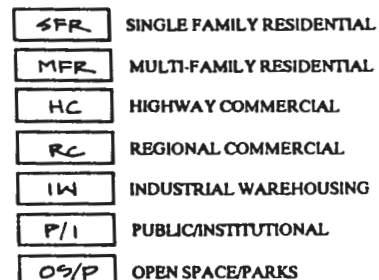
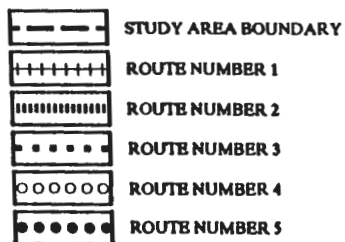
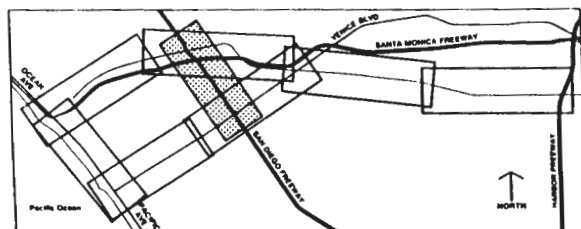
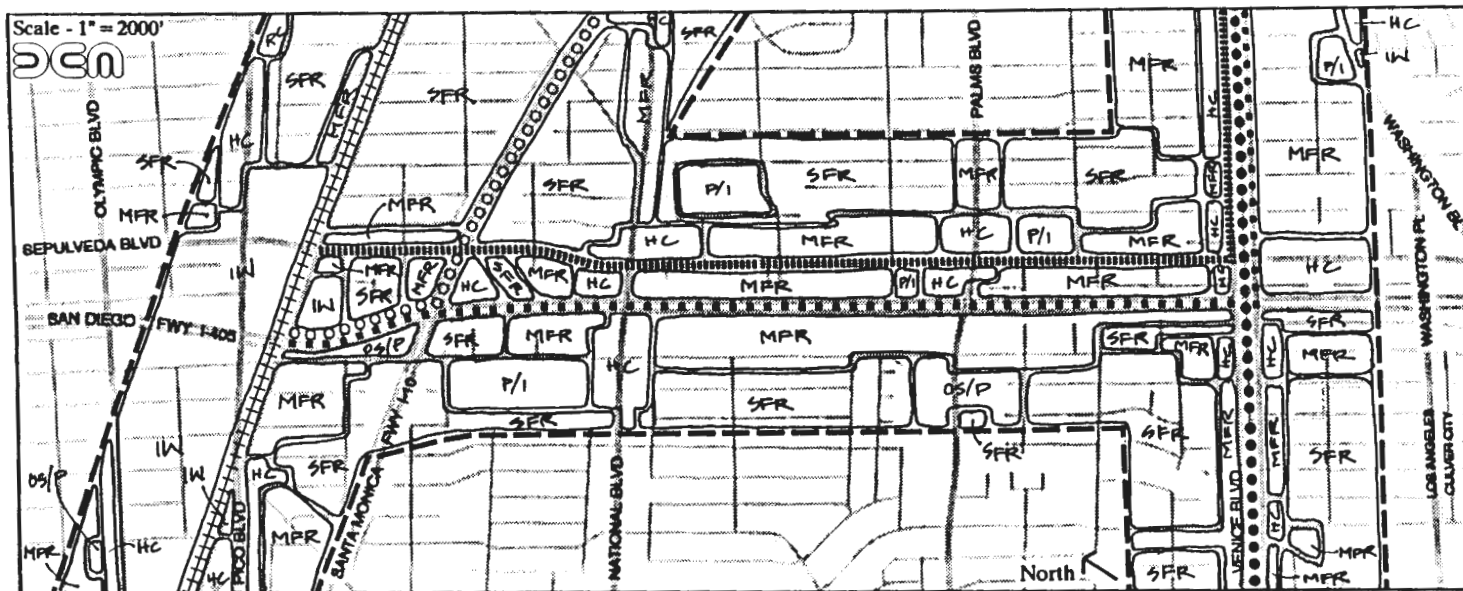
There are a number of existing and planned developments that should be considered in future transit planning. These developments will not necessarily be physically impacted by the proposed transit project though there may be the potential for cumulative impacts. In addition, this development is likely to be directly benefitted by the operation of a future transit system within the corridor. The listing of major projects was derived through field surveys and contacts with various agencies. The major related projects are summarized in Table 3-9.



- STUDY AREA BOUNDARY
- ROUTE NUMBER 5
- ROUTE NUMBER 6

- SINGLE FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- HIGHWAY COMMERCIAL
- INDUSTRIAL WAREHOUSING
- PUBLIC/INSTITUTIONAL
- OPEN SPACE/PARKS

SOURCE: David Evans and Associates, Inc.



SOURCE: David Evans and Associates, Inc.

TABLE 3-9 CUMULATIVE PROJECTS LIST			
Project/Type of Development	Location	Square Feet	Status
New City Hall	9770 Culver Blvd.	80,000 sf & future additional 20,000 sf	Schematic design approved by Cerain 5/91; demolition completed.
Culver Studios Enterprises	9336 Washington Blvd.	Renovation of 318,000 sf studio facility	Complete in 1992
developer CCRA	3844-64 Wateseka Avenue	108,723+ sf, 333 parking spaces	1992
Culver Center Expansion	Bounded by Venice & Washington Blvds, Overland Ave & Midway St.	500,221 sf with 2,625 parking spaces	unknown
Sony Studios	10202 Washington Blvd.	1,849,950 g.s.f. In multi-phased buildout.	unknown
New Culver City Fire Station #1	SW corner of Culver/Irving		1992
Rancho Park Post Office	Exposition Blvd. between Sepulveda & Sawtelle	180,000 sf incl. parking lot.	completed 12/91
Venice Canal Renovation	between Venice & Washington Blvd.		1994
Colorado Place Phase II B; Office	2500 Broadway	260,000 sf total office	Under construction

TABLE 3-9 CUMULATIVE PROJECTS LIST			
Project/Type of Development	Location	Square Feet	Status
The Arboretum	2000-2224 Colorado Ave.	1,040,490 total 270,000 hotel (250 rooms) 25,000 restaurant 10,000 retail 60,000 health club 35,000 medical off. 37,048 health club 20,000 savings 7 loan Remainder permitted to be: comm. off.	Development approved, by City Council, 1987 Project expected to proceed in phases.
Phase A		93,647 office	Filed 3/19/91. Under construction
Phase B		260,000 office & retail	Plan Check approved
The Water Garden/Office Development	2425 Olympic Blvd.	Phase I-629,788 total sf. Phase II-629,788 total sf. 1,259,578 office 20,000 med. office 40,000 retail 50,000 restaurant 25,000 health club 30,000 banks/S&L's 7,000 child care facility	Phase I under construction. Phase II 2-7 year start date.
Santa Monica Beach Hotel	1 Pico Blvd.	120,016 total, 194 rooms, 8,000 restaurant	under construction

Environmental Assessment

The potential land use impacts essentially fall into four categories:

- **Displacement.** In certain instances, existing improvements have been constructed within the right-of-way which will be used for the transit facilities. In other cases, facility operations (grade separations, stations, parking areas, signals, power stations, etc.,) will require removal of existing improvements.

The LACTC will provide fair and just compensation only to those properties outside the right-of-way pursuant to State and Federal laws. The actual displacement impacts will not be known until subsequent phases of engineering and design.

- **Access.** Some industrial and commercial activities are accessible by roads that presently cross the Exposition right-of-way, particularly west of Fairfax Avenue. This access might be constrained or eliminated with transit operations. In other cases, access to properties would be affected during construction phases.
- **Growth-Inducing Impacts.** Depending on the type of facility that is ultimately constructed, there could be a potential for *growth-inducing* impacts. Growth-inducing impacts occur when a project serves as a catalyst for additional growth and development. For example, if land use controls permit higher density development, an LRT line may provide a stimulus to higher density residential development along portions of the corridor or the establishment of certain types of commercial establishments in the vicinity of stations.

Potential land use impacts for each of the project alternatives are discussed in Table 3-10.

TABLE 3-10 LAND USE IMPACTS MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Displacement will occur where improvements have intruded upon the right-of-way and where related LRT facilities and grade separations are required.		Displacement will occur where improvements have intruded upon the right-of-way and where LRT facilities and grade separations are required.	

**TABLE 3-10
LAND USE IMPACTS MATRIX**

Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT (continued)	Development of the right-of-way may restrict access to commercial and industrial uses. Efficient transit operations are likely to stimulate growth-inducing impacts along and in close proximity to the right-of-way.		Development of the right-of-way may restrict access to commercial and industrial uses. Efficient transit operations are likely to stimulate growth-inducing impacts along and in close proximity to the proposed right-of-way.	
Trolley-Bus	Displacement may occur where improvements have intruded upon the Exposition right-of-way.	Displacement may occur where improvements have intruded upon the Exposition right-of-way. Some displacement may be required to accommodate trolley in mixed flow traffic.		Displacement may occur where improvements have intruded upon the Exposition right-of-way.
Transitway	Displacement will occur where improvements have intruded upon the right-of-way and where related transitway facilities are required.		Displacement will occur where improvements have intruded upon the right-of-way and where related transitway facilities are required.	
Bikeway	Minimal displacement anticipated. Some alternate uses intruding into the right-of-way could remain.			

3.8 NATURAL RESOURCES

Environmental Setting

Natural resources as they relate to the project may be grouped in two categories: 1) air and water resources; and 2) resources which will be used in project construction (e.g. aggregate for concrete, metals for steel, etc.). Air and water resources are discussed in Sections 3.2 and 3.3, respectively. The project area, for the most part, is fully urbanized. There are no natural resource extraction activities in or near the project area. Substantial amounts of petroleum products have been drawn from the Potrero, Inglewood, and Athens oil fields which are located in the vicinity of the project area.

Environmental Assessment

The CEQA Law and Guidelines indicates a project will have a significant adverse impact on the environment if it encourages activities which result in the use of large amounts of fuel, water, or energy. One of the benefits of the transit proposals under consideration is the more efficient use of fossil fuels by providing an alternative to personal automobile use.

The proposed transit facilities envisioned at the present time will not impact ongoing resource extraction activities in the vicinity of the project area. Like any other construction project, future development of the transit alternatives being considered will involve the irretrievable commitment of construction material resources and energy resources. The amount of nonrenewable resources required in the facility's construction will depend on the facility ultimately selected as indicated in Table 3-11.

TABLE 3-11 NATURAL RESOURCES IMPACTS MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Substantial nonrenewable resources used in construction. Savings in fossil fuels related to VMT reduction.		Substantial nonrenewable resources used in construction. Savings in fossil fuels related to VMT reduction.	

**TABLE 3-11
NATURAL RESOURCES IMPACTS MATRIX**

Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
Trolley-Bus	Nonrenewable resources used in construction. Savings in fossil fuels related to VMT reduction.	Nonrenewable resources used in construction. Savings in fossil fuels related to VMT reduction.		Nonrenewable resources used in construction. Savings in fossil fuels for VMT reductions.
Transitway	Substantial resources used in construction. Continued use of fossil fuels.		Substantial resources used in construction. Continued use of fossil fuels.	
Bikeway	Minimal consumption of resources.			

3.9 RISK OF UPSET

Environmental Setting

According to the CEQA Law and Guidelines, risk of upset refers to those activities that will result in a risk of explosion or release of hazardous materials. There are a large number of industrial, commercial, and warehousing activities located in the project area. Some of these uses are involved in the handling, storage, or production of materials classified as being hazardous to public health.

As part of this assessment, a survey was undertaken to identify sites in the project area that had been identified by the Environmental Protection Agency (EPA). The EPA maintains the *Comprehensive Environmental Response, Compensation, and Liability Information System* or *CERCLIS* list. EPA's CERCLIS identifies those sites deemed by the EPA to be potentially hazardous. Once on a CERCLIS list, a site is assessed by the EPA or other appropriate regulatory agencies to determine what further action, if any, is required for remediation.

Other sites may also be present in the project area that are not found on the CERCLIS list. The Regional Water Quality Control Board (RWQCB) maintains a listing of leaking underground storage tanks. The State Office of Planning and Research maintains a Hazardous Waste Substance and Sites List. Table 3-12 indicates major cerclis sites in the vicinity of the project area.

TABLE 3-12 HAZARDOUS SITES IN PROJECT AREA - CERCLIS SITES	
CERCLIS Site	Location
Venice Manufacturing Gas Plant	340 South Main Street
General Telephone (GTE)	2902 Exposition Boulevard Santa Monica, CA 90404
Botfield and Company	1600 Main Street Venice, CA 90291
Apollo Plating Company	5008 W. Jefferson Blvd. Los Angeles, CA 90016
Gateco	3107 La Cienaga Blvd. Los Angeles, CA 90016
Leigh Dennis	1756 22nd Street Santa Monica, CA 90404
States Batteries	5735 W. Jefferson Blvd. Los Angeles, CA 90016
Tempo	3113 S. La Cienaga Los Angeles, CA 90016
Beacon Laundry & Dry Cleaning	8695 W. Washington Blvd. Culver City, CA 90230
Thrifty Corp. Distribution Center	3430 S. La Brea Ave. Los Angeles, CA 90016
Unocal Station #5795	9930 National Blvd. Los Angeles, CA 90034
Texaco Dealer/Ernest Hancz	11279 Venice Blvd. Los Angeles, CA 90066
Not Available	Venice Avenue Unknown Location

Environmental Assessment

A project will result in significant adverse effects if it will create a potential public health hazard or involve the use, production, or disposal of materials which pose a hazard to people or animals or plant populations in the affected area. The impacts from the proposed transit projects envisioned at this time do not fall into this category.

The LRT vehicles are powered by electricity delivered through catenary equipment on top of the vehicles which connect to electrical lines. There is considerable debate among experts concerning the health effects of electromagnetic fields (EMF) such as that which would be found around electrical transmission and generating equipment. Much of the research has focused on the effects of the long-term exposure near transmission lines. Some studies (including earlier Soviet studies) indicated there may be some increased risk to EMF exposure. In 1988, the California legislature directed the California Department of Health Services to oversee three detailed studies on the effects of electromagnetic fields (EMFs). The first study is to be completed in October 1992 and will focus on 24-hour residential and occupational exposure.

The proposed transit projects under consideration will involve the use of certain hazardous materials. For example, solvents, paints, and cleaning fluids will be used to maintain buses or rail cars at maintenance yards. In addition, the ballast under the existing tracks are likely contain byproducts related to past rail operations. Finally, the alignment has been unused for a number of years and it is likely that some illegal dumping has occurred in the past. As a result, mitigation is likely prior to construction of any of the transit alternatives.

During the next phase of environmental review, a Phase I Risk Assessment should be undertaken for the entire alignment being considered. The Phase I assessment will involve a more detailed record check, site visits, and a visual survey of the alignment to identify areas where further testing (Phase II) may be required. Table 3-13 provides an overview of potential impacts in terms of risk of upset related to each of the project alternatives.

<p>TABLE 3-13 RISK OF UPSET IMPACTS MATRIX</p>				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	CERCLIS sites in close proximity to the Exposition right-of-way will require mitigation prior to transit development.		CERCLIS sites in close proximity to the proposed route will require mitigation prior to transit development.	
Trolley-Bus	CERCLIS sites in close proximity to the Exposition right-of-way will require mitigation prior to transit development.	CERCLIS sites in close proximity to the proposed alignment will require mitigation prior to transit development.		CERCLIS sites in close proximity to the proposed alignment will require mitigation prior to transit development.
Transitway	CERCLIS sites in close proximity to the right-of-way will require mitigation prior to transit development.		CERCLIS sites in close proximity to the proposed route will require mitigation prior to transit development.	
Bikeway	CERCLIS sites in close proximity to the right-of-way will require mitigation prior to transit development.			

3.10 POPULATION AND HOUSING

Environmental Setting

The assessment of housing and population characteristics used the same categories of segments as that used in the land use study (refer to Exhibit 3-7). Population and housing statistics were derived from the 1990 U.S. Census. Population and housing figures for each segment were estimated using Census Tract level statistics. Employment, housing, and population projections were obtained for each census tract from SCAG projections. The census tracts are shown in Exhibit 3-24.

The population and housing characteristics of the eight segments are described below:

- **Segment A:** Segment A contains an estimated 17,400 housing units, with an average household size of 2.79 persons. Approximately 300 units are directly adjacent to the alignment within this segment. An estimated 49,000 persons live in the 10 tracts bordering the right-of-way. This large figure may be the result of the segment's proximity to the central business district and a higher than average number of persons inhabiting each dwelling unit. Approximately 850 persons live in the 300 units adjacent to the alignment. Overall, population growth in Segment A is expected to increase by approximately 2.73 percent.
- **Segment B:** Approximately 19,000 housing units are contained within the census tracts located within this segment. An estimated 131 units are located adjacent to the right-of-way. The average household size is 2.60 persons. Segment B is also densely populated; approximately 48,000 persons are living within census tracts located in this segment. An estimated 350 persons live in housing units adjacent to the alignment. Segment B's population is projected to decline between 1990 and 2010 according to SCAG projections.
- **Segment C:** The census tracts in Segment C contain approximately 26,000 housing units. The average household size of 2.09 persons is lower than the related figures of Segments A and B. An estimated 275 persons live adjacent to the proposed routes. Approximately 51,500 persons live within census tract boundaries included within the one-half mile study boundary. Nearly 600 persons live in housing units adjacent to the Exposition right-of-way and the Route 4 alternative. Population growth in the census tracts located in the West L.A./Mar Vista area is predicted to rise by nearly 16 percent. Population growth for Segment C is comparatively low compared to other

Westside segments, and possibly may be attributed to the higher number of units designated as single-family dwellings.

- **Segment D:** The four census tracts within Segment D contain a total of 7,940 housing units. Compared to other segments, this lower figure is most likely the result of the large proportion of industrial warehousing and office professional uses contained in Segment D. No housing units are located adjacent to the right-of-way in this segment. Nearly 17,200 persons live within the four census tract boundaries with an average household size of 2.13 persons per dwelling unit. A 24 percent increase in population is projected for those tracts located in Segment D. The expected increase may indicate that a substantial number of low/medium housing units will be replaced with higher density complexes or older non-residential uses being converted to residential living.
- **Segment E:** Segment E (the largest segment in terms of population) contains 13 tracts and nearly 33,000 housing units. Community commercial uses, however, border a large portion of Venice Boulevard, and buffer residential areas accounting for the smaller figure of 162 units adjacent to the proposed routes. Approximately 68,000 persons live within the Segment E study boundaries. An average of 2.14 persons inhabit each dwelling unit. An estimated 375 persons live adjacent to the proposed route. An eleven percent increase in population is projected between 1990 and 2010.
- **Segment F:** Residential land uses comprise a majority of Segment F. Nearly 14,350 dwelling units occupy the 8 census tracts located within the segment study area. Approximately 208 units are located immediately adjacent to the proposed route. Approximately 29,050 persons live within the census tracts, with an average household size of 2.10 persons. An estimated 422 persons live adjacent to alignment in the segment. A 20.5 percent increase in population is projected for this segment.
- **Segment G:** The segment includes a majority of single-family neighborhoods and the Santa Monica portion contains a mix of multi-family and community commercial uses. The large proportion of housing units is reflected in the approximate figure of 11,600 housing units. Nearly 110 housing units front on Venice Boulevard and Pacific Avenue. An average of 1.72 persons occupy each housing unit, perhaps indicative of a significant single population. A 23 percent increase in population is predicted for this segment.

- Segment H:** Segment H includes all five of the proposed routes as well as portions of the City of Culver City and the communities of Palms/Mar Vista and West Los Angeles. Segment H contains 10,800 housing units. Compared to other segments, this figure is low and may indicate a larger number of single-family homes and low/medium density housing units. Nearly 175 units border the proposed route. Approximately 22,600 persons live within census tracts contained in Segment H. The average household size is 2.13 persons, an average figure for all tracts west of Robertson Boulevard. An estimated 400 persons live in the 175 units located adjacent to the proposed routes. A 14 percent (from 1990 to 2010) increase in population is projected for the census tracts located in this segment.

The demographic statistics and projections for the eight study segments are summarized below in Table 3-14. Population figures by route number are shown in Table 3-15.

TABLE 3-14 DEMOGRAPHIC CHARACTERISTICS			
Segment	1990 Pop.	2010 Pop.	% Growth
A	48,975	50,958	2.73%
B	48,263	45,036	-12.93%
C	51,469	61,730	15.67%
D	17,185	22,592	24.71%
E	68,127	78,403	11.18%
F	29,045	36,107	20.36%
G	19,527	24,969	22.53%
H	22,598	28,575	14.32%
Sources: 1990 U.S. Census. 1990 Southern California Association of Governments (SCAG) Projections			

TABLE 3-15 POPULATION FIGURES BY ROUTE			
Route	1990	2010	% Growth
Route 1 (A, B, C, D)	165,892	180,316	7.55%
Route 2 (A, B, E, H)	187,963	202,972	3.83%
Route 4 (A, B, C, D, H)	188,490	208,891	8.9%

TABLE 3-15 POPULATION FIGURES BY ROUTE			
Route	1990	2010	% Growth
Route 5 (A, B, E, F, G)	213,937	235,443	8.77%
Sources: Bureau of the Census, 1991. SCAG Small Area Forecasting Data, 1991.			

Employment projections for the eight study segments are summarized in Table 3-16. The employment projections were derived from SCAG projections developed as part of the Growth Management Plan. The projections were developed for individual census tracts in the region. The employment projections for the eight study segments were derived in the same way as that used to derive the population and housing projections.

TABLE 3-16 EMPLOYMENT: 2010	
Segment	Total Employment
A	25,830
B	20,709
C	45,658
D	27,648
E	35,229
F	12,014
G	8,726
H	40,020
Source: SCAG Small Area Forecasting Data, 1991.	

Environmental Assessment

The proposed transit alternatives will not *directly* result in any substantial change in population or housing within the project area. Any potential population and housing impacts will involve the following impacts:

- **Displacement.** In certain instances, some displacement of existing structures will occur to make room for right-of-way needs or other facilities. Significant amounts of residential displacement is not anticipated because the alignment alternatives will be largely confined to existing right-of-ways. Although some displacement may occur, the degree and extent of impact will have to be evaluated after the proposed project's design has been refined. Any displacement would require relocation and compensation to be provided to those affected persons.
- **Growth-Inducing Impacts.** Depending on the type of facility that is ultimately constructed, there could be a potential for *growth-inducing* impacts. Growth-inducing impacts would result if the transit project were to be a catalyst to additional growth and development. For example, some areas along the transit corridor zoned for higher density residential development may be developed, in part due to the proximity of a reliable transit system nearby.
- **Employment Generation.** The proposed construction and operation of the transit facilities being considered will generate varying degrees of employment. Construction-related employment will be considerable for all of the alternatives.

Potential population, housing, and employment impacts for each of the project alternatives are discussed in Table 3-17.

TABLE 3-17 POPULATION AND HOUSING IMPACTS MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Growth-inducing impacts attributed to land use plans. An efficient transit system may permit growth to occur.		Growth-inducing impacts attributed to land use plans. An efficient transit system may permit growth to occur.	

TABLE 3-17 POPULATION AND HOUSING IMPACTS MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
Trolley-Bus	Growth-inducing impacts attributed to land use plans. An efficient transit system may permit growth to occur.	Growth-inducing impacts attributed to land use plans. An efficient transit system may permit growth to occur.		Growth-inducing impacts attributed to land use plans. An efficient transit system may permit growth to occur.
Transitway	Growth-inducing impacts attributed to land use plans. An efficient transit system may permit growth to occur.		Growth-inducing impacts attributed to land use plans. An efficient transit system may permit growth to occur.	
Bikeway	Insignificant impacts on population or housing.			

3.11 TRAFFIC/CIRCULATION

Environmental Setting

Roadways and freeways within the study area are among the most heavily travelled in the Southland. The housing, population, and employment projections discussed in the previous section indicate that increased traffic generation will occur due to local growth. In addition, regional transportation systems (the I-405 and I-10 Freeways) will be handling increased traffic volumes resulting in even greater delays in commute times. Generally, regional traffic volumes are expected to increase 1.5% on an annual basis by the year 2000. At the present, this congestions (both existing and future) will not be resolved by other mass transit proposals because they serve different travel sheds.

Environmental Assessment

A detailed traffic analysis of the entire study corridor is beyond the scope of this report. Katz Okitsu Associates did examine the potential impacts of the various transit alternatives on existing roadways and traffic at selected locations.

A main objective of the transit alternatives being considered is to improve traffic conditions in the area. By effectively reducing the number of private vehicles on local roads and freeway, additional capacity will be provided. There may be potential traffic impacts on the local level:

- **Short-term Construction Impacts.** The construction of the transit alternatives being considered here will result in varying degrees of impact, depending on the length and duration of construction. In some instances, access to individual properties will be affected during construction.
- **Operational Impacts - Roadway Crossings.** Locations where the transit facility will cross local roads will result in delays in cross traffic depending on the type of transit (trolley bus, LRT, HOV, or bikeway). In some locations, grade separations would be required to more reduce interference from transit vehicles.
- **Operational Impacts - Mixed Flow Impacts.** The transit alternatives using trolley bus or special HOV lanes that deviate from the Exposition right-of-way will travel in mixed traffic. This may result in traffic impacts on arterial roadways such as Venice Boulevard and Pacific Avenue. Preliminary studies indicate some street widening or elimination of on-street parking may be required to accommodate trolley bus or the segregated LRT right-of-way.
- **Operational Impacts - Redistributed Traffic.** Some traffic in the study area will be redistributed following the transit facility's operation. For example, transit stations with parking areas will be localized generators of new traffic. The trips, however, will be removed from the regional transportation network. Other types of redistributed trips will include changes in bus line and feeder connections, kiss-n-ride drop offs, and park and ride commuters.

The potential impacts of the various transit alternatives are characterized in Table 3-18.

TABLE 3-18 TRAFFIC IMPACTS MATRIX				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Significant benefit in terms of VMT reduction. Potential traffic impacts in vicinity of stations and intersections. Some grade separations will be required.		Significant benefit in terms of VMT reduction. Potential traffic impacts in vicinity of stations and intersections. Some grade separations will be required. Short-term construction impacts along freeway segments.	
Trolley-Bus	Benefit in terms of trip reduction. Some adverse impacts at intersections.	Benefit in terms of trip reduction. Some adverse impacts at intersections and in mixed flow traffic.		Benefit in terms of trip reduction. Some adverse impacts at intersections and in mixed flow traffic.
Transitway	Some traffic congestion relief. Potential impacts at intersections and crossings.		Some traffic congestion relief. Potential impacts at intersections and crossings.	
Bikeway	Minimal traffic impact. Some benefit from VMT reduction.			

3.12 PUBLIC SERVICES

Environmental Setting

The communities of Los Angeles contract with the City of Los Angeles for fire and police protection services, park and recreational facilities, public schools, public facilities and roads and other governmental services such as libraries and post offices. California Department of Transportation (CalTrans) is responsible for maintaining the Santa Monica and San Diego freeways. Likewise, the cities of Santa Monica and Culver City offer similar services to its residents. Typically public services are located along major roadways to service concentrated portions of the population and achieve high visibility and public access.

Environmental Assessment

Fire protection and police and law enforcement services will be provided by the City of Los Angeles, Santa Monica, and Culver City fire and police departments. The selected mode and transportation route will largely determine the extent of security needed. the LACTC will contract with the County to provide law enforcement services.

The proposed alignments will improve the accessibility of visitors and residents to parks recreational facilities. Rancho Cienega Sports Center, Baldwin Hills Playground, McManus Park, Media Park, Woodbine Park, Palms Parks, Stewart Street Park, Memorial Park in Santa Monica, Mar Vista Recreational Center, and Westminster Recreation Center are located adjacent or near the proposed routes.

The proposed project is located within the Los Angeles, Santa Monica and Culver City Unified School Districts. The proposed transit project may serve as a catalyst for the development of high density housing units adjacent to the selected alignment. Foshay Junior High School, Dorsey High School, Washington School, Ellis Avenue School, Notre Dame Academy Elementary and Girls' High School, St. Joan of Arc School, Garfield School, La Ballona School, First Lutheran School, St. Augustine School, Charnock Road School, Venice High School, Westminster Avenue School, and St. Clement School are located along the proposed study routes.

Although the intent of the proposed project is to offset Westside congestion, it is likely the alternatives will generate additional traffic in the vicinity of the park and ride facilities and stations. The potential impacts on public services associated with the proposed mode and route options are shown in Table 3-19.

<p>TABLE 3-19 PUBLIC SERVICE IMPACTS MATRIX</p>				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	LACTC contracts with Sheriff for law enforcement. Some increase in service demands from police and fire. Operations and maintenance of system will be responsibility of LACTC.		LACTC contracts with Sheriff for law enforcement. Some increase in service demands from police and fire. Operations and maintenance of system will be responsibility of LACTC.	
Trolley-Bus	No significant change in services demand over conventional bus service. Maintenance of Exposition right-of-way will be required.	No significant change in services demand over conventional bus service. Maintenance of Exposition right-of-way will be required.		No significant change in services demand over conventional bus service. Maintenance of Exposition right-of-way will be required.
Transitway	Law enforcement and other services required for traffic control and emergency response.		Law enforcement and other services required for traffic control and emergency response.	
Bikeway	Minimal service demand anticipated. Service demand will be related to maintenance and public safety.			

3.13 ENERGY

Environmental Setting

The California region is presently serviced by two energy companies: Southern California Edison (SCE) and the Southern California Gas Company (SCGC). SCE and SCGC provide electrical and natural gas service to the project area, with lines located along each of the proposed alternatives.

Environmental Assessment

The project area is urbanized with utilities and infrastructure already in place. The proposed transit project may require the local extension of gas and electric lines on site to accommodate the new development. The LRT or trolley bus alternatives will require the installation of overhead and catenary wires. In addition, aboveground electrical lines may need to be relocated where they are too close to the proposed operations. As the SCE and SCGC provide service on demand, no adverse impacts are expected with any of the project alternatives. Potential impacts to existing energy systems are shown in Table 3-20.

TABLE 3-20 PROPOSED PROJECT ALTERNATIVES MATRIX: ENERGY				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Significant amounts of electricity required for system wide operation. Beneficial reduction in fossil fuel consumption due to reduction in VMT.		Significant amounts of electricity required for system wide operation. Beneficial reduction in fossil fuel consumption due to reduction in VMT.	

TABLE 3-20 PROPOSED PROJECT ALTERNATIVES MATRIX: ENERGY				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
Trolley-Bus	Significant amounts of electricity required for system wide operation. Beneficial reduction in fossil fuel consumption due to reduction in vehicle trips.	Significant amounts of electricity required for system wide operation. Beneficial reduction in fossil fuel consumption due to reduction in vehicle trips.		Significant amounts of electricity required for system wide operation. Beneficial reduction in fossil fuel consumption due to reduction in vehicle trips.
Transitway	Fuel consumption related vehicle usage. Some fuel savings related to improved traffic flow.		Fuel consumption related vehicle usage. Some fuel savings related to improved traffic flow.	
Bikeway	Least amount of energy consumption.			

3.14 UTILITIES

Environmental Setting

Southern California Edison (SCE) provides electricity to the planning area. The Southern California Gas Company (SCGC) provides natural gas service to the planning area.

Water service for the communities of Los Angeles and the City of Santa Monica is provided by the Los Angeles Department of Water and Power (LADWP). That portion of Culver City west of Washington Boulevard secures its water supply from the Southern California Water Company.

The Los Angeles County Sanitation District provides sewer service to the project area with local sewer lines maintained by the Los Angeles County Department of Public Works. The

cities of Los Angeles, Santa Monica and Culver City are served by a storm drain system maintained by the Los Angeles County Department of Public Works. The proposed routes are banked to direct runoff to the sides of the road and into existing catch basins.

The communities of Los Angeles contract with the City of Los Angeles for solid waste and disposal. The cities of Santa Monica and Culver City contract with private companies to haul commercial and residential trash to sanitary landfills.

Environmental Assessment

The Light Rail Transit (LRT) and the trolley bus alternatives derive their power from overhead electrical wires. Although these alternatives would require the extension of existing power and catenary lines to the corridor, SCE provides service on demand and does not anticipate any adverse impacts with project construction or operation. In addition, electrical lines placed too close to the proposed transit operations may need to be removed.

The project may require the local extension of gas lines on site. As the SCGC provides service on demand, the project will have no adverse impacts on natural gas service.

The selected transportation route may require the relocation of telephone lines in the project area. Depending on the needed lines, General Telephone will reinforce existing cables to serve the new facilities. In addition, telephone lines placed too close to the proposed transit operations may need to be removed. This situation is most evident along the Exposition right-of-way.

It is not anticipated that the LACTC transit project would significantly alter regional water supplies, however water would be required for landscaping.

The types of activities and facilities associated with the proposed project typically do not generate large amounts of sewage. No sewer impacts are associated with project implementation.

The proposed improvements will occur within existing railroad right-of-ways and/or paved roadways. The proposed improvements will not result in additional runoff.

The activities and facilities associated with the proposed transit facilities typically do not generate large quantities of solid waste. Disposal sites for excavated ballast may be required for all of the project alternatives. No adverse impacts on waste disposal are expected with project implementation. Potential impacts to utilities are shown in Table 3-21.

TABLE 3-21 PROPOSED PROJECT ALTERNATIVES MATRIX: UTILITIES				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Utilities required for system wide operation. Some relocation may be required. Water and sewer connections required at stations and maintenance facilities.		Utilities required for system wide operation. Some relocation may be required. Water and sewer connections required at stations and maintenance facilities.	
Trolley-Bus	Additional utilities required for system operation.	Additional utilities required for system operation.		Additional utilities required for system operation.
Transitway	Minimal utilities (lighting, signals, etc.) required for system operation. Some relocation may be required.		Minimal utilities (lighting, signals, etc.) required for system operation. Some relocation may be required.	
Bikeway	Minimal improvements (lighting, landscaping, etc.) will be required.			

3.15 HUMAN HEALTH

Environmental Setting

An urban metropolis such as Los Angeles is subject to a variety of human health concerns. These include but are not limited to motorists and other vehicle operators neglecting the posted speed limit and road conditions, and inattentive pedestrians.

Environmental Assessment

The risk of upset section discusses a number of health and related issues (Section 3.9). Potential human health concerns are shown in Table 3-22.

TABLE 3-22 PROPOSED PROJECT ALTERNATIVES MATRIX: HUMAN HEALTH				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Potential traffic and pedestrian safety impacts at crossings.		Potential traffic and pedestrian safety impacts at crossings.	
Trolley-Bus	No adverse impacts anticipated over existing bus service.	No adverse impacts anticipated over existing bus service.		No adverse impacts anticipated over existing bus service.
Transitway	Potential traffic safety impacts at intersections and crossings.		Potential traffic safety impacts at intersections and crossings.	
Bikeway	No adverse impacts are anticipated.			

3.16 AESTHETICS

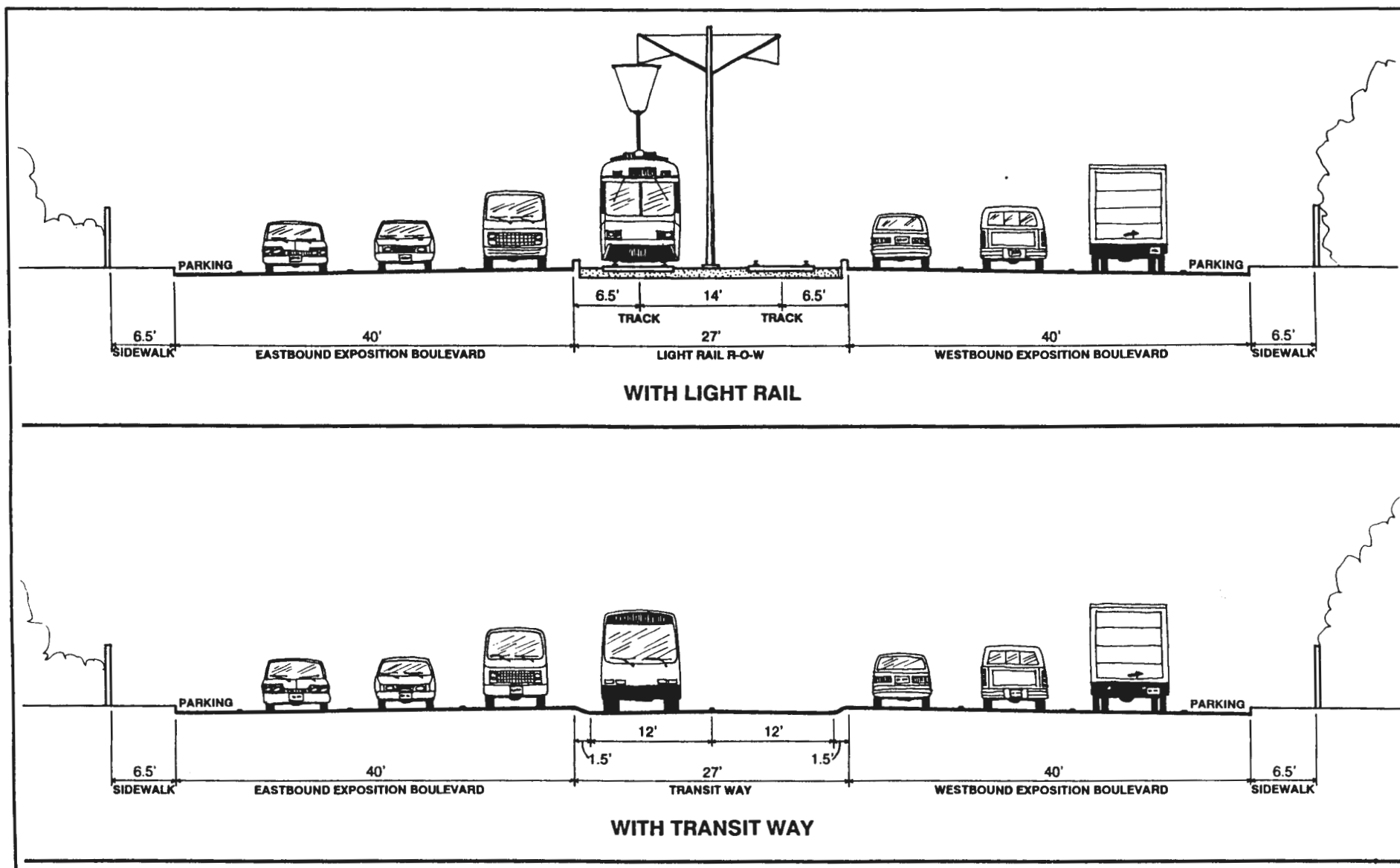
Environmental Setting

The proposed transit system will pass through single-family residential neighborhoods, multi-family neighborhoods, community commercial neighborhoods consisting of low-rise buildings, and industrial and railway settings.

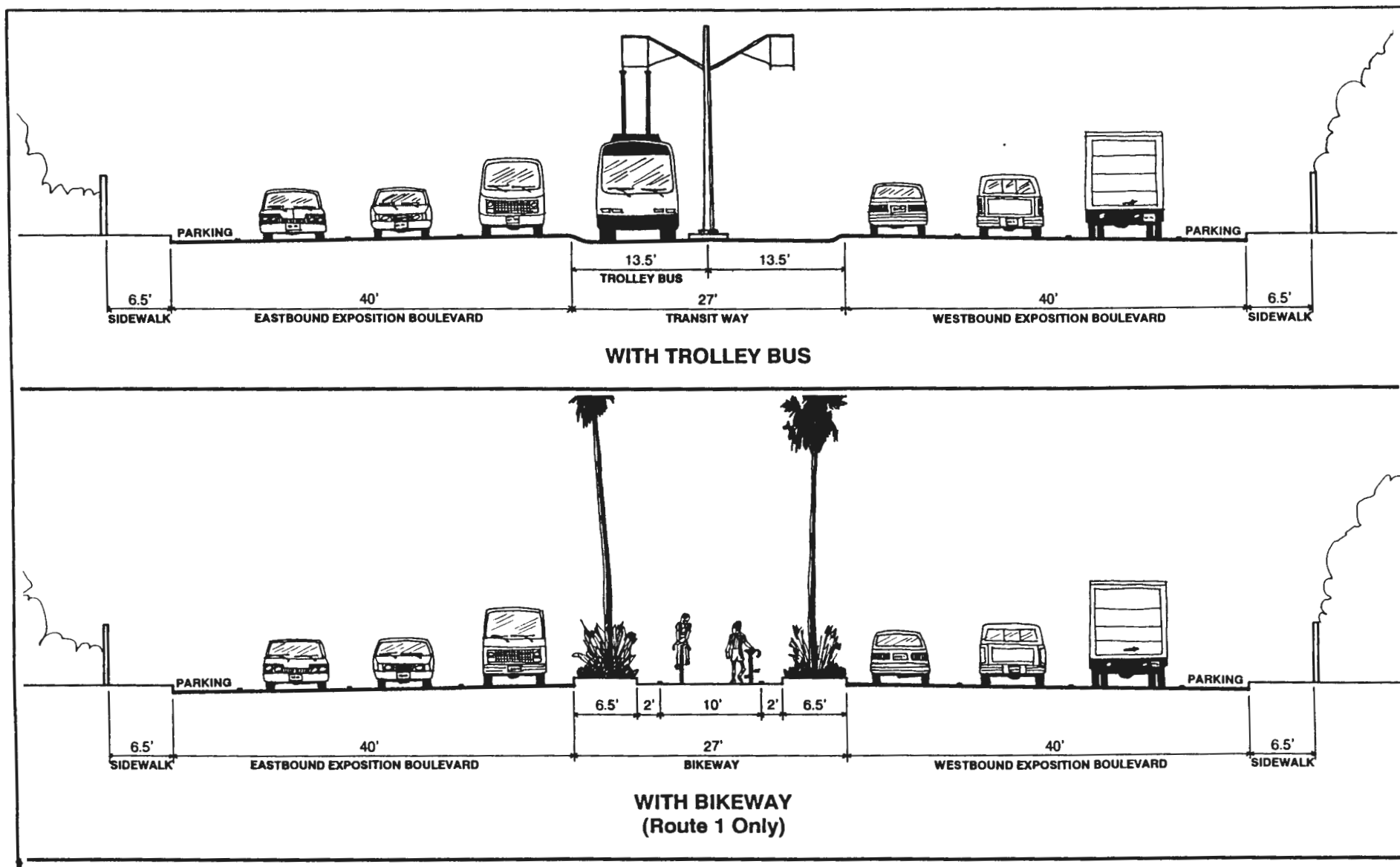
Environmental Assessment

The proposed project will alter the aesthetics of the selected transportation route. Major alterations will occur with the light rail transit and trolley bus mode options which require catenary wires, station platforms, warning signals and safety gates with at-grade and above-grade crossings. Minor alterations are expected with the transitway and bike path options. All of the proposed projects will include landscaping, a beneficial aesthetic impact. Thus, the selected mode will determine the extent of aesthetic impacts to the corridor. Potential aesthetic impacts to the selected transportation corridor are shown in Table 3-23 and conceptual cross sections are illustrated in Exhibits 3-25 through 3-27.

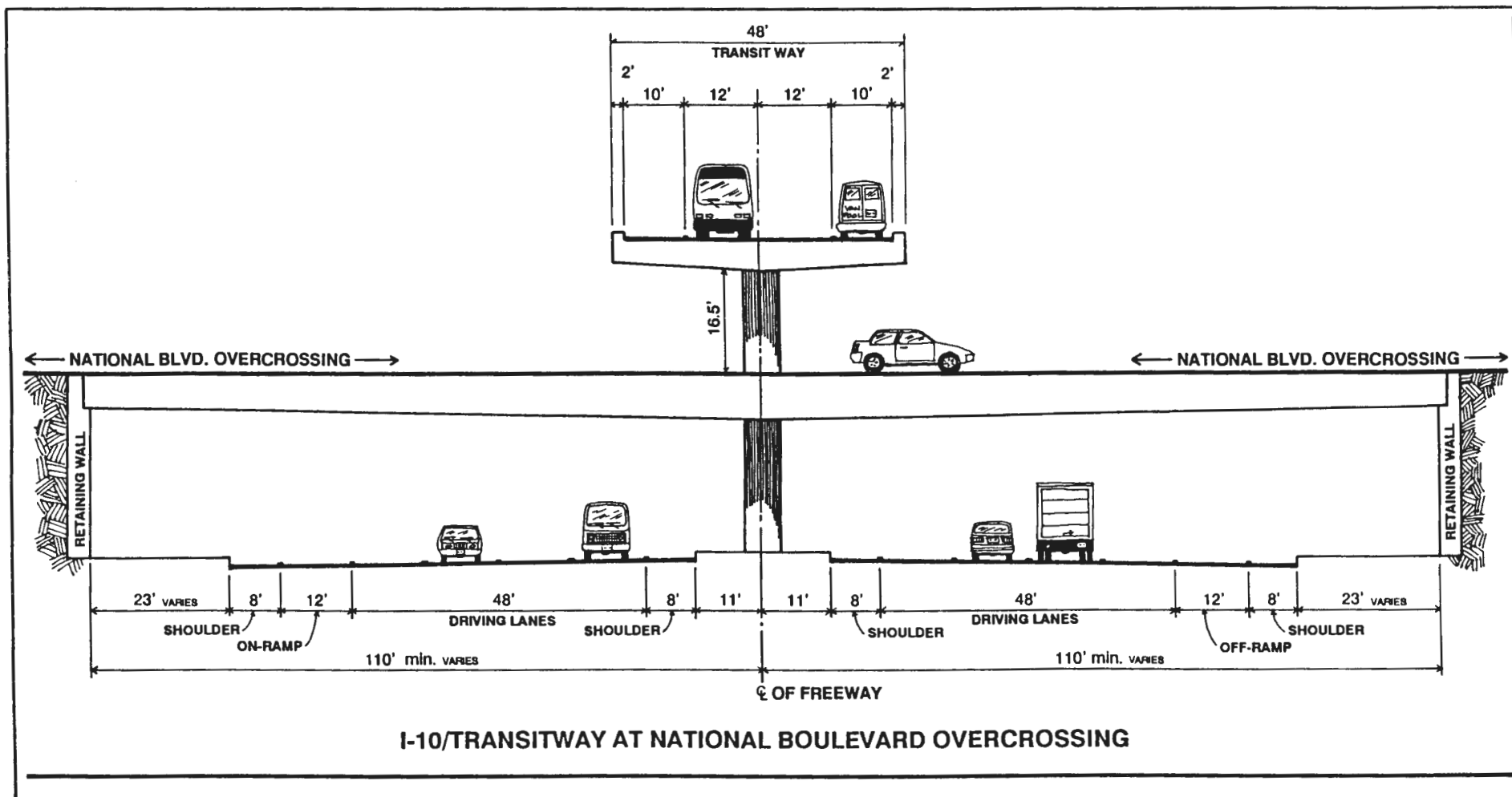
TABLE 3-23 PROPOSED PROJECT ALTERNATIVES MATRIX: AESTHETICS				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	Improved appearance of corridor with landscaping and maintenance. Stations will result in a change in the appearance. Catenary and other equipment may create visual impacts.		Improved appearance of corridor with landscaping and maintenance. Stations will result in a change in the appearance. Catenary and other equipment may create visual impacts.	
Trolley-Bus	No significant changes. Overhead wires along corridor will alter views.	No significant changes. Overhead wires along corridor will alter views.		No significant changes. Overhead wires along corridor will alter views.



SOURCE: David Evans and Associates, Inc.



SOURCE: David Evans and Associates, Inc.



SOURCE: David Evans and Associates, Inc.

**TABLE 3-23
PROPOSED PROJECT ALTERNATIVES MATRIX: AESTHETICS**

Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
Transitway	Improved maintenance and landscaping of Exposition right-of-way will be beneficial.		Improved maintenance and landscaping of Exposition right-of-way will be beneficial. Greatest potential for impact is associated with aerial structure over freeway.	
Bikeway	No adverse aesthetic impacts. Beneficial impact related to landscaping and maintenance.			

3.17 RECREATION

Environmental Setting

The cities of Los Angeles, Santa Monica and Culver City maintain and operate parks and recreational facilities for residents and visitors. City parks are dispersed along each of the alignments under consideration. The following parks are included adjacent or near the proposed routes: Rancho Cienaga Sports Center, Baldwin Hills Playground, McManus Park, Media Park, Woodbine Park, Palms Park, Stewart Street Park, Memorial Park in Santa Monica, Mar Vista Recreation Center, and Westminster Recreation Center.

Environmental Assessment

Proposed station locations adjacent to City parks may require minor land acquisition. The proposed project will improve accessibility to local parks which should be considered beneficial. The proposed project is not expected to produce negative impacts on the use of recreational facilities in the vicinity of the selected alignment. The selected transportation

route will provide efficient service for those without automobiles to frequent local parks. Table 3-24 indicates potential impacts to city and community parks associated with the implementation of the proposed alignments.

TABLE 3-24 PROPOSED PROJECT ALTERNATIVES MATRIX: RECREATION				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	The proposed project will increase accessibility to local parks. The route will pass 7 City parks.		The proposed project will increase accessibility to local parks. The route will pass 7 City parks.	
Trolley-Bus	The proposed project will increase accessibility to local parks. The route will pass 7 City parks.	The proposed project will increase accessibility to local parks. The route will pass 7 City parks.		The proposed project will increase accessibility to local parks. The route will pass 5 City parks.
Transitway	The proposed project will increase accessibility to local parks. The route will pass 7 City parks. Operating vehicles will add mobile emissions to the area and may adversely affect park patrons.		The proposed project will increase accessibility to local parks. The route will pass 7 City parks.	

<p>TABLE 3-24 PROPOSED PROJECT ALTERNATIVES MATRIX: RECREATION</p>				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
Bikeway	The proposed project will increase accessibility to local parks. The route will pass 7 City parks.			

3.18 CULTURAL RESOURCES

Environmental Setting

Historical landmarks within the City of Los Angeles are concentrated within the Los Angeles central business district. The proposed alignment passes several historical sites in Santa Monica and Culver City, as listed in national, state, county and city historical directories. Cultural resources in Santa Monica include: St. Anne's Home and Chapel, Heritage Square, First Methodist Episcopal Church, Santa Monica City Hall, the Merle Norman building, Horatio West Court Apartments, the Chronicle Restaurant, 2 bungalows located at the northwest corner of Main Street and Pier Avenue and the Santa Monica Bay District. In Culver City, St. Augustine's Church and the Pacific Electric Railroad Company Culver Substation, (also known as the Ivy Park Substation) are listed as state and local historical resources. Within the City of Los Angeles, the Venice Canal District and an unidentified historical industrial site located at in the 10200 block of National Boulevard listed as culturally significant.

Environmental Assessment

The proposed project will provide improved accessibility to local cultural resources. Adverse impacts will be limited to modifications of the listed historical sites resulting from the development and operation of the selected transit corridor and generated air pollution associated with the transitway mode.

No archaeological resources are expected to be found onsite or within an approximate one mile radius. The proposed project will not impact any known or suspected culturally or historically significant sites. In the event that artifacts or other cultural resources are

unearthed, salvage operations pursuant to Appendix K Archeological Impacts in CEQA will result. Table 3-25 shows potential impacts to cultural resources associated with each of the project alternatives.

TABLE 3-25 PROPOSED PROJECT ALTERNATIVES MATRIX: CULTURAL RESOURCES				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
LRT	The proposed route passes the Culver Substation and the unidentified historical industrial site, St. Anne's Home and Chapel.		The proposed route passes the Culver Substation and the unidentified historical industrial site, St. Anne's Home and Chapel.	
Trolley-Bus	The proposed route passes the Culver Substation and the unidentified historical industrial site, St. Anne's Home and Chapel.	The proposed route passes the Culver Substation and the unidentified historical industrial site, St. Anne's Home and Chapel.		The proposed route passes all of the identified cultural resources listed in the Cultural Resources "Environmental Setting" with the exception of St. Anne's Home and Chapel.
Transitway	The proposed route passes the Culver Substation and the unidentified historical industrial site, St. Anne's Home and Chapel.		The proposed route passes the Culver Substation and the unidentified historical industrial site, St. Anne's Home and Chapel.	

TABLE 3-25 PROPOSED PROJECT ALTERNATIVES MATRIX: CULTURAL RESOURCES				
Mode Options	Route 1 Exposition Vermont to 17th	Route 2 Exposition via Venice, Sepulveda	Route 4 Exposition via I-10, I-405	Route 5 Venice to the Coast North/South
Bikeway	The proposed route passes the Culver Substation and the unidentified historical industrial site, St. Anne's Home and Chapel.			

SECTION 4: SENSITIVE LAND USES

Following the completion of the land use surveys, the project team identified those areas that could be adversely impacted by the study alternatives. Table 4-1 summarizes those land uses that could be sensitive to either the construction or operation of the transit projects envisioned in this study. Key issues are illustrated in Exhibits 4-1 through 4-8.

A summary of issue areas noted frequently within Table 4-1 may be useful in anticipating constraints which should be addressed in subsequent studies. Potential noise impacts include sensitive receptors (such as residences, hospitals and school facilities) which could be adversely affected by noise generated from the proposed transportation modes. Short-term construction impacts may include both noise generated from construction equipment and pedestrian and vehicular access difficulties encountered during project construction. Potential pedestrian constraints include safety concerns and restricted access following project implementation.

TABLE 4-1 SENSITIVE LAND USES		
Location	Land Use	Issue
EXPOSITION ALIGNMENT ONE		
Northeastern corner of Western and Exposition Blvd.	Foshay Junior High School	Potential noise impacts due to transitway operations (LRT, trolley, HOV lane). Short-term construction impacts. Potential pedestrian hazards.
Between 5th Ave. and Crenshaw Blvd.	Industrial Corridor	Rear access may be affected
Exposition Blvd. & Crenshaw Blvd.	Highway & Community Commercial Uses.	Billboard removal.
La Brea Ave. and Exposition Blvd.	Rancho Cienaga Recreation Center	Potential impacts are minimal. Short-term construction impacts. Potential pedestrian access constraints.
Southwest corner of Farmdale and Exposition Blvd.	Dorsey High School	Potential noise impacts due to transitway operations (LRT, trolley, HOV lane). Short-term construction impacts. Potential pedestrian access constraints.
Southwest corner of Hauser and Exposition Blvd.	Baldwin Hills Recreation Center	Potential noise impacts due to transitway operations (LRT, trolley, HOV lane). Short-term construction impacts. Potential pedestrian constraints.

TABLE 4-1 SENSITIVE LAND USES		
Location	Land Use	Issue
Northwest corner of Jefferson and Exposition Blvd.	McManus Park	Potential noise impacts due to transitway operations (LRT, trolley, HOV lane). Short-term construction impacts. Potential pedestrian constraints.
Southwest corner of National Blvd. and Vinton Ave.	Woodbine Park	Short-term construction impacts.
Southeast corner of Overland and the I-10.	Notre Dame Academy/Palms Park and Rancho Park Library	Potential noise impacts. Short term construction impacts.
Pico Blvd. and Overland	Westside Pavilion	Short-term construction impacts.
Between Manning and Edith	Children's Home	Short-term construction impacts.
Northwest corner of Exposition and Overland	Overland Avenue Elementary School.	Potential pedestrian constraints, noise impacts, short-term construction impacts.
Gateway south of Exposition Blvd.	St. Joan of Arc School and Parish	Potential pedestrian constraints, noise impacts, short-term construction impacts.
20th St. and Colorado	St. Anne's Parish and School	Potential noise impacts, short-term construction impacts.
17th and Colorado	Garfield High School	Potential pedestrian constraints, noise impacts, short-term construction impacts.
2 blocks south of Exposition Blvd. along Stewart	Stewart Street Park	Short-term construction impacts.
Between Sepulveda Blvd. and I-405	Home Junction	Potential pedestrian constraints.
Main Street, between 4th Street and Ocean Avenue	Santa Monica Civic Center	Short-term construction impacts.

TABLE 4-1 SENSITIVE LAND USES		
Location	Land Use	Issue
Four blocks south of Colorado along 4th Street	Santa Monica High School	Short-term construction impacts.
14th Street and Olympic Blvd.	Memorial Park	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Denker Avenue to Arlington, along Exposition Blvd.	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Vermont Ave. to Dalton Ave. (north side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Arlington to 4th Street, along Exposition Blvd. (north side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Victoria to Potomac, along Exposition Blvd. (South side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Crenshaw Blvd. to Farmdale Avenue (north side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
La Brea to Dunsmuir, along Exposition Blvd.	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Melvil Ave. to Helms Ave. (south side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Livonia Ave. to S. Beverly Dr. (north side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
So. Durango Ave. to Hughes Ave. (south side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.

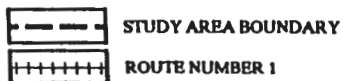
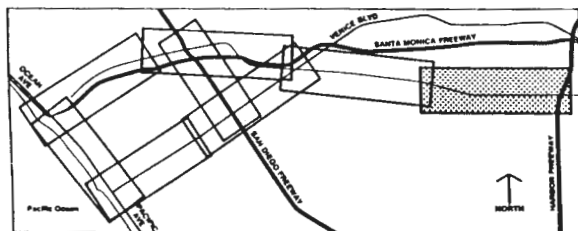
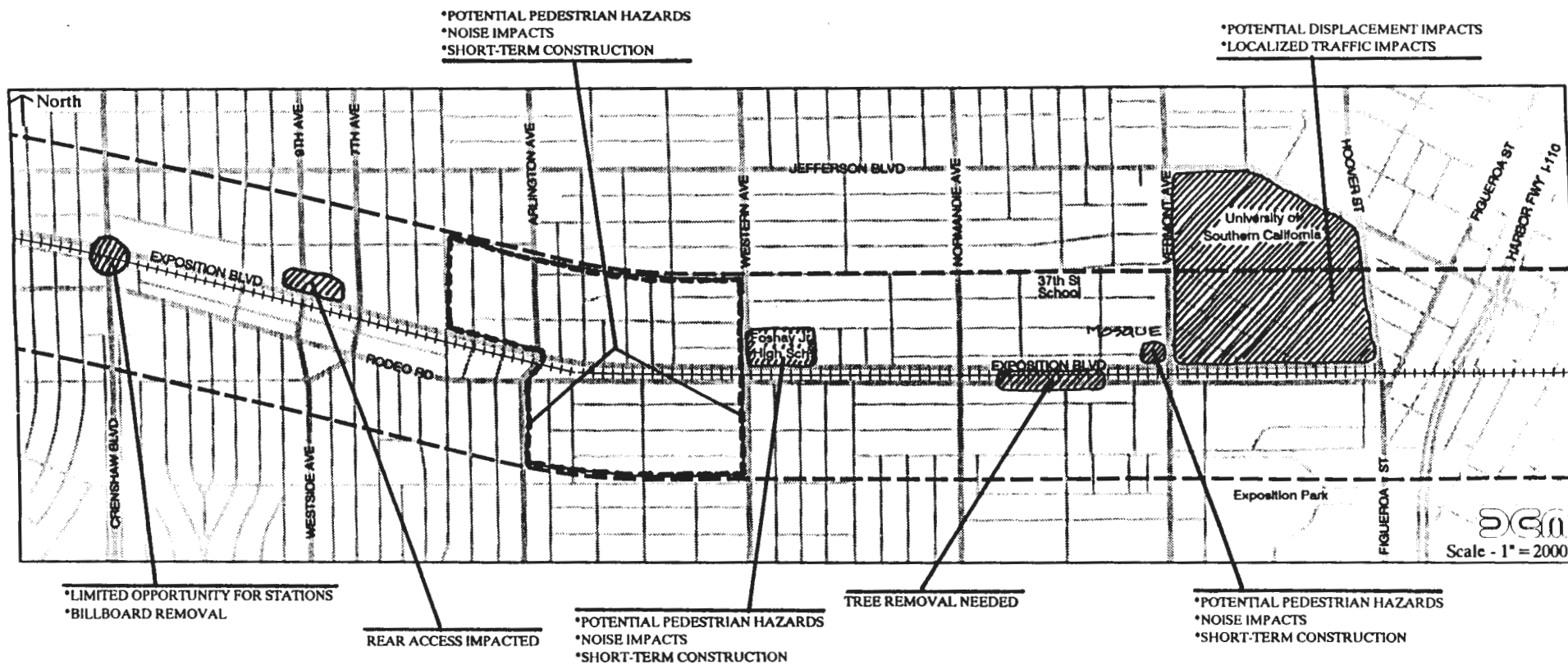
TABLE 4-1 SENSITIVE LAND USES		
Location	Land Use	Issue
Mentone Ave. to Cheriot Vista Pl. (south side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Motor Ave. to Military Ave.	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Military Ave. to Sepulveda Blvd. (south side only)	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Sawtelle Blvd. to Butler Ave. (south side only)	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Barrington Ave. to Bundy Dr. (south side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
20th St. to 15th St. (north side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
14th St. to 9th St. (north side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Motor Avenue to Camden, along Exposition Blvd. (north side only)	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
26th Street and Colorado.	The Arboretum	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Colorado and Broadway	Colorado Place	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.

TABLE 4-1 SENSITIVE LAND USES		
Location	Land Use	Issue
Olympic Boulevard Colorado Avenue Cloverfield Avenue and 26th Street	The Water Garden	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
ROUTE TWO: VENICE BLVD./SEPULVEDA BLVD. DEVIATION		
Venice Blvd. and Canfield	Media Park	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Venice Blvd. and Hughes Avenue	Brotman Medical Center	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Southeast corner of Venice Blvd. and Overland Avenue.	The Culver Center.	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Venice Blvd., between Clarington and Jasmine.	St. Augustine Parish and School	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Two blocks south of Venice Blvd. along Washington Blvd.	Sony Studios	Short-term construction impacts.
Sepulveda Blvd. and Charnock	Charnock Road School.	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Along Sepulveda Blvd., between Rose Avenue and National Blvd.	UCLA Student Housing	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Midway Avenue to Bentley Avenue (south side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Venice Blvd. to Charnock Road (east side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Venice Blvd. to Palms Blvd. (west side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.

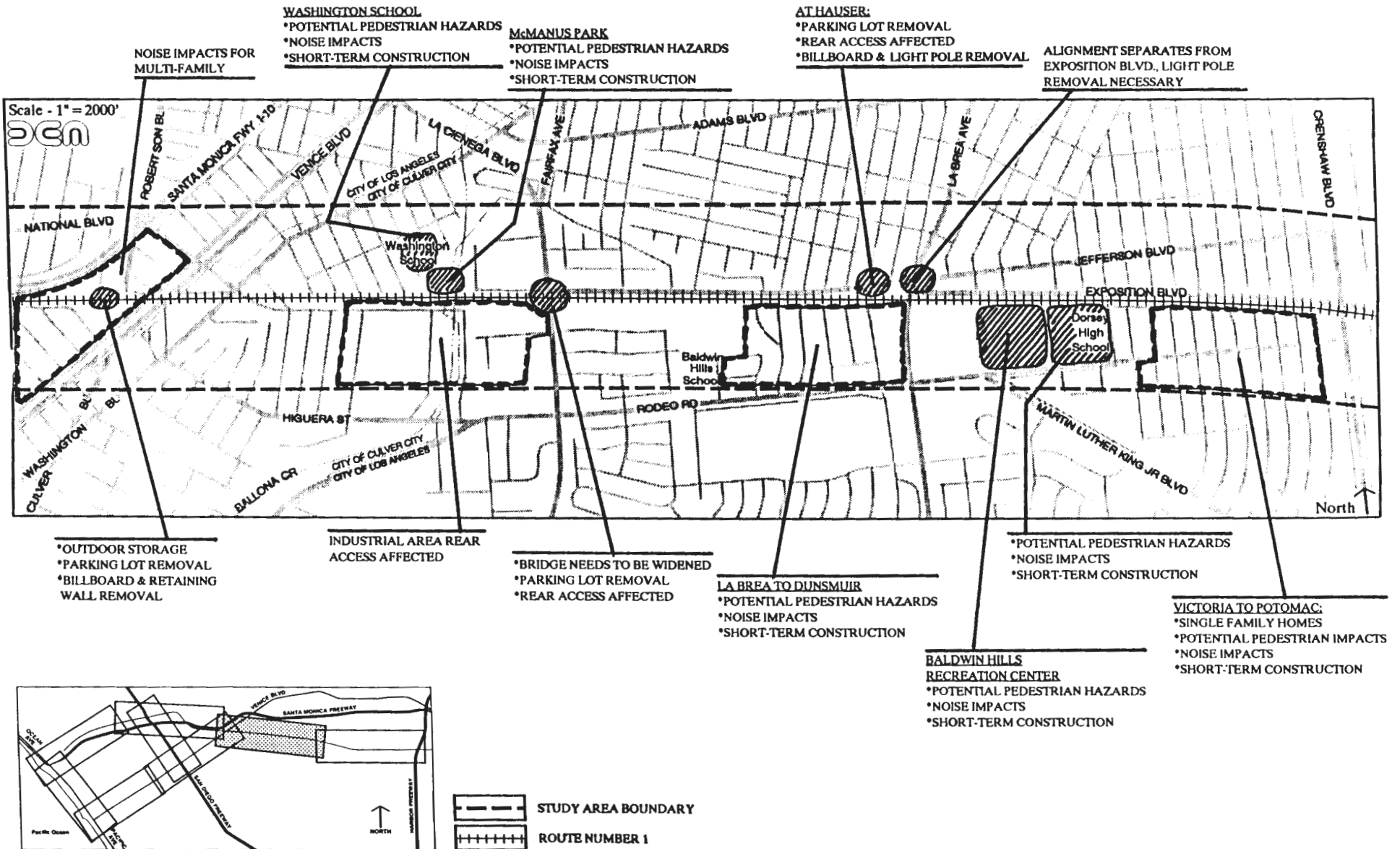
TABLE 4-1 SENSITIVE LAND USES		
Location	Land Use	Issue
Rose Avenue to Clover Avenue.	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Sardis Avenue to Brookhaven Avenue (west side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Sardis Avenue to Exposition Blvd. (east side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
ROUTE 3 - VENICE BLVD. TO I-405 * same uses along Venice Blvd., see Route 2.		
Between Venice Blvd. and Charnock, adjacent to I-405.	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Southwest corner of Palms Blvd. and Sawtelle Blvd.	Mar Vista Recreation Center.	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Charnock Road to Clover Ave. (west side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Charnock Road to Palms Blvd. (east side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Rose Ave. to Queensland St. (east side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Clarkson Ave to I-10 (east side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
ROUTE 4 - I-10/I-405		
Oakhurst to Beverly Drive, adjacent to I-10	Residential Area	Potential noise impacts, short-term construction impacts.
Between Manning and Edith	Children's home	Potential noise impacts, short-term construction impacts.

TABLE 4-1 SENSITIVE LAND USES		
Location	Land Use	Issue
Along Overland Avenue, one block north of National Blvd.	Notre Dame Academy Elementary and Girl's High School.	Short-term construction impacts, potential pedestrian constraints.
Between Motor Ave. to Sepulveda Blvd., north side	Residential Area	Potential noise impacts, short-term construction impacts.
Between Overland Ave. and Sepulveda Blvd., south side.	Residential Area	Potential noise impacts, short-term construction impacts.
ROUTE 5: VENICE BLVD. TO PACIFIC/MAIN AVE.		
I-405 to Albright Avenue (south side only)	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Berryman Avenue to Barrington Avenue (north side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Rosewood Avenue to Lincoln Blvd.	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Walgrove Avenue to Venesia Avenue (south side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Linden Avenue to Shell Avenue (east side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Mildred Avenue (south side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Ocean Avenue to Pico Blvd. (south side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Abbott Kinney to Venice Way (north side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.

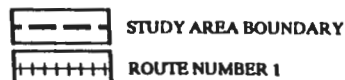
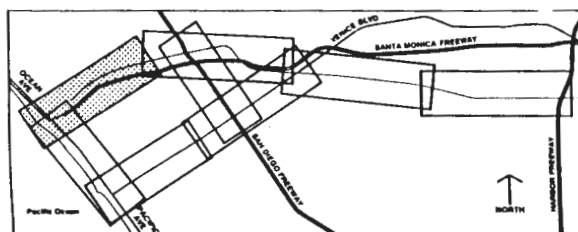
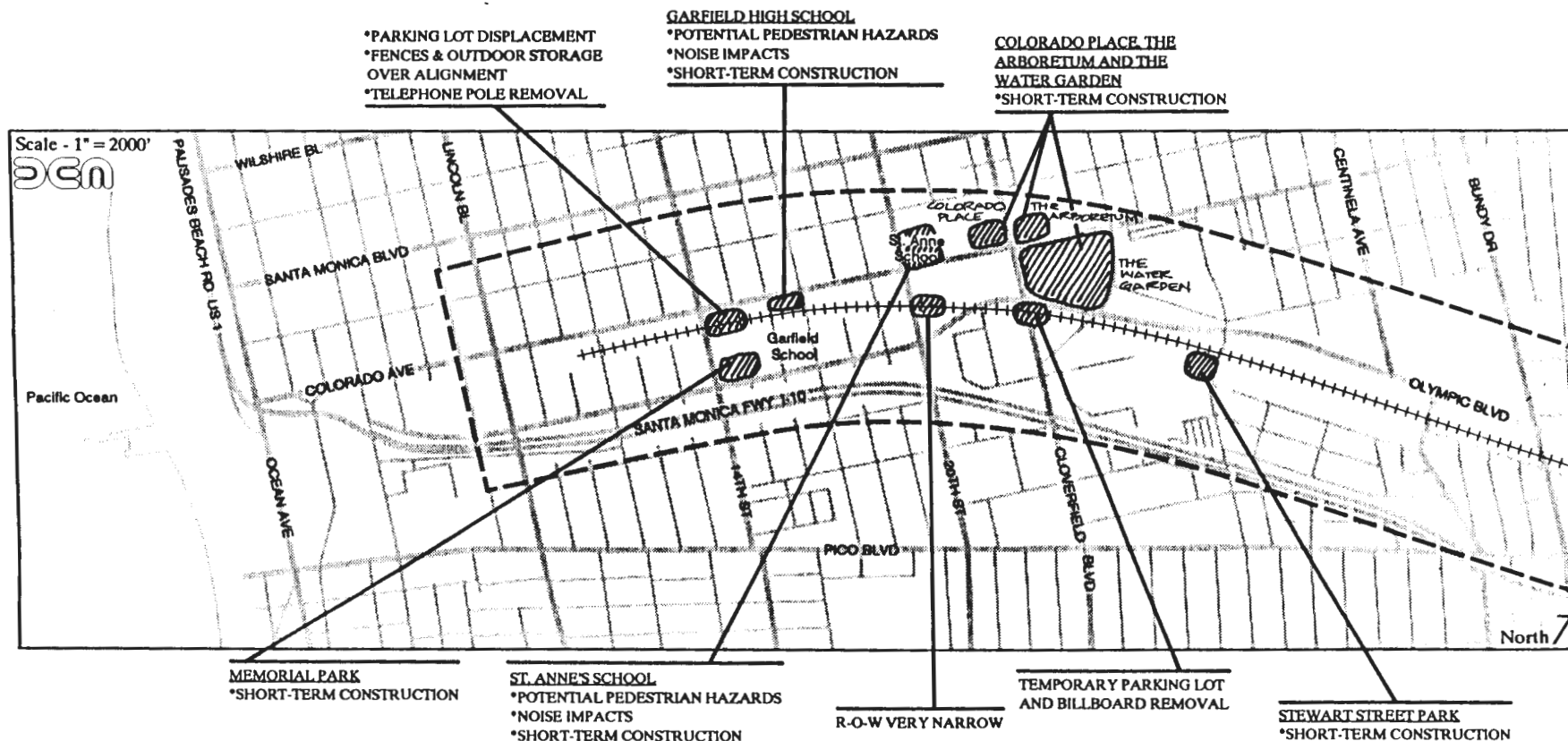
<p>TABLE 4-1 SENSITIVE LAND USES</p>		
Location	Land Use	Issue
Venice Way to Vernon Avenue (east side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian hazards.
Sunset Avenue to Marine Street (east side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Venice Blvd. to Pico Blvd. (west side only).	Residential Area	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Southeast corner of Venice Blvd. and Walgrove.	Venice High School	Potential noise impacts, short-term construction impacts, potential pedestrian constraints.
Along Main Street, between Pico Blvd., and Colorado Ave.	Santa Monica Civic Center, including Civic Auditorium, Courthouse and City Hall	Short-term construction impacts, potential pedestrian constraints.
Pico Blvd and 4th Street, 4 blocks east of Ocean Avenue	Santa Monica High School.	Short-term construction impacts, potential pedestrian constraints.
Between Washington Blvd. & Pacific Ave.	Unused center strip.	Debris clearance needed.
Along Main Street between Westminster and Brooks Ave.	Westminster Avenue School	Potential noise impacts. Short-term construction impacts. Potential pedestrian constraints.
West side of Main Street between Brooks and Thorton Ave.	RTD yard facility.	Minimal impacts anticipated.
One block east of Main Street between Marine St. and Ashland Ave.	St. Clement School	Short-term construction impacts. Potential pedestrian constraints.
Source: David Evans and Associates, Inc., 1991.		



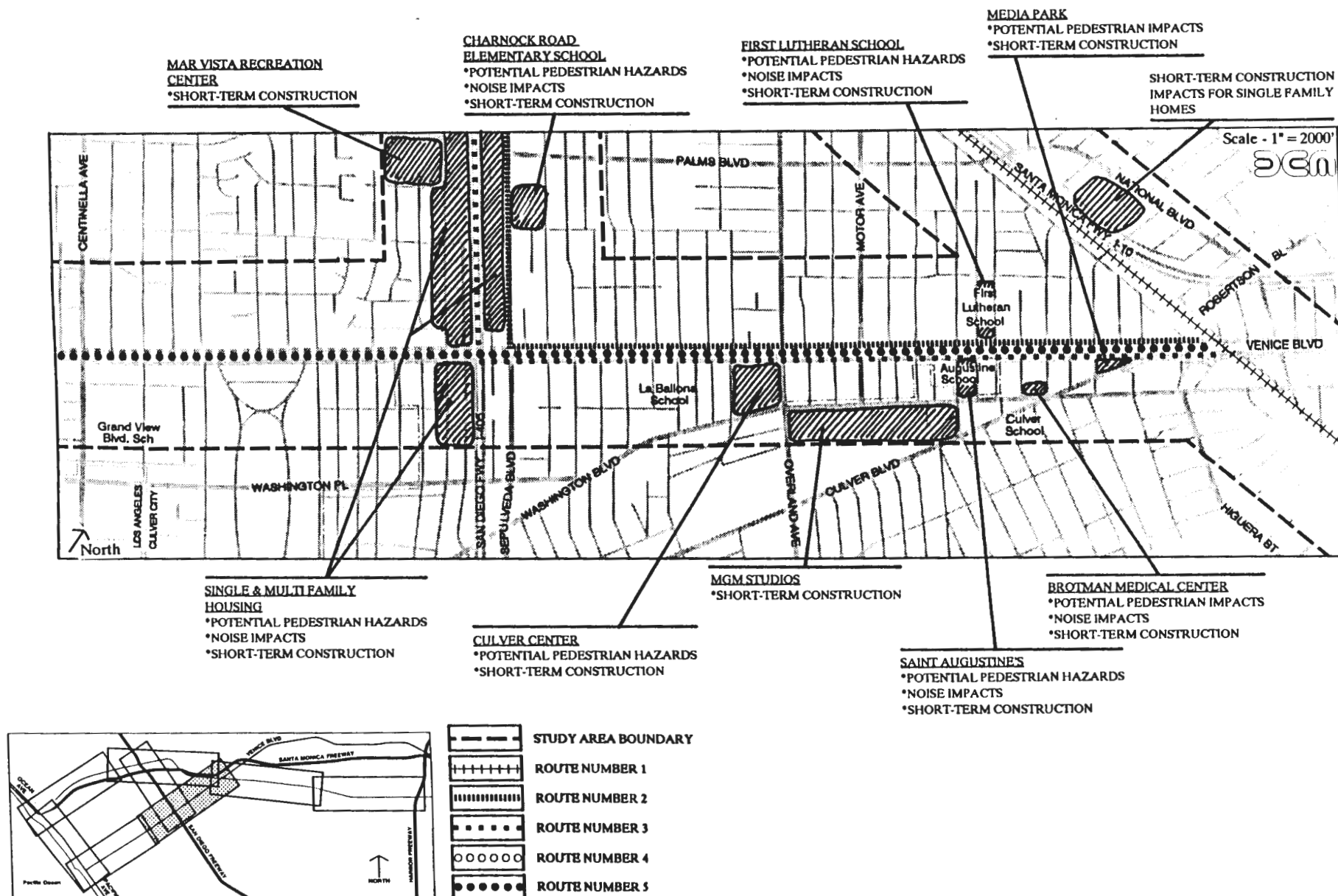
SOURCE: David Evans and Associates, Inc.



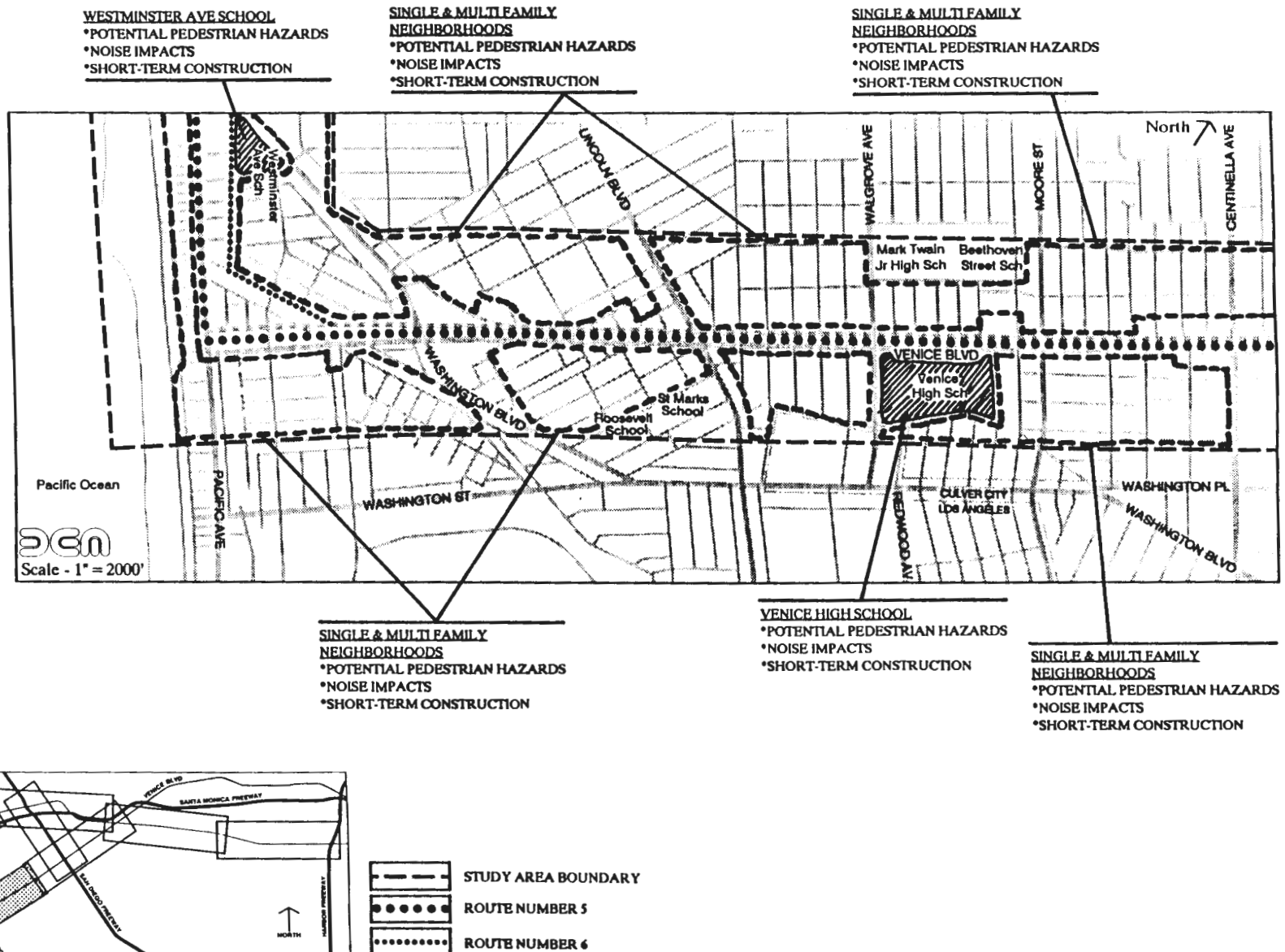
SOURCE: David Evans and Associates, Inc.



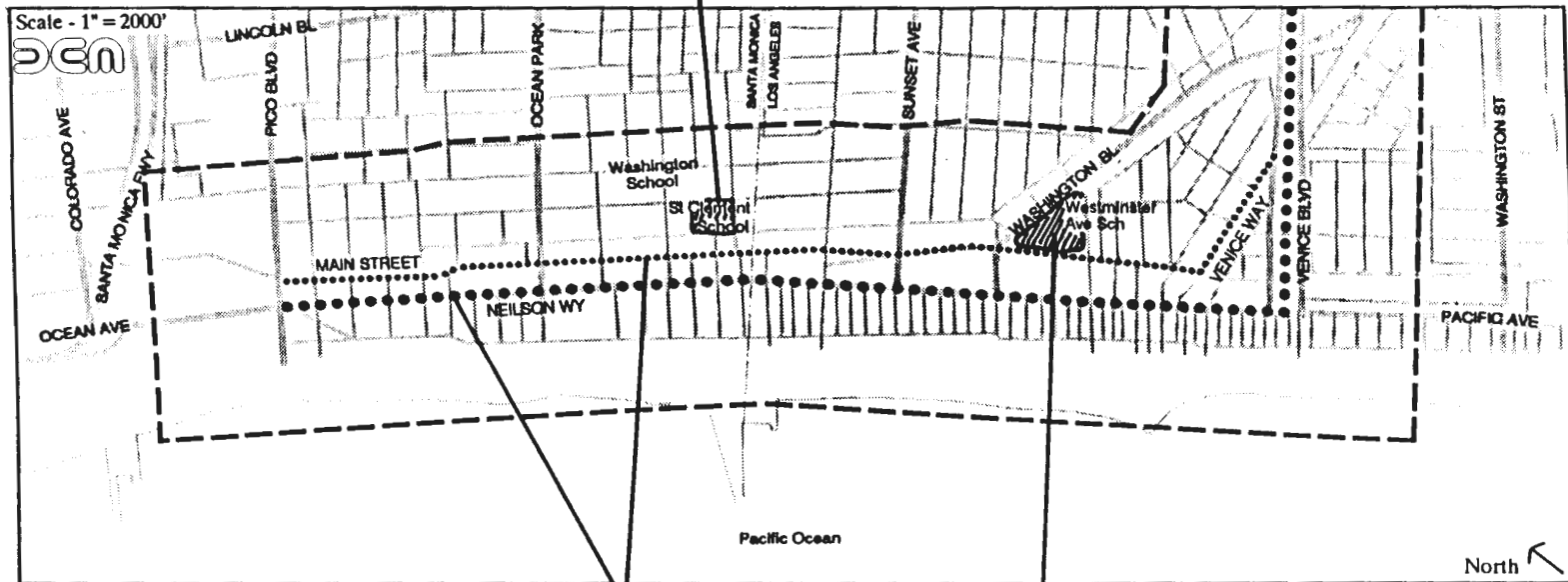
SOURCE: David Evans and Associates, Inc.



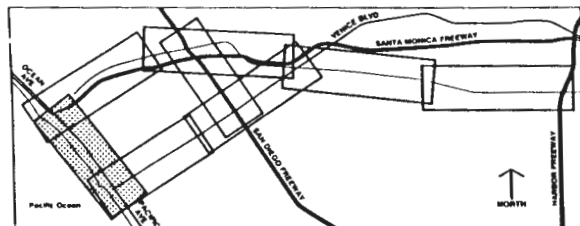
SOURCE: David Evans and Associates, Inc.



**SAINT CLEMENT
ELEMENTARY SCHOOL**
 *ADJACENT TO MAIN AVE. EXTENSION
 *POTENTIAL PEDESTRIAN HAZARDS
 *NOISE IMPACTS
 *SHORT-TERM CONSTRUCTION

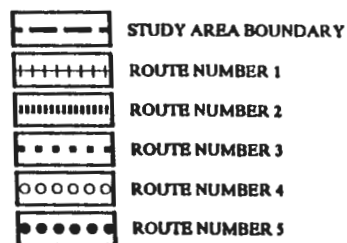
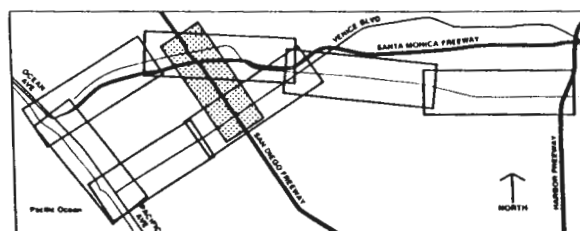
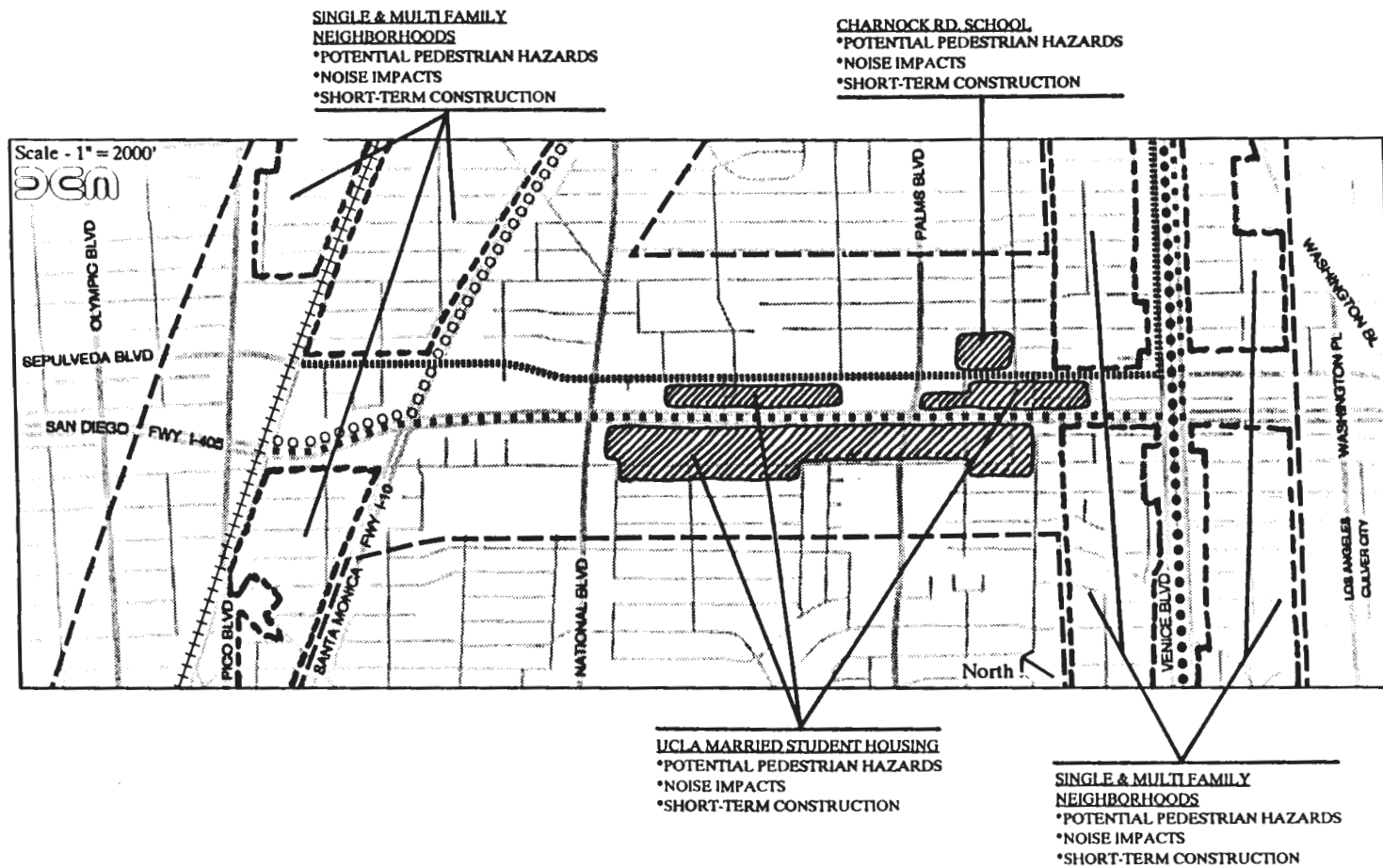


WESTMINSTER AVE SCHOOL
 *ADJACENT TO MAIN AVE EXTENSION
 *POTENTIAL PEDESTRIAN HAZARDS
 *NOISE IMPACTS
 *SHORT-TERM CONSTRUCTION



- STUDY AREA BOUNDARY
- ROUTE NUMBER 5
- ROUTE NUMBER 6

SOURCE: David Evans and Associates, Inc.



SOURCE: David Evans and Associates, Inc.

SECTION 5 LIST OF PREPARERS/REFERENCES

5.1 PREPARERS OF THE ENVIRONMENTAL ASSESSMENT:

David Evans and Associates, Inc.
1000 East Garvey Avenue South, Suite 250
West Covina, California 91790

Project Manager	Marc Blodgett
Project Planner	Wendy Walsh
Graphics	Robert Campbell
Word Processing	Judy Krause
	Chris Caban

Katz Okitsu and Associates, Inc.
1200 Corporate Center Drive, Suite 140
Monterey Park, California 91754

Project Traffic Engineer	Walter Okitsu
--------------------------	---------------

5.2 REFERENCES:

Janet I. Atkison. Los Angeles County Historical Directory. 1988

City of Culver City. Land Use Element of the General Plan. 1978

Environmental Protection Agency. AP-42 Compilation of Air Pollutant Emission Factors, Third Edition (including Supplements 7-11). October 1980

City of Los Angeles. Palms-Mar Vista-Del Rey District Plan. 1991.

City of Los Angeles. South Central Los Angeles District Plan. 1987

City of Los Angeles. West Los Angeles District Plan. 1988

City of Los Angeles. West Adams-Baldwin Hills-Leimert District Plan. 1980

City of Los Angeles. Venice Community Plan. 1980

Office of Historic Preservation: California Department of Parks and Recreation.
California Historical Landmarks. 1990

City of Santa Monica. Land Use and Circulation Elements of the General Plan. 1987

Soil Conservation Service. Report and General Soil Map: Los Angeles County, California. 1969.

Southern California Association of Governments. 2010 Small Area Population and Employment Forecasting Data. 1990.

South Coast Air Quality Management District. California Air Quality Data. 1988

State of California Air Resources Board. Air Quality Analysis Tools. 1983

U.S. Census. 1990 Census Data.

U.S. Geological Survey. Evaluating Earthquake Hazards in the Los Angeles Region - An Earth-Science Perspective. USGS Professional Paper 1360. 1985

SECTION 6 INITIAL STUDY AND CHECKLIST

Title of Proposal: Exposition Right-of-Way Environmental Assessment

Date Checklist Submitted: 02-24-92

Agency Requiring Checklist: The Los Angeles County Transportation Commission

Agency Address: 818 West Seventh Street, Suite 1100

City/State/Zip: Los Angeles, California 90017

Agency Contact: Mr. Fred Silverman, Project Manager Phone: (213) 623-1194

DETERMINATION

On the basis of this evaluation:

- a) I find that the proposed project *could not* have a significant effect on the environment, and

A NEGATIVE DECLARATION will be prepared _____ ()

- b) I find that although the proposed project could have a significant effect in this case because the *mitigation* measures described in Section 4 of this study have been added to the project.

A NEGATIVE DECLARATION will be prepared _____ ()

- c) I find the proposed project *may* have a significant effect on the environment, and

An ENVIRONMENTAL IMPACT REPORT is required _____ (x)

_____	<u>Fred Silverman</u>
Signature	Print Name

<u>The Los Angeles County Transportation Commission</u>	<u>02-24-92</u>
For	Date

ENVIRONMENTAL CHECKLIST FORM

PROJECT LOCATION: Los Angeles, Santa Monica, Culver City Los Angeles County
City County

PROJECT ADDRESS: Exposition Boulevard Right-of-Way, between Vermont Avenue and 17th Street in Santa Monica; Exposition Boulevard right-of-way, using Venice and Sepulveda Boulevards; Exposition Boulevard right-of-way using Interstates 10 and 405; Exposition right-of-way using Venice Boulevard and Pacific/main Avenues.

DESCRIPTION OF PROJECT: Mass Transit Proposals Being Considered for the Exposition Right-of-Way and Route Alternatives

ENVIRONMENTAL IMPACTS:

	Yes	Maybe	No
1. Earth. Will the proposal result in:			
a. Unstable earth conditions or changes in geologic substructures?	___	___	<u>X</u>
b. Disruptions, displacements, compaction or overcovering of the soil?	___	___	<u>X</u>
c. Changes in topography or ground surface relief features?	<u>X</u>	___	___
d. The destruction, covering, or modification of a unique geologic or physical feature?	___	___	<u>X</u>
e. An increase in wind or water erosion of soils, either on or off the site?	___	<u>X</u>	___
f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river or stream or the bed of the ocean, bay, inlet or lake?	___	___	<u>X</u>
g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failure, or similar hazard?	___	<u>X</u>	___

Section 6 Initial Study List cont.

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
2. Air. Will the proposal result in:			
a. Substantial air emissions or deterioration of ambient air quality?	___	<u>X</u>	___
b. The creation of objectionable odors?	___	___	<u>X</u>
c. Alteration of air movement, moisture, or temperature, or a change in climate, either locally or regionally?	___	___	<u>X</u>
3. Water. Will the proposal result in:			
a. Changes in currents or the course/direction of water movements, in either marine or fresh waters?	___	___	<u>X</u>
b. Changes in absorption rates, drainage patterns, or the rate and amount of surface runoff?	___	<u>X</u>	___
c. Alterations to the course or flow of flood waters?	___	___	<u>X</u>
d. Changes in the amount of surface water in a water body?	___	___	<u>X</u>
e. Discharge into surface waters, or an alteration of surface water quality, including but not limited to temperature, dissolved oxygen or turbidity?	___	___	<u>X</u>
f. Alteration of the direction or rate of flow of groundwater?	___	___	<u>X</u>
g. Change in the quantity of groundwater, either through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations?	___	<u>X</u>	___
h. Substantial reduction in the amount of water otherwise available for public water supplies?	___	<u>X</u>	___
i. Exposure of people or property to water-related hazards, such as flooding or tidal waves?	___	___	<u>X</u>

Section 6 Initial Study List cont.

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
4. Plant Life. Will the proposal result in:			
a. Change in the diversity of species or in the number of species of plants (including trees, shrubs, grass, crops, and aquatic plants)?	___	<u>X</u>	___
b. Reduction in the number of a unique, rare, or endangered species of plants?	___	___	<u>X</u>
c. Introduction of new species of plants into an area or result in a barrier to the normal replenishment of existing species?	___	<u>X</u>	___
d. Reduction in the acreage of an agricultural crop?	___	___	<u>X</u>
5. Animal Life. Will the proposal result in:			
a. Changes in the diversity of species or in the number of species of animals (birds, land animals including reptiles, fish, shellfish, benthic organisms and insects)?	___	<u>X</u>	___
b. Reduction in the number of a unique, rare or endangered species of animals?	___	___	<u>X</u>
c. Introduction of new species of animals into an area or result in a barrier to the migration or movement of animals?	___	___	<u>X</u>
d. Deterioration of existing fish or wildlife habitat?	___	___	<u>X</u>
6. Noise. Will the proposal result in:			
a. Increases in existing noise levels?	___	<u>X</u>	___
b. Exposure of people to severe noise levels?	___	<u>X</u>	___
7. Light and Glare. Will the proposal produce new light and glare?	<u>X</u>	___	___
8. Land Use. Will the proposal result in a substantial alteration of the present or planned land use of the area?	<u>X</u>	___	___

Section 6 Initial Study List cont.

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
9. Natural Resources. Will the proposal result in an increase in the rate of use of a natural resource?	___	<u>X</u>	___
10. Risk of Upset. Will the proposal involve:			
a. A risk of an explosion or the release of hazardous substances (including but not limited to oil, pesticides, chemicals and radiation) in the event of an accident or upset conditions?	___	___	<u>X</u>
b. Possible interference with an emergency response plan or an emergency evacuation plan?	___	<u>X</u>	___
11. Population. Will the proposal alter the location, distribution, density, or growth rate of the human population of an area?	<u>X</u>	___	___
12. Housing. Will the proposal affect existing housing or create a demand for additional housing?	<u>X</u>	___	___
13. Transportation and Circulation. Will the proposal result in:			
a. The generation of substantial additional vehicular movement?	___	<u>X</u>	___
b. Effects on existing parking facilities or on the demand for new parking?	<u>X</u>	___	___
c. Substantial impact upon existing transportation systems?	___	<u>X</u>	___
d. Alterations to present patterns of circulation or movement of people and/or goods?	<u>X</u>	___	___
e. Alterations to waterborne, rail or air traffic?	<u>X</u>	___	___
f. Increases in traffic hazards to motor vehicles, bicyclists or pedestrians?	___	<u>X</u>	___
14. Public Services. Will the proposal have an effect on or result in the need for new or altered governmental services in any of the following areas:			
a. Fire Protection?	___	<u>X</u>	___
b. Police Protection?	<u>X</u>	___	___

Section 6 Initial Study List cont.

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
c. Schools?	<u> </u>	<u> X </u>	<u> </u>
d. Parks and Recreational Facilities?	<u> </u>	<u> X </u>	<u> </u>
e. Maintenance of public facilities, including roads?	<u> X </u>	<u> </u>	<u> </u>
f. Other governmental services?	<u> </u>	<u> </u>	<u> X </u>
15. Energy. Will the proposal result in:			
a. The use of substantial amounts of fuel or energy?	<u> </u>	<u> X </u>	<u> </u>
b. Substantial increases in the demand on existing sources of energy or require the development of new sources of energy?	<u> </u>	<u> X </u>	<u> </u>
16. Utilities. Will the proposal result in the need for new systems or substantial alterations to the following entities:			
a. Power or Natural Gas?	<u> X </u>	<u> </u>	<u> </u>
b. Communication systems?	<u> </u>	<u> X </u>	<u> </u>
c. Water?	<u> X </u>	<u> </u>	<u> </u>
d. Sewer or septic tanks?	<u> </u>	<u> X </u>	<u> </u>
e. Stormwater drainage?	<u> </u>	<u> X </u>	<u> </u>
f. Solid waste and disposal?	<u> </u>	<u> X </u>	<u> </u>
17. Human Health. Will the proposal result in:			
a. Creation of a health hazard or potential health hazard (excluding mental health)?	<u> </u>	<u> X </u>	<u> </u>
b. Exposure of people to potential health hazards?	<u> </u>	<u> X </u>	<u> </u>
18. Aesthetics. Will the proposal result in the obstruction of any scenic vista or view open to the public or result in the creation of an aesthetically offensive site open to public view?			
	<u> </u>	<u> X </u>	<u> </u>

Section 6 Initial Study List cont.

	<u>Yes</u>	<u>Maybe</u>	<u>No</u>
19. Recreation. Will the proposal result in an impact on the quality or quantity of existing recreational opportunities?	<u> </u>	<u> X </u>	<u> </u>
20. Cultural Resources. Will the proposal result in:			
a. The alteration or destruction of a prehistoric or historic archaeological site?	<u> </u>	<u> </u>	<u> X </u>
b. Adverse physical or aesthetic effects to a prehistoric or historic building, structure or object?	<u> </u>	<u> </u>	<u> X </u>
c. The potential to cause a physical change which would affect unique ethnic cultural values?	<u> </u>	<u> </u>	<u> X </u>
d. Restrictions on existing religious or sacred uses within the potential impact area?	<u> </u>	<u> X </u>	<u> </u>
21. Mandatory Findings of Significance.			
a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal species or eliminate important examples of the major periods of California history or prehistory?	<u> </u>	<u> </u>	<u> X </u>
b. Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals (A short term impact on the environment is one which occurs in a relatively brief, definitive period of time while a long term impact will endure well into the future.)?	<u> </u>	<u> </u>	<u> X </u>
c. Does the project have impacts which are individually limited, but cumulatively considerable (A project may impact on two or more separate resources where the impact on each resource is relatively small, but where the effect of the total of these impacts on the environment is significant.)?	<u> X </u>	<u> </u>	<u> </u>

Section 6 Initial Study List cont.

- d. Does the project have environmental effect which will cause substantial adverse effects on human beings, either directly or indirectly?

Yes Maybe No

X _____ _____

Discussion of Environmental Evaluation

See Section 3.

Discussion of Land Use Impacts.

See Section 3.7.