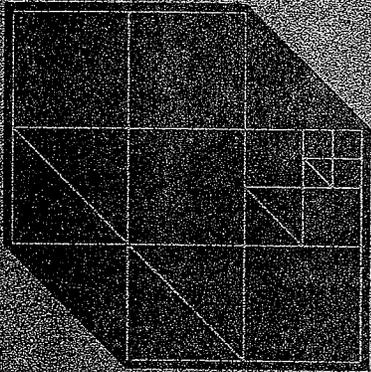


COUNTY
OF
LOS
ANGELES
GENERAL
PLAN



environmental impact report

FINAL ENVIRONMENTAL IMPACT REPORT

County of Los Angeles General Plan

This volume, along with the Supplement to the Final Environmental Impact Report (EIR), dated November 25, 1980, constitutes the Environmental Impact Report for the County of Los Angeles General Plan. These documents were certified as being completed in compliance with the California Environmental Quality Act, the State EIR Guidelines and the County of Los Angeles Environmental Document Reporting Procedures and Guidelines, on November 25, 1980, by the Board of Supervisors of the County of Los Angeles.

County of Los Angeles
Department of Regional Planning
320 West Temple Street
Los Angeles, California 90012

FIRST REPRINT, MARCH 1981

This Report Constitutes The
Final Environmental Impact Report
For The

LOS ANGELES COUNTY
PROPOSED GENERAL PLAN

County of Los Angeles
Department of Regional Planning
320 West Temple Street
Los Angeles, California 90012

March 2, 1979

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1.0 - SUMMARY

Project Description

The EIR for the general plan revision program encompasses the County of Los Angeles, an area of 4,083 square miles containing 81 incorporated cities as well as 3,000 square miles of unincorporated area. The chapters and elements included in this general plan revision program are:

- General Goals and Policies Chapter
- Conservation and Open Space Element
- Land Use Element
- Housing Element
- Transportation Element
- Water and Waste Management Element
- Economic Development Element
- Implementation Chapter

Analysis of Alternatives

One of the first steps in preparing the general plan was the consideration of alternative population levels and urban patterns. To provide a range which would bracket the possible options yet be sufficiently clear for purposes of public input, four alternatives were considered and evaluated. These alternatives were based on a population range of seven million to eight million persons and either a concentrated or dispersed distribution pattern. Alternatives A and B were based on a population of seven million while Alternatives C and D were based on a population of eight million. A concentrated growth pattern was envisioned by Alternatives B and D and a dispersed pattern by Alternatives A and C. The recommended plan is based on a 7.8 million population and represents a combination or balanced approach within the parameters established by the alternatives. Future trends unknown at this time may result in modification of this projection through the monitoring system adopted as part of the general plan. It focuses development in the most suitable locations, promoting a more concentrated development pattern while allowing reasonable land development opportunities. Figure 1-1 provides a relative visual comparison of the four alternatives.

Figure 1-1:
RELATIVE COMPARISON OF THE FOUR ALTERNATIVES ¹

IMPACT CATEGORY	ALTERNATIVES					
		A	B	C	D	
Geologic/Seismic (Encroachment of development into fault zones and unstable slopes)	+					+
	0					0
	-					-
Soils (Encroachment of development into areas with soils constraints for development)	+					+
	0					0
	-					-
Flood/Runoff (Encroachment of development into flood plains, watershed areas)	+					+
	0					0
	-					-
Fire (Encroachment of development into high fire hazard zones)	+					+
	0					0
	-					-
Noise (Increase in noise levels)	+					+
	0					0
	-					-
Air Quality (Decrease in pollutant levels)	+					+
	0					0
	-					-
Water Resources/Water Quality (Change in water consumption and encroachment into recharge areas)	+					+
	0					0
	-					-
Biota (Encroachment into SEAs)	+					+
	0					0
	-					-
Extractive Resources (Encroachment into sand and gravel and petroleum resource areas)	+					+
	0					0
	-					-
Prime Agricultural Soil Resources (Encroachment into existing agriculture or prime land areas)	+					+
	0					0
	-					-
Energy Consumption (Decrease in mobile and stationary usage levels)	+					+
	0					0
	-					-
Archaeological/Historical/Paleontological Resources (Encroachment into resource areas)	+					+
	0					0
	-					-
Scenic Qualities (Encroachment into scenic open areas and change in scale on recycled land)	+					+
	0					0
	-					-
Land Use (Extent of reuse of recycled land)	+					+
	0					0
	-					-

¹The alternative having the least impact, either positive or negative, serves as the baseline for the relative comparison.

IMPACT CATEGORY	ALTERNATIVES					
		A	B	C	D	
Communities (Extent of revitalization)	+		■	■	■	+
	O	■	■	■	■	O
	-					-
Population (Reduction of out migration)	+			■	■	+
	O	■	■	■	■	O
	-					-
Housing (Increase in dwelling units)	+			■	■	+
	O	■	■	■	■	O
	-					-
Employment/Unemployment (Increase in employment levels)	+			■	■	+
	O	■	■	■	■	O
	-					-
Income (Increase in per capita and family income)	+			■	■	+
	O	■	■	■	■	O
	-					-
Investment (Public investment in revitalization)	+		■	■	■	+
	O	■	■	■	■	O
	-					-
Governmental Expenditures (Increase in public service costs)	+					+
	O	■	■	■	■	O
	-	■		■		-
Governmental Revenue (Increase in property tax and taxable retail sales revenues)	+			■	■	+
	O	■	■	■	■	O
	-					-
Transportation (Change in vehicle miles traveled)	+		■	■	■	+
	O	■	■	■	■	O
	-			■		-
Liquid/Solid Waste Disposal (Increase in waste generation)	+					+
	O	■	■	■	■	O
	-			■	■	-

Methodology

Twenty-five environmental effects categories were identified representing physical hazard/resources, services, land use and socio-economic factors. Each was discussed in terms of setting, effects/mitigation measures and alternatives, at the planning area and county level. The assessment of effects was based on the impacts of adopting the plan — e.g., allowing development to take place or encouraging certain public programs.

A series of evaluations of the plan's written projections and policies, mapped policies, and recommended actions was carried out. The urban development pattern shown on the General Development Policy Map (i.e., urban expansion and infill development) was evaluated in terms of its potential effect on the various physical hazard¹/resource categories (i.e., geologic/seismic hazard, soils, flood/runoff and fire hazard; biota, extractive resources, prime agricultural land, and scenic qualities). This analysis assumes a "worst case" development of all of the 55,800 acres of urban expansion as well as the 23,600 acres of infill (all parcels of 50 acres or larger) shown on the map.² This approach was used since development over the planning period to the year 2000 will be based on private actions, and it is not known precisely where such development will be located. It is thus anticipated that actual impacts will be less than those described for the resource and hazard categories. In addition to discussing the effects of urban expansion and infill for the county as a whole and by planning area, effects were also identified for the unincorporated area in order to provide an indication of impacts within those areas over which the county has jurisdictional control.

1

With regard to the hazard categories (i.e., geologic/seismic, soils, flood/runoff, fire), it should be pointed out that since many areas affected by one hazard are also affected by one or two other hazards (e.g., fire and slope stability), it is not appropriate to total the acreage figures provided. Cumulative effects are discussed on pages 1-34 to 1-36.

2

The maps utilized to determine the effects within the various hazard/resource categories are of varying reliability. The acreages listed should therefore be interpreted as general indicators of rather than precise measurements of magnitude or location.

The Plan's effects on socio-economic factors (e.g., communities, housing, employment/unemployment) are, for the most part, based on projected land use, population, housing and employment changes between 1975 and 2000.* The Plan's revitalization efforts are dealt with primarily in the socio-economic categories. The discussion of effects on non-urban development was based primarily on housing and population projections. The discussion of the effects of revitalization and non-urban development are considered at a lesser level of detail than urban expansion/infill development based on the lesser level of adverse effects anticipated. Non-urban development is discussed primarily in terms of scenic qualities, since it is impossible to determine with any precision where such development will occur, and since there are special management procedures established for sensitive non-urban areas which will minimize adverse impacts.

The analysis of the Plan's written and mapped policies, projections and recommended actions indicated that its adverse impacts are related primarily to the mapped policies. The written policies and recommended actions generally function as mitigation measures.

At the time specific projects are proposed, environmental assessment procedures will require a more detailed disclosure of impacts.

Environmental Effects Analysis/Mitigation Measures

A summary of the effects which could result from implementation of the plan's policies and recommended actions, and mitigation measures which are proposed to or which could reduce the effects identified are provided below.

I

These projected changes are as follows: Population - 808,000 persons; housing - 468,500 dwelling units, employment - 661,000 jobs; urban expansion - 27,000 acres; infilled land - 35,900 acres; recycled land 33,100 acres. Of course, it is impossible to quantify future events with precision, so that these figures are not predictions, but are projections of trends modified to be consistent with plan policies. They are approximations and are subject to error.

Geologic/Seismic -

Effect -

The plan restricts urban expansion in areas having seismic or geologic hazards, including potential liquefaction and slope stability hazards. One thousand (1,000) acres or less than two percent of the potential urban expansion area are located within fault zones. Planning areas particularly affected by seismic hazard are Antelope Valley (400 acres), San Fernando (100 acres), Santa Clarita Valley (300 acres), East San Gabriel Valley (100 acres), and Malibu/Santa Monica Mountains (100 acres). Four hundred (400) of the 1,000 acres -- subject to moderate fault hazard -- are located within unincorporated areas. In addition, 1,100 acres of infill development are subject to seismic hazard, 200 of which are in unincorporated areas. Planning areas most affected are East San Gabriel Valley and San Fernando. The plan's recommendations regarding recycling will have a positive impact on seismic safety in terms of the removal of older hazardous buildings (2,800 acres of residential medium and high density, as well as 2,900 acres of commercial uses are to be recycled).

With regard to liquefaction hazard, approximately 6,600 acres of urban expansion are potentially affected, including 3,000 acres in unincorporated areas. Most of this acreage is located in the East San Gabriel Valley, Santa Clarita Valley and Malibu/Santa Monica Mountains planning areas. Infill land subject to this hazard totals 5,000 acres, 12 percent of which is located in unincorporated areas.

Areas with a potential slope instability hazard are also affected by potential urban expansion and infill development. Eight thousand six hundred (8,600) acres of potentially unstable slope areas -- 4,600 acres in unincorporated areas -- are shown in the plan as affected by urban expansion. Primary planning areas affected are East San Gabriel Valley, Santa Clarita Valley, Malibu/Santa Monica Mountains and San Fernando. The plan also includes 3,900 acres of infill development subject to slope instability hazard, 15 percent of which is located in unincorporated areas.

Mitigation Measures -

Plan policies are directed toward reducing hazards to acceptable levels in areas subject to geologic/seismic hazard, and managing rather than barring development in hillside areas to reduce the risk of such hazards. The Land Use Element includes general standards and conditions for development within active and potentially active fault zones. These conditions include submittal of a geologic report, and prohibition of most structures within 50 feet of an active fault trace. All projects within active and potentially active fault zones requiring discretionary approval are to be submitted to County Engineer for review and the establishment of conditions as necessary. County Building Code requirements must be met before any grading or other permits can be issued. Performance review guidelines within hillside management areas relate to the avoidance of any geologic/seismic hazards or adequate engineering solutions to eliminate any significant threats.

Soils -

Effect -

Plan policies allow development in areas having soils constraints - based on characteristics such as composition, permeability, cut-slope stability, erosion hazard, and other engineering constraints - where appropriate corrective measures can be implemented. Thirteen thousand eight hundred (13,800) acres of potential urban expansion, or about twenty-five percent of the total urban expansion area, are located in areas with soils having engineering constraints for development (located primarily in the Antelope Valley, Santa Clarita Valley and East San Gabriel Valley Planning areas). Seventy percent of the 13,800 acres, or 9,700 acres are located within the unincorporated area. In addition, 2,600 acres of land with potential soils constraints are within infill areas; all of this acreage except 100 acres is within cities.

Mitigation Measures -

While plan policies restrict development in areas significantly hazardous to the public health and welfare, soil constraints can, for the most part, be corrected provided appropriate soils engineering technology is applied at the project level. A review of soil conditions and any necessary measures to correct soil problems is required by County Engineer-Facilities prior to the issuance of a grading or other discretionary permit. The plan's guidelines for development in Hillside Management Areas are also designed to reduce any adverse impact -- performance review includes the design of all excavation, roads, utilities, structures, etc. to compensate for problem soils.

Flood/Runoff-

Effect -

The removal of vegetation and coverage of land with impervious surfaces due to the urbanization process increases runoff, thus resulting in greater flood hazard potential. The plan generally directs development so as to avoid flood-prone areas; potential urban expansion is, however, permitted on 4,200 acres of potential flood or mudflow-prone areas. With reference to flood hazard, 2,800 acres are affected by potential urban expansion (including 2,600 acres in the Antelope Valley and 200 acres in the Santa Clarita Valley) and 400 acres are subject to infill development (located in the Cities of Palmdale and Lancaster). One thousand four hundred (1,400) acres of urban expansion, located in the Santa Clarita Valley, Malibu/Santa Monica Mountains and Antelope Valley, and 300 acres of infill development in the San Fernando and East Central planning areas are subject to potential mudflow hazard. Seventy (70) percent of the total acreage subject to mudflow is within the unincorporated area.

Mitigation Measures -

Plan policies are oriented toward restricting development in flood prone areas, avoiding major new flood control works and maintaining natural stream courses and watershed processes. The plan identifies flood prone areas as special management areas. Prior to the establishment

of flood protection districts, any development within a flood prone area is to be reviewed by County Engineer and Flood Control District who will define the areas within which no permanent structures will be permitted. After flood protection districts are established, no permanent structures are to be constructed within such areas, except accessory or approved flood control structures. The plan's Hillside Management performance review relates to the location of development at such distance from floodways so as not to interfere with natural drainage during severe storms and so as not to be endangered by such runoff. Other mitigation measures include limiting urban expansion in flood or mudflow-prone areas to primarily low density development, individual project review with reference to flood and runoff problems, and County Engineer's requirements for storm drain improvements and erosion control, as well as project design (e.g., clustered development.)

Fire -

Effect -

Fire hazard conditions relate to heavy vegetation, steep slopes and a high frequency of days of critical fire weather. Only six percent of the potential urban expansion area, or 3,600 acres, is subject to brush fire hazard. On a subregional level, the planning areas most affected are Santa Clarita Valley (2,600 acres), East San Gabriel Valley (500 acres) and Malibu/Santa Monica Mountains (400 acres). All except 100 of the 3,600 acres are located in unincorporated areas. In addition, 200 acres of infill development are subject to brush fire hazard, located within cities in the San Fernando and Burbank/Glendale planning areas. The plan's non-urban development would also be subject to brush fire hazard in hillside areas. In addition, the plan's recycling efforts will reduce urban fire hazards to the extent that the projected 33,100 acres of recycling results in the removal or major rehabilitation of hazardous older structures.

Mitigation Measures -

Plan policies are directed toward discouraging isolated development in wildland fire hazard areas, and developing stricter brush clearance ordinances to protect existing structures. Since brush fire hazard is associated with hillsides, the plan's Hillside Management provisions will help to mitigate adverse effects associated with this hazard.

The performance review procedure relates to the provision of adequate fire protection capacity based on such factors as fuel load, topography, access and water supply. Impacts on fire hazard can largely be mitigated at the project level given the access, brush clearance, type of building materials, fire flow and other requirements of the County Fire Department or other appropriate fire protection agency.

Noise -

Effects -

The impacts of noise on man are physiological, psychological, sociological and economic. Although quantification of noise impacts associated with the plan is not feasible, greater noise levels are associated with additional population, urban expansion, the centers concept, the more intensive use of industrial sites and major transportation corridors such as the Century Freeway and the completion of missing segments of other freeways. The Palmdale Airport is another potential major noise source, although airport operations in 1995 would result in no incompatible land use within the 65 CNEL noise boundary established by the State of California. The increased passenger trips at LAX, to 40 MAP in 1990, are expected to be accompanied by a decrease, rather than an increase, in noise levels, due to the phasing out of noisier aircraft, as required by Federal Aviation Regulation Part 36.

Mitigation Measures -

Plan policies dealing with mitigating increased noise levels are directed toward reducing noise in residential areas and reducing transportation-related noise. The Los Angeles County Community Noise and Vibration

Noise and Vibration Control Ordinance offers attenuation measures for a variety of noise sources and receptors. The Federal Occupational Safety and Health Act and the California Occupational Health and Safety Act (protecting industrial and construction workers against noise) as well as the various regulatory legislative measures of the State of California (e.g., California Noise Control Act of 1973, Noise Element Requirements of the Government Code, Noise Insulation Standards of the Health and Safety Code, etc.) also offer various methods of community noise control. The Los Angeles County General Plan Noise Element also offers additional mitigation measures. With reference to aircraft noise Federal Aviation Agency regulations require that noisier aircraft be phased out, and various State agencies deal with noise standards for existing and future airports and interior noise levels in residential structures.

Air Quality -

Effects -

The Plan's emphasis on a more concentrated pattern of development with balanced land uses is consciously designed to reduce the need for vehicle travel and therefore to reduce mobile source emissions. The analyses prepared by the County and by the South Coast Air Quality Management District and SCAG indicate a decrease in total emissions by the year 2000. Also, implementation of the 1979 Air Quality Management Plan* will result in meeting federal clean air standards in the air basin by 1987. The County's analysis, using a less sophisticated system, indicates a reduction in air pollution emissions (from stationary, mobile, and miscellaneous area sources) of about 64 percent by the year 2000. This represents a total net reduction of 4,430 tons per day (from 6,950 tons per day in 1975 to 2,520 tons per day for the year 2000).

Mitigation Measures -

Although federal and state measures have made impressive strides in emission controls of the motor vehicle, the County has proposed additional measures oriented toward the reduction of vehicle miles travelled (VMT)

*Adopted January 26, 1979 by the South Coast Air Quality Management District.

and vehicle trips and energy conservation. General plan policies and recommended actions aimed at the reduction of emissions include land use regulation (e.g., through the use of infill development and the encouragement of urban form conducive to the use of a mass transit system), land division and development plans (e.g., through decreased energy consumption), and highway improvements and transportation-oriented improvements (e.g., through the use of an improved multimodal transportation system). Plan policies are also supportive of reductions in stationary sources of emissions (e.g., encouraging research into "clean" forms of energy, such as those from thermal and solar sources). Moreover, the county has taken an active role as the lead agency in preparing a subregional Air Quality Management Plan (AQMP) which will strive to alleviate some of the problems associated with air pollution in this area. Preliminary data in the AQMP indicates that federal air quality standards will be met by 1987 through the implementation of approximately 75 tactics contained in the AQMP.

Water Resources/Water Quality -

Effects -

A slight (one percent) decrease in water usage is expected by the year 2000; agricultural usage is projected to decrease by about twenty-five percent, from approximately 167,000 acre-feet in 1975 to 124,700 acre-feet in 2000, while municipal (including residential/industrial usage) is projected to increase slightly, from approximately 1,495,300 acre-feet in 1975 to 1,520,570 acre-feet in 2000. Water conservation is expected to result in a ten percent savings. Although adequate supplies appear to be available to meet the anticipated water demand, the current quantities of Colorado River water will be significantly reduced by 2000, requiring greater reliance on State Water Project water, which is projected to be available in adequate quantities.

The supply of ground water will be affected by urban expansion — 3,700 acres of potential expansion are located in aquifer recharge areas (i.e., areas having highly permeable soil types located over a viable aquifer); planning areas most affected are Antelope Valley (400 acres) and the East San Gabriel Valley (1,900 acres). Twenty seven percent (1,000 acres) of the total acreage is located in the unincorporated area. In addition, 1,300 acres of recharge areas are affected by infill development; all except 100 of the 1,300 acres are within cities. However, it should be noted that development would generally result in the loss of about 50 percent of the acreage involved, thus reducing but not eliminating the potential for ground water recharge on the acreage affected. The plan's non-urban development would also result in some loss of recharge capability; this effect is not, however, considered to be significant.

Additional water service would be required on the 55,800 acres of potential urban expansion; upgrading of existing water service in recycle and infill areas may also be required.

With regard to water quality, the major source of groundwater pollution is inadequately treated sewage. There is a potential for pollution of ground water due to inadequate sewage treatment by septic tanks or private treatment systems in unsewered areas where the plan allows urban expansion, such as the Malibu/Topanga area. The major sources of coastal water pollution are polluted storm water and runoff, as well as the three major waste water discharge points discharging effluent into the ocean.

Mitigation Measures -

Plan policies are directed toward protecting and preserving ground water recharge and watershed areas, promoting water conservation programs, conserving storm and reclaimed water, achieving increased storage of potable water through use of spreading grounds, promoting the acquisition

of additional water for aquifer replenishment, and accepting population growth consistent with water availability. Use of reclaimed water is a potential source of supplemental supplies, as well as precipitation management to increase rainfall or snowfall.

Water quality in unsewered areas is protected by presently existent requirements of the Health Department and the State Regional Water Quality Control Board. Plan policies and recommended actions are oriented toward preventing the pollution of ground water, the ocean and other bodies of water and accelerating the upgrading of water, reclamation and sludge removal facilities. SCAG's Areawide Waste Management Treatment Plan for the South Coast area, to be completed over the next three to four years, is to develop control and abatement measures for water quality problems, with the goal of reducing non-point source pollution. The county is participating in the preparation of this plan.

Biota -

Effect -

The plan's Land Use Element includes conditions and standards for development within areas identified as Significant Ecological Areas (SEAs). These areas represent the habitat of rare, endangered or threatened plant and/or animal species, prime examples of the more common biotic communities as well as resources that are uncommon, rare, unique or critical to the maintenance of wildlife. Development within such areas must demonstrate that the biotic resources will be adequately protected.

The plan does, however, allow potential urban expansion on 34,800 acres, and infill on 6,100 acres, in the county where natural vegetation (representing the key factor of habitat type), including coastal sage scrub, chaparral, grassland and woodland savanna, would be affected. Urban expansion and infill development affect, respectively 12,500

acres of grassland¹ (five percent of the county's total), 5,100 acres of chaparral (about two percent of the county's total) 4,600 acres of coastal sage scrub² (four percent of the county's total) and 18,700 acres of woodland/savanna³ (11 percent of the county's total). Of the 34,800 acres of urban expansion, 12,400 acres are within unincorporated areas; of the 6,100 acres of infill, 400 acres are within unincorporated areas.

Mitigation Measures-

Plan policies and recommended actions are oriented toward protecting and preserving Significant Ecological Areas and their associated buffer areas, as well as riparian vegetation, watershed and streams. Other mitigating policies relate to restricting development in hillside areas, encouraging open space easements and dedications, preserving and restoring marine resources, and encouraging flood control methods which avoid alteration of natural stream channels, thereby preserving riparian habitat. Within SEAs, only regulated scientific study and passive recreation uses are considered compatible uses by definition. Although other uses may be permitted, through the performance review procedure, compatibility is to be determined by a detailed biotic survey and such conditions as may be necessary to assure protection of ecological resources.

The management of the National Forests and adjacent lands, including private inholdings which are regulated by the county, will also help to protect the significant habitat and resources within these areas. The loss of vegetation and habitat can also be mitigated to some degree at the project level — for those projects requiring discretionary approval — through project design (e.g., concentrated development) and through low density development. The plan's hillside management provisions, requiring the retention of large portions of hillside property in a natural or open state, within both non-urban and urban hillsides, will also help to mitigate the overall impact on biota.

1

Including desert vegetation in North County

2

Including sagebrush scrub in Antelope Valley

3

Including desert woodland in North County

Extractive Resources -

Effect -

Approximately 1,100 acres of known extractive resources (sand and gravel, and oil and gas) are located within the plan's potential urban expansion areas and 3,900 acres are affected by infill development. Four hundred (400) acres of urban expansion (36 percent of the total) and 400 acres of infill (11 percent of the total) are within unincorporated areas. Specifically, approximately 700 acres of sand and gravel areas containing known resources in urban expansion areas and 2,800 acres of such resources in infill areas are affected. The total 3,500 acres represent approximately two percent of the county's total sand and gravel known resources. With reference to oil and gas, 400 acres in urban expansion areas and 1,100 acres in infill areas are affected. The total 1,500 acres also represent approximately two percent of the county's total oil and gas resources. Most of the affected resource lands are proposed for low and low-medium density residential use. The preemption of these acres will result in either the loss of the resource or some form of multiple use of the resource lands. Where the loss of sand and gravel quarrying operations in close proximity to urban uses does occur, increased air pollution and energy consumption will result from the increased transport distances. Potential conflicts between extractive (quarrying) uses and other urban uses will increase as a result of urban expansion. With reference to petroleum resources, such extraction sites can operate with minimal disruption to nearby properties in urban areas.

Mitigation Measures -

Plan policies call for encouraging the protection and conservation of significant mineral resources and evaluating the extent of additional deposits. The plan designates mineral resource areas as special management areas, wherein proposed projects other than open space, passive recreation, agriculture, extraction or surface mining shall be reviewed for compatibility with existing or potential mineral resource production. The Surface Mining and Reclamation Act of 1975, which is to be implemented by local governments, is also concerned with the protection of significant mineral resources. Projects requiring discretionary action

by governmental agencies can be evaluated during the environmental review process to determine and possibly mitigate the impact on mineral resources. Quarrying sites located near other uses, especially residential uses, would require buffering to mitigate conflicts. The Land Use Element specifies that all extractive surface mining facilities are subject to conditions relating to such items as control of noise, dust, vibration, smoke, odors and lighting; provision of setbacks; as well as erosion, water quality, and runoff controls.

Prime Agricultural Soil Resources -

Effect -

The General Development Policy Map shows the potential urbanization (urban expansion and infill) of 13,400 acres of lands currently used for agriculture, or about 15 percent of the total acreage currently used for agriculture. Eight thousand three hundred (8,300) of the 13,400 acres are located in the south county, with the remainder in the north county. Two thousand five hundred (2,500) of the 13,400 acres are located in unincorporated areas. While most of the existing agricultural land in the south county is used for dairy farming and growing nursery stocks rather than the production of field crops, vegetables or citrus, an economic loss would be associated with the loss of such uses. However, plan policy specifically encourages the retention of economically viable agricultural production within existing urban areas through the identification and mitigation of significant adverse impacts resulting from adjacent new development.

The plan also shows 28,000 acres of urban expansion and 16,600 acres of infill on vacant lands having a potential high capability for agriculture but which are not currently used for agricultural purposes. The total 44,600 acres represent approximately 11 percent of the county's total acreage of lands having such high capability. The Antelope Valley is most affected by urban expansion; the East San Gabriel Valley and Antelope Valley are most affected by infill development. Seven thousand two hundred (7,200) acres of urban expansion acreage on high capability soils, and 1,600 acres of infill acreage on high capability soils, are within the unincorporated area.

The combined total of new urban development (urban expansion and infill) on existing agricultural lands and on lands having a high capability

for agriculture represents about 13 percent of the total 450,000 acres of prime land in the county.

Mitigation Measures -

Plan policies generally call for preserving significant agriculture resources and encouraging the expansion of agricultural activities, using flood inundation areas for agriculture, and using economic incentives such as the California Land Conservation Act to encourage continued agricultural production. In the Antelope and Santa Clarita Valleys, over 200,000 acres (about eight percent of the county's acreage) are designated in the plan as potential agricultural preserves and the Land Use Element includes general conditions and standards to guide land use decisions within such areas relating to such factors as types of uses, minimum lot size, effect on agricultural uses, etc.

Energy Consumption -

Effect -

Overall energy consumption is expected to drop by two percent by the year 2000, based primarily on increased automobile efficiency. Total annual energy use in the year 2000 is projected to be about 1,316,000,000 million BTUs, as compared to 1,340,000,000 million BTUs in 1975. Residential usage is projected to increase by ten percent, and other stationary usage by 22 percent, but the decrease in the transportation sector (48 percent) is projected to reduce overall usage by two percent. The electrical utilities plan to meet the electrical energy needs of a population greater than the plan's projected 808,000 increase, and the State Energy Resources Conservation and Development Commission also projects a growth factor greater than that indicated by the plan. The gas utilities are uncertain as to the availability of future supplies, although no curtailment to high priority customers (e.g., residential users) is anticipated. The development of energy sources to meet the energy needs of the increased population will result in adverse effects related to air quality, water supply, water pollution and health and safety, although

Mitigation Measures -

The principal mitigation measure is the conservation of energy usage, through existing and proposed governmental regulations, as well as individual consumer choices. The Plan includes many policies and recommended actions oriented toward energy conservation, affecting both stationary and mobile sources. Another measure is the current effort to prepare an "Energy" Element of the General Plan.

Archaeological/Historical/Paleontological Resources -

Effect -

The Plan's new urban development represents a potentially adverse impact on the County's archaeological and paleontological resources; however, since no comprehensive survey of the County has been completed, quantification of effects is not feasible. To the extent that development is allowed in areas which have been surveyed and identified as archaeologically sensitive, such as the Santa Monica Mountains, Puente Hills and Santa Susana Mountains, archaeological resources will be affected; paleontological resources are also likely to be located in these same areas. Since the Plan does emphasize the revitalization of already urbanized areas and infill-ing, rather than urban expansion, the potential impact on these resources is lessened; the emphasis on rehabilitation would have a potentially beneficial impact on historic structures, providing greater likelihood that older buildings could be preserved.

Mitigation Measures -

Plan policies are aimed at preserving and protecting archaeological, paleontological and historical resources as well as the cultural heritage of the County. Recommended actions also include adding the position of staff archaeologist to the Department of Regional Planning.

Use Element also includes guidelines for the protection of archaeological resources during the initial study process, and for the preservation of historical sites where possible and design controls on development in the vicinity of historical sites. Effects on cultural resources will be evaluated at the project level during the environmental review process for projects requiring discretionary permits. When significant effects are identified as a part of this process, they can be mitigated through project design or by delaying development until the resources can be recovered.

Scenic Qualities -

Effect -

The plan's hillside management, scenic corridor, Significant Ecological Area, and open space easement provisions all represent beneficial aspects in terms of scenic quality (see mitigation measures below). The plan does, however, reflect some loss of scenic lands. Urban expansion is allowed on 2,900 acres of urban expansion land and 800 acres of infill land identified as having high scenic quality (based on an experimental south county model developed by Environmental Systems Research Institute as a part of the Land Suitability/Land Capability Study for the General Plan Revision Program). Areas most affected are the Santa Clarita Valley, East San Gabriel Valley, and Malibu/Santa Monica Mountains. Most of the development would be at low residential densities; however, scenic qualities would be affected, especially by the construction of access roads.

The change in scenic qualities was also measured in terms of encroachment of new urban development into hillside areas (15 percent or greater slope). A total of 12,500 acres of urban expansion are affected, including 3,200 acres at 15 to less than 30 percent slope and 9,300 acres at 30 percent or greater slope. Areas where encroachment is greatest are the East San Gabriel Valley, Santa Clarita Valley and Malibu/Santa Monica Mountains. Of the 12,500 acres, 7,400 acres are located within

the unincorporated area. With regard to infill development, 3,200 acres are affected--900 acres of 15 to less than 30 percent slope and 2,300 acres of 30 percent or greater slope. All but 200 acres of this infill development (located in the Central and Santa Clarita Valley areas) is located in cities.

The plan's non-urban development (a projected net change of 15,000 new dwelling units) -- in particular the potential new dwelling units within non-urban hillsides--also represents a change in scenic qualities.

In addition, the plan's recycling and infilling efforts may result in a change of scale of some existing urban areas. An average residential density of 23.9 units per acre for the 325,000 new residential units on recycled land (as compared to an existing average density of 7.7 units per acre on the acreage to be recycled) could result in a major visual change in neighborhoods in the West, Central, East Central, Southeast, South and West San Gabriel Valley planning areas, and possible conflicts between single family and adjacent recycled areas. However, it is assumed that the recycling effort will result in beneficial visual effects to the extent that it is used to upgrade the appearance of blighted neighborhoods. Residential infill and urban expansion is to be developed at an average density of 7.8 units per acre, as compared to a county average residential density of 6.6 units per acre in 1975.

Mitigation Measures -

Plan policies are oriented toward protecting areas that have significant scenic values, protecting views from public roadways and key vantage points, encouraging tree planting programs and landscaping in urban developments, protecting coastal areas, and promoting the undergrounding of electric and communication lines. The plan's Hillside Management/Performance Review Procedure sets specific slope/density formulas for non-urban residential development, with minimum and maximum densities. Submittal, review and approval of a specific site plan is required

for all projects in non-urban hillsides (25 percent or greater slope) where the proposed density exceeds the minimum slope/density threshold. Further, all proposed residential development in non-urban hillsides is subject to a performance review procedure; criteria relate to grading, protection of drainage courses, riparian vegetation, trees, significant views, landscaping, etc. In addition, 70 percent of the land is to be retained in a natural or open state. Urban residential development on hillsides of 25 percent or greater slope is also subject to the performance review procedure, with regard to public safety and quality of design. Also, 50 percent of the development site is to be retained in a natural or open state.

Other mitigation measures are the Land Use Element's General Conditions and Standards for Development as applied to non-urban residential development, the plan's special management designation of scenic corridors, potential agricultural preserves, significant ecological areas, national forests, the designation of over 40,000 acres as open space easements, and the implementation of the Santa Monica Mountains National Recreation Area legislation. In addition, private projects will be reviewed as to scenic impacts as a part of the environmental review process, when a discretionary development approval is required. Design changes can be incorporated during this process.

With reference to alteration of the scale of existing neighborhoods, the primary mitigation measure is design control, to insure that adjacent uses are compatible.

Land Use -

Effect -

Major land use changes include the projected 33,100 acres of recycling, primarily in older urban areas, the projected 35,900 acres of in-filling on bypassed vacant land, primarily in the suburbs, and the projected 27,000 acres of urban expansion. The plan's emphasis on concentrated

development and moderate densities will result in positive effects through a more limited consumption of land and other natural resources and a more limited potential for development in hazardous areas. The revitalization process is designed to discourage abandonment of existing deteriorated areas, but would result in changes in land use types, including a net loss of residential low density uses (see discussion of Communities) especially in the older urban and suburban areas. When all categories of urbanization are considered (urban expansion, recycling and infilling) there will be a net gain in all land use types except vacant and agricultural. Potential negative effects resulting from the concentrated development pattern relate to increased local traffic, the potential overburdening of local service systems and possible reduction of privacy.

Mitigation Measures -

These are all discussed under other categories -- i.e., Scenic Qualities, Communities, Housing, and Transportation.

Communities -

Effect -

Beneficial effects include encouraging the revitalization of older inner-city areas, through the extensive rehabilitation of residential, commercial and industrial areas and through the selective and timely recycling of the most seriously deteriorated areas, and encouraging the conservation and maintenance of existing sound neighborhoods as well as the retention of the character of existing rural communities. Potential negative effects relate to the emphasis on higher density residential construction, the compatibility of new local commercial and industrial uses with existing development and the disruption and relocation resulting from the recycling process. Increased noise levels, reduced public facility/service levels, as well as visual impacts may be associated with the shift to higher densities on recycle and infill land. Despite the plan's emphasis on rehabilitation rather than recycling, there is the potential for loss of some service and business establishments, and psychological

impacts on residents affected, as well as difficulty in finding new housing. Although the plan's emphasis on revitalization and conservation/maintenance is intended to discourage population migration from the older urban areas, community identity may be affected by the changing demographic composition of certain communities and the change to higher densities or the loss of rural agricultural lifestyle resulting from urban expansion.

Mitigation Measures -

Plan policies are aimed at conserving sound residential areas and protecting them from the intrusion of incompatible uses, fostering rehabilitation rather than replacement of housing units wherever economically feasible, and minimizing displacement in revitalization areas and providing full relocation services to occupants of dilapidated units that must be removed. The plan also provides general conditions and standards for development of local commercial and industrial uses (where not regulated by an area or community plan), so as to minimize impacts on the surrounding neighborhood/community land use patterns.

Population -

Effect -

The plan's projected population increase of 808,000 between 1975 and 2000 results largely from natural increase, although a total net out-migration of 581,000 persons by the year 2000, or an average of 23,000 persons per year, is assumed. This out-migration level represents a reversal of the last decade's trend of population loss to neighboring counties, especially of middle and upper income residents. The continuing out-migration of these residents has implied a loss of social and economic vitality. The plan's emphasis on revitalizing older urban areas is intended to reverse the last decade's trend toward migration from the inner city and older suburbs to urban fringe areas both within and outside the county.

Mitigation Measures -

To reduce out-migration, especially of middle and upper income residents, plan policies are oriented toward the revitalization of older areas, the provision of new housing and the protection of the character of existing stable residential neighborhoods, as well as economic development (emphasizing a strong, diversified economy, an improved standard of living and the retention of jobs and investment). Policies promoting greater governmental effectiveness, such as a more equitable distribution of costs and benefits of governmental actions, and an increased sensitivity of government to citizens' needs and values, also may help to slow out-migration.

Housing -

Effect -

The plan's encouragement of the provision of new housing units (including lower income units), the rehabilitation and conservation of existing units, and the reduction of blight would result in primarily positive effects. The plan calls for the construction of 612,400 new housing units, including 444,000 medium (and limited high) density units and 172,400 low density units. A beneficial effect of the plan's emphasis on the construction of moderate density units (e.g., twin homes, townhouses, garden apartments) is the generally lower cost of such units (as compared to detached single family units on large lots) and therefore greater affordability to a wider range of families. The plan also encourages the rehabilitation of 424,000 housing units, the conservation of 798,000 units through heavy maintenance, and the demolition of 143,000 unsound units. The projected 13,680 acres of residential recycling in the plan will result in a substantial shift to moderate densities from low densities, (see discussion of effects on Communities) resulting in a potential reduction in blight as well as the necessity of relocating residents in the blighted recycle areas. Nineteen thousand (19,000) low density units and 307,000 medium (and limited high) density units are included. Potentially negative effects

related to increased densities include more crowded living conditions and increased pressures on existing local service systems. The plan also includes a projected 18,600 acres of new lower density residential expansion. Lower density development is generally associated with increased consumption of energy and other natural resources and a more costly extension of services.

Mitigation Measures -

To mitigate the negative effects of recycling, the plan emphasizes the preservation and maintenance of stable residential neighborhoods, the prevention of abrupt increases in housing density, the rehabilitation rather than replacement of sound housing units, and upgrading existing services and facilities in areas needing or undergoing revitalization. The negative aspects of allowing generally more costly lower density residential development at the urban fringes is mitigated by plan policies and recommended actions emphasizing the development of low and moderate income housing, and encouraging the use of energy saving technology in design, construction and operation of residential buildings. The Land Use Element's general conditions and standards for development also provide that lower income housing may exceed the densities shown on adopted plans, provided that it is reviewed for compatibility with community character and the availability of services. The impact of low density fringe development on natural resources and scenic qualities can, to a certain extent, be limited at the project level, depending on project design, as a part of the environmental review process for discretionary permit approvals.

Employment/Unemployment -

Effect -

The plan encourages a stronger economy and reduced unemployment. The effects of the plan are anticipated to be generally favorable; the projected increase of 661,000 jobs between 1975 and 2000 and the reduction of in-commuting by 227,000 will accommodate an increase in the labor force

of 769,000 and allow a decrease in the unemployment rate to an assumed five percent level — from 319,000 in 1975 to 200,000 in 2000. To reach this unemployment level, a program of vigorous revitalization of the older and deteriorated job centers, and a program promoting the advantages of locating or retaining industrial plants in Los Angeles, need to be carried out. Plan policies deal with increased emphasis on on-the-job training, improving the dissemination of information about job opportunities and employer requirements, and eliminating job discrimination. Increased emphasis on employment opportunities in the private sector is particularly important given the potential for lower employment levels in the public sector associated with the impacts of Proposition 13. Associated with the positive economic effects are the potential negative effects on the physical environment — air and water pollution and depletion of energy resources.

Mitigation Measures -

To mitigate the potential negative environmental effects of economic growth, the plan includes policies such as identifying the types of firms most likely to provide stable employment and rising incomes and that will also conserve land and protect environmental resources; promoting jobs within convenient commuting range of residential areas in order to reduce commuting time, save energy, reduce air pollution and improve public convenience. Other mitigation measures are discussed under other categories — i.e., Air Quality and Energy Consumption as well as the various categories dealing with development in hazardous areas and the loss of natural resources.

Income -

Effect -

The plan's emphasis on revitalization of the older urban areas—retaining jobs and improving housing opportunities—is intended to stem the out-migration from these areas, raising and maintaining the county's level of income relative to adjacent counties. Preventing the abandonment of the

county's older urban areas will also help keep the local tax burden from rising, thus also positively affecting incomes. The plan also encourages the extension and delivery of public services in a rational and efficient manner, therefore avoiding unnecessary costs and minimizing the impact on residents' income.

Mitigation Measures -

Since the plan's effects on income are expected to be beneficial, none are suggested.

Investment -

Effect -

The plan calls for sensible public investment to encourage additional private investment to carry out its revitalization policies and recycling targets. Implementation of the plan's commercial/industrial and housing revitalization programs and other economic development policies should tend to improve the current investment climate. Encouraging and reassuring private investors is the key to successful implementation of the policies. The plan's emphasis on conservation and maintenance of the existing housing stock should also help to maintain investment levels.

Mitigation Measures -

None are suggested, as the impacts are anticipated to be beneficial.

Governmental Expenditures -

Effect -

The total cost of local government services in 1978 was approximately 7.1 billion dollars. This figure represents about \$1,000 per person to pay for education, highways, police and fire protection, health, welfare,

sewage and the other services provided by local governments. Based upon today's per capita costs of local government, an increase of approximately \$808 million in expenditures (in 1978 dollars) would be required to provide the plan's projected 808,000 additional population by the year 2000 with the current level of public services. The plan does, however, include policies which will have the overall impact of reducing the potential level of government expenditures, such as those encouraging revitalization and intensification of development in existing urban areas, and providing that urban fringe development will be permitted only to the extent that marginal public costs for public services and facilities — exceeding average public sector expenditures in already developed areas — are absorbed by such development. A successful revitalization effort in which public expenditures (federal, state and county) are leveraged with private investment will result in less unemployment, fewer social problems and a lower demand for local expenditures for social services, thus resulting in an assumed reduction in public expenditures in the long term. In addition, the plan's policies channeling new urban expansion into areas based upon the minimum cost for extending services will have the impact of requiring fewer facilities than if old urban expansion patterns were to continue. The plan's emphasis on a more compact pattern of urban development is specifically designed to reduce the governmental expenditures needed to provide adequate service levels.

Mitigation Measures -

The plan's policy direction is oriented toward ensuring beneficial effects on governmental expenditures. These policies relate to improving the land use decision-making process, programming water and sewer service extensions to be consistent with plan policies, establishing procedures to use cost/benefit/revenue studies to evaluate new developments, reviewing regulations, ordinances, codes and standards to minimize impacts on development costs, and employing cost/benefit techniques in formulating codes and standards. While the impact of policies that call for developing new and better information and analysis will increase the level of operating expenditures in the short run, the long run impact will be to reduce the level of operating expenditures, thus mitigating any adverse effect.

Governmental Revenues -

Effect -

The sources of revenues for local jurisdictions are receipts from other governmental units (state and federal) and general revenues from local sources (e.g., property taxes, and general sales and gross receipts). Revenues from these sources are affected by a variety of factors, such as the rate of inflation and legislative and fiscal changes, which are beyond the scope of influence of the plan. However, the property taxes and general sales and gross receipts are the most likely sources to be impacted by the plan in a predictable manner. With reference to the property tax, the increased numbers of new residential, commercial and industrial structures projected by the plan are expected to have a positive effect — since the passage of Proposition 13, higher revenues may be received for newly constructed structures (as opposed to existing structures which have not been sold). After Proposition 13 property tax revenues resulting from commercial or industrial uses can no longer be presumed to be uniformly greater than those from residential use since residential units are typically subject to a more rapid turnover rate and hence represent a greater opportunity for re-assessment. The plan's policies relating to revitalization and infill will also result in positive impacts on the property tax in terms of increased tax revenue and a general reduction in investment in new infrastructure. With reference to general sales and gross receipts, such revenues will be increased by both the projected population growth and the expansion of commercial facilities. A successful implementation of the plan's revitalization strategy, and positive effects on local revenues, are greatly dependent on revenues from state and federal sources as well as the private sector.

Mitigation Measures -

Because the plan's effects are expected to be beneficial, none are suggested.

Transportation -

Effect -

Person trips on an average weekday in 2000 are anticipated to increase by 12 percent over 1975 levels, to 28.2 million trips, while average vehicle miles traveled (VMT) on an average weekday is projected to be

116 million miles, as compared to 111 million miles in 1975 (the plan assumes a transit diversion of eight percent of total person trips). Travel patterns and magnitudes are expected to change very little by the year 2000. The plan recommends several mapped and written policies designed to lessen the traffic congestion problem on those segments of freeways and highways currently experiencing congestion. The plan's written policies encourage the use and expansion of public transportation, promote carpooling and stress low cost strategies that maximize the efficiency and cost effectiveness of the existing transportation facilities and systems.

The plan includes the completion of some new transportation facilities and improvement of several existing facilities. Effects related to the proposed Route 105 (Century) Freeway-Transitway are related to displacement of people and residences, noise, seismic hazard, air quality, loss of tax base and loss of recreational uses. Effects associated with development of Palmdale Airport to 12 Million Annual Passengers by 1995 include noise, air quality, surface drainage, biota, access and growth inducement. Noise effects are also associated with the increase in passenger trips at LAX. The proposed Route 138 Metropolitan Bypass Freeway and Route 48 Lancaster Freeway are intended to allow traffic to bypass the Los Angeles Metropolitan area. The Route 126 Santa Clara River Freeway is also intended to relieve existing and anticipated traffic congestion. The significant effects of all of these transportation facilities are or will be discussed in environmental impact reports.

The plan also includes completion of several missing freeway links to maximize the movement of people and goods, eliminate congestion and/or provide needed access. The completion of the missing freeway links would not, for the most part, involve any significant environmental effects except increased local noise levels. The construction of transportation facilities associated with the urban expansion process may result in impacts on scenic quality, geologic/seismic or other

hazards, or natural resources. These potential effects are discussed under other categories.

Mitigation Measures

Plan policies include stressing environmental compatibility and improvement, seismic safety, the conservation of energy and natural and man-made resources and minimizing the adverse effects on people and businesses in the provision of transportation. The effects of specific public road or transit projects will be considered at the project level, and environmental studies will be required to ensure compatibility with the existing environment. Transportation related effects of private development will be considered at the private project level whenever a discretionary permit is required. Mitigation measures for effects on hazards and resources are discussed in the appropriate categories.

Liquid/Solid Waste Disposal

Effect -

Based on a liquid waste generation of 116 gallons per capita per day (GCD) in the Coastal Basin, a total liquid waste generation of 856 million gallons per day (MGD) is anticipated by the year 2000. Existing and presently proposed treatment facilities are anticipated to provide 840 MGD capacity, a figure well within the 10 percent margin between supply/demand considered acceptable. Within individual planning areas, anticipated population growth can be accommodated by existing and planned capacity except in the Palmdale/Lancaster area which will be deficient by 5.6 MGD requiring construction of new facilities or enlargement of existing plants. Where the construction of sewer lines is required, impact on the physical environment will be minimal since such lines are generally placed within the street right-of-way. Adverse effects of sewage generation on water quality are considered under Water Resources/Water Quality (see above).

Annual solid waste production is anticipated to be 13,453,000 tons in 2000. Annual waste generation will rise in proportion to population. Landfill capacity will continue to diminish to the year 2000, although marginally adequate capacity will be available to serve the plan's projected population to the year 2000, if permits for existing sites are renewed.

Mitigation Measures -

Since sewerage generation is associated with potential water quality problems (see Water Resources/Water Quality) and since the plan's increased population will require construction or improvement of sewerage facilities in some areas, plan policies call for maintaining a balance between intensity of development and the capacity of needed facilities, coordinating the programming of waste management facilities with land use, and developing a system to monitor changes in land consumption in order to evaluate the capacity of existing sewerage systems by service area at the project level. Other policies which would tend to mitigate the potential adverse impacts relate to increased service efficiencies, greater coordination with other agencies in developing new technology and encouraging innovative designs.

With regard to solid waste disposal, the plan proposes increased landfill capacity as a short-range solution, in addition to waste recycling and resource recovery (energy generation) as long term solutions. Potential adverse impacts associated with additional landfill capacity include loss of habitat, water quality degradation, increased traffic, migration of methane gas, odors, noise and visual changes. The Los Angeles County Solid Waste Management Plan proposes several new sites and implementation of resource recovery to alleviate the shortage of landfill sites; salvaging of reuseable materials and compression of materials prior to delivery to landfill sites are also potential methods for reducing the quantity of landfill materials.

SUMMARY OF INDIVIDUAL ENVIRONMENTAL FACTORS

In urban expansion areas significant impacts include seismic and unstable slopes (Geologic/Seismic), mudflow (Flood/Runoff), fire hazard, Prime Agricultural Soil Resources, and Scenic Qualities. In infill areas significant impacts include seismic and unstable slopes (Geologic/Seismic) and Scenic Qualities. A significant impact in non-urban areas is fire hazard. The impacts associated with the remaining environmental factors are either considered beneficial or insignificant due to mitigation measures and/or the amount of acreage involved.

CUMULATIVE EFFECT -

While the evaluation of the Plan's potential impacts on individual environmental factors is important, an analysis of areas subject to several constraints and/or containing multiple resources is more meaningful since it approximates the capability of land for development. Material prepared by Environmental Systems Research Institute (ESRI) was utilized to analyze this potential cumulative encroachment. All undeveloped land -- except that committed to open space use -- was classified as to general suitability for development ranging from "A" ("high capability") down to "E" ("very low capability"). Lands encroaching into D and E categories provide the focus for this cumulative analysis. D lands are described as those having a low capability for development with major environmental constraints. E lands have a very low capability for development and have severe environmental constraints.

The environmental constraints in Class D include: potentially active faults, slopes greater than 30 percent high potential for unstable slopes, sand/gravel extraction sites, and significant ecological area buffer zones. Class E constraints include active faults, active landslides or unstable sea cliffs, flood proneness, and significant ecological areas.

Urban expansion and infill development on D lands amounts to 7,100 acres of which 4,600 are in unincorporated territory. These areas are shown in Figure 1-2.

FIGURE 1-2

ESTIMATED ACREAGES OF URBAN EXPANSION AND INFILL DEVELOPMENT IN CLASS D
(ESRI CAPABILITY)

<u>Planning Area</u>	Urban Expansion		Infill Development	
	<u>Total County</u>	<u>Unincorporated Area</u>	<u>Total County</u>	<u>Unincorporated Area</u>
San Fernando	300	-0-	300	-0-
Burbank/Glendale	-0-	-0-	300	-0-
West San Gabriel Valley	-0-	-0-	100	-0-
East San Gabriel Valley	800	400	200	-0-
Malibu/Santa Monica	400	400	*	*
West	300	-0-	-0-	-0-
Central	-0-	-0-	300	-0-
South	-0-	-0-	*	*
Southwest	-0-	-0-	300	-0-
Santa Clarita Valley	3,800	3,800	*	*
Antelope Valley	-0-	-0-	-0-	-0-
TOTAL	5,600	4,600	1,500	*

* Less than 100 acres

The 7,100 acres represents about 13 percent of the total 55,800 acres of urban expansion. Of this total, 69 percent is in the Santa Clarita Valley. The primary environmental constraints in this planning area are unstable slopes and slopes over 30 percent.

Eight thousand five hundred (8,500) acres of urban expansion and infill development are in Class E of which 500 acres are in unincorporated territory. Figure 1-3 shows their location.

FIGURE 1-3

ESTIMATED ACREAGES OF URBAN EXPANSION AND INFILL DEVELOPMENT IN CLASS E
(ESRI CAPABILITY)

<u>Planning Area</u>	Urban Expansion		Infill Development	
	<u>County</u>	<u>Area</u>	<u>County</u>	<u>Area</u>
San Fernando	200	-0-	100	-0-
Burbank/Glendale	-0-	-0-	*	-0-
West San Gabriel Valley	-0-	-0-	*	-0-
East San Gabriel Valley	-0-	-0-	100	-0-
Malibu/Santa Monica	100	100	*	-0-
Central	-0-	-0-	*	*
East Central	-0-	-0-	*	-0-
South	-0-	-0-	100	100
Santa Clarita Valley	100	100	*	*
Antelope Valley	<u>2,800**</u>	<u>200***</u>	<u>300</u>	<u>*</u>
TOTAL	3,200	400	600	100

Of the 3,800 acres, 3,100 acres are located in the Antelope Valley, representing about 82 percent of the total Class E lands. Most of the lands in this class are flood prone; however, the Plan's flood plain management and compliance with ordinances relating to flood hazard would reduce the impact to insignificant levels.

* Less than 100 acres

** Does not include 4,700 acres in Palmdale Airport site.

*** Does not include 4,400 acres in Palmdale Airport site.

2.0 - PROJECT DESCRIPTION

2.1 Location

This general plan program encompasses the entire county of Los Angeles, an area of 4,083 square miles. The county is bounded by Ventura County on the west, Kern County on the north, San Bernardino County on the east, Orange County on the southeast and the Pacific Ocean on the west and south. County jurisdiction also includes Catalina and San Clemente Islands.

Los Angeles County is the hub of the Southern California region, defined for the purposes of this report as the six-county area encompassed by the Southern California Association of Governments (SCAG)* (Map 2-1 indicates the location of Los Angeles County within the SCAG region). It comprises approximately 11 percent of this region, but contains 70.0 percent of the population. The county contains 81 incorporated cities, which together form an area of approximately 1,100 square miles. Unincorporated area is over 3,000 square miles, and includes some of the areas where major growth will be likely to occur during the life of the plan.

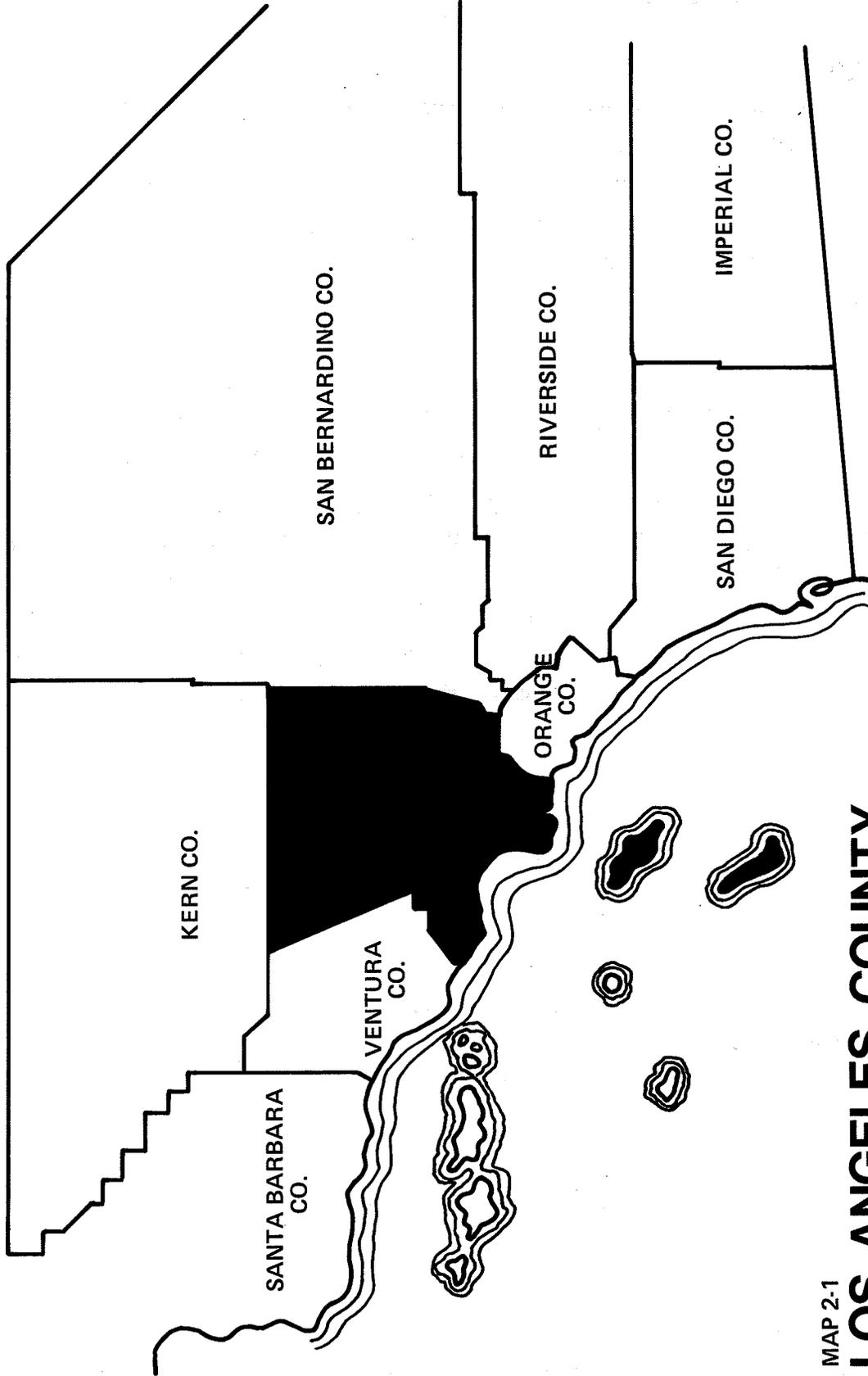
2.2 Objectives

The General Goals and Policies Chapter of the general plan includes the following goals. These goals express the purpose of all six elements of the plan (as listed in Section 2.3) and are to be used as a guide for implementing the plan.

- Provide full and equal opportunity.
- Conserve resources and protect the environment.
- Revitalize declining urban areas.
- Develop a strong diversified economy and ensure full employment.

In addition, each of the six elements of the general plan includes specific objectives.

* The SCAG region covers a total of 38,528 square miles and includes the counties of Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura.



MAP 2-1
LOS ANGELES COUNTY

2.3 Description

History -

The Regional Planning Commission embarked on a countywide planning program in late 1968. The first phase culminated in October, 1970 with the adoption of an interim plan, the Environmental Development Guide (EDG). The EDG covered both cities and unincorporated areas, and placed heavy emphasis on identifying major problems and articulating basic goals and policies. It contained Land Use, Housing, Transportation, Water and Waste Management and Open Space and Recreation Elements. This plan was to have been subjected to extensive citizen and public agency review during succeeding years (Phase II) and ultimately revised and adopted as a plan for the entire county (Phase III).

Because of the many new legislative and court mandates enacted between 1970 and 1972, the county was required to delay Phase II of the program in late 1972. The major legal requirements which impacted the program were the Open Space Lands Act, 1970 Legislative session and AB's 996 and 1301 (1972 Legislative session). Rigid time deadlines, and the requirement to achieve consistency between zoning and the general plan, focused the late 1972 - early 1973 effort on the unincorporated areas of the county, with primary emphasis given to land use and open space mapped policy. The county met these requirements through its adoption on June 18, 1973 of the General Plan of Los Angeles County. This plan amended the Open Space and Land Use Elements of the EDG, added a Conservation Element, and concerned itself with achieving consistency between zoning and land use.

However, inconsistencies and conflicts between the 1970 and 1973 plan became evident due to the differences in detail, geographic coverage and element focus. In addition, the state issued guidelines for preparing general plans which established a much broader scope than past local planning efforts and required the adoption of four new elements by September 20, 1974 (seismic safety, noise, safety, scenic highways). These new elements were adopted by the Board of Supervisors on January 30, 1975.

On July 9, 1975, Judge David A. Thomas voided the 1973 amendments -- the Land Use, Conservation, Open Space, Housing and Transportation/ Public Services & Facilities Elements -- and two zoning ordinance amendments implementing the 1973 plan amendments. Also, the EIR was found to be inadequate. The Seismic Safety, Noise, Safety and Scenic Highways Elements were not affected.

Present Program -

After the Thomas Decision, the county developed an approach toward the countywide planning program aimed at both meeting the state guidelines and reconciling the conflicts between the 1970 and 1973 plans. It was decided that the approach should strive for internal consistency, should be developed at a countywide level rather than at the unincorporated area level only, that policy selection should be based on the evaluation of alternative forecasts and an environmental impact analysis; and that the maximum level of citizen and public participation should be provided.

The chapter and elements included in this general plan program and to which this EIR is directed are:

- General Goals and Policies Chapter
- Conservation and Open Space Element
- Land Use Element
- Housing Element
- Transportation Element
- Water and Waste Management Element
- Economic Development Element
- Implementation Chapter

These elements and chapters, in addition to the four adopted elements listed under "History" above and certain adopted community/area plans will together comprise the general plan of Los Angeles County.

2.4 Technical Characteristics

Since the project is a general plan, no engineering proposal or data exists or is necessary. General descriptions of environmental, economic and supporting public services and facilities characteristics are found throughout the EIR. Information on these characteristics is also found in the general plan itself.

3.0 METHODOLOGY

3.1 Purpose of a General Plan EIR

This EIR was prepared according to the requirements set forth in the State EIR Guidelines as amended by the Secretary for the Resources Agency on January 24, 1978 and the California Environmental Quality Act of 1970, as amended. Section 15037(a)(1) of the State EIR Guidelines defines a general plan or element thereof as a project and as a result, the County of Los Angeles, as well as all other cities and counties in the state, is required to assess the environmental impact of the adoption of general plans or elements thereof.

This EIR examines the social and economic impacts which may occur as well as the physical impacts, to the extent that available information allows. It was prepared in accordance with state and county EIR Guidelines to be an informational document and is intended to provide a full disclosure of environmental effects. It should be remembered that an environmental evaluation need not be exhaustive, nor is it the intent of an EIR to resolve disagreement among experts regarding technical matters.

The analysis of effects, at the level of detail of a general plan, is the most appropriate means of evaluating environmental factors such as air pollution and energy consumption, which need to be evaluated on a countywide basis. Other environmental factors analyzed in this EIR, such as geologic/seismic hazards, need to be evaluated further at a subsequent time on a smaller scale. Accordingly, this EIR cannot be used as a basis for a categorical exemption for any proposed project even though it is in conformance with the general plan. However, the plan should be used for evaluating subsequent projects in terms of regional environmental factors, cumulative impacts, and growth inducement.

The discussion of potential effects attempts to avoid a discussion of those impacts which are speculative. It should be noted that a more detailed evaluation of impacts will be possible at the project level when detailed plans on design and density are available showing such items as the amount and extent of grading, types and amount of vegetation to be removed, number of residents to be relocated, etc. Appropriate mitigation measures can also be evaluated at the project level.

The EIR does not provide detailed technical data, but rather incorporates this data by reference where appropriate.

3.2 Environmental Analysis

Twenty-five environmental effect categories were identified representing physical hazards, natural resources, services, land use, and socioeconomic factors, as follows:

Geologic/Seismic

Soils

Flood/Runoff

Fire

Noise

Air Quality

Water Resources/Water Quality

Biota

Extractive Resources

Prime Agricultural Soil Resources

Energy Consumption

Archaeological/Historical/Paleontological Resources

Scenic Qualities

Land Use

Communities

Population

Housing

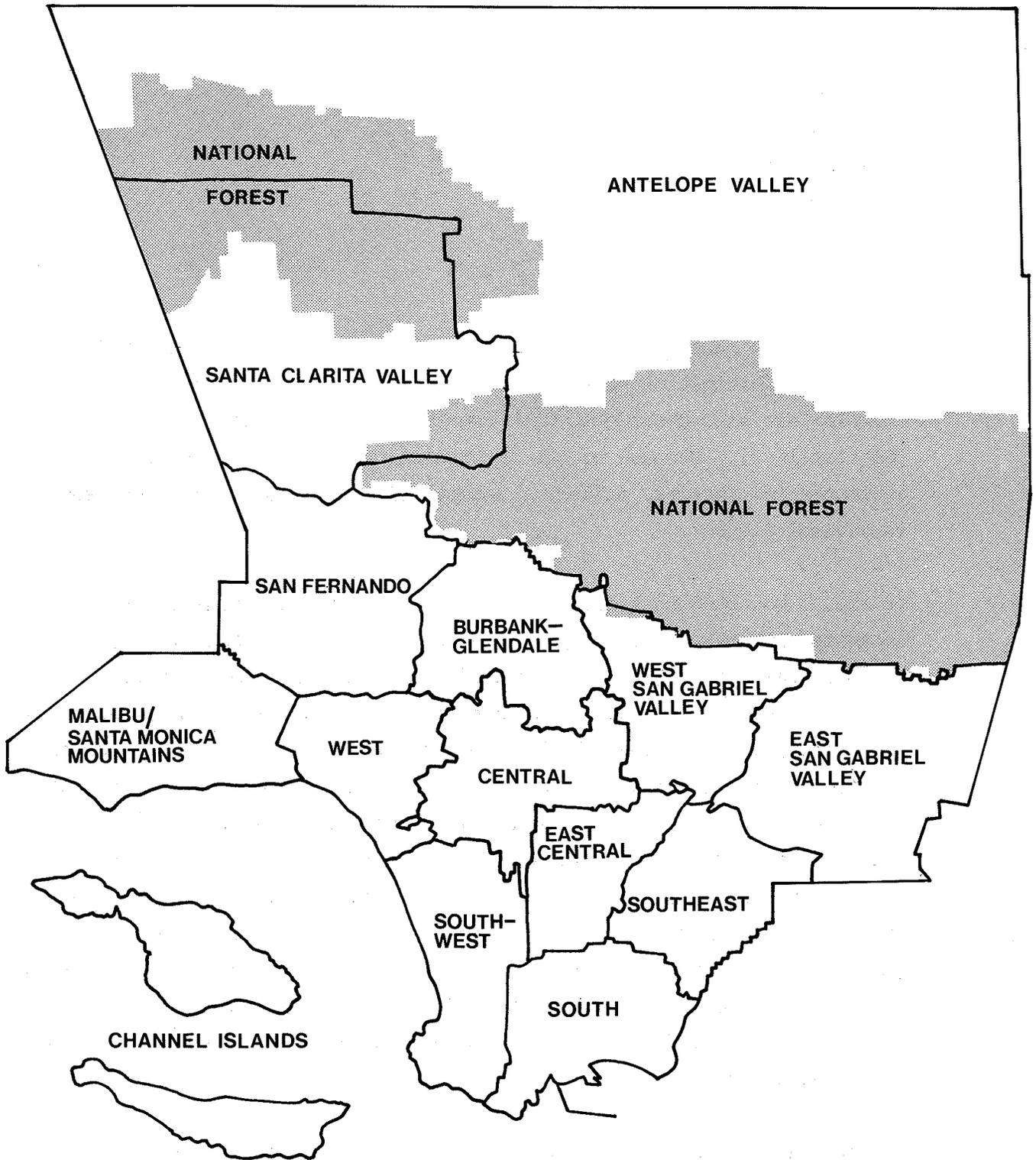
Employment/Unemployment

Income
Investment
Governmental Expenditures
Governmental Revenue
Transportation
Liquid/Solid Waste Disposal

Each of these factors is discussed in terms of Setting (Section 5.0) and Effects/Mitigation Measures (Section 6.0). The alternatives to the plan are also considered with regard to each of these factors (Section 10.0). Because of the interrelationships among the major environmental factors, different aspects of some impacts are discussed in several places.

It should be noted that slope (hillside land) is not discussed as a separate category. Since slope is related to several hazard (i.e., geologic/seismic, soils, flood/runoff, fire) and physical resource (i.e., biota, archaeological/paleontological resources, scenic resources) categories, a discussion of effects of development on sloped land as an additional impact category would duplicate much of the acreages provided in these other sections — especially in the case of slope instability (geologic hazard), mudflow (flood/runoff), fire and scenic resources. However, the relationship of slope to the various affected categories is noted where appropriate, and in addition, Section 6.13 (Scenic Qualities) includes a listing of acreages of sloped land (i.e., 15 percent or greater slope) affected by the plan's urban expansion and infill development; the effect of rural development on sloping terrain is also discussed in Section 6.13.

Effects were generally identified and quantified at the planning area level in order to provide a more specific discussion than would be available at the countywide level (see Map 3-1 - Los Angeles County Major Subregions). Any reference to names of these regions applies to the entire planning area.



MAP 3-1
**LOS ANGELES COUNTY
 MAJOR SUBREGIONS**

An assumption was made that the plan will be implemented in accordance with the policy maps, written policies and projections, and recommended actions. The policies, projections and recommended actions are considered to be actions having potential environmental impacts which may therefore be assessed for possible beneficial and detrimental effects on the environment. The assessment was based on the impacts of adopting the general plan - e.g., allowing development to take place or encouraging certain actions by local governments. It should be noted that projections are not predictions. They reflect the current "state of the art" and are subject to change as new data and analysis techniques become available.

The analysis of environmental effects began with an evaluation of the written policies developed for each element of the plan. An Initial Study Matrix (see Figure 3-1) was developed for each written policy. Each policy was evaluated in terms of adverse and beneficial effects.

An analysis of the plan's mapped policies was also carried out. The urban expansion and infill development shown on the General Development Policy Map¹ was evaluated² in terms of its potential impact on the various resource/hazard categories (i.e., aquifer, biotic, extractive, agricultural and scenic resources; geologic/seismic, soils, flood/runoff and fire hazard). It should be noted that the figures provided are estimates.

1

This map is a general expression of the plan's major policy direction. It is based on the statements of general policy, the plan projections and city and community plans. It provides an indication of those areas where urban development would be appropriate and those areas which should remain in a non-urban state to the year 2000. Urban areas are further divided to indicate where 1) rehabilitation and recycling is encouraged; 2) efforts to maintain the existing character of neighborhoods are supported; and 3) new development can take place by infilling or urban expansion. (See General Plan Introduction.)

2

The analysis was based on a comparison of the General Development policy Map with various maps indicating specific physical resources or hazards — see a listing of such maps in Appendix D — Data Reliability. As is indicated, the data derived from this comparison is of varying reliability.

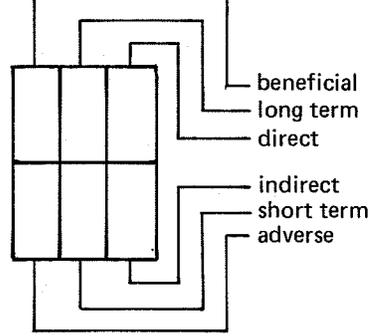
FIGURE 3-1

**LOS ANGELES COUNTY
GENERAL PLAN REVISION PROGRAM**

INITIAL STUDY – IMPACT MATRIX

**DRAFT
ENVIRONMENTAL IMPACT REPORT**

KEY:



ELEMENT:

DATE:

POLICY STATEMENT NO.

IMPACT CATEGORY

1. Natural Environment (Biota, water resources, agricultural resources, mineral resources, scenic qualities, energy)	2. Natural Hazards (Health & Safety) (Geologic/Seismic, Soils, Flood/Mudflow, or Fire Hazard)	3. Environmental Quality (Noise, air quality, water quality)	4. Urban Form & Pattern (Land use, Communities)	5. Economic (Employment/Unemployment, Investment, Income)	6. Social/Cultural (Housing, Population, Archaeological/Historical Resources)	7. Services (Transportation, Liquid and Solid Waste, etc.)	8. Fiscal (Governmental Expenditures, Governmental Revenues)	9.	10.

COMMENTS:

The analysis of the General Development Policy Map assumed an urban expansion of 55,800 acres - the maximum supply shown on the map -- while the actual acreage projected to be necessary to meet the demands of the projected additional population is 27,000 acres. This approach identifying the "worst case" is felt to be appropriate since development over the planning period to the year 2000 will occur primarily as the result of private actions, and since it cannot be predicted where such development actually will be located. It is thus anticipated that actual impacts (acreage affected) will be much less than those described in Section 6.0 for the hazard and resource categories.

With regard to infill development, the analysis in Section 6.0 for hazards/resources is also based on the total supply shown on the General Development Policy Map. While it is estimated that about 55,000 acres of vacant land are actually available for infilling, this map shows parcels of 50 acres or larger -- or a total 23,600 acres of infill. An analysis of the plan's projected demand for 35,900 acres of infill could therefore not be carried out, since parcels smaller than 50 acres are not shown on the map. However, it is assumed that development on smaller lots in the infill category is less likely to be affected by the hazard/resource factors quantified in Section 6.0.

In addition to identifying the plan's effects on physical resources/hazards within urban expansion/infill areas for the county as a whole, such impacts also are identified within unincorporated areas, in order to provide an indication of the impacts occurring within those areas over which county government exercises direct jurisdictional control.

The plan's projections were also evaluated with reference to potential effects on air quality, energy consumption, services (i.e., water, liquid/solid waste, transportation) and socio-economic factors (i.e., communities, population, housing, employment). These categories were evaluated as to projected year 2000 population, housing, land use and employment figures (see Appendix 1). The plan's revitaliza-

tion efforts are discussed primarily in the socio-economic categories since they would have minimal impact on the physical resource/hazard categories inasmuch as revitalization occurs in developed areas (exceptions are indicated in the sections dealing with seismic and fire hazard, as well as scenic qualities). Specific areas to be recycled are not identified in the plan maps since the revitalization process will likely represent a combination of recycling and rehabilitation activities. The precise mix of these revitalization activities depends upon a number of factors which cannot be adequately forecast (e.g., revenues available, technology, community preferences, etc.).

The analysis of the effects of non-urban development was based primarily on estimated housing and population projections¹ for these areas. It was assumed that the estimated additional net 15,000 dwelling units projected to be developed within non-urban areas represent the conversion of 15,000 acres from vacant rural land to residential uses as a result of grading for access roads, building pads, accessory structures, etc.² The 15,000 acres to be converted to residential uses represent approximately two percent of the approximately 753,460 acres of non-urban land shown on the Land Use Policy Map.

Given the extensive non-urban acreage within the county, it would be highly speculative to make a determination as to where non-urban development might be located outside rural communities. Moreover, for the most part, non-urban areas are located within special management areas (hillside management, flood prone area, significant ecological area — see Mitigation Measures in Sections 6.13, 6.3 and 6.8,

1

These projections are not predictions, but are approximations subject to error.

2

It was assumed that regardless of density allowed in the particular non-urban development category, a maximum of one acre for each dwelling unit would be altered for residential uses.

respectively) and are to be developed at very low densities. For these reasons, no quantification of effects within hazard/ resource areas is provided. Effects related to specific environmental categories (e.g., fire hazard, scenic qualities) are, however, discussed in Section 6.0.

Subsequent to the evaluation of policies and projections, an evaluation of the plan's recommended actions was carried out. Potential adverse effects of these recommendations are discussed where such effects would be different from those of previously evaluated written or mapped policies or projections.

The analysis of the plan's written and mapped policies, projections, and recommended actions indicated that adverse impacts are reflected most explicitly in the mapped policies. The written policies would generally result in positive impacts or function as mitigation measures since they will be used by administrative staff to implement the plan at the project level, and project level decisions will be required to be in conformance with the plan's policies. The recommended actions would also generally function as mitigation measures and/or result in positive impacts.

Thus, Section 6.0 concentrates on the effects of urban expansion and infill development as the types of development most important in terms of environmental effects. The effects of non-urban development and revitalization are also considered, although at a lesser level of detail given the relatively minimal impact which is expected in these areas. The significant adverse effects relating to these categories are discussed in Section 7.0

Mitigation measures for the adverse effects of the plan are also included in Section 6.0. The types of measures are: (1) those included in the general plan — policies, recommended actions, general conditions and standards for development, density levels (it should be noted that

recommended actions and general conditions and standards of development apply to unincorporated areas unless otherwise indicated); (2) existing governmental codes and regulations; and (3) other available measures which although outside the scope of the plan, can be used to reduce the effects identified.

4.0 DESCRIPTION OF ENVIRONMENTAL SETTING--REGIONAL

Prior to describing the county's setting, a broader view of the region as a whole is appropriate. To aid in defining the various characteristics of the region much information from the Southern California Association of Governments (SCAG) area is used. This area comprises the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura and Imperial and well over a hundred municipalities. The areal extent of the region described is approximately 38,000 square miles containing about 10 million people.

4.1 Physical Features

While the region as a whole encompasses many prominent topographical features, the east/west trending mountain ranges, including the Santa Monica, San Gabriel, San Bernardino and Santa Ana Mountains are perhaps the most notable. Coastal areas bound the counties of Los Angeles, Ventura and Orange, providing a rich scenic and recreational resource. Also of interest is the region's vast desert area.

The primary physical hazards existing within this topographically diverse framework are the threats of earthquake, flood and fire. Additional geological and soil hazards can be encountered as urban development encroaches into unstable hillside areas.

Evidence of recent seismic activity in the region is considerable. Seismic occurrences have taken place most recently in Imperial County. However, the 1971 earthquake centered in Los Angeles County was the most destructive seismic event in the last 40 years. Although there are numerous geologic faults and fault traces, the San Andreas Fault poses the greatest danger to the region, as well as to a major portion of the rest of the State

of California. Other active faults existing in the area include the Newport-Inglewood Fault, the Norwalk Fault and the Raymond Hill Fault.

Unstable soils resulting in landslides are also an inherent hazard. Mass movement of soils is most demonstrable, perhaps, in the Palos Verdes Peninsula and Pacific Palisades area of Los Angeles County. Landslides have also occurred in other mountainous areas. Furthermore, expansive soils create possible development problems.

Compounding the problem of mass movement of unstable soils are the occasionally great amounts of rainfall which induce supersaturation of soils and cause them to slide. Examples of this can be found during heavy rainstorms in the San Gabriel Mountain foothill communities and in the Santa Monica Mountains.

Flooding and runoff are problems primarily in the frontal mountainous canyons and hilly areas of the region. As more land is developed the potential for flooding/runoff increases. This is due in part to the fact that a greater amount of impermeable surfaces are being created. However, most developed areas are required to provide adequate storm drain facilities to alleviate the danger of flooding. Dam collapse due to earthquakes provides yet another potential flood hazard.

Because of the nature of the region's dense chaparral vegetation, brush fires pose potential hazards. Also, forest fires during the dry summer and fall seasons pose health and safety hazards, especially to mountainous areas of the region.

Over the last three decades noise levels have been increasing at a steady rate. This is partially a result of the introduction of larger and noisier transportation vehicles as well as the increase in actual numbers of vehicles. Furthermore, the increasing demands of a growing population

for better, more convenient transportation facilities, coupled with inadequate noise control measures to buffer residential areas from noise generated by these facilities, have moved the sources of noise closer to the people.

4.2 Natural Resources

The region contains two air basins - South Coast Air Basin and Southeast Desert Air Basin. The most populous is the South Coast Air Basin, which includes parts of Santa Barbara, Ventura, Los Angeles, San Bernardino and Riverside counties as well as all of Orange County. Topography, air movement and temperature have direct influences on the concentration of air pollutants. Normally, air contaminants are dispersed, but temperature inversions frequently occur to hold pollutants close to ground level. The most notable area where this phenomenon occurs is the Coastal Basin. Additionally, the most common pollutants are hydrocarbons, carbon monoxide, oxides of nitrogen and sulphur oxides. Automobiles (gasoline exhaust) are the greatest single source of hydrocarbons, oxides of nitrogen and carbon monoxide. Smog (photochemical oxidants) is the result of chemical reactions among the common pollutants in the atmosphere. In addition, stationary sources emit a lesser percentage of a complex mixture of pollutants, the most noticeable component of which is sulfur dioxide.

Most water for the region is imported from outside sources - primarily the Colorado River, the Los Angeles Aqueduct and the State Water Project. In the past the quantity of water provided to the region has presented no major problems although the recent drought demonstrated the need for water conservation measures and a reevaluation of water sources.

Water quality is, on the whole, of a generally acceptable nature for domestic purposes. State Water Project water, however, is considered to be of higher quality than Colorado River water based on the amounts of dissolved solids. In most areas groundwater is also generally of high quality.

Habitat types vary widely. Because of the topographic and climatic diversity of the region, a wide range of vegetative and animal habitats exist, ranging from marine to sub-alpine and desert communities.

4.3 Energy Consumption

Most of the natural gas and nearly one-quarter of the electricity consumed in the region come from outside the state. In 1973, regional production of natural gas was 25 percent of the state's total - representing only 12 percent of the regional demand.

Both production and supplies of natural gas are declining regionally, while foreign and domestic imports are steadily increasing. The region is not self-sufficient in its production of extractive resources (primarily petroleum). In 1973 regional production of crude oil amounted to 51 percent of the state's total, representing only 60 percent of the region's demand.

Major producers of electricity and suppliers of natural gas in the region are Southern California Edison Company, the Los Angeles City Department of Water and Power and the Southern California Gas Company.

4.4 Urban Form/Archaeological/Historical

The wide array of topographic and urban features provide the region with a wealth of scenic resources. Urban development conforms closely to the transportation network -- the railroads, then the freeways. Intense development occurs in the coastal basins throughout the region and in the inland areas of San Bernardino and Riverside Counties. Intense agriculture is practiced in the Imperial Valley.

The area's Indian and Spanish heritage coupled with a variety of peoples with different cultural backgrounds lends a rich cultural heritage to the area.

4.5 Social

The 1970 Census indicated that there were 7.2 million whites, other than Spanish-Americans, 1.7 million Spanish-Americans, 0.8 million Blacks, and 0.3 million people of other races (primarily Asian and Native American) in the region. Directly correlated with population characteristics are incomes and educational levels, both of which are highest in western coastal counties. On a regional average, Anglos had a median family income of \$10,300 in 1969 as compared to \$6,900 for Blacks, \$8,300 for Spanish-Americans, and \$9,200 for families of other races. Median family income for the total population was \$15,000 in 1975. Of the population 25 years old or older, 62.5 percent were high school graduates.

The general condition of dwelling units in the region is good due to the fact that the majority have been constructed since 1950. However, as of 1975, approximately 406,000 dwelling units in the region, or 10.3 percent were considered substandard, that is lacked plumbing facilities or were overcrowded. Those living in substandard housing include the poor, elderly and minorities. Furthermore, most homeowners are Caucasians and the majority of tenants are members of the minority group population.

4.6 Economic

The region's economic output represents 10 percent of the Gross National Product. Bearing in mind the broad diversification of the area's industry in the last ten years, this fact is understandable. The economic base of the region was once totally dependent on agriculture, oil extraction, aerospace and aviation and tourism/recreation. Although these are still important economic assets, manufacturing of goods such as apparel and other textile products, rubber and plastics and furniture and fixtures have recently played key roles.

As an indicator of where this diversified industry is located, it should be mentioned that employment in the region is most concentrated in the Central Los Angeles area. Also, the single greatest employment concentration is the Los Angeles Central Business District-Wilshire Corridor, which is estimated to contain 20 percent of the region's jobs. While the unemployment rate has increased, the civilian labor force and employment have also increased.

4.7 Services

The region's transportation network (streets and freeways) provides relatively fast, unimpeded vehicle movement during off-peak hours. Provision of water and waste service facilities is most nearly complete in the highly urbanized areas, fragmented where expansion into hills and mountains has taken place, and poorest in isolated developments. Although services vary among jurisdictions, those such as fire, police, and library are available through almost every city, while other services such as health and welfare are available on a county-wide basis. Beyond the county-wide level, agencies such as the Southern California Air Quality Management District (SCAQMD) serve several counties.

5.0 - DESCRIPTION OF ENVIRONMENTAL SETTING--LOS ANGELES COUNTY

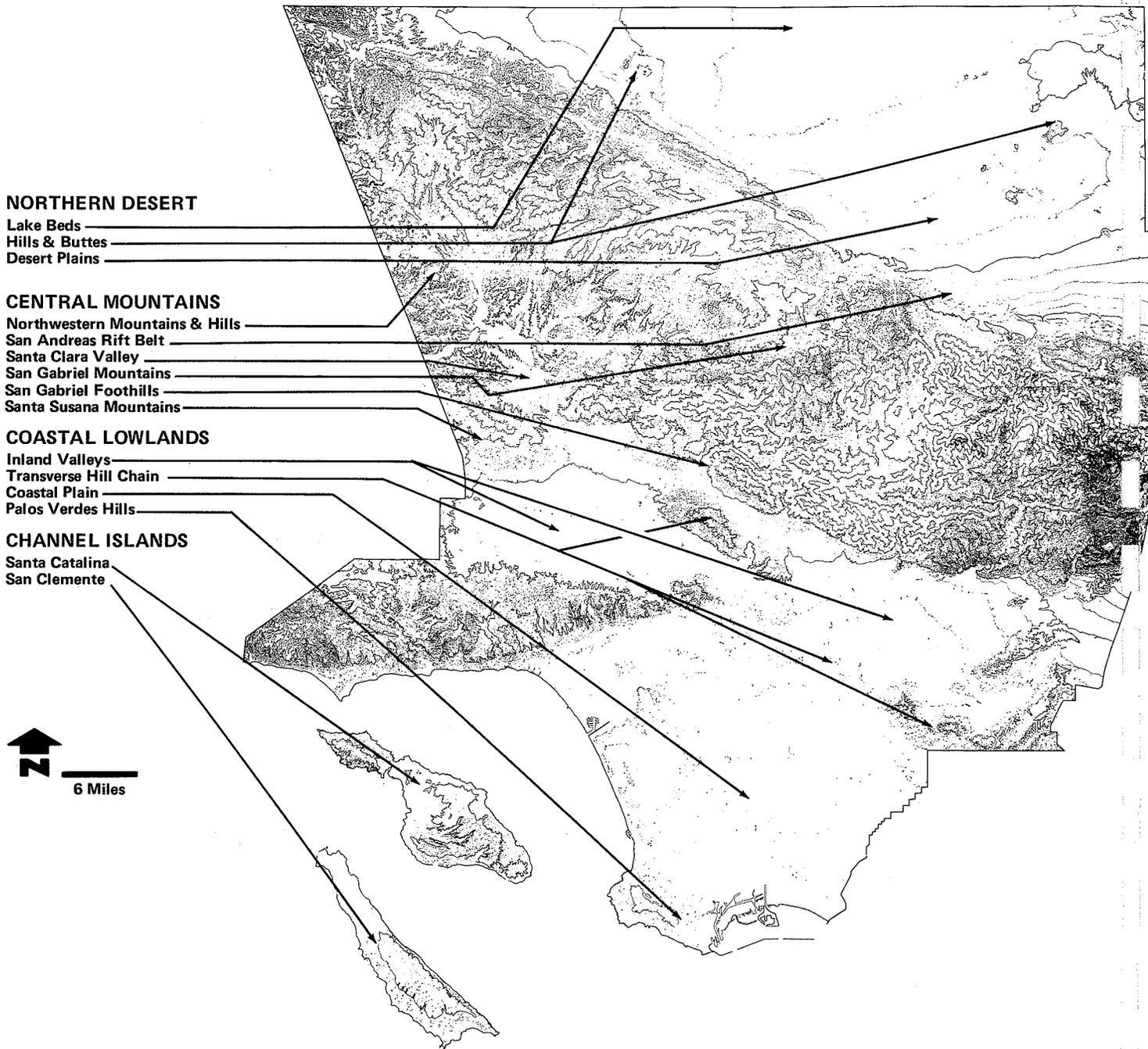
The terrain of the county falls into a broad pattern of Coastal Lowlands, mountains, desert valleys, and the Channel Islands. The southern fourth of the county, site of the second largest metropolis in the United States and the western hemisphere, is in the Coastal Lowland region. (See Map 5-1: Natural Subregions Map and Map 5-2: Topography of Los Angeles County.)

The Coastal Lowlands -

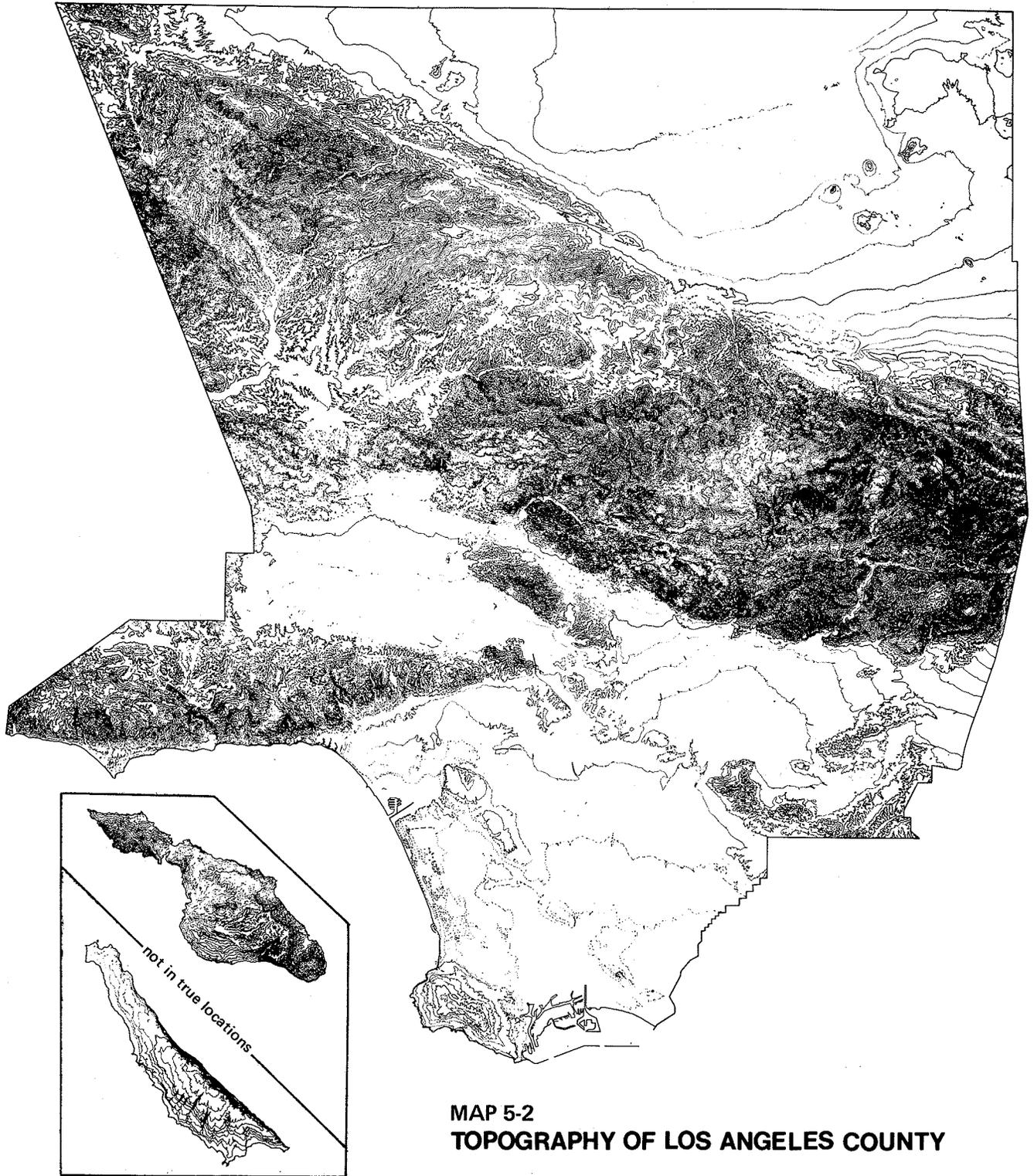
The Coastal Lowland region of Los Angeles County may be divided into three subregions: the Coastal Plain, the Transverse Hill Chain and the Inland Valleys.

The Coastal Plain generally lies below 500 feet in elevation. Its seaward limits are fringed with a combination of marshy lowlands, sand dunes, broad elevated marine terraces and low hill masses such as the Baldwin, Signal, Dominguez and Palos Verdes Hills. The interior edge of the Coastal Plain borders the Transverse Hill Chain and is surrounded by an irregular belt of terraces which are remnants of coalesced alluvial fans.

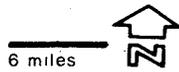
The Inland Valleys are generally less than 1,000 feet above sea level. In the county, there are two major Inland Valleys: the San Gabriel and the San Fernando Valleys. These two broad valleys, surrounded by hills and mountains, are tilted downward towards the sea and are connected to the coastal plain by various gaps and passes through the Transverse Hill Chain.



MAP 5-1
NATURAL SUB-REGIONS



**MAP 5-2
TOPOGRAPHY OF LOS ANGELES COUNTY**



The Transverse Hill Chain, with peaks generally below 2,500 feet in elevation, extends from west to east through the Coastal Lowlands of Los Angeles County and divides the Coastal Plain from the Inland Valleys. Components of the Transverse Hill Chain include the Santa Monica and Verdugo Mountains, and the Repetto, San Rafael, Puente and San Jose Hills.

Mountains -

A formidable mountain chain slants diagonally from northwest to southeast through the center of the county. This Central Mountain Chain covers nearly half of the county and rises to an elevation of more than 10,000 feet at the summit of Mt. Baldy. The major elements of these mountains include the San Gabriel Mountains, with extensive areas above 5,000 feet in elevation, and the Northwestern Mountains and Hills with summits generally below 5,000 feet. Between the San Gabriel Mountains on the south and the Northwestern Mountains and Hills on the north is the Santa Clarita Valley with a floor ranging from 1,000 to 3,000 feet in elevation.

Desert -

The northern quarter of the county, the Antelope Valley, is a broad elevated plain. This plain, the westerly extremity of the Mojave Desert, tilts gently downward to the north and ranges in elevation from 2,500 to 4,000 feet above sea level. Its southerly border is the complex terrain of the San Andreas Rift Belt characterized by long narrow valleys, and low ridges trending from northwest to southeast. The complexity is caused by constant motion, over time, of the San Andreas rift belt. The belt is a transition or foothill zone between the desert plain and the mountains. The

more prominent topographic features include Leona, Anaverde and Valyermo Valleys and Portal, Ritter and Holcomb Ridges.

An important subregion of Antelope Valley is the area of dry, very flat lake beds northerly and northeasterly of the community of Lancaster. Another subregion lies in the northeast corner of Antelope Valley around the community of High Vista. This is an area of widely spaced low buttes and hills and elevated uplands.

Channel Islands -

The Channel Islands - Santa Catalina and San Clemente - are the two most easterly of Southern California's eight Channel Islands. The two islands are the peaks of mountains which rise from continental slopes lying approximately 3 1/2 miles beneath the surface of the Pacific Ocean.

Santa Catalina Island, which is located approximately 26 miles southwesterly of the Los Angeles Harbor, has elevations ranging from sea level to 2,100 feet. The island's interior is generally mountainous and rugged, traversed along its main axis by a high ridge. The coastline consists of precipitous cliffs with less than five miles of water frontage providing reasonable access to the island. In addition to the mountainous areas, there is also a central plateau of rolling hills and numerous valleys with moderate slopes adjacent to the ocean.

San Clemente is publicly owned, but devoted to military use. Its range of elevations is similar to those of Santa Catalina.

5.1 Geologic/Seismic

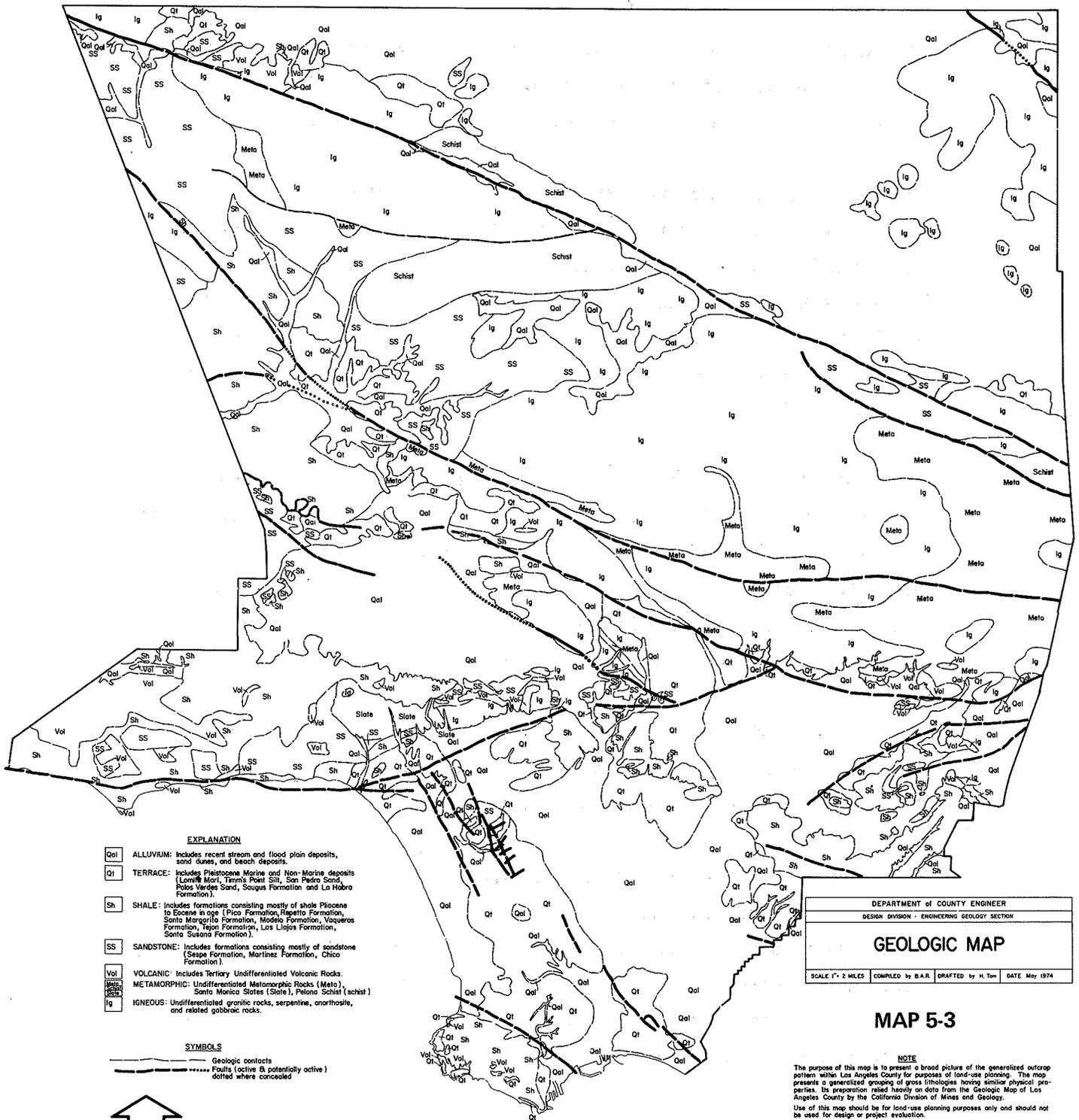
Geology -

Los Angeles County is geologically complex and is characterized by many structural variations. The area contains a wide array of generally disarranged rock types which are dissected by many prominent faults. The region is in the youthful stage of geologic evolution and is tectonically unstable. Major earthquakes have played a prominent role in its past development and are certain to have an important influence on its future.

Geologic complexity goes hand in hand with topographic diversity and presents the same broad, distinct patterns of Coastal Lowlands, deserts and mountains. Generally the mountains and hills consists of older, resistant solid rocks, while valleys and basins are made up of younger, softer, often unconsolidated materials. (See attached Map 5-3: Generalized Geology).

The Coastal Plain of the Coastal Lowlands is fringed on its seaward side by a belt of elevated, loose surface materials. These include continental and marine* terraces at Santa Monica, marine terrace materials capped by thin layers of sand dunes on their seaward edge in the area between Baldwin Hills and Palos Verdes Hills and an apron of terrace materials skirting Signal Hill in the Long Beach area. There are only three gaps in this belt of coastal terraces

*Continental refers to materials of dry land origin as opposed to marine materials which have been submerged beneath the sea.



and dunes: the site of the Los Angeles-Long Beach Harbor (Los Angeles River), the site of the Long Beach Marina (San Gabriel River) and the site of Marina del Rey (Ballona Creek).

The center of the Coastal Plain, extending from Hollywood in Los Angeles County to the vicinity of El Toro in Orange County, is floored with loose alluvial materials washed down from adjacent hillsides and mountains. The Los Angeles Basin has an average width of about 10 miles and a length of 40 miles. A broken belt of poorly consolidated continental terraces fringes the inland side of the basin.

The central San Gabriel Valley is floored with unconsolidated recent alluvium and is connected with the Los Angeles Basin through Whittier Narrows and Laguna Wash. A narrow belt of poorly consolidated continental terraces lies along the east margin of the valley while a much broader belt of similar materials covers the west end of the valley between Pasadena and San Gabriel.

The San Fernando Valley, a basin floored with unconsolidated alluvium, is connected to the Los Angeles Basin through the "Glendale Narrows" of the Los Angeles River.

Southwesterly and northwesterly trending hills in the Coastal Lowland area are composed largely of complexly folded and faulted sedimentary marine strata. Important exceptions occur in the Verdugo Mountains, the San Rafael Hills, and in limited sections of the east end of the Santa Monica Mountains where igneous and metamorphic rocks occur.

Old, resistant metamorphic and igneous rocks predominate in the Central Mountains. The San Gabriel Mountains are almost exclusively of these materials as are the higher areas of the Northwestern Mountains and Hills, including such topographic features as Sierra Pelona and Liebre Mountains. The lower areas of these mountains, including an area surrounding Newhall and extending northeast to Agua Dulce and northwest to Gorman, is composed largely of marine and continental sedimentary rocks in down-dropped or downfolded basins. There are only very limited areas of alluvial lowlands in the Central Mountains, all of which occur as elongated segments along the principal tributaries of the Santa Clara River. The most significant alluvial area lies around Newhall and Saugus where several major tributaries of the Santa Clara River meet. Another area is the upper Santa Clarita Valley around Acton and Agua Dulce. A third area occurs at the narrow Hungry and Peace Valleys near Gorman.

Antelope Valley is a broad down-dropped basin floored with loose alluvium carried down to the Valley by such streams as Big Rock and Littlerock Creeks. Very fine alluvium occurs in the lake beds north and northeast of Lancaster with sand dune belts lying easterly (downwind) from the lakebeds. Leona, Valyermo and Anaverde Valleys are smaller valleys with a thin covering of alluvial or residual materials. The uplands around High Vista and the southwestern foothills are largely of igneous and metamorphic rocks. Solid sedimentary rocks occur westerly of Neenach and in a long belt between Soledad Pass and Valyermo.

With regard to specific geologic problems, many of the county's hilly areas are subject to slope failures such as landslides and rockslides. Exposure to slope instability hazard has increased

with the urbanization of hilly areas, and as a result slope failures have caused millions of dollars of property damage in past years. Moderate to steep slopes are most likely to have stability problems. Areas affected by this type of hazard include the slopes of the Santa Monica Mountains, the San Gabriel Mountains, the Palos Verdes Hills, the hills and mountains around Newhall and Saugus and the Puente and San Jose Hills.

Another geological problem in certain areas of Los Angeles County is subsidence, which is associated with the extraction of groundwater and oil. Subsidence is a major problem particularly in coastal areas such as Long Beach because of the threat of flooding. Also associated with subsidence (in coastal areas undergoing pumping of groundwater) is the intrusion of sea water into underground fresh water basins.

Faults and Seismicity -

The rock units of Los Angeles County have been dissected and sheared by an extensive fault system. (See attached Map 5-4: Generalized Faults). The widely known San Andreas Fault Zone slants through the county in a generally straight line from Gorman to Big Pines and generally separates the Central Mountains from the Northern Desert. The Santa Susana-Sierra Madre-Cucamonga Fault Zone generally follows the southern edge of the Central Mountains and separates them from the Los Angeles basin. The Central Mountains have been thrust up along this mountain frontal fault zone.

The most prominent fault zone of the Coastal Lowlands is the Newport-Inglewood Fault extending from Beverly Hills through Inglewood and Signal Hill to Orange County. Movement along this

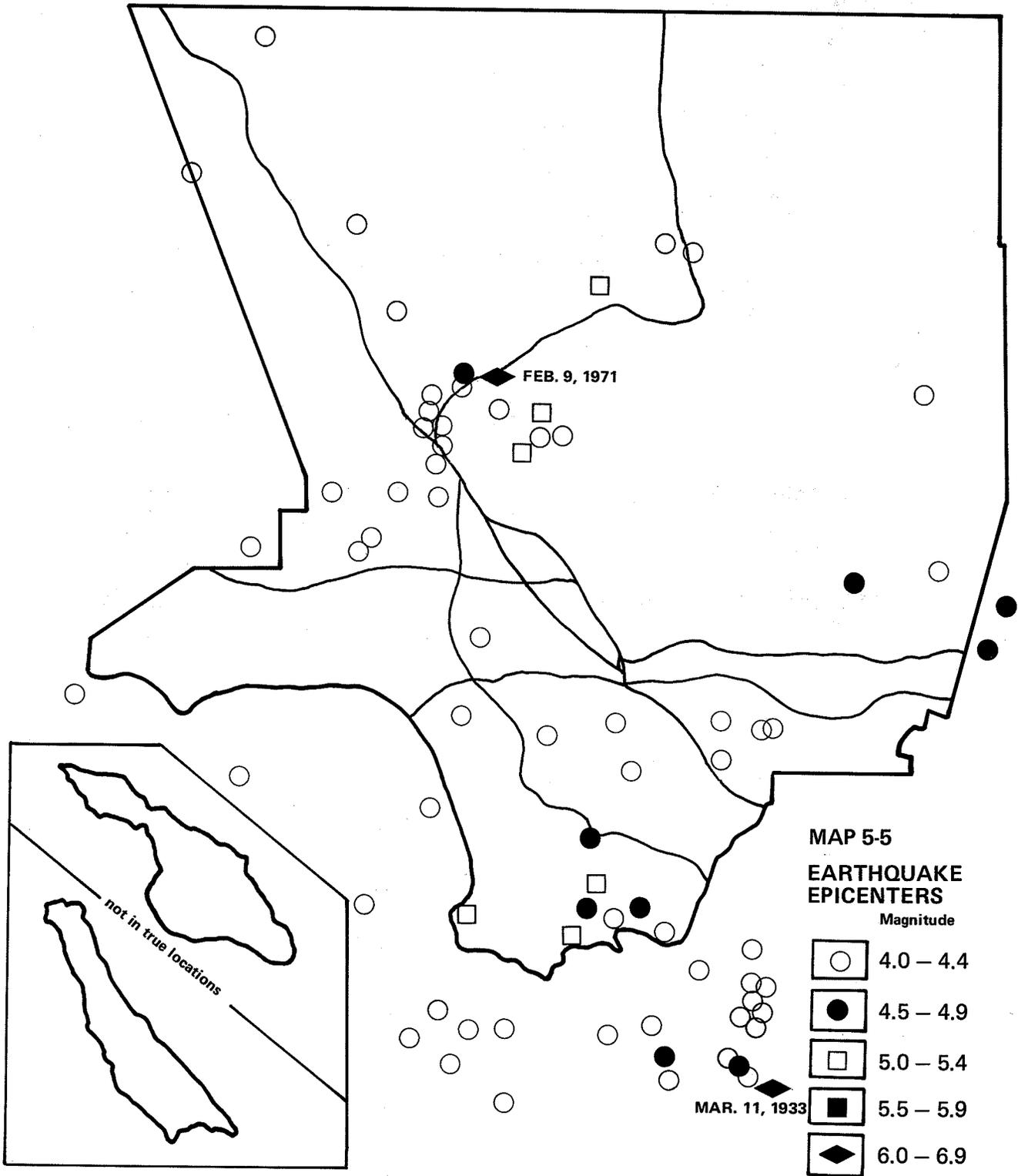
fault zone resulted in the 1933 Long Beach earthquake (See Map 5-5: Earthquake Epicenters). An extensive fault zone also occurs along the southern base of the Santa Monica Mountains.

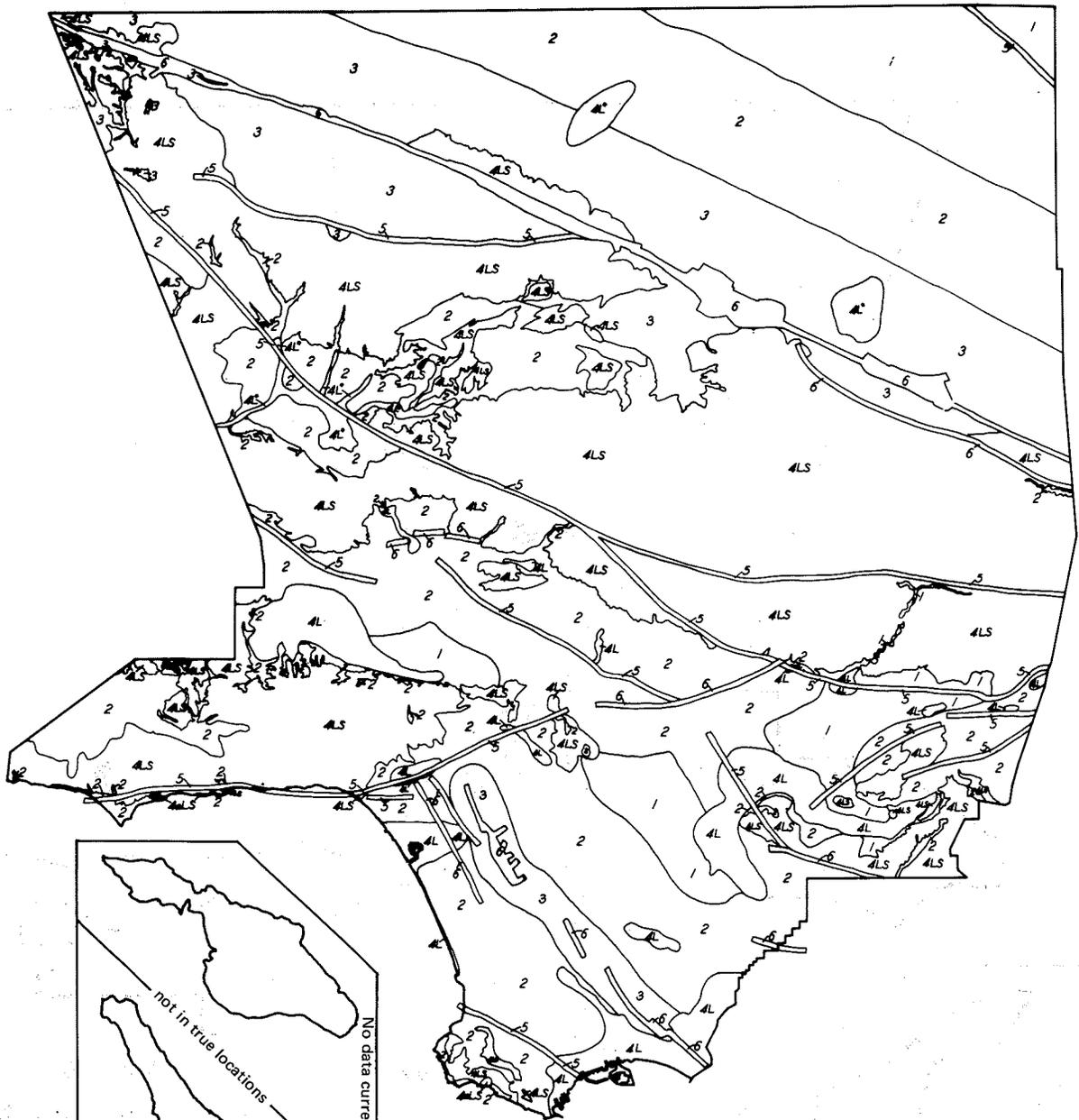
Because of the presence of four well known active and many other potentially active faults, Los Angeles County is subject to severe earthquake hazard. Damage may occur along, but is not confined solely to, areas on or near faults. Earthquake induced ground movements may reach their greatest displacement or amplitude in the county's valleys and plains, which are covered with unconsolidated materials. (See Map 5-6: Seismic Zones). However, certain types of construction on relatively hard materials of the hills and mountains may be subject to greater damage than construction on unconsolidated materials. Relatively hard rock materials, however, are less prone to quake damage resulting from settlement, liquefaction (the sudden loss of strength of soils under saturated conditions due to earthquake shock) and ground lurching. Quakes in coastal areas may also pose the threat of tidal wave (tsunami) damage. Damage by seiches may occur from seismically induced waves on inland water bodies.

The extent of geological hazards resulting from earthquakes and slides is poorly known because most of the county has not been geologically mapped in sufficient detail to delineate slides, active faults and potentially active faults accurately.

5.2 Soils

Los Angeles County has a varied pattern of soils that matches and is partly a product of its complex geology and diverse topography. Again it is possible to recognize the broad general pattern of





**MAP 5-6
SEISMIC ZONES**

- Decreasing Damage Potential ↓
- 6 Active Fault: Potential ground rupture zone
 - 5 Potentially Active Fault: Potential ground rupture zone
 - 4L: Potential Liquefaction Zone (*Historic shallow groundwater; contour depth 30 feet.)
 - 4aLs: Active Landslide
 - 4Ls: High Landslide Potential: Includes areas of high landslide distribution
 - 3 High Ground Response Zone
 - 2 Moderate Ground Response Zone
 - 1 Low Ground Response Zone

6 miles

Coastal Lowlands, Central Mountains, and Northern Desert in describing county soils. (See Map 5-7: Soils).

The Coastal Lowlands have broad areas of prime soils (soils which pose few problems for development). Most of the Coastal Plain has soils that are excellent both for agriculture and urban development. Only on the borders of the plain and in the recent flood plain deposits are major soil problem areas present. The seaward borders are fringed with limited areas of problem soils which present drainage and foundation problems. In the Palos Verdes Hills, there are soil bodies that cause excessive corrosion and display notable shrink-swell behavior in addition to the erosion and foundation problems more commonly associated with hilly areas. The soils of the terraces and low hills along the inner border of the coastal plain also have inherent foundation and drainage problems compounded by excessive corrosivity and shrink-swell behavior. High groundwater areas along the coastal rivers and in Whittier Narrows Gap present a soil liquefaction hazard.

Most of the San Gabriel Valley and the central San Fernando Valley have excellent soils which present only minor problems for urbanization. Eastern San Fernando Valley (the alluvial fan of Tujunga Wash) and the channels of the Los Angeles and San Gabriel Rivers are composed of coarse sandy materials which present urban developers with drainage and foundation problems. In the Calabasas area there are soil bodies that cause excessive corrosion and display notable shrink-swell behavior.

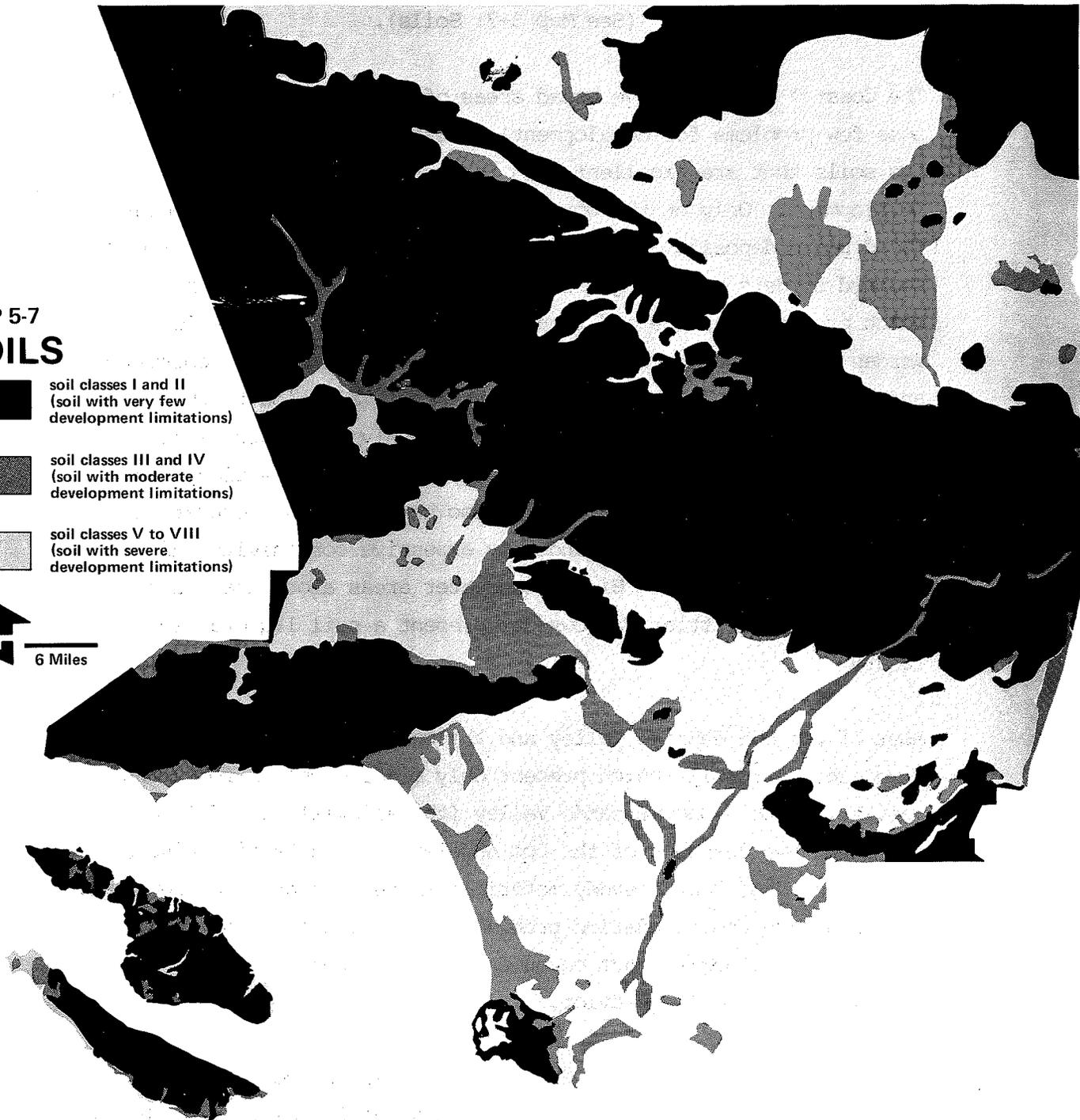
The soils of the Transverse Hill Chain are either not suitable for crops or only of marginal agricultural usefulness. In addition, they present a broad array of problems to the urban user. These

MAP 5-7
SOILS

 soil classes I and II
(soil with very few
development limitations)

 soil classes III and IV
(soil with moderate
development limitations)

 soil classes V to VIII
(soil with severe
development limitations)



problems include thin soils, steep slopes, excessive runoff, propensity to severe erosion and limitations on excavation depth due to unstable materials.

The thin, residual soils of the rugged, extensive Central Mountains are generally non-arable and subject to many of the same limitations present in the Transverse Hills. Very steep slopes and extremely rapid runoff pose a severe erosion hazard; bedrock at or near the surface limits excavation and can make development unusually expensive, and there are problems with structural foundations and drainage. Thin mountain soils pose special problems for local sewage disposal systems.

The Central Mountains have only limited areas of alluvial soils. These are concentrated in the middle and upper Santa Clarita Valley and tributary canyons around Newhall, Valencia, Saugus and at Acton and Agua Dulce. Portions of these areas are limited in usefulness because of flood hazard and coarse soil textures which present foundation and drainage problems, especially hydro-compaction (collapsing soils) and soil liquefaction.

Antelope Valley has extensive areas of soils with only minor limitations. These soils may be used for either agriculture or urban development. Generally the best soils of Antelope Valley lie in a broad belt stretching from Neenach on the west to the San Bernardino County boundary on the east and extending down from the Central Mountains on the south to the dry lake beds northerly of Lancaster. There are limited areas of good soils in the narrow valleys along the San Andreas Rift including Valyermo, Leona and Anaverde Valleys. Localized high groundwater can present a soil liquefaction hazard.

There are also extensive areas of problem soils in Antelope Valley. The hills and ridges along the San Andreas Rift, the rocky buttes of eastern Antelope Valley, and the thin-soiled upland around High Vista generally are covered with soils of igneous or metamorphic origin. These soils are subject to rapid runoff which, combined with steep to moderate slopes, presents a severe erosion hazard. Further, in these thin residual soil areas, bedrock is at or near the surface which can make excavation difficult.

The soils of the middle and upper alluvial fans also present another major problem. The alluvial fans of Big Rock and Littlerock Creeks have extensive areas of coarse textured, sandy, rocky soils which are droughty and present developers with foundation and drainage problems, especially hydrocompaction.

The third soil problem area of Antelope Valley is the ancient lake bed area north and northeast of Lancaster. This area is extremely flat and the soils very fine textured. The flatness retards runoff of storm waters while fine soil texture slows percolation of water into the ground. The result is the ponding of water and its slow evaporation, with the consequent accumulation of excessive salts in the soil. The end product is an alkaline soil that is corrosive. These soils, therefore, pose problems for drainage, foundation and pipeline construction. Generally, all three groups of Antelope Valley problem soils pose difficulties for local sewage systems.

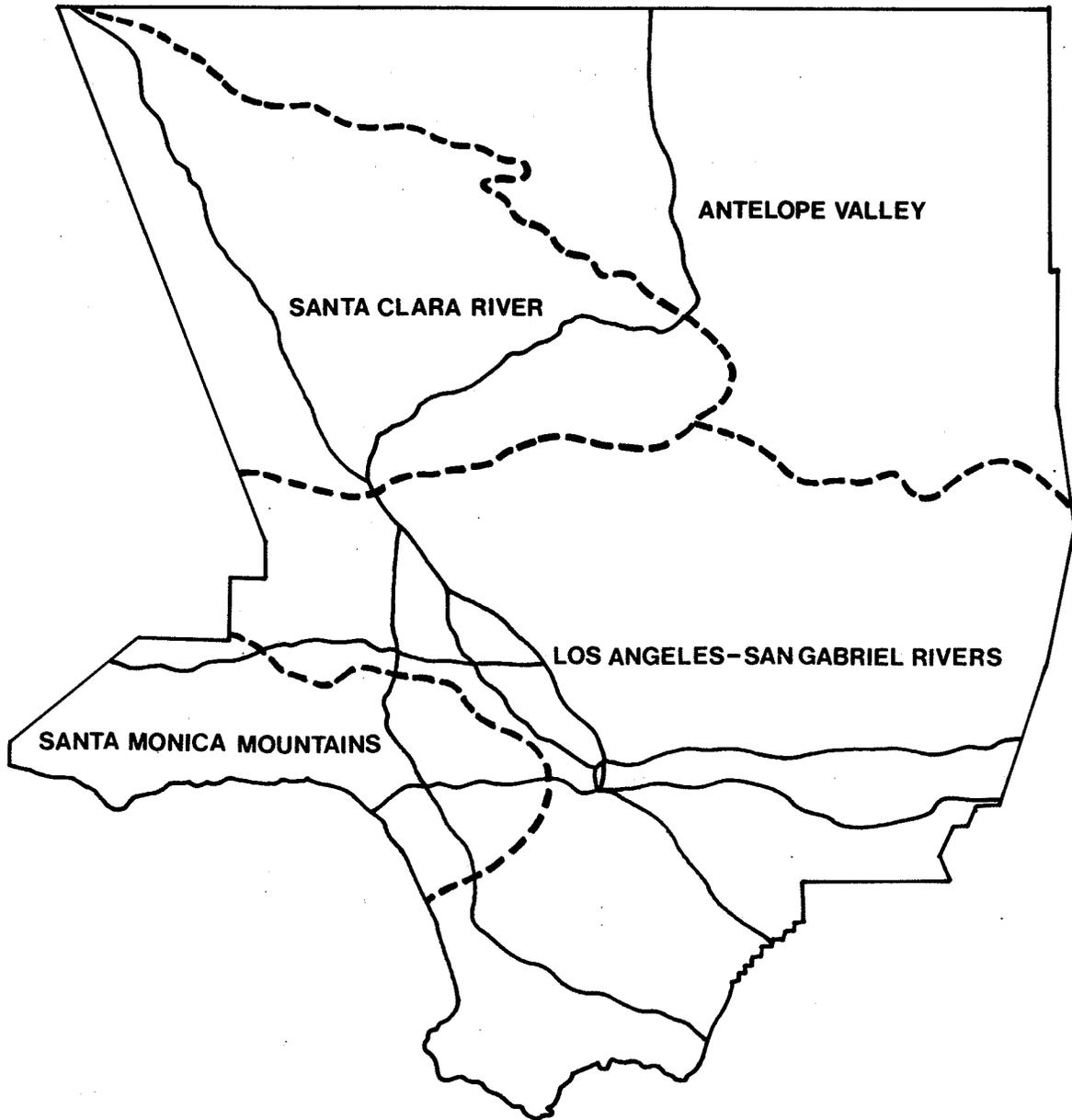
5.3 Flood/Runoff

Drainage -

Los Angeles County may be generally divided into four major drainage systems: three coastal systems and one desert system. (See Map 5-8: Los Angeles County Four Major Drainage Areas.) The coastal systems are the Santa Clara River, the Los Angeles and San Gabriel Rivers and the Santa Monica Mountains. The Antelope Valley is within the desert system.

The Los Angeles River drains the San Fernando Valley, the western margin of the San Gabriel Valley, the Central part of the Coastal Plain in the county, the southwestern San Gabriel Mountains and the northeast slope of the Santa Monica Mountains. The San Gabriel River drains the south central San Gabriel Mountains, the central and eastern San Gabriel Valley, the Puente and San Jose Hills and the eastern Coastal Plain in Los Angeles County. The Santa Clara River drains virtually all the northwestern Central Mountains including the north slope of the western San Gabriel Mountains and most of the Northwestern Mountains and Hills. In the Lake Hughes area, Santa Clara tributaries drain even the north slopes of the Central Mountains and the south central slopes of Portal Ridge. This drainage flows to the sea through Ventura County.

While not identified as a major drainage area within the county, the Santa Ana River drains the Pomona area. In the immediate coastal areas there are many short streams unrelated to the principal streams which drain directly to the sea, particularly in the



MAP 5-8

LOS ANGELES COUNTY FOUR MAJOR DRAINAGE AREAS



THE REGIONAL PLANNING COMMISSION
COUNTY OF LOS ANGELES, CALIFORNIA
1970

Palos Verdes and Baldwin Hills, and the Santa Monica Mountains. Some of the notable streams in these areas are Malibu, Topanga, and Ballona Creeks.

The desert drainage system is composed of the Antelope Valley, most of the San Andreas Rift Belt (except the Lake Hughes -Pine Canyon area which drains to the sea) and the northerly slopes of the Central Mountains. Its principal streams are Big Rock, Littlerock, Neenach Wash, Anaverde Creek, Fairmont Wash and Amargosa Creek, all of which drain to Rosamond Playa, north of Lancaster.

The southern California streams which serve as the principal drainage courses exhibit a characteristic unlike most others; rather than growing in size and volume with distance from their source, they instead dwindle or disappear in their lower reaches. The streams originate in the Central Mountain Chain, sustain year round flow only within the mountains and normally sink into their coarse-textured channels upon reaching the desert or Coastal Lowlands. In late winter and early spring, however, when stream flow is heaviest, the Coastal streams flow to the sea. During years of unusually heavy rains, major desert streams flow across Antelope Valley to pond and evaporate near Rosamond Playa. A substantial volume of the flow from the northern slopes of the San Gabriel Mountains percolates into the aquifer, raising the water table annually by 100 feet or more.

Within the Central Mountains, heavy rains occurring in a relatively short rainy season create serious drainage problems and flood hazard in both the desert and coastal lowlands. The nature of the stream channels also contributes to the problems and hazards. Although in the mountains and hills the stream channels (canyons)

are usually deep and well-defined, in the lowlands they are shallow, clogged and ill-defined making them unable to accommodate the volume and velocity of flows from upstream. The result is often wide-spread damage in inhabited lowland areas unless adequate flood control measures are taken.

Flood Control -

The existing urban area south of the San Gabriel Mountains is relatively free from flood hazard as a result of a comprehensive system of flood control channels, dams, debris basins and storm drains. The Los Angeles River and the San Gabriel River-Rio Hondo drainage areas reflect a 50-year construction program, virtually complete at this time. The facilities constructed include over 2000 miles of storm drains and channels, 20 dams, 83 debris basins and 20 pumping plants. In the northern portion of the county few, if any, improvements have been made even though the potential exists for damage in the flood plain. The northern boundary of the Flood Control District is located southerly of Palmdale.

Mudflow Hazard -

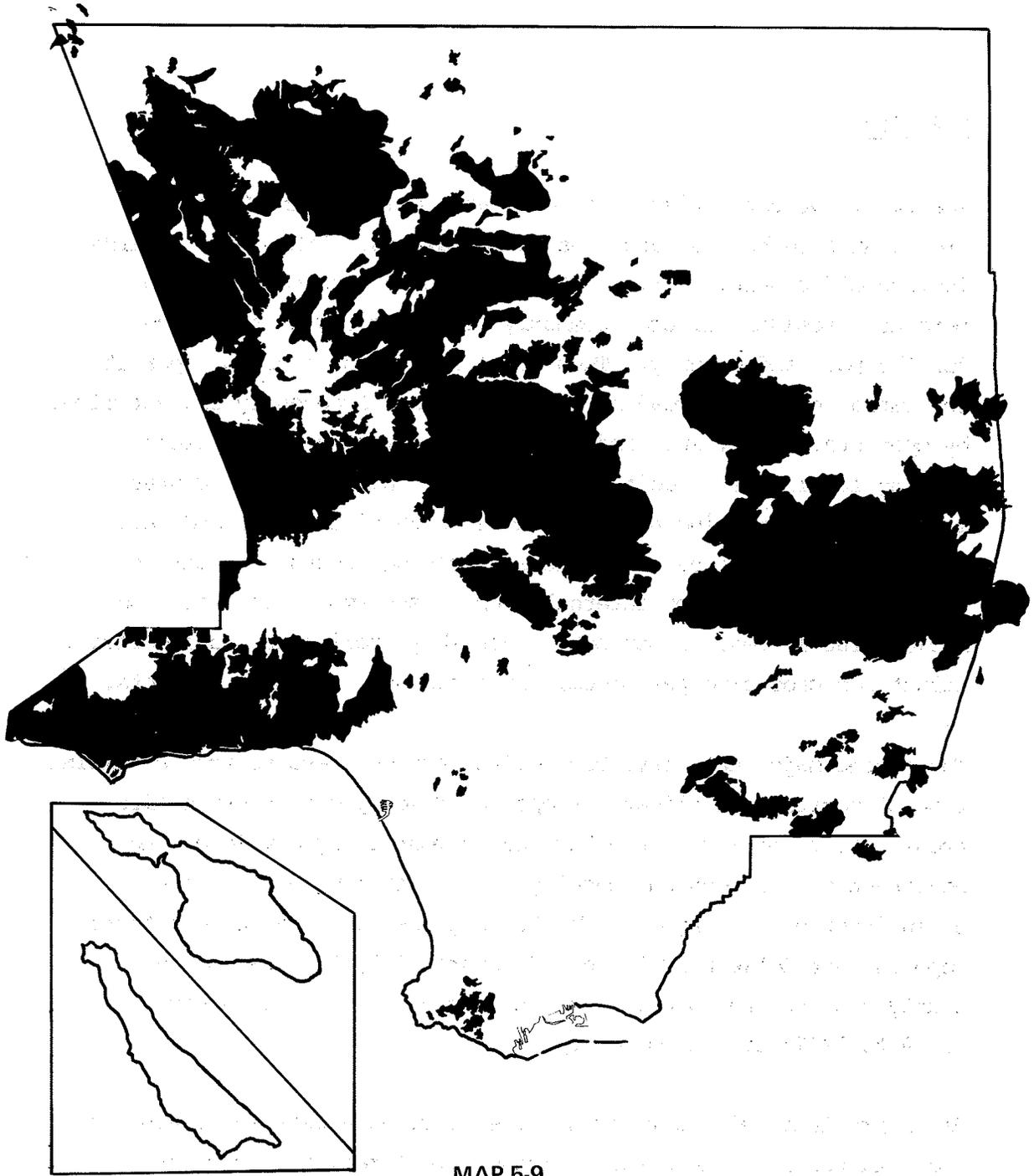
Most of the central portion of the Santa Monica Mountains, and hilly and mountainous portions of the San Fernando Valley, East San Gabriel Valley, Santa Clarita Valley, and Antelope Valley, are subject to mudflow. Mudflow is associated with the eroding of soils, vegetation and rock materials from sloping terrain, combined with a quantity of water or material with destructive or inundation potential. Mudflow is an especially acute hazard in hilly areas where a fire has removed the protective vegetative cover. The potential for property damage exists where development is located in areas subject to such hazard. The county's 83 debris basins have been constructed to provide protection from mudflow.

5.4 Fire

The two major categories of fire hazards existing in the county are urban fire hazards and brush fire hazards. Urban fire hazards include older multi-storied hotels that have been converted to permanent residential use, commonly providing low cost housing for the poor and elderly. These buildings, upon ignition, permit the rapid internal spreading of fire and are frequently characterized by open stairwells, substandard electrical wiring and obsolete heating facilities. Additional urban fire hazardous structures include the increasing number of newer high-rise office and residential buildings (due to problems involving access, evacuation and their dependency on internal support systems), hospitals and medical facilities, indoor public assembly facilities and industrial structures producing petroleum, chemicals and explosive products.

The second major category, brush fire hazards, results from a combination of vegetation, climate, slope and development in brush fire areas. As prime level land has been almost fully developed, new construction has been encroaching into brush covered hillsides or in intervening canyons. The Los Angeles County Fire Department reports that between 1967 and 1973 nearly 203,000 acres of the county's brushland have burned. Historical brush fire areas (1919 to 1977) are shown on Map 5-9.

Major problems related to brush fires include access and evacuation along narrow hillside streets, inadequate fireflow in some areas and construction standards (untreated shake roofs have been banned in fire hazard areas since 1971, but existing dwellings were not required to comply).



MAP 5-9
HISTORICAL BRUSH FIRE AREAS

 FROM 1919 TO 1977

SOURCE:
 Los Angeles County
 Forrester and Fire Warden

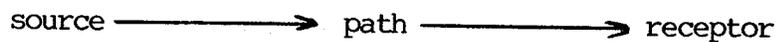


5.5 Noise

Background Description -

For purposes of this discussion, sound can be defined as "what we hear"—a sensory experience of the brain, while noise is any sound which is undesirable because it interferes with speech and hearing, or is intense enough to damage hearing, or is otherwise annoying.

Some basic facts are necessary for an understanding of sound and noise. First, a systems approach should be taken in dealing with acoustical problems, that is:



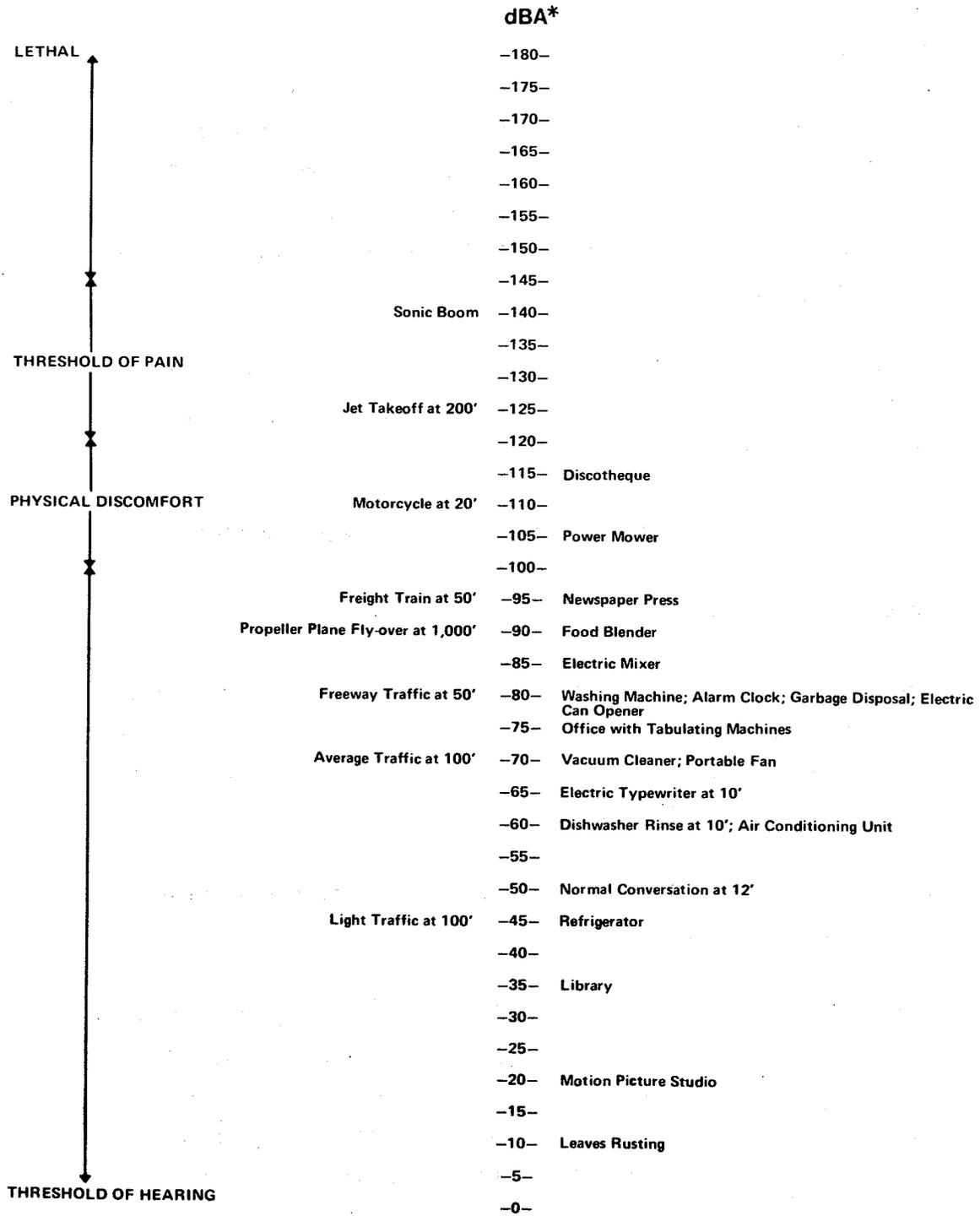
Source -

The measurable qualities of sound include frequency, intensity and duration. Frequency is defined as the number of times the vibrations or resultant pressure variations occur during a one second interval. It is measured in cycles (of sound waves) per second and is quantified in units called Hertz (Hz). Environmental noise consists of a broad range of frequencies which make up a noise spectrum.

Intensity is synonymous with amplitude or the magnification of sound levels. Sound waves, for purposes of intensity, are measured in units called decibels (dB). (See Figure 5-1: Acoustical Scale). Noteworthy is the fact that ten noise sources of the same sound level will double the intensity (due to logarithmic progression).

FIGURE 5-1

ACOUSTICAL SCALE



* The unit of sound is the decibel (dB). The loudness of sound is typically measured using a sound meter, the A-Scale of which corresponds closely to the way the human ear perceives sound.² Thus the sound level for noise evaluations is frequently expressed in dBA.

Duration is simply the length of time a noise occurrence lasts. For example, high noise levels due to construction may prove to be nuisance factors for relatively long periods of time, while a single automobile on a rarely travelled residential street may prove to be a very short term nuisance.

Path -

The impact of noise on the receptor is often mitigated with effective walls, berms, and other noise control measures which block the path that noise travels and attenuate the noise to acceptable levels. Also of primary importance in noise control is the distance between the noise source and the receiver. For this reason, many potential community noise problems can be eliminated through effective land-use decisions.

In addition, noise reaching a receptor can be effectively reduced or magnified, based on meteorological conditions. For example, with high relative humidity and low temperatures there is maximum sound absorption by air. Also, temperature and wind have substantial effects on sound levels--in temperature inversion conditions, noise levels are higher because noise waves are refracted downward due to the capping effect of the inversion layer.

Receptor -

The type of receptor by land use and/or the sensitivity of persons on the receiving property often dictates the significance of the noise related impact. The receptor can be insulated and designed to attenuate intruding noises to acceptable levels.

Most community noise problems are caused when any of the above components of the system (i.e., source, path, receptor) are

significantly exceeded, inadequate or missing, or when a combination of all three components are not adequate to mitigate a particular noise source.

Designated noise sensitive receptor areas include hospitals and other similar health care institutions and libraries. These sensitive areas are required to be posted with signs. Noise receptor areas, listed in order of their noise sensitivity, include designated noise sensitive areas, single, double, and multiple family residential properties, commercial properties and manufacturing or industrial properties.

Many physiological as well as psychological effects are evident from prolonged exposure to high noise levels. In general, with age there is less sensitivity to low frequency sound. Furthermore, sensitivity to high frequency sound is lost first with prolonged exposure to loud noises over time. In conjunction, those with high frequency hearing losses do not have the ability to hear consonants in speech. (Low frequency and high amplitude sounds in speech are vowels).

County Community Noise Environment

While relevant information on noise levels representative of the entire county is somewhat limited, ambient noise data has been generated for specific urban and suburban areas.

A publication of the California State Office of Noise Control reports on noise exposures within various communities in Southern California. The Los Angeles County unincorporated area of Lennox is characterized as a community severely impacted by aircraft

1 2

noise, where hourly Leq¹ values averaged in excess of 78 dB(A)², with maximum levels exceeding 104 during aircraft flyovers. In fact, the U.S. Environmental Protection Agency considers the Lennox area to have the worst community noise problem in the United States. Other Los Angeles communities were cited within the report with Leq values ranging from approximately 50-55 dB(A) in relatively quiet suburban areas to 75-80 dB(A) in the more urbanized areas. Figure 5-2 provides Leq values for various areas over time, and demonstrates the range of noise exposure throughout Los Angeles communities.

Reference is also made to a report prepared by the City of Los Angeles Planning Department. Aircraft noise exposure outside the boundary of Los Angeles International Airport was stated to average 116 PNdB and 120 PNdB during landing and take-off operations, respectively. (PNdB is simply a subjective expression for the perceived "noisiness" of aircraft noise). Based upon a limited number of 24-hour measurements, the report further suggests that in 1971, noise levels throughout the City of Los Angeles averaged 55.4 dB(A).

Within Los Angeles County, major noise exposures are of transportation origin (i.e., from aircraft, railway and automobile operations). Figures 5-3, 5-4, 5-5, and 5-6 depict present noise emission levels

1
Leq — Energy Equivalent Noise Level; provides a means by which the total energy of one community noise exposure may be compared with another.

2
dB(A) — "decibels on the A-scale"; the A-weighted sound level measures approximately the relative "noisiness" or "annoyance" of many common sounds.

for transportation vehicles and typical freeway and railroad noise levels. Reference should be made to the Los Angeles County General Plan Noise Element and Draft Environmental Impact Report adopted January 30, 1975 for a detailed description of various aspects of transportation noise.

In addition, stationary noise sources--from commercial and/or residential activity--contribute significantly to the county's existing noise environment. Examples of stationary noise sources include rock and gravel plants, auto repair shops and gas stations, lawn mowers, animals, air conditioning units, swimming pool heater and filter motors, construction projects and restaurant exhaust systems.

FIGURE 5-2

COMMUNITY NOISE SURVEY - LOS ANGELES COUNTY

<u>Location</u>	<u>Average of Hourly Leq Readings</u>
Third floor apartment, next to freeway - West Los Angeles	80
Urban shopping center - Torrance	60
Popular Beach - Pacific Palisades	60
Urban residential, near airport - Lennox	78
Suburban residential in Hill Canyon - Los Angeles	54

FIGURE 5-3

PRESENT NOISE EMISSION LEVELS⁵ FOR TRANSPORTATION VEHICLES

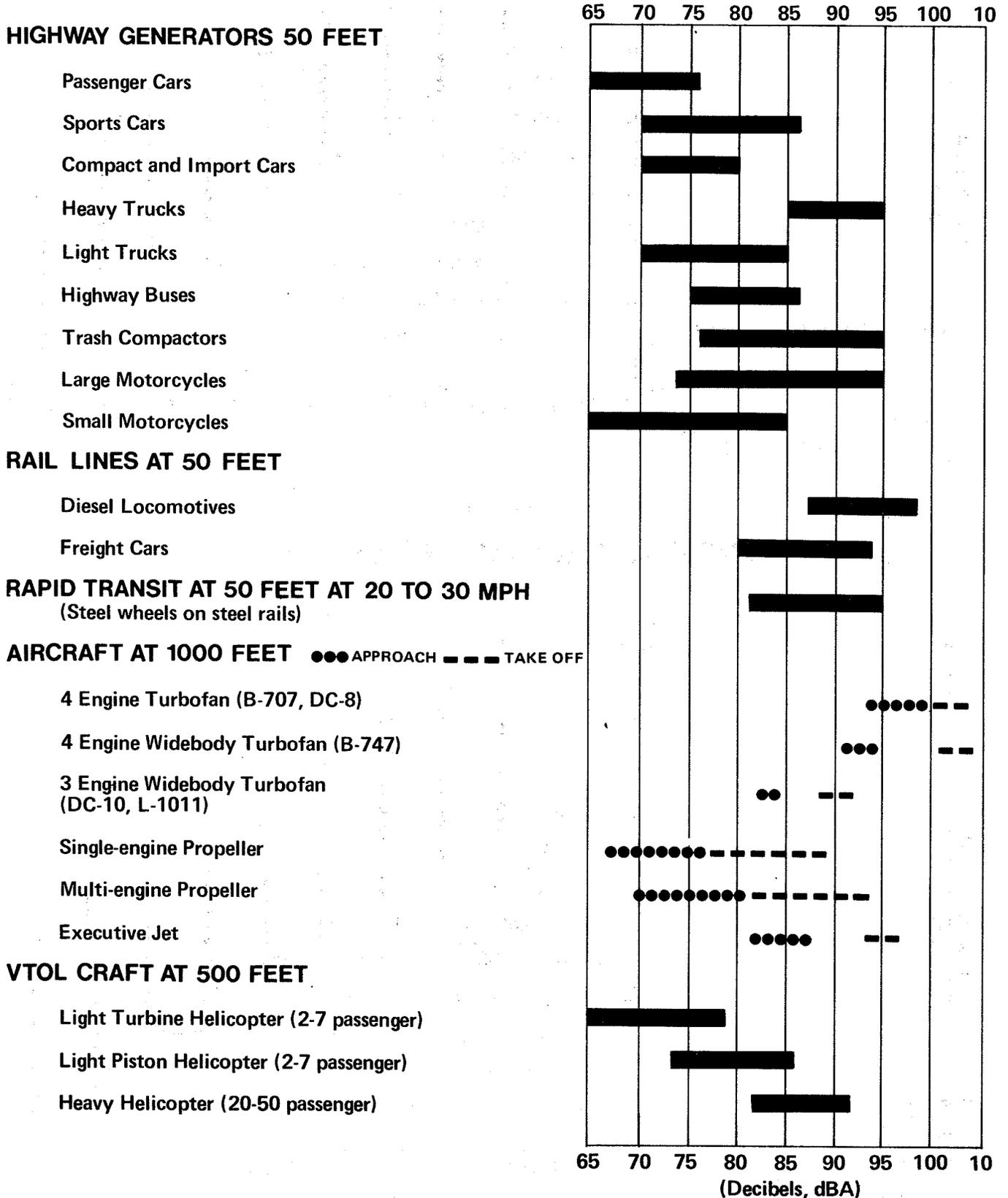


FIGURE 5-4

TYPICAL ARTERIAL HIGHWAY NOISE LEVELS (L₁₀)

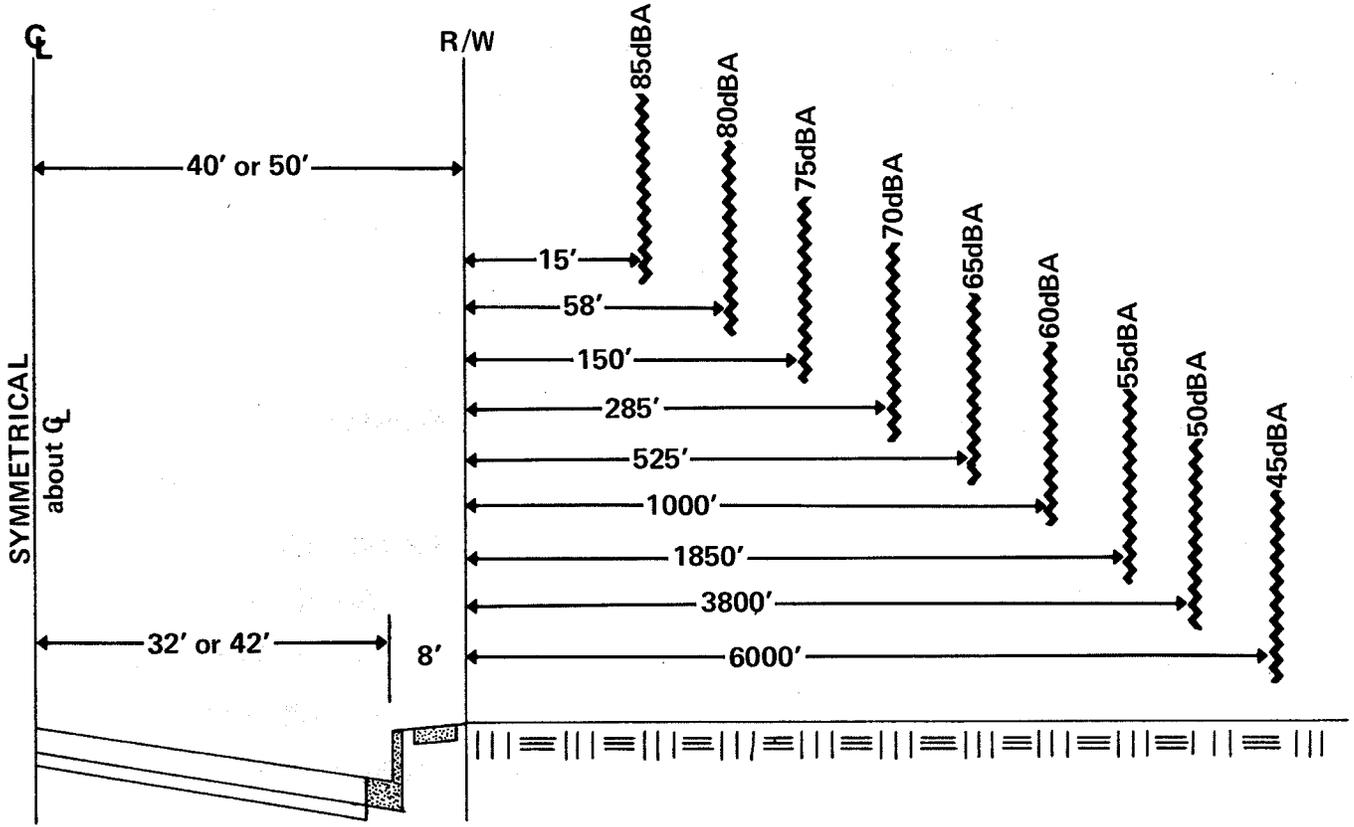


FIGURE 5-5

TYPICAL FREEWAY NOISE LEVEL

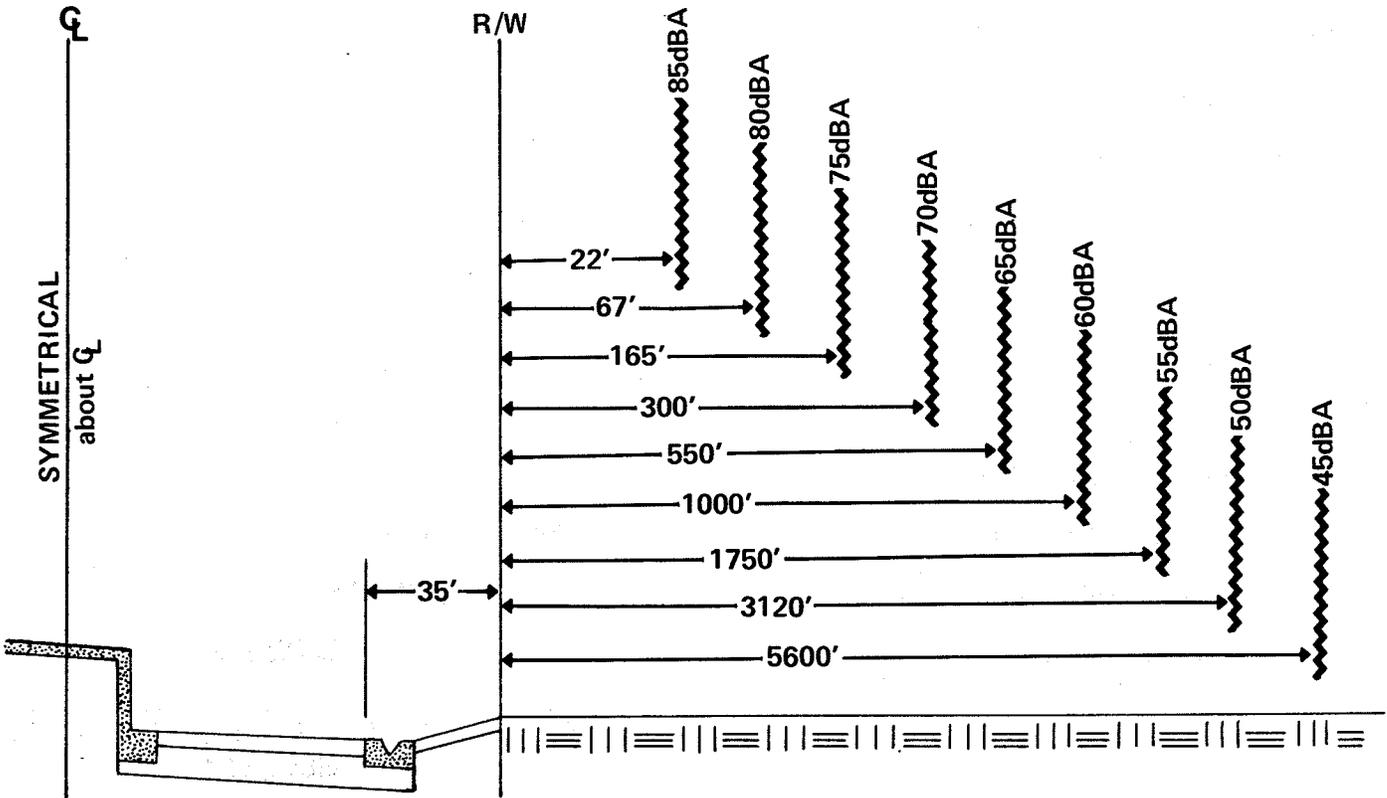
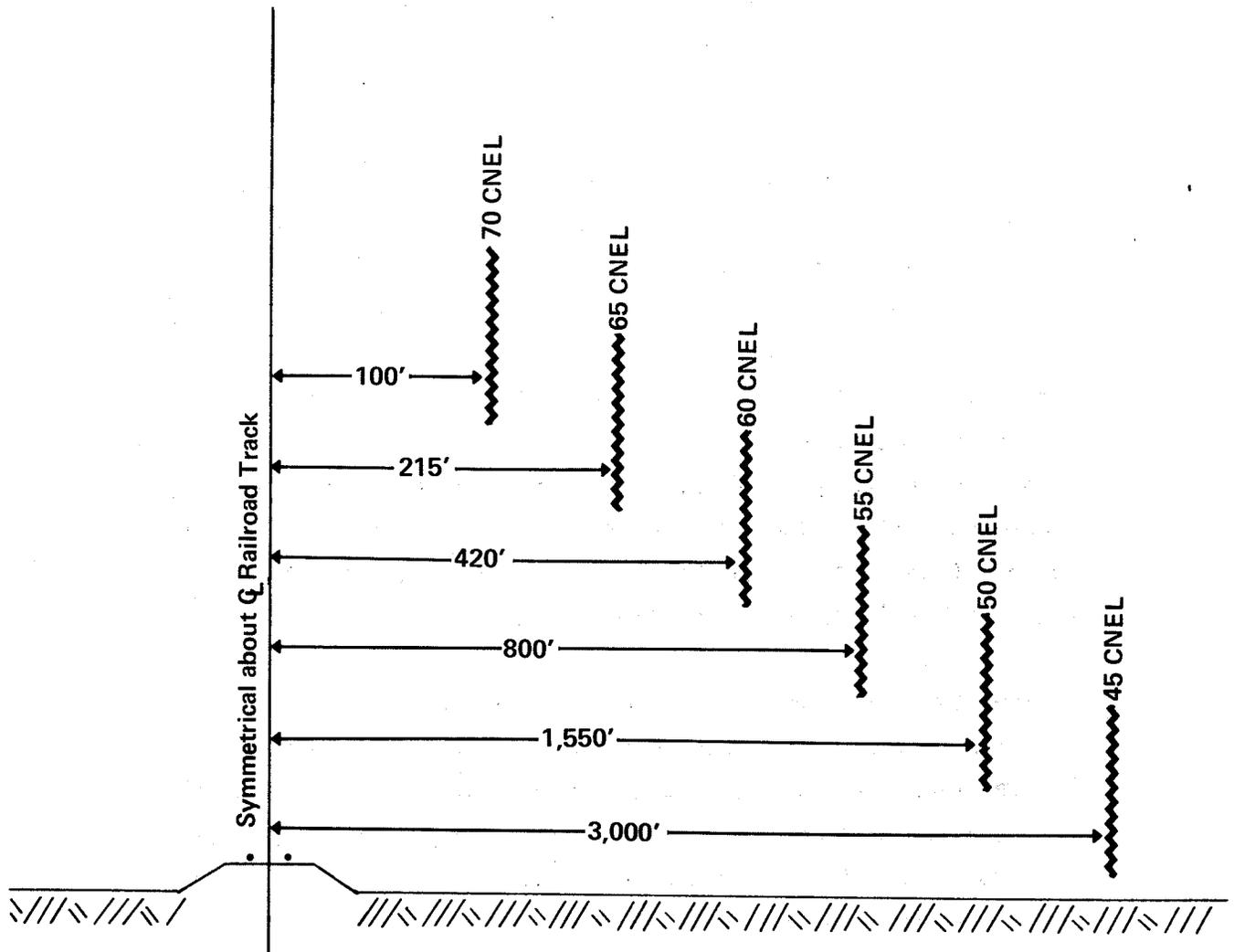


FIGURE 5-6

TYPICAL RAILROAD NOISE LEVELS (CNEL,dB)



5.6 Air Quality

Climate -

Southern California, including Los Angeles County, has one of the most varied climate patterns in the nation. For instance, during the long summer, arid subtropical weather conditions prevail, typified by sunny skies and periods of drought. On the other hand, in the short winter season, temperate weather patterns predominate characterized by the passage of alternating warm and cold fronts accompanied by rain in the Coastal Lowlands, and rain and snow in the mountains and deserts.

On the basis of factors such as rainfall, temperature and wind patterns, several climatic sub-regions can be recognized in the county. The Coastal Lowlands, the Mountains and the Desert, are the three areas which demonstrate major differences. The Coastal Plain, due to the moderating influence of the sea, has what is often referred to as a Mediterranean climate. This climatic type can in turn be subdivided. First, a narrow fringe along the coast is subject to frequent fogs, mild year-round temperatures and sparse rainfall. The remainder of the Coastal Plain and the Inland Valleys (San Fernando and San Gabriel) are relatively free of fogs, with arid summers and moist winters.

Another type of climatic sub-region is found in the mountains. The high eastern San Gabriel Mountains, generally above 5,000 feet in elevation, have the most distinct mountain climate exhibiting frequent winter snows, subfreezing temperatures and summer thunder showers and may be called the "high mountain" climate. Furthermore, the moist lower slopes of the front ranges of the Central Mountains which receive moderate winter rainfalls and infrequent snow as at Mt. Wilson, ("low mountain" climate) can be considered a transition

between the high mountain and Mediterranean climates. The northwest slopes of the San Gabriel Mountains and the Northwestern Mountains and Hills in the seaward drainage areas are characterized by low rainfalls, less frequent snows than in the eastern San Gabriels, and hot dry summers.

The desert, which is comprised of the Antelope Valley, like the other two major regions displays considerable climatic variety. The northeasterly part of the Valley is characterized by very little rainfall (less than 10 inches), very hot summers, chilly winters and strong winds. The southwestern Antelope Valley from Palmdale to Neenach, with slightly less extreme temperatures and slightly more rain, can be considered a steppe climate.

A transition zone between the desert and steppe and the mountain climates is the Juniper Hills-Lake Hughes area which is characterized by winter snow, moderate winter rainfalls and warm, dry summers.

Precipitation -

Rainfall in the county is highly variable, ranging downward from 45 inches on localized areas of seaward slopes of the San Gabriel Mountains. Rainbearing storms most often approach the county over the sea from the southwest or west and thus precipitation generally decreases with increasing distance from the ocean, except where intervening mountains occur. In addition, the county receives nearly all of its average annual rainfall during the winter and spring months.

The natural subregions, by virtue of the characteristics mentioned previously, have varying annual rainfall averages. The Coastal Plain has an annual average of 14 inches, the Transverse Hills receive an average of 20 inches, with the inland valleys receiving

nearly 18 inches. The Central Mountains have great variations with 20 to 45 inches on the seaward slopes and nine to 25 on the arid north slopes. Antelope Valley has an annual average of eight inches.

Snowfall in the county is great enough to provide both a recreational resource and a barrier to travel in the Central Mountains, particularly in the Gorman and Escondido Summit areas. Additionally, the entire Antelope Valley gets some snowfall, with the heavier concentrations in the southwesterly portion of the valley. Snow is very unusual in the Coastal Lowlands, but occasionally falls in the higher elevations of the Transverse Hills.

Scattered and sporadic summer thunder showers occur, but produce only a small portion of the total rainfall. These storms are more common in the northeast quadrant of the county, usually affecting only the Antelope Valley and the high northeastern San Gabriels. Flash floods and brush fires set by lightning strikes are commonly attributed to such storms.

Temperatures -

Extremely varied temperatures occur in the county and are affected by factors such as distance from the sea, elevation and season. Mild temperatures with low daily, monthly and annual ranges usually occur in coastal areas while the mountains and deserts more frequently have harsher climates and extreme temperature ranges.

Urbanization affects temperature by the creation of "heat islands" - a heated air mass over an urban area caused by emissions from fuel consumption and stored heat in buildings and streets. This intensifies the effects of inversion, eliminating convection and intensifying the air pollution problem in urban areas.

Wind -

Wind patterns are of great significance in the county. During winter the area lies in the northern hemisphere belt of prevailing westerly winds. In summer, the area lies in the subtropical calms. This summertime condition often produces the daytime temperature inversion which is characterized by cool air at the surface and warm air overhead - a reversal of normal conditions. Furthermore, the inversion eliminates convection which produces a very stable surface layer of air resulting in greatly intensified air pollution in the Coastal Lowlands. However, the inversion is generally limited to the Coastal Lowlands and the coastal slopes of the Central Mountains. Surface winds associated with the coastal inversion are the daytime sea breeze and the nighttime land breeze - the sea breeze feeding the inversion, and the land breeze "cleansing" the affected area.

Desert areas are subject to westerly winds and convection currents during the day and at night to the inversion effect. This night inversion is a result of rapid air cooling in the mountains during early evening and draining to the lower areas of the Antelope Valley where it "pools" near the ground beneath warmer air aloft.

Wind conditions in the Central Mountain belt are an aggregate of the situation in the lowlands to the north and south. During the daytime in summer, lower coastal slopes are affected by the sea breeze. Above the inversion level, however, coastal-facing slopes are usually calm by day, except for canyons which are affected by updrafts. Similarly, desert slopes are subject to strong updrafts (which are caused by convectional surface heating in the desert lowlands to the north). During the nights, in all seasons, air in the mountains cools rapidly. And because it is then heavier than the warmer air in the lowlands, it drains down slope (katabatic/mountain breeze) to the desert basins.

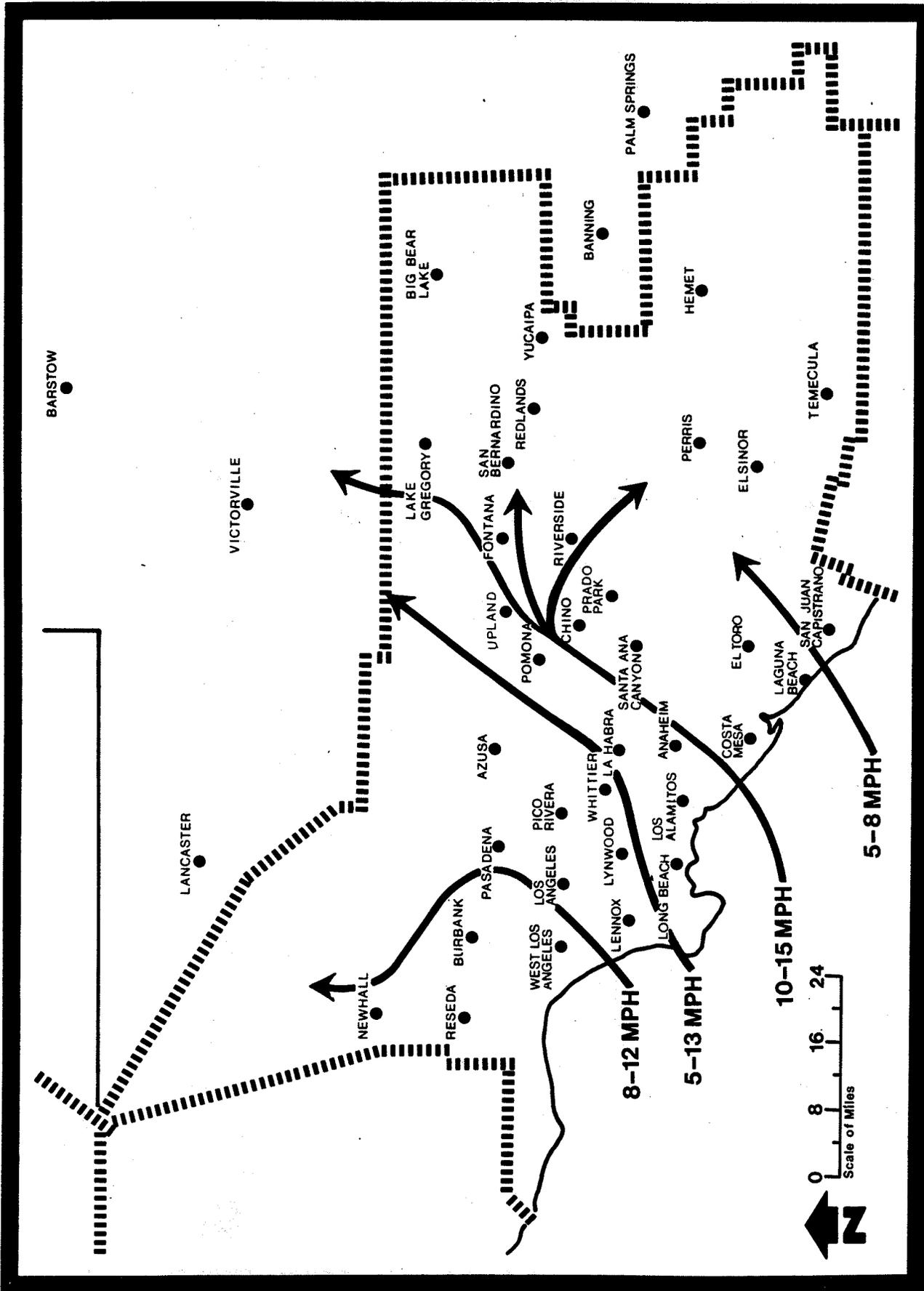
These wind patterns are also important since they result in the transport of emissions from their source (the place where they are created) to areas downwind. Map 5-10 (Typical Summer Daytime Ocean Winds) shows how pollution created near the coast may be carried to inland areas such as Whittier, Newhall and the San Fernando and San Gabriel Valleys. A pollutant such as oxidant becomes "worse" during this transport process since photochemical oxidation takes place and causes smog. Map 5-11 (Typical Winter Night Drainage Winds) shows the reverse wind pattern--wind blows from the mountain areas and inland valleys towards the coastal areas.

Emissions -

The most significant air quality problem in the county is photochemical smog which is created in the atmosphere as the result of sunlight energized reactions among contaminants such as the oxides of nitrogen and reactive hydrocarbons and other gases. The products and other unpleasant manifestations produced by these reactions include eye and lung irritations and damage to vegetation. Visibility reduction is yet another indication of this type of air pollution. Also, in high concentrations gases such as ozone and carbon monoxide are harmful.

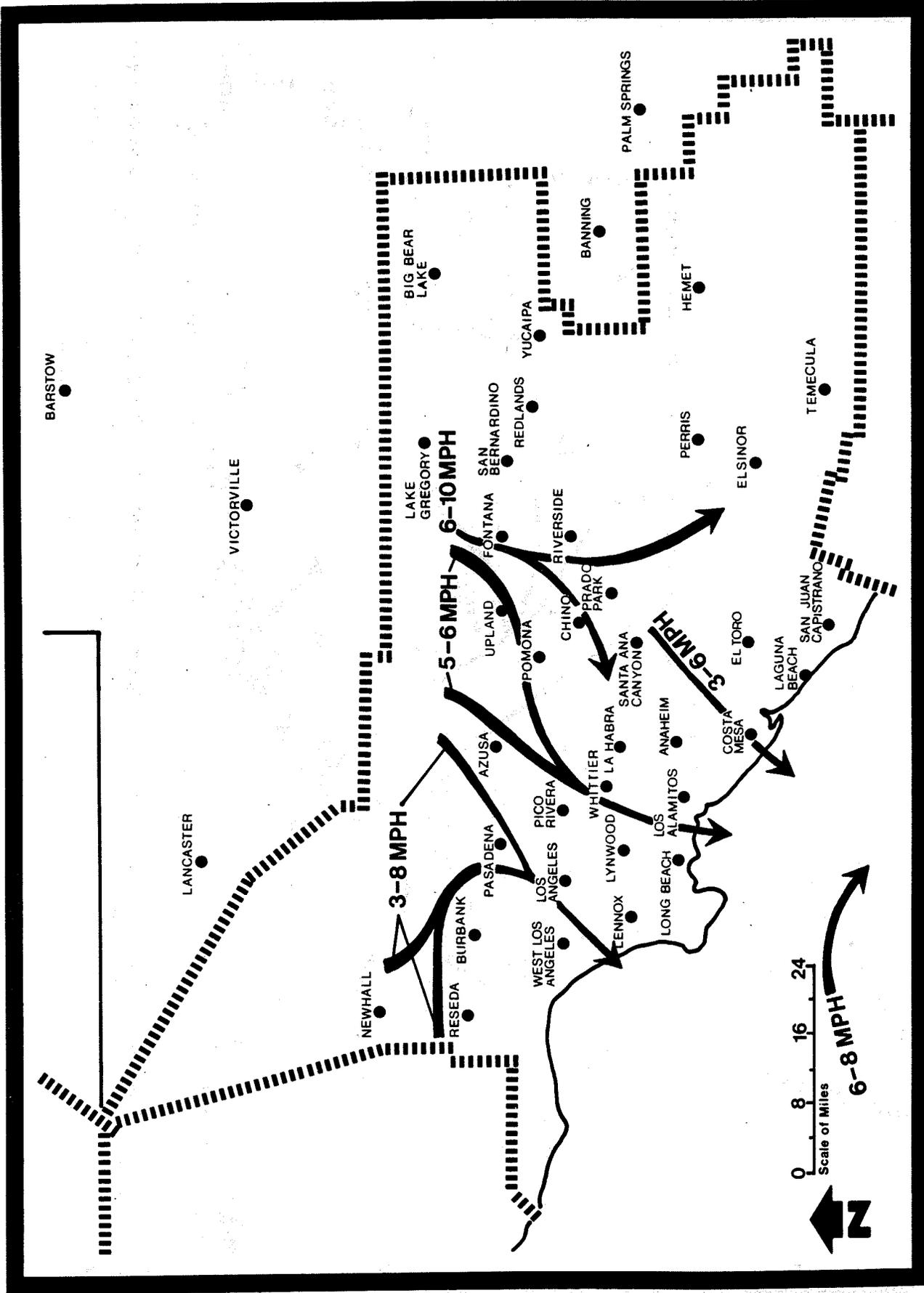
Besides the presence of various contaminants the formation of photochemical smog requires the presence of specific meteorological conditions. These include strong and persistent daytime inversions which permit the contaminants to accumulate, and sunlight of sufficient intensity and duration to initiate and sustain the photochemical reactions for several hours.

Maps 5-12 through 5-18 indicate the number of days in 1976 on which State and/or Federal standards were exceeded for oxidant, carbon



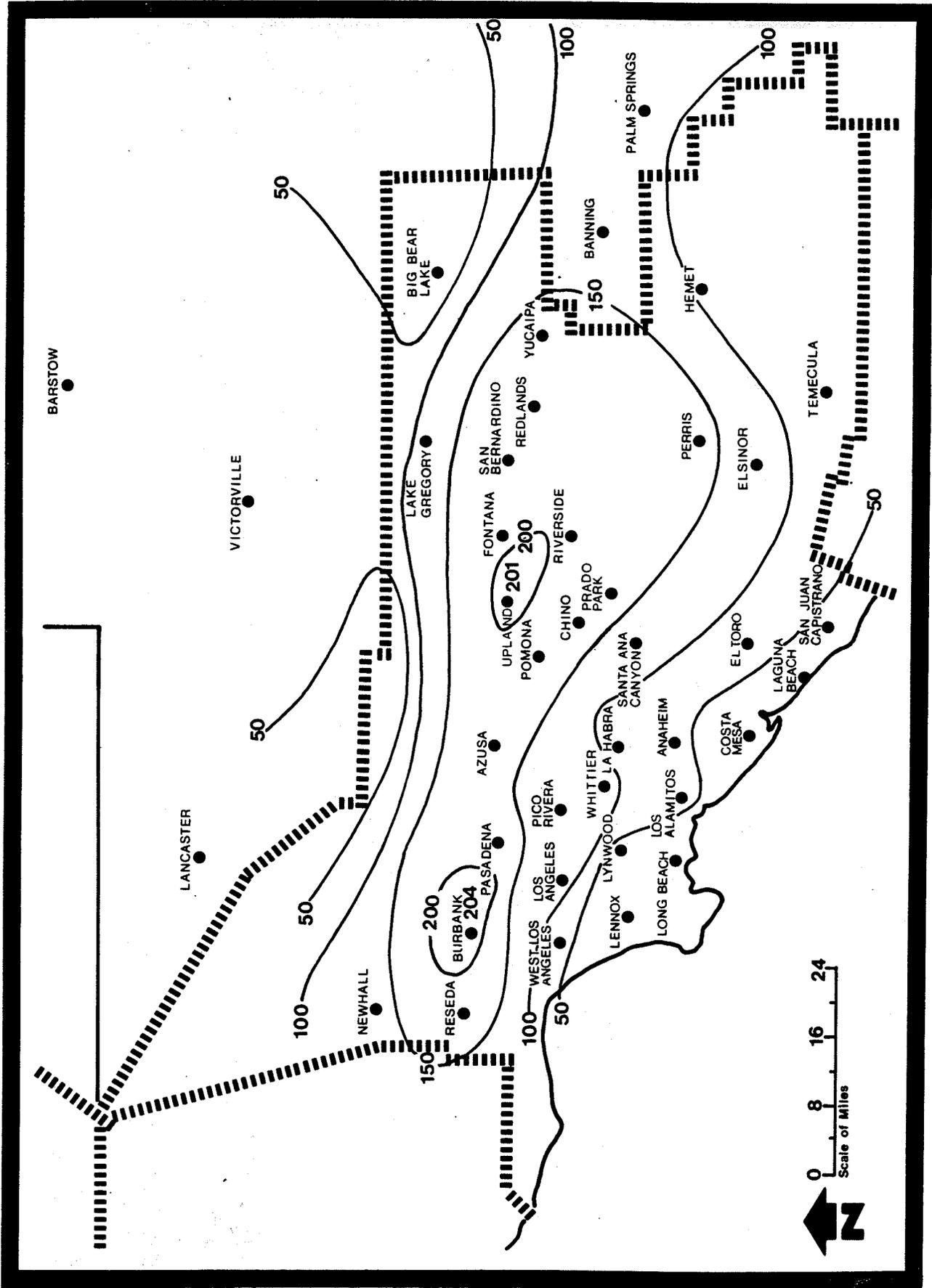
TYPICAL SUMMER DAYTIME OCEAN WINDS
MAP 5-10

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
 ■■■■■ District Boundary
 ● Air Monitoring Station



TYPICAL WINTER NIGHT DRAINAGE WINDS
MAP 5-11

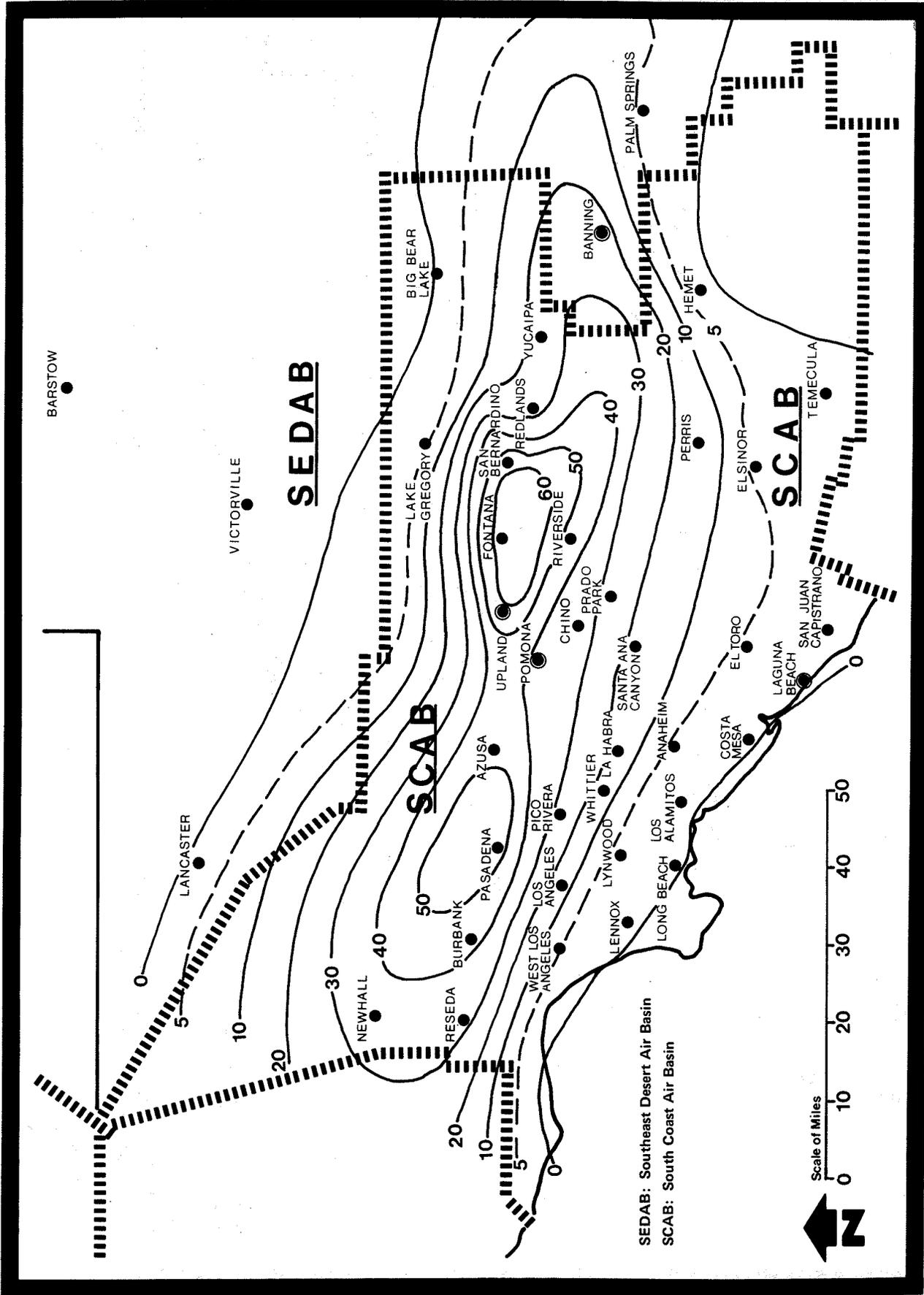
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
 ■■■■■ District Boundary
 ● Air Monitoring Station



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

- ▬ District Boundary
- Air Monitoring Station
- ◐ Less Than 9 Months of Data

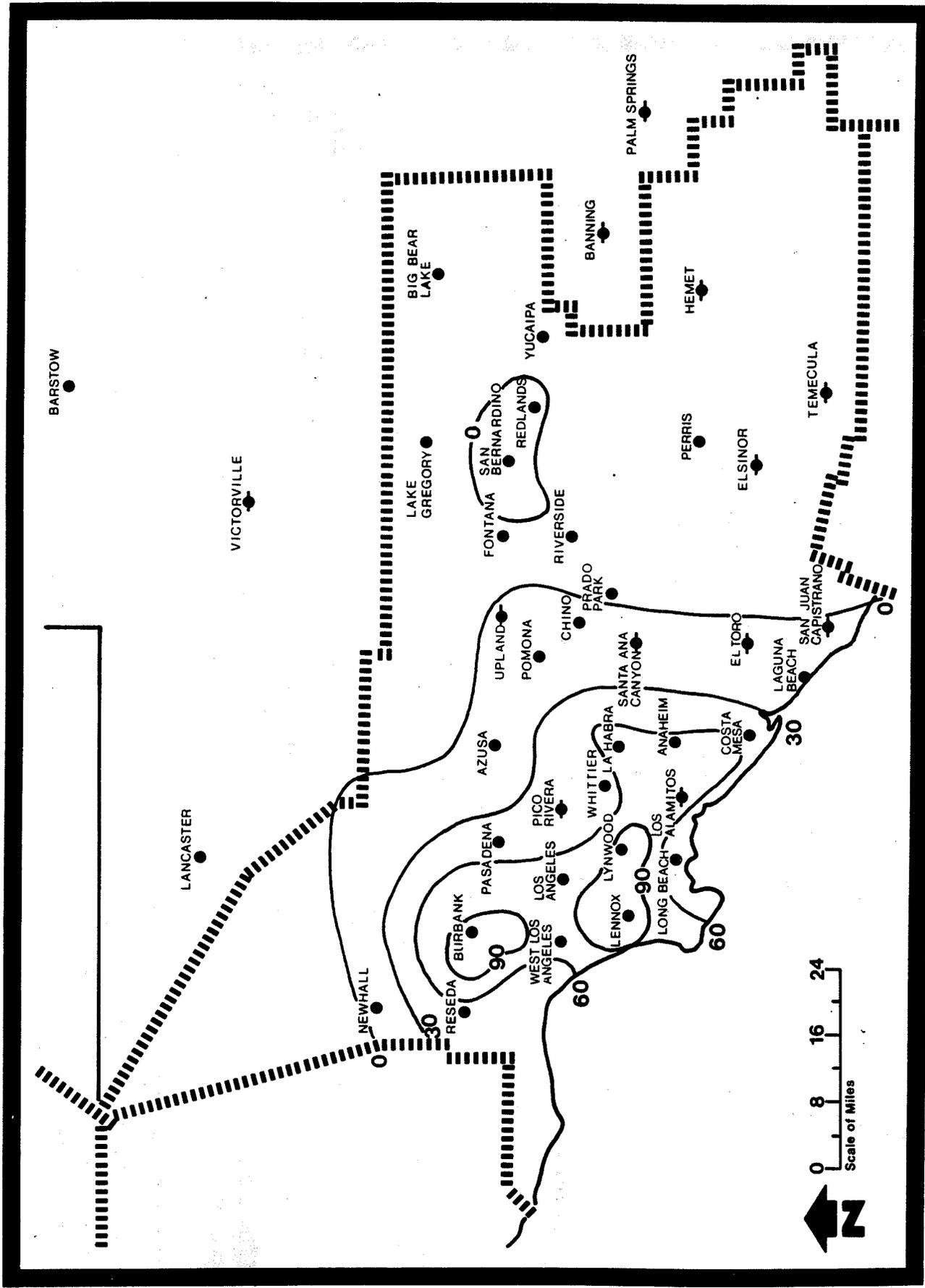
OXIDANT
 NUMBER OF DAYS VIOLATING FEDERAL STANDARD
 (1-HR. AVG. 03 > 0.08 PPM)
 1976



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

- Indicates Air Monitoring Station Where Pollutant is Measured
- ◐ Indicates Less Than a Full Year's Data
- ◑ Indicates Station Where Pollutant is Not Measured

OXIDANT
 NUMBER OF DAYS VIOLATING STATE STAGE 1 EPISODE LEVEL
 (1-HR. AVG. \geq 0.20 PPM)
 1976

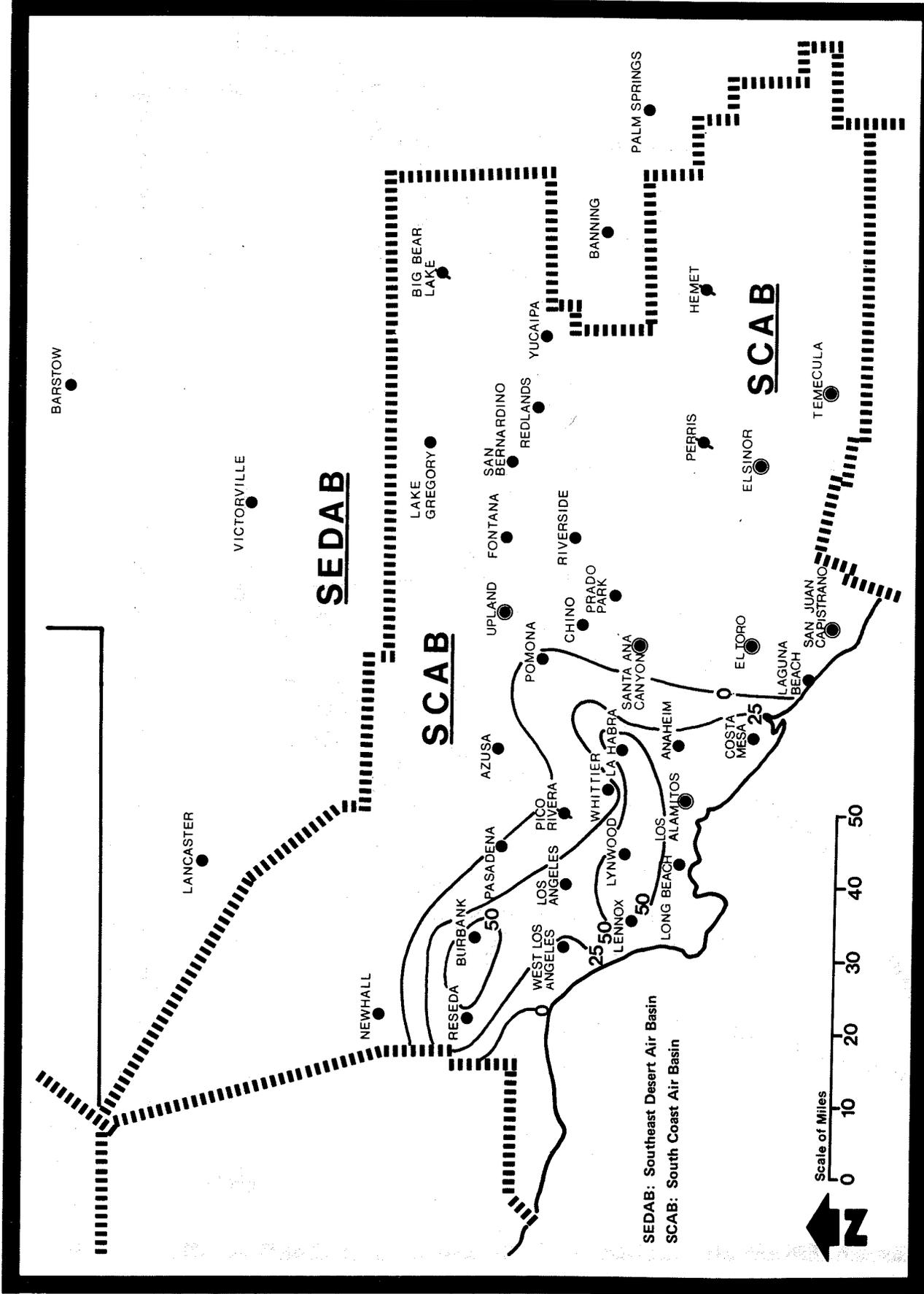


SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

**CARBON MONOXIDE
NUMBER OF DAYS VIOLATING FEDERAL STANDARD
(8-HR. AVG. CO > 9 PPM)
1976**

MAP 5-14

- ▬▬▬▬▬▬ District Boundary
- Air Monitoring Station
- Less Than 9 Months of Data



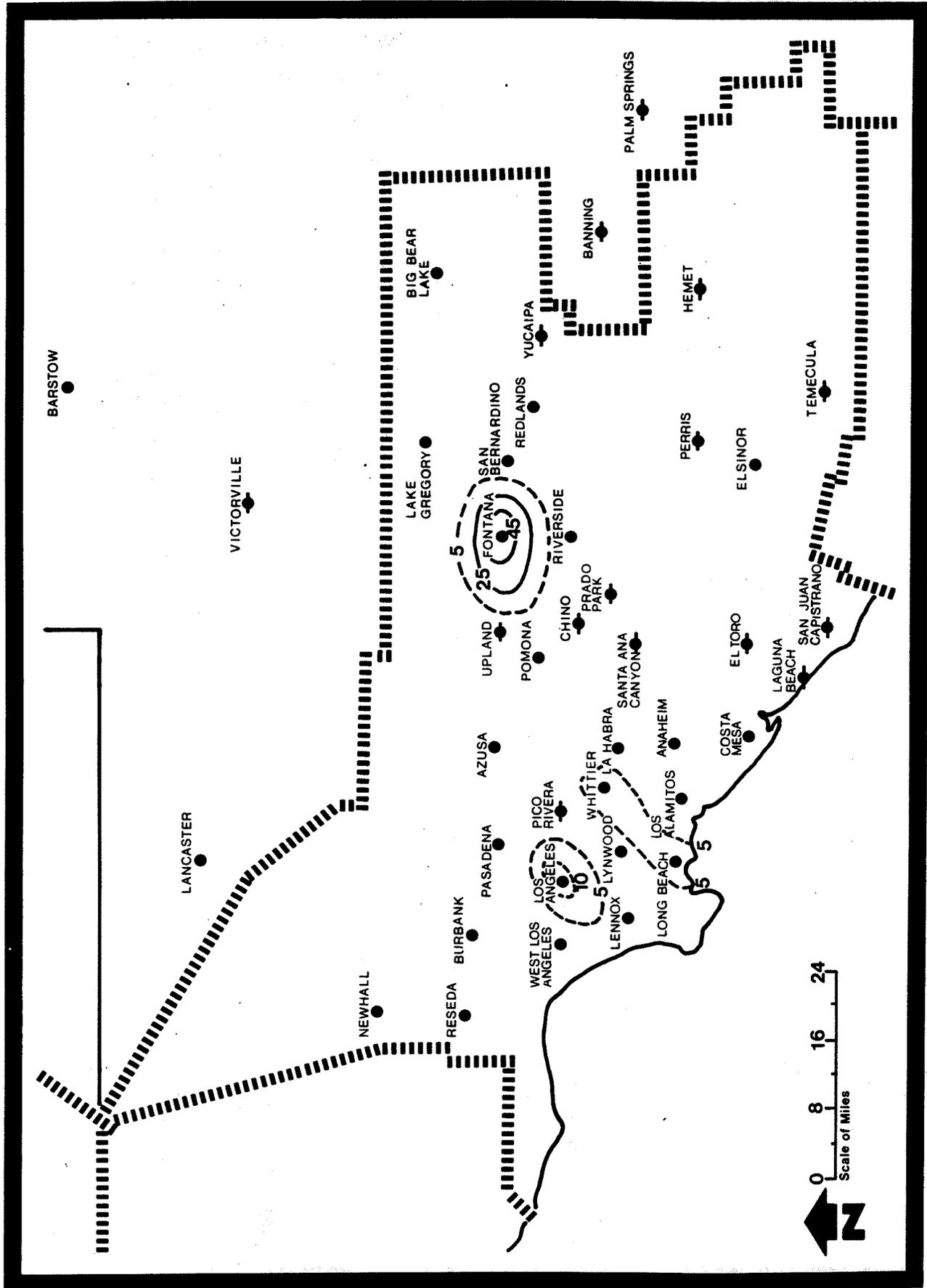
SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

- Indicates Air Monitoring Station Where CO is Monitored
- Indicates Less Than a Full Year's Data is Available
- Indicates Station Where CO is Not Monitored

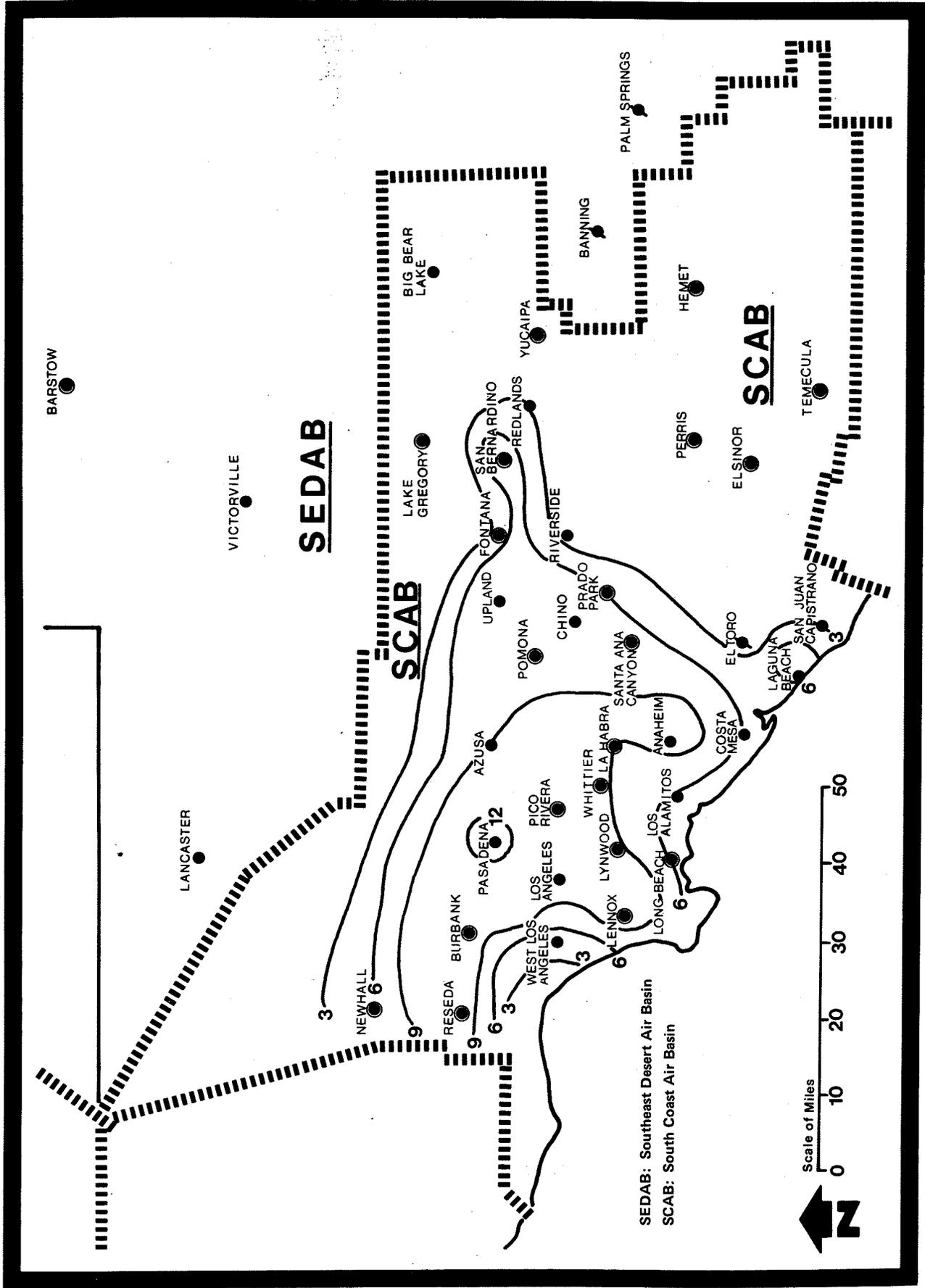
CARBON MONOXIDE
NUMBER OF DAYS VIOLATING STATE STANDARD
(12-HR. AVG. CO \geq 10 PPM)
1976

MAP 5-15

5-44



SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT
SULFUR DIOXIDE
NUMBER OF DAYS VIOLATING STATE STANDARD
(24-HR. AVG. SO₂ ≥ 0.04 PPM)
1976



LEAD
NUMBER OF MONTHS VIOLATING LEAD STANDARD
(MONTHLY AVG. Pb ≥ 1.50 ug/m³)
1976
MAP 5-18

monoxide, sulfur dioxide, nitrogen dioxide, and lead.

Types of Pollutants -

Ten pollutants are of major importance in Los Angeles County. These are oxidant, carbon monoxide (CO), nitrogen dioxide (NO₂), sulfur dioxide (SO₂), total suspended particulates, lead, sulfate, non-methane hydrocarbons, hydrogen sulfide and visibility reducing particles. Primary pollutants (those emitted directly from a source) are carbon monoxide, nitrogen dioxide (NO₂), total suspended particulates, lead, hydrocarbons and hydrogen sulfide.

Oxidant-Ozone -

The term oxidant is often, but erroneously used interchangeably with ozone. The oxidant category includes ozone and other oxidant compounds. The photochemical oxidation process in air which causes smog and the presence of ozone in the atmosphere ensures that this oxidation will continue.

Ozone is characteristically colorless with an acrid odor. Hazards and health effects which it can produce are coughing, choking, headache and severe fatigue. It can also lower animal infection resistance as well as damaging the leaves of plants. In addition, it can crack rubber, deteriorate fabrics and fade colors. Ozone is the chemical compound used as an indicator to determine the concentration of oxidants in the atmosphere.

Carbon Monoxide (CO) -

Carbon monoxide is a product of incomplete fuel combustion. In great amounts this gas can be fatal. In smaller quantities fatigue, headache, confusion and dizziness can occur. Carbon monoxide in the atmosphere does not appear to substantially damage property or vegetation.

Nitrogen Dioxide (NO_2) -

Nitrogen dioxide is the only important, widespread pollutant gas which is colored — yellow-brown. It can, therefore, affect visibility. Additionally, it has a pungently sweet odor.

This gas, even at relatively low concentrations is, most likely, harmful to the lungs. Nitrogen dioxide can also decrease the oxygen carrying capacity of the lungs. Furthermore, it can be harmful to plants; and, in water it becomes metal corroding nitric acid.

Sulfur Dioxide (SO_2), Sulfates and Hydrogen Sulfide -

Fuel combustion is the primary source of sulfur oxides. Prime sources of sulfur oxide emissions are oil refineries and fuel oil burning power generating plants. Lesser contributors are steel and chemical plants. Furthermore, the oxides of sulfur as particulate sulfates or in combination with water vapor in the atmosphere can form highly corrosive acids which are both irritating and damaging to property. The major oxide of sulfur that is produced in combustion is sulfur dioxide (SO_2), a heavy, pungent, colorless gas that combines easily with water vapor to become sulfurous acid (H_2SO_3), a colorless liquid. Sulfurous acid, mildly corrosive, is used as a bleaching agent in industry; as a pollutant, it can cause yellow spots on automobile paint. It joins easily with oxygen in the air to become the even more corrosive, irritating mist sulfuric acid (H_2SO_4).

Total Suspended Particulates (Including Visibility Reducing Particles) -

Particulates are relatively large particles in the atmosphere - ranging in size from one micron to over 10 microns (visible to

the naked eye). When liquids and solid substances are emitted into the air as particulate matter, their properties may be changed - resulting in secondary particulates. Secondary particulates are created by gaseous reactions in the atmosphere.

Lead -

Lead is a metallic element common to many substances. It can be found in soil, rocks, water and food. Noteworthy is the fact that only a very small amount contaminates the air.

Although more lead is ingested when eating a normal diet, a greater percentage of lead in the air is retained by the body when inhaled. However, even though preventive measures have been taken on a national level, specific harmful effects of inhaled lead particles have not been determined.

Hydrocarbons -

Hydrocarbons are compounds containing both carbon and hydrogen. They are contained in large amounts in petroleum, natural gas and coal. Most hydrocarbons pose a health hazard only if they are present in the air in very high concentrations.

Two classes of hydrocarbons are important in regard to air pollution -- olefins and aromatics. Olefins have very little direct effect on animal life, but they do create potential problems after taking part in photochemical reactions. Aromatics, on the other hand can have direct detrimental effects on health. Moreover, most pollution causing hydrocarbons are emitted into the atmosphere as a result of incomplete combustion -- especially by the burning of gasoline by automobiles.

Data on existing emissions is found in Section 6.6., in order to allow a comparison between existing and projected emissions and to avoid duplication.

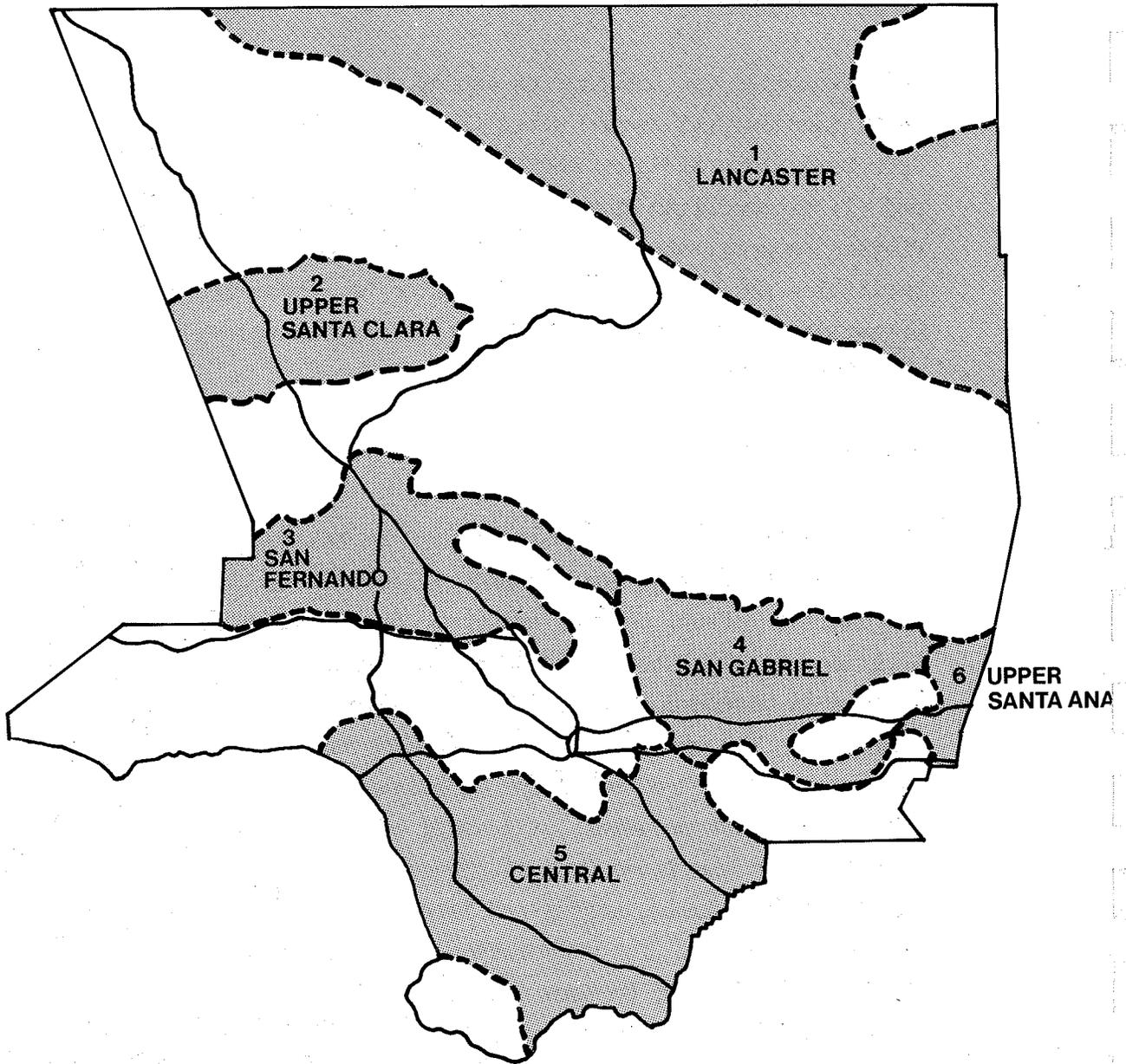
5.7 Water Resources/Water Quality

Water Resources -

Water supplies for Los Angeles County are currently obtained from three sources: (1) ground water (approximately 40%); (2) Los Angeles City Department of Water and Power - Owens River (approximately 20%); and (3) Metropolitan Water District Colorado River and State Water Project (approximately 40%--20% from each source). The physical facilities for the importation of water have been designed to accommodate population growth substantially in excess of existing population levels.

Ground Water -

There are six main ground water basins in the county. These regions are: Antelope Valley, San Fernando Valley, Santa Clarita Valley, San Gabriel Valley, Central and Upper Santa Ana Valley (see Map 5-19: Los Angeles County Six Main Groundwater Basins). Each basin acts as an underground reservoir from which water is pumped for local use. The basins are replenished by natural percolation and through water replenishment programs. These include Flood Control District projects, salt water barriers and water reclamation projects. In the Flood Control projects water is impounded in flood control basins during storms and later released to downstream water-spreading grounds. The percolation of the storm water blends with natural ground water to form subsurface reservoirs. Level of replenishment is, however, partially dependent on total precipitation and frequency/intensity and duration of storms. Salt water barrier replenishment projects generally involve the use of fresh water from the Colorado River to repulse the intrusion of sea water. There



MAP 5-19

LOS ANGELES COUNTY SIX MAIN GROUNDWATER BASINS



THE REGIONAL PLANNING COMMISSION
COUNTY OF LOS ANGELES, CALIFORNIA
1970

is a deficient local ground water supply due to relatively low and variable rainfall, and seasonal stream flows.

Imported Water -

Although local ground water provided all of the water used in the Santa Clarita Valley and nearly all of that used in the Antelope Valley, 67 percent of the water supply for the remainder of the county was imported in 1975. Given the inadequacy of its supply, ground water has been supplemented with imported water since 1913. Water imported by the Department of Water and Power is distributed through the Department's own network of mains primarily in the City of Los Angeles. Water imported by Metropolitan Water District is sold and distributed through 14 member agencies which in turn supply water to retail purveyors, a total of 239 public and private organizations.

Approximately one-third of the water imported by the Metropolitan Water District is used for industry, while the remaining two-thirds is used for residential purposes (approximately 50% inside the dwellings and 50% outside for uses such as landscaping and swimming pools). Water imported by the Department of Water and Power is used as follows: Approximately 30% for commercial and industrial uses, 10% for governmental uses and the remainder for residential purposes (approximately 65% inside the dwellings, 35% outside).

On a county-wide basis (including the Santa Clarita and Antelope Valleys) 90 percent of the total water supply is used for municipal (residential, commercial and governmental) and industrial purposes, while only 10 percent is used for agricultural purposes. Annual consumption for the county in 1975 was 1,662,200 acre feet, or about 212 gallons per person per day.

Areas requiring extension of water distribution lines, or supplemental lines to the existing system include: Lancaster-Palmdale, Calabasas-Agoura, Puente Hills and portions of the Carson area.

Reclaimed Water -

At present, 17 plants reclaim water from sewage aggregating 143 million gallons per day which are put to beneficial uses, including landscape and agricultural irrigation and groundwater replenishment. However, an additional 667 million gallons per day are not reused.

Water Quality -

Water quality refers to chemical, physical, biological, bacteriological, radiological and other properties and characteristics of water which affect its use and users. The California Administrative Code and the Federal Safe Drinking Water Act have determined limits for consumer acceptance of water quality, based on water which may be objectionable to an appreciable number of people, but which is not hazardous to health.

The main source of water pollution in the county is inadequate treatment of sewage by septic tanks or private sewage-treatment systems. Coastal waters are primarily affected by inadequately treated sewage discharged to the ocean at the three major waste water discharge points (see Section 5.24) and generating plants located on the Coast, as well as polluted storm waters and runoff. Increasing awareness of the sources of pollutants and continued monitoring by agencies such as the California Regional Water Quality Control Board has helped to maintain water quality standards.

With regard to the quality of water from the various sources, the Colorado River contains 700-750 parts per million, total dissolved

solids (TDS), while the Owens River contains 184 parts per million TDS. The quality of ground water varies from well to well. State and Federal standards suggest 500 parts per million TDS, but permit 1000 parts per million.

There are also Federal and State standards for turbidity—the State Department of Health has set a turbidity limit of 0.5 units for "water exposed to a significant sewage hazard," while EPA has set a limit of one turbidity unit, and permits a maximum of five units under certain conditions. The 1971-1975 turbidity average for the Owens River Aqueduct was 3.4 units with peaks as high as nine units. In addition, EPA is considering standards for the reduction of certain organics in drinking water. These standards are, however, recommendations, not requirements.

The Flood Control District is active in the conservation and quality control of water. Accordingly, the district operates 26 spreading grounds with a total area in excess of 2000 acres, three salt water barriers to arrest the infiltration of ocean water to the aquifer, as well as retention basins where storm waters are impounded for use in restoration of the aquifer.

5.8 Biota

Biotic communities are assemblages of plant and animal species that are found in specific physical habitats. They are ecological units containing a diverse group of organisms that exist together in an orderly, predictable manner and having a very close and complex set of interrelationships. These communities are commonly identified and discussed with reference to one or two dominant plant species and the nature of the vegetation. Vegetation is considered to be the key factor of the varied biotic communities existing in the county.

The tremendous variation in physical environments within the county has produced a very unique and diverse collection of biological

resources. According to the Munz (1974) classification of biotic communities, fourteen of the fifteen communities occurring in Southern California can be found in Los Angeles County. This is an extremely high number, but it does not fully reflect the diversity of communities that can be found within the county. The Munzian system only identifies major vegetation types, and does not deal with intra-community variation. A more recent system proposed by Thorne (1976) takes this parameter into account, identifying, for example, no less than thirty-six communities of chaparral in Los Angeles County, an impressively high number for an area its size.

In 1963, the California Department of Fish and Game inventoried the natural communities of the State (Figure 5-7). The results were tallied in a condensed Munzian system, and revealed several important trends. Man's activities have reduced the diversity of biological resources in Los Angeles County. By 1963, urban and agricultural development had already eliminated nearly 30 percent of the natural biotic communities in the county, and this figure has risen sharply in the intervening period. Only chaparral and desert vegetation covered over 10 percent of the region, and both of these classifications combined several distinct communities that occurred at much lower percentages. In addition, only a small portion of the chaparral in the county occurred outside the Angeles National Forest. The majority of communities existed only as very limited examples.

Widespread habitat loss and degradation is now indicated by the number of rare and endangered plant and animal species found here. The Los Angeles County Significant Ecological Area Study of 1976, published by Environmental Systems Research Institute, which studied the biotic resources within the county area excluding the Channel Island and the Angeles National Forest, identified 10 animal species and seven plant species as being rare or endangered. The animal species include the California condor, the American

peregrine falcon, the Southern bald eagle, the California brown pelican, the California least tern, the light-footed clapper rail, Belding's savannah sparrow, the unarmored threespine stickleback, the Mohave ground squirrel, and the El Segundo blue (butterfly). The plant species include the Santa Monica Mountain live-forever, the Many-stemmed dudleya, the Santa Susana tarweed, Nevin's barberry, the Slender-horned chorizanthe, the Mohave spine flower and Bedstraw. Most of these species are classified as endangered within the county. In addition to these species, one other animal species and twelve additional plant species are recognized as either rare or endangered within the county, occurring outside the study area of the 1976 significant ecological area report.

FIGURE 5-7

MAJOR HABITAT TYPES IN LOS ANGELES COUNTY IN 1963
(California Department of Fish and Game 1966)

Urban-agriculture	763,673	29.3
Chaparral	722,096	27.6
High desert	399,956	15.4
Coast sagebrush	176,848	6.8
Grassland	173,997	6.7
Pinyon-juniper	140,172	5.4
Pine-fir-chaparral	97,812	3.8
Riparian woodland	35,973	1.4
Woodland-chaparral	29,582	1.1
Inland sagebrush	22,776	0.9
Woodland-grass	17,749	0.7
Woodland-sagebrush	10,942	0.4
Lakes, bays, reservoirs	7,838	0.3
Seasonal Marsh	3,120	0.1
Marsh	1,692	0.1
Hardwood	1,250	trace

The biological resources of the county can be discussed best on a regional basis. The county can be divided into six major regions of similar geography and climate. These are the coastline, the Santa Monica Mountains, the Central Mountain Chain and Verdugo Mountains, the San Jose, Chino and Puente Hills, the Antelope Valley and Mojave Desert, and the San Fernando Valley and Los Angeles Basin. The diversity of biotic communities within each region and their status is briefly described below. The community classification and discussion used here are based on those proposed by Thorne (1976).

Coastline

The coastline of Los Angeles County possesses examples of several coastal, shoreline, dune, and scrub habitats. The major biotic communities found in this region include marine aquatic, coastal dune sand plant, coastal salt marsh, coastal sage scrub, and chaparral. Most of these have been considerably modified since 1900 by pollution, development, and intense recreational use. These activities are continuing to reduce habitat areas, and are threatening to eliminate several species and unique communities.

Marine aquatic communities include two distinct types of submerged vegetation—marine meadows and surfweed communities. Marine meadows are found in quiet waters of bays, lagoons, and estuaries, or deeper waters near the coast where wave action is mild or absent. This community is composed of a few flowering species and numerous algae. It is represented in Los Angeles County by habitat at scattered localities along undisturbed portions of the coastline. Surfweed is a sublittoral community that is composed of few flowering plants and numerous species of algae. It occurs along rocky shores below low tide levels, but where wave action is present. It is found at scattered localities on the Malibu coast and on the Palos Verdes Peninsula. This community includes many submerged rocky shoreline habitats and kelp beds.

Although rocky and sandy intertidal areas do not contain vascular plants, they do support abundant and tremendously diverse algal and faunal communities. Literally hundreds of species may be present in an individual tidepool. These habitats make a significant contribution to the biotic diversity in Los Angeles County.

The climate along the coast is very mild. Temperatures do not fluctuate greatly and the marine air crossing the region is quite moist. These factors give the region a long growing season. The variety of geological and topographical settings provide habitat for a number of terrestrial communities.

The coastal dune sand plant community is found in scattered localities in the upper sandy beaches along much of the county's coast and in the stabilized dune habitat at El Segundo. This community is characterized by rhizomatous grasses, sprawling succulents, and semi-shrubs. Despite many favorable environmental conditions, this is a harsh environment. The substrate is sandy and loose, and there is strong and persistent wind. As beachfront development has taken place in the county, the amount of coastal dune sand plant community has been greatly reduced. In addition, beaches have received intense human use and few, if any, areas of undisturbed habitat remain.

Coastal salt marsh has almost been eliminated from the county, but isolated remnants can still be found at Ballona Creek and Alamitos Bay, and the potential for a salt marsh exists at Malibu Lagoon. At one time, coastal salt marsh covered approximately 6,800 acres in Los Angeles County. However, due to airport, marina, recreational, residential, and industrial developments, this acreage has been severely reduced, and only about four percent of those areas remain today.

Coastal salt marsh vegetation extends from the upper intertidal zone to above the mean high tide level, and is dominated by succulent herbaceous perennials growing in salt-saturated soils. This vegetation can be broken into two communities, tidal marsh and salt-flat succulent. The distinction between the two is that tidal marsh is inundated regularly while salt-flat succulent is submerged only during high spring and summer tides.

Coastal sage scrub is a low, relatively open shrubby vegetation that is found on dry, gravelly slopes below 3000 feet. Where it grows on ocean cliffs, it is called a sea-bluff succulent community. This is an uncommon association that differs greatly in species composition and physiognomy from inland coastal sage scrub. Sea-bluff succulent is composed of succulent herbs including many endemic species. This community is restricted in distribution in the county, and is found only on the coastal bluffs of the Palos Verdes Peninsula and Malibu Coast.

Another form of coastal sage scrub, the maritime sage scrub community, is found covering the hill tops and slopes of the immediate coast. This community is richer in species than seabluff succulent due to a more favorable environment and contains many shrubs and herbs.

Chaparral is found in many drainages and on many slopes along the coastline. The coastal form of this community is called mixed chaparral. It is a wide-spread scrub vegetation found below 5000 feet in the Southern California coastal mountain ranges. It is dominated by a variety of broad-leaved shrubs and herbs. Stands are dense and often impenetrable. Mixed chaparral and maritime coastal sage scrub are both found on the bluff-tops and hillsides of the Palos Verdes Peninsula, and along the Malibu Coast. These are the only places on the coast where these communities can be found.

Santa Monica Mountains

The Santa Monica Mountains are relatively low mountains that run in an east-west direction along the Malibu Coast. Temperatures are not significantly lower at higher elevations, but rainfall is higher on the coastal exposures. There is a strong marine air influence over most of the mountain range due to its proximity to the ocean. Consequently, the climate is relatively mild, and several communities are well-developed here. These include freshwater aquatic habitat, riparian woodland, coastal sage scrub, grassland, oak woodland, and chaparral. Because development in the Santa Monica Mountains has recently accelerated, several of these communities are becoming more limited in distribution.

Freshwater aquatic communities require year-round water. Although very limited in number, perennial streams which support quiet stream aquatic vegetation can be found in the Santa Monica Mountains. This community contains many free-floating, attached-floating, partially submerged and submerged aquatic plants. The species composition depends upon the depth, temperature, and alkalinity of the water, and the substrate present. This habitat is accompanied by a fauna of aquatic and semi-aquatic species that are restricted to this habitat type. This community is becoming extremely uncommon in Los Angeles County.

Riparian woodland is found along the margins of perennial streams as well as in drainages where water is found beneath the surface. This community consists of semi-aquatic trees, shrubs, and herbs, and is very dense in several of the mountain canyons. Many canyon floors where this community is found are currently under pressure for residential development, and only a limited number of good examples remain.

The coastal sage scrub communities found in this region include maritime sage scrub and inland sage scrub. However, the coastal sea-bluff succulent vegetation is not present. Maritime sage scrub is found on the lower coastal slopes of the mountains, whereas inland sage scrub is found on the interior slopes. Here conditions are hotter, drier, and higher in elevation. This community is not as rich in species as the maritime sage scrub, and lacks the numerous endemics and other species requiring the milder maritime climate.

Southern California grassland is found in the broader valleys and ridges of the mountains. Once dominated by native perennial grasses, this community is now composed of introduced annual grasses and herbs. However, there are a number of native annual forbs that are abundant in years of favorable rainfall. This community is probably maintained in part by continued grazing of domestic livestock.

On north-facing slopes and in shaded ravines, southern oak woodland can be found grading into surrounding coastal sage scrub and chaparral. This community is dominated by large evergreen oaks. Dense stands of shrubs often occupy the openings between the trees. In this region, the community was once more widespread than it is today. Many areas have been cleared for agricultural and urban development.

Chaparral communities including mixed chaparral and red-shanks chaparral can be found in the Santa Monica Mountains. Mixed chaparral is abundant on the upper slopes and ridges of the mountains and in drainages nearer to the coast. Red-shanks chaparral is not well developed in the Santa Monica Mountains, and can only be found as small isolated populations at higher elevations. Its presence in this region is unique in the county. It is typically taller than mixed chaparral and is formed by nearly pure stands of red-shanks (Adenostoma sparsifolium).

Central Mountain Chain and Verdugo Mountains

The San Gabriel Mountains, Verdugo Mountains, Simi Hills, Santa Susana Mountains, and the eastern slopes of the Tehachapi Mountains in the northwest corner of the county are included in this botanical region. Most of the region is within the Angeles National Forest and has remained in a natural state.

These ranges are higher in elevation than surrounding areas, and are characterized by greater seasonal differences in temperature and by drier air than the more coastal regions. Snow is common in these mountains in winter at altitudes over 4000 feet. In addition, the influences of the desert and the Tehachapi Mountains, which link this area to the Sierra Nevada, help make this one of the most diverse botanical regions in the county.

Freshwater and riparian habitats are found throughout the ranges. Coastal sage scrub, chaparral, grassland, oak woodland, pinyon-juniper woodland, and sagebrush scrub are found on the lower slopes and ridges, while several Pacific and Sierran Coniferous forests are found at higher elevations. Mountain meadows are also located in this region.

Freshwater lake, pond, and quiet stream communities are similar to those found in the Santa Monica Mountains. Lower elevation riparian woodland here also resembles that found in the coastal transverse range. At higher elevations, the riparian woodland blends into mixed evergreen forest and the species differ significantly. Higher elevation riparian woodlands are a part of the county's biological resources that are restricted to this region.

As in the other inland mountainous regions of the county, the inland sage scrub community is the coastal sage scrub represent-

ative here. Many widespread species dominate this vegetation along with others that are found only in the drier inland regions.

Mixed chaparral resembling that found in the Santa Monica Mountains, is found here as well as the chamisal, montane, and desert forms of chaparral. These are distinct communities that are restricted to this geographic region within Los Angeles County. Chamisal chaparral consists of pure stands of the chaparral indicator species chamise (Adenostoma fasciculatum). Montane chaparral occurs well above the altitudinal range of other chaparral communities, near the zone where forests are found. The community is characterized by low, dense shrubs covering dry, exposed slopes. Desert transition chaparral is restricted to the dry, rocky desert slopes of these mountains. It is often found in association with pinyon-juniper or joshua tree woodlands, and is dominated by arid-adapted species.

Two communities of oak woodland are found in this region. They are the southern oak woodland which is widespread in the county, and foothill woodland which is more common in central California. However, the southernmost distribution of this community can be found in the interior transverse mountain ranges of Los Angeles County. Foothill woodland is transitional between grassland or chaparral and montane communities. Its species composition varies with elevation, available moisture, and soil. It commonly is found at higher elevations than southern oak woodland.

Grasslands are common in the broad valleys and foothills of the region. In addition to the common Southern California grassland, the Great Central and Coast Ranges Valley grassland is found here. This community is much more common to the north, and only reaches the county on the eastern slopes of the Tehachapi Mountains in the extreme northeast corner of the county. Like

other California grasslands, the perennial native bunch grasses in this community have been replaced by introduced European annuals.

The higher slopes of these mountains support a variety of Pacific and Sierran coniferous forests. This is the only region in Los Angeles County where these montane communities are found. The southern mixed evergreen forest represents the Pacific coniferous forests. It is found from 1,500 to 5,500 feet in moist canyons where it grades from moist riparian woodlands at lower elevations into chaparral and yellow pine forest where conditions are drier. Several Sierran coniferous forests are found in the region including lower and upper montane, and subalpine forests. Lower montane coniferous forests include Coulter pine forest and yellow pine forest, both of which are found between 5,000 and 8,000 feet. The upper montane forest is found to 8,500 feet, and includes the white fir-sugar pine forest community. Subalpine forest communities include lodgepole pine forest and limber pine forest. They are both very limited in distribution and occur only on the highest peaks.

Throughout the region where moisture is sufficient, there are mountain meadows. They often occur along streamcourses, and possess a rich flora of grasses, sedges, rushes, and herbs. This community is very uncommon in Los Angeles County.

On the drier desert slopes of the mountain ranges of the region, pinyon-juniper woodland and great basin sagebrush scrub are found between 4,000 and 8,000 feet. These xeric communities often overlap in distribution forming a unique, unusually diverse association. Neither community is common in Los Angeles County.

San Jose, Chino and Puente Hills

The climate in the San Jose, Chino, and Puente Hills consists of

warm summers and mild winters. The region does not feel a strong marine influence, and is therefore relatively dry. Due to their low elevations, these hills do not support montane communities. However, many lowland and foothill communities are present. These include riparian woodland, inland sage scrub, southern California grassland, southern oak woodland, mixed chaparral and chamisal chaparral. Although the communities here are not out of the ordinary, they are the only good examples remaining in the southeastern portion of the county. These communities are currently under pressure for residential and landfill development.

Antelope Valley and Mojave Desert

Very low relative humidities prevail for most of the year in this region, rainfall is minimal and there is a sharp seasonal difference in temperature. Summers are extremely hot and winters can be very cold. Snow is not unknown to the region in the winter, and often lightly covers the ground for several days. The Mojave Desert extends from the Tehachapi Mountains east to the Colorado River. Los Angeles County contains only the westernmost portion of this desert. Nevertheless, the county possesses examples of most desert communities. These include great basin sagebrush scrub, joshua tree woodland, creosote bush scrub, desert rock plant, riparian woodland, shadscale scrub, and alkali sink scrub. With the exception of great basin sagebrush scrub, these communities are restricted to the deserts of the southwestern United States.

Much habitat loss has occurred in the Antelope Valley as a result of extensive agricultural development. Many of the remaining areas that support native vegetation are small and have become isolated. This has resulted in a considerable loss of biological resources.

Great basin sagebrush scrub is an open low scrub habitat dominated by great basin sagebrush (Artemisia tridentata). A variety of

shrubs, perennial grasses and annuals are also found in this community. It occupies the deeper, sandy soils of arid slopes and valleys from 4,000 to 8,500 feet. This community is not common in Los Angeles County or southern California, and only occurs at isolated localities.

Joshua tree woodland is found on well-drained desert slopes and alluvium between 2,500 and 5,000 feet. In the county it occurs at the base of the Central Mountain Chain and on most of the county's buttes. It is dominated by joshua tree (Yucca brevifolia), which forms a woodland of branched, bayonet-leaved trees. Numerous shrubs, cacti, and annuals are associated with it. The community is often intermixed with pinyon-juniper woodland, sagebrush scrub, and other desert scrub communities.

Most of the desert floor below 4,000 feet is covered by a creosote bush scrub community. Although sometimes composed solely of evenly spaced creosote bush (Larrea tridentata), there are often a number of shrubs, yuccas, and cacti present. During years of favorable rainfall, many wildflower species can also be found in these areas.

On rocky outcrops and slopes in the desert, there are commonly open communities of shrubs and herbs that are called desert rock plant communities. They are commonly without specific dominant species. In Los Angeles County, these communities are found on buttes and the rockier desert slopes of the transverse mountain ranges.

A very uncommon community in its best form in the desert is riparian woodland. It consists of trees, including cottonweed (Populus fremontii) and willows (Salix sp.), and an often dense understory of shrubs and grasses. It may be found only in the

largest desert washes and even then is restricted to a small number of localities.

Two communities of alkaline scrub are found in and around the dry lake beds in the northern portion of the county. These are shadscale scrub and alkali sink scrub. Shadscale scrub dominates heavy, alkaline soils that commonly have a shallow hardpan. It is a low shallow-rooted shrub community composed of species adapted to these edaphic conditions. Similarly, alkali sink scrub is a low, sparse community found in poorly-drained soils of most alkaline flats and dry lakebeds.

Los Angeles Basin and San Fernando Valley

Much of the Los Angeles Basin is under a moderate to strong coastal influence. The area has a mild climate and a long growing season. However, inner portions of the Basin and the San Fernando Valley are drier and experience slightly greater extremes in seasonal temperatures. The region has been intensively developed. Nevertheless, several important biotic communities can still be found here. Inland sage scrub, southern oak woodland, and southern California grassland occur in scattered undeveloped areas throughout the region. In addition, many lowland riparian areas can be found where stream courses remain unchannelized. However, the most unique communities that remain in the region are the freshwater aquatic communities including freshwater marsh, reservoir semi-aquatic, and lake, pond, and quiet stream aquatic. These are very uncommon communities and make significant contributions to the variety of biotic resources in the County.

Freshwater marsh is a community of immersed plants found in shallow permanently inundated areas. It is dominated by a variety of tall reeds, rushes, grasses, and sedges. In Los Angeles County, good

examples of this community may be found at Madrona Marsh and Harbor Lake Regional Park, on the shallow margins of several man-made lakes and reservoirs, and along quiet stream courses where the water table is above the surface.

The reservoir semi-aquatic community is found in reservoirs and flood control basins where the water level undergoes seasonal fluctuation. The species found here are adapted to alternate periods of flooding and immersion, and are therefore considered semi-aquatic.

Lake, pond, and quiet stream aquatic communities are found in permanent bodies of water, and support a tremendous variety of life forms. In Los Angeles County, most permanent bodies of water supporting this community are man-made, and due to seasonal fluctuations in water level, are not as diverse as comparable natural communities.

Significant Ecological Areas -

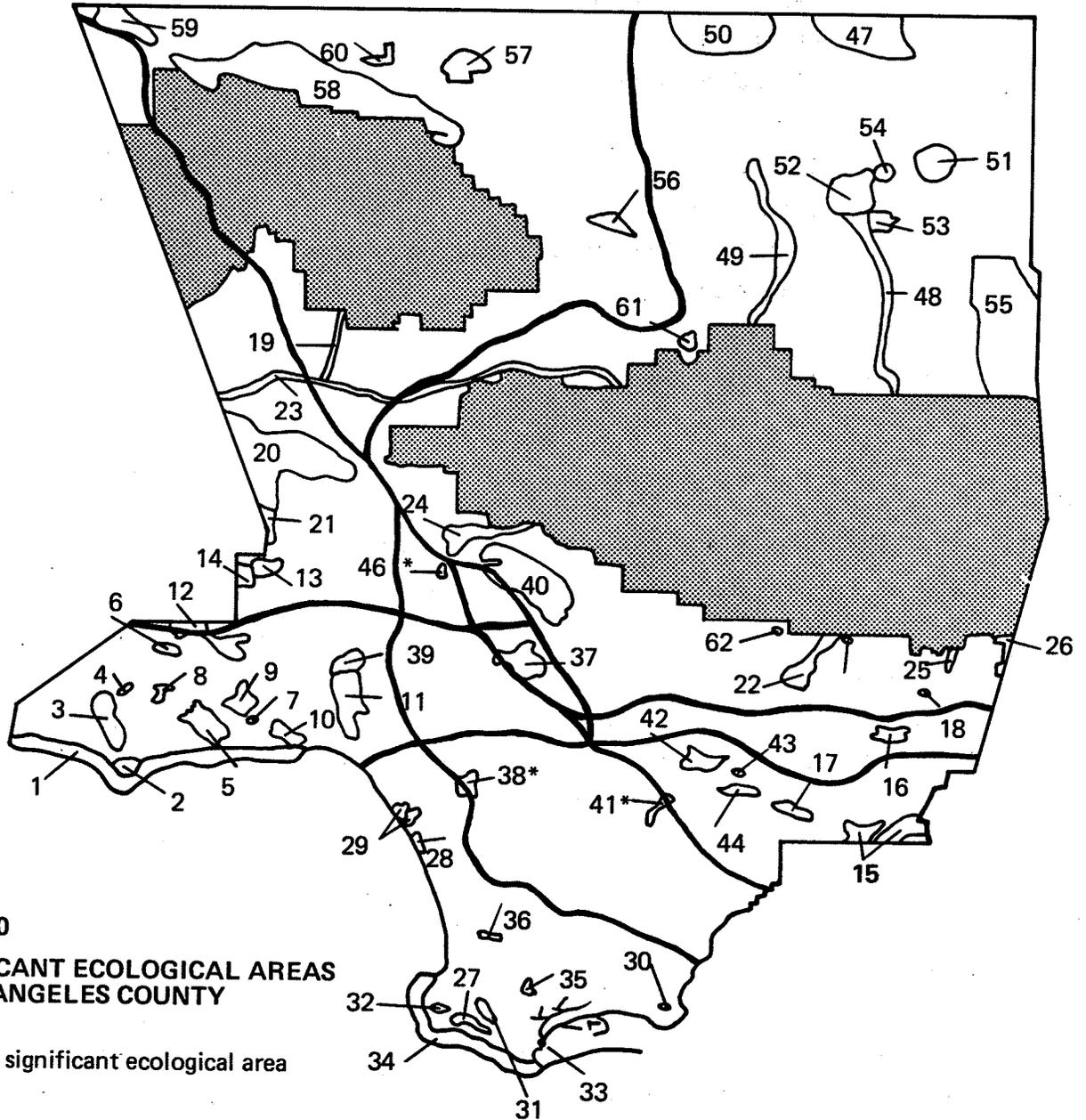
The Los Angeles County Significant Ecological Area Study of 1976 prepared by Environmental Systems Research Institute identified 62 areas of special ecological significance in the County (See Map 5-20: Significant Ecological Areas in Los Angeles County). These areas represent the habitat of rare, endangered and threatened plant and/or animal species, prime examples of remote, undisturbed patches of the more common biotic communities, as well as resources that are uncommon, rare, unique or absolutely critical to the maintenance of wildlife, based on an analysis of information available in the literature and from qualified individuals throughout the county. This analysis included a review and revision of the Significant Ecological Area report published by the Environmental Resource Committee and members of the UCLA faculty in 1972, which

had identified and mapped 81 significant ecological areas. The boundaries chosen for each significant ecological area in the 1976 study were based on the data gathered, the recommendations made in a comprehensive survey of governmental agencies, academic institutions and conservation groups, and the interpretation of aerial photographs, as well as, in some cases, field verifications. The sites chosen were believed to be the best examples in that they were large and relatively unimpacted, possessed defensible boundaries and supported a diversity of communities. The study excluded the National Forests and the Channel Islands.

To determine the significant ecological areas to be designated, primary consideration was given to areas with unique, uncommon or scientifically interesting features. For this reason, Point Dume, Upper La Sierra Canyon, Malibu Canyon and Lagoon, Las Virgenes, Hepatic Gulch, and Cold Creek were chosen. Other areas were selected to provide good examples of the more common habitats, and to ensure that the full range of the remaining biotic and geographical diversity in the region had been sampled. For these reasons, Zuma Canyon, Tuna Canyon, Temescal-Rustic-Sullivan Canyons, Palo Comado Canyon and Encino Reservoir were selected, based on size, condition of habitat, diversity of communities present, presence of water and information available. A description of all of the areas selected is provided in the 1976 study cited above.

Although the 1976 study did not include the National Forest areas, these lands are probably the most important significant ecological areas in the county. They cover a vast area where ecosystems and biotic communities have retained their natural character and they possess many unique resources. A brief description of those areas within the forests known to possess special ecological value is included in the 1976 study, and a listing of the areas follows:

SIGNIFICANT ECOLOGICAL AREAS IN LOS ANGELES COUNTY



MAP 5-20

SIGNIFICANT ECOLOGICAL AREAS
IN LOS ANGELES COUNTY



significant ecological area



national forest



4 Miles

*Potential significant ecological areas

Charlton and Chilao Flats
Mescal Creek
Big Pines Cienega
Chantry Flats
Mt. Baden-Powell
Snow Melt Gullies
Crystal Lake
Piru Creek
West Fork San Gabriel River Watershed
East Fork San Gabriel River Watershed

5.9 Extractive Resources

Non-Fuel Resources -

The major non-fuel mineral resources exploited in Los Angeles County include clay, diatomite, crushed stone, decomposed granite, dimension stone, miscellaneous rock products, sand and gravel, soapstone, specialty sands and silica. Economically, the most important are the rock, sand and gravel used for concrete aggregate, asphaltic concrete aggregate, base and sub-base aggregate and fill. Two other mineral resources—titanium and anorthosite—have potential economic importance. They are found in great quantities in the San Gabriel Mountains, but the deposits are either widely dispersed, of low quality, or are not economically recoverable at this time.

In Los Angeles County aggregate is mined from four distinct types of natural features: stream channels, floodplains, alluvial fans and bedrock. The most important minerals are generally found in alluvial or consolidated sedimentary deposits, located in valleys and lowlands where mineral extraction must compete with other urban uses.

In 1974, production of rock products in the county totalled 21,398,000 short tons, including 20,310,000 tons of sand and gravel, 927,000 tons of stone and 161,000 tons of clay. California is the largest producer of aggregates in the nation and the Los Angeles area is the leading producer for its economic size.

Reserves of rock, sand and gravel (See Map 5-21: Minerals) are estimated at approximately 674 million tons. Total reserves within 60 miles of the Los Angeles Civic Center are estimated to be exhausted by the end of the century, if current consumption patterns continue. Figure 5-8 indicates both reserves and resources:

FIGURE 5-8
ROCK, SAND AND GRAVEL PRODUCTION

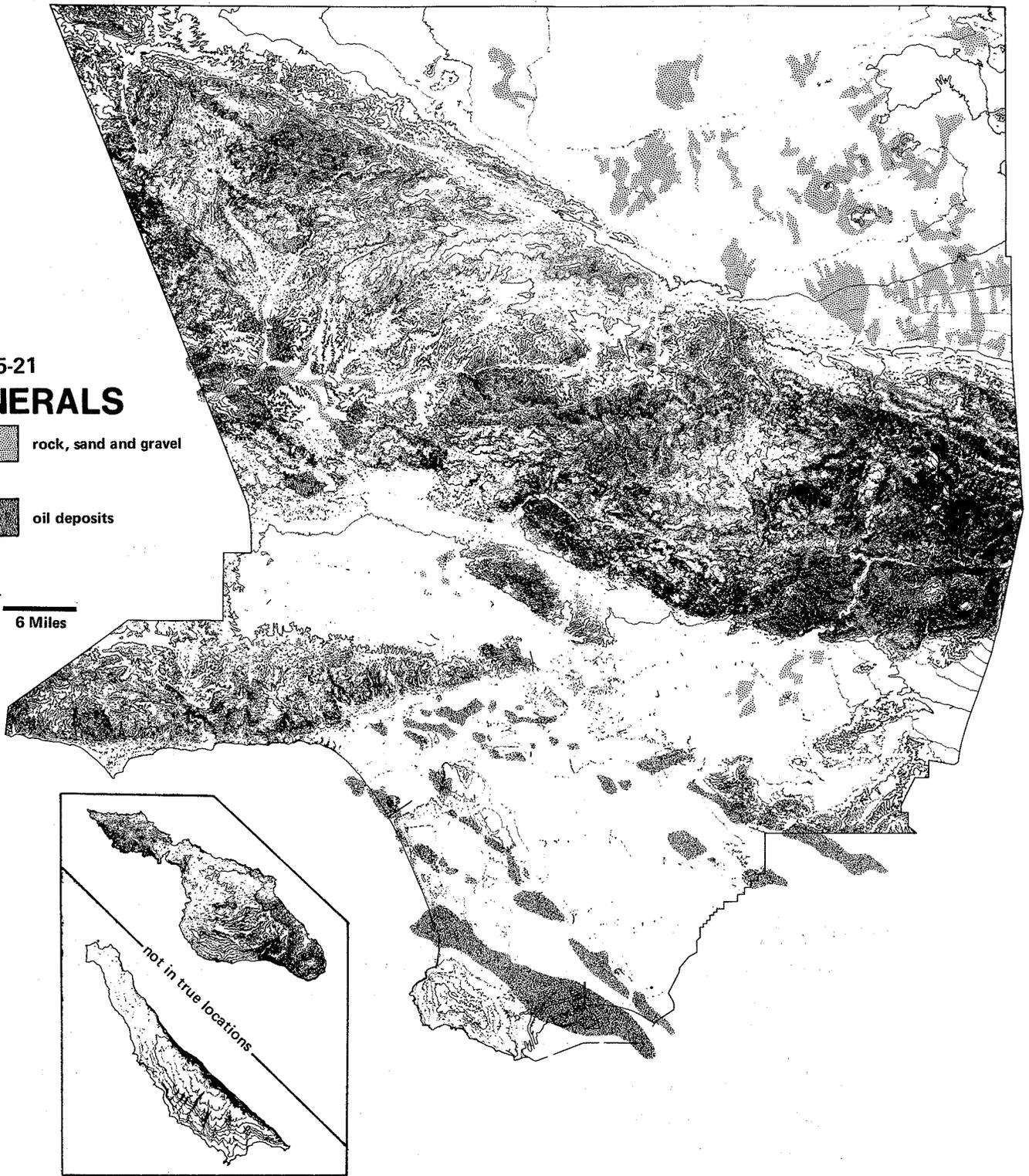
Production District	Reserves(1) (Million Tons)	Resources(1) (Million Tons)	Avg. Annual Sales 1971-1975 (Million Tons)
Little Rock Creek Fan	83.9	24.2	9.962
San Gabriel Fan	325.6	201.6	14.482
Tujunga	53.6	29.9	4.495
Upper Santa Clara River	<u>210.8</u>	<u>6.8</u>	<u>1.040</u>
TOTAL	673.9	262.5	20.979

(1) Reserves include material which is believed to be acceptable for commercial use that exists within the boundaries of property owned or leased by aggregate producing companies, and for which permission has been granted by the proper authorities allowing extraction and processing. Resources include similar material that is believed to exist within these boundaries, that cannot be mined--either because no use permit has been granted to allow extraction, or because it cannot be mined under present conditions for technological or economic reasons.

MAP 5-21
MINERALS

 rock, sand and gravel

 oil deposits



Oil and Gas Resources -

Oil and gas reserves are widely scattered throughout Los Angeles County. The largest and most productive fields are in Long Beach, Wilmington, Torrance and surrounding areas. Other fields are located in El Segundo, Inglewood, and Playa Del Rey, as well as in the area from West Los Angeles through Downtown, extending into Montebello, Whittier, Santa Fe Springs, and continuing in a southeasterly direction into Orange County. Oil fields are also extensive in the Newhall/Castaic area. (See Map 5-21: Minerals.)

Production of oil and gas has been declining since the late 1960s, as resources have declined. Production in 1974 amounted to approximately 94 million barrels of oil and 58 billion cubic feet of natural gas as compared to 133 million barrels of oil and 107 million cubic feet of natural gas in 1969. Estimated recoverable reserves in Los Angeles County are 940 million barrels of oil and 318 billion cubic feet of natural gas. However, the term "reserves" is economic in nature and refers to the amount producible at current well-head prices.

5.10 Prime Agricultural Soil Resources

Existing Agriculture -

In 1975 approximately 92,000 acres of land were used for agricultural production in the county. Of this total, about 74,000 acres were located in the northern portion of the county (primarily within the Antelope Valley) while approximately 18,000 acres were scattered throughout the southern portion of the county. More specifically, in the southern portion, agricultural lands are found in the northern and western sections of the San Fernando Valley, La Habra Heights and the East San Gabriel Valley around Claremont and La Verne. As nearly all of this acreage is either in or on the fringe of

the urbanized areas, there is great pressure to convert to urban uses.

Major crops produced within the county are: field crops, vegetables, citrus and wholesale nursery stock. While field crops occupy the largest number of agricultural acres in the county, nursery stock represents greater dollar sales, due to its higher dollar value per acre.

Vacant Prime Land -

There are more than 450,000 acres of essentially undeveloped prime agricultural land remaining in the county. Almost all of the prime agricultural land in the South County has already been urbanized: about 25,000 acres remain. About 18,000 acres (81%) of such land is presently being used for agriculture. The largest amount of vacant prime land within the South County lies in the East San Gabriel Valley. As is the case with existing agriculture, vacant prime land in the South County consists of numerous small sized parcels located primarily within urban areas. These parcels are subject to heavy development pressure.

In the North County, there are approximately 425,000 acres of prime land. As indicated above, 74,000 acres of such land is under cultivation, leaving about 350,000 acres of vacant prime land. About 90% of the total acreage is in the Antelope Valley, primarily in the western section.

5.11 Energy Consumption

Electrical Power

The seven million inhabitants of Los Angeles County are currently served by seven separate electrical power utilities --the privately

owned Southern California Edison Company (SCEC) and the six municipally owned power departments of Los Angeles, Burbank, Glendale, Pasadena, Azusa and Vernon (SCEC wholesales electrical energy to the cities of Vernon and Azusa, who in turn retail it to their customers). These companies provide electricity to the county through an extensive network of generation, transmission and distribution facilities. SCEC supplies about 60 percent of the energy consumed within the county, while Los Angeles Department of Water and Power (LADWP) supplies about 35 percent of such power. The remaining five percent of electrical power consumed in the county is supplied by the Burbank Public Services Department (about two percent), the Pasadena Water and Power Department (about two percent) and the Glendale Water and Light Department (one percent). The municipally owned utilities together serve 14 percent of the county's land area and 45 percent of the county's population, while Edison Company, whose service area includes 14 counties in Central and Southern California, serves 86 percent of the land area and 55 percent of the population in Los Angeles County. Together, the seven utilities supply adequate electrical energy to meet the power demands of more than 2,600,000 dwelling units, numerous large-scale industrial and commercial uses, thousands of miles of highway and street lighting.

Figure 5-9 reflects electrical energy usage levels within Los Angeles County as of 1975, as indicated by the electrical power utilities.

FIGURE 5-9

1975 ELECTRICAL ENERGY USAGE

	Total Population	System Peak		Total Annual
		1	2	3
	<u>Served</u>	<u>Loads (Megawatts)</u>		<u>kwh Sales --</u>
City of Burbank	90,879	169		733,040,000
City of Glendale	137,742	175		653,412,000
L.A.D.W.P.	2,824,828	3,594		15,333,021,540
City of Pasadena	107,936	169		701,000,000
4				
S.C.E.C.	3,892,100	10,369		26,690,040,000

1

Peak Load - The highest ranges of system consumption, usually recurring in daily, weekly and seasonal cycles (the highest peak load tends to occur during the summer due to the use of air conditioning).

2

Megawatt (mw) - One thousand kilowatts. (A Kilowatt is one thousand watts, or the equivalent of 1,341 horsepower).

3

Kwh - kilowatthour - The equivalent of 1,000 watts of power at work for one hour (e.g., ten 100 watt light bulbs burning for one hour would consume one kilowatthour of electrical energy).

4

These SCEC figures give population for Los Angeles County only and include energy usage within the cities of Azusa and Vernon. The Peak load figure was available only for the entire SCEC system including Los Angeles as well as other counties; the kwh figure reflects sales within Los Angeles County only, on the basis of 52% of total SCEC system sales.

Thus, as of 1975, the utilities served a total of 7,053,485 persons within Los Angeles County, with total annual sales of about 44 billion kilowatthours.

With regard to generation sources and system capacity as of 1975, SCEC has indicated that they relied on hydroelectric plants and thermal plants (utilizing primarily gas and oil, with two coal-fired and one nuclear plant), with an effective operating capacity of 13,888 megawatts for the entire SCEC system. LADWP also relied on hydroelectric plants as well as steam plants, with an effective generating capacity of 5,959 megawatts in 1975. The other utilities (the cities of Burbank, Glendale and Pasadena) also relied primarily on hydroelectric and steam plants, while Burbank also utilized combustion turbine units.

Natural Gas -

Natural gas is supplied by the Southern California Gas Company (So Cal Gas) through fixed transmission and distribution facilities to most of the urbanized areas of the county. So Cal Gas serves a 22,000 square mile area and nearly 11 million persons between the San Joaquin Valley and the Mexican border exclusive of San Diego County. The City of Long Beach Municipal Gas Department also serves residents of the City of Long Beach, purchasing gas on a contract basis from So Cal Gas.

Now, as in the past decades, the county has relied upon natural gas as its primary residential, commercial and industrial energy source, satisfying approximately 55 percent of the area's non-transportation energy needs. Natural gas provides 95 percent of water heating, 92 percent of space heating and 76 percent of the energy used for cooking in southern California homes.

Los Angeles County has become almost totally dependent on out-of-state natural gas. While the production of natural gas within California grew at an annual rate of six percent between 1940 and 1974, production has declined precipitously since 1972, paralleling the depletion of the oil and natural gas-producing fields in Los Angeles County as well as the San Joaquin Valley. The Southern California Gas Company, therefore, currently relies on two out-of-state gas suppliers, El Paso Natural Gas Company, and Transwestern Pipeline Company, for nearly 95 percent of its gas supplies. Because these two interstate sources have indicated that they will be able to provide no additional supplies from traditional sources in Texas, Oklahoma and New Mexico, the Southern California Gas Company has been searching for additional supplies throughout the continental U.S., the Pacific basin, and countries adjacent to that basin. Major areas being investigated include the Cook Inlet area of south Alaska, the Arctic, Australia, Indonesia and Central and South America.

Although supplies of gas within and transmitted to southern California from present sources are declining rapidly, thus far only large industrial and commercial firms and electric generation utilities (who have the capability to switch to alternate fuels such as fuel oil) have experienced curtailment.

During 1976, natural gas consumption in Los Angeles County delivered by So Cal Gas totalled 385,301,274,000 cubic feet, with 45.8 percent of this total delivered to residential users, 38 percent to industrial users, 16 percent to commercial users and 0.2 percent to agricultural users. The City of Long Beach Municipal Gas Department also provided an additional 19,500,000,000 cubic feet of natural gas for a total usage of 404,801,274,000 cubic feet in the county.

Petroleum (Transportation) -

The transportation sector is presently the largest consumer of energy within the county and is the only market sector that is supplied virtually entirely by petroleum. Figure 5-10 indicates transportation fuel usage by sector in 1976:

FIGURE 5-10
1976 TRANSPORTATION FUEL USAGE

<u>Type of Use</u>	<u>Millions of Gallons Consumed</u>	<u>Percentage of Transportation Energy Usage</u>
Automobiles	3,218	65%
Transit buses	26	0.5%
Commercial trucks	259	5%
Aircraft (Jet Fuel & Aviation Fuel)	761	15%
Harbors (Bunker Fuel)	545	11%
Railroads (Diesel Fuel)	160	3%

Total transportation fuel used was thus 4,969 million gallons, or 118.3 million barrels. Of this amount, 71% was consumed within the highway sector, primarily in automobiles. Within the highway sector, 3,429,694 automobiles, 2,500 transit buses and 598,741 commercial vehicles were registered in the county as of 1976. The transportation sector accounted for 44% of the energy use within California in 1975, as compared to 26.4 percent of total energy usage in the United States in 1975.

5.12 Archaeological/Historical/Paleontological Resources

Archaeological -

Native American peoples living in the county prior to the arrival of Europeans, developed a complex pattern of resource exploitation. The complexity is reflected in the artifacts, features and sites which make up the only tangible remains of their cultures, which existed for thousands of years. Major sites containing data for the reconstruction of these systems still exist in many areas of the county. Using sophisticated and precise excavation and analytical techniques, local archaeologists have reconstructed major portions of culture history within the county over a period of 7,000-11,000 years, and are beginning to collect data on earlier periods. However, no comprehensive archaeological survey of the entire county has been carried out.

As of October 1, 1976, 857 archaeological sites had been officially identified and recorded as existing in the County. Of these, 420 are located in the unincorporated areas. Since 1972, an estimated 85-90 percent of all archaeological surveys within the county have been conducted in conjunction with the preparation of environmental documents required by the California Environmental Quality Act and, as a result, only areas affected by proposed projects have been systematically studied. Because many of these projects, including zoning variances and changes, lot splits and subdivision have been located in the Santa Monica Mountains, this area is one of the best investigated portions of the county--190 sites have been recorded. In addition to the Santa Monica Mountains, the Vasquez Rocks area has also undergone systematic surveys in recent years - 140 sites have been identified. Other areas of the county known to contain a significant concentration of sites include the Baldwin Hills, Palos Verdes Peninsula, San Pedro Harbor and the foothills

of the San Gabriel Mountains. However, many of these sites have been damaged or destroyed through urbanization. Large portions of the county remain to be surveyed.

Historical -

Many monuments to our historical past still exist in Los Angeles County forming an essential link with the present. There are missions and the remnants of the great ranchos which once covered southern California, and the routes of early explorers and historical trails. There are also stagecoach stations, forts, railroad depots, and the homes of prominent people whose lives are a part of the area's history.

Numerous historical sites within the county have been identified by state and local groups. Over 1000 sites are currently being evaluated, and many more potential sites are located within the county. Over 250 sites are currently officially recognized. Such sites are associated with the Hispanic (early 1500's to middle 1800's) and American (middle 1800's to present) periods of our cultural heritage. The Federal Government (National Register of Historic Places) and the State of California (Registered Historical Landmark Criteria) have established guidelines for determining a structure's or site's historical significance.

Generally, the sites which have been designated by the state or federal government or local groups represent some aspect of local history and include residences, churches, public buildings and commercial structures which are distinguished for their design or architectural style, historic trees, battlefields, military campsites, stations along historic transportation routes, and places associated with historically notable persons, activities or events. In many instances, these sites have been marked by a plaque or

monument. In some instances, several historical sites are located near one another--e.g., neighborhoods of Victorian houses, homogeneous business districts, and early settlements. Several sites which are not individually of outstanding significance may as a group be considered historically significant. Historical sites are located, for the most part, in the accessible urbanized areas of the county, with the largest number in an east/west belt across the southern county, clustering primarily in the Hollywood and Central Los Angeles areas.

Paleontological -

Los Angeles County is one of the richest areas in the world for both fossil marine vertebrates and land vertebrates from rocks deposited over the last 25 million years. Perhaps one of the richest and most famous fossil deposits is located at Rancho La Brea. Although Rancho La Brea has been highly publicized, there are many other areas of Los Angeles County which contain equally important fossil occurrences.

The richness of fossils in the county is due to several major series of events in the geologic history of the area. During Miocene and Pliocene time (between five and twenty-five million years ago) most of what is now the greater Los Angeles basin and the surrounding hills (Santa Monica Mountains, Repetto Hills, San Jose Hills, Puente Hills, Palos Verdes Hills, the San Fernando Valley, the Simi Hills, Santa Susana Mountains, the Santa Clarita Valley and mountains surrounding) were all submerged below the Pacific Ocean. Thousands of feet of sand, mud and other materials were deposited on the ocean bottom. Marine mammals and shore birds were buried in these deposits as they died and sank to the bottom. Through time, many of these specimens became fossilized.

During Pleistocene (Ice Age) times, forces within the earth elevated much of this area above the ocean and formed hills and mountains where the ocean bottom and valleys once existed. Erosion cut down through these older sediments as they were being uplifted to form the terrain we see today.

There are over 1,100 known vertebrate fossil localities within the county, mostly in the hills. These localities are scattered within 700 square miles (17% of the county) of hilly terrain which contain fossil producing rock formations. In addition, the entire floor of the Los Angeles basin, San Fernando Valley and Antelope Valley are mantled with Quaternary sediments similar to those at Rancho La Brea. Approximately 90 square miles of the 700 square miles of fossiliferous terrain has already been completely graded and built on, mostly in the last 10 to 20 years. Of the remaining 600+ square miles, much is in immediate danger, particularly areas surrounding the Santa Clarita Valley, the western Santa Monica Mountains and the Puente Hills.

5.13 Scenic Qualities

Scenic qualities are highly subjective, depending upon the perceptions of the individual viewer. Oil wells or billboards may be scenic to some persons while not to others. However, most people would probably agree that Los Angeles County has been richly endowed with a physical setting which offers its citizens and visitors a variety of scenic experiences--a complex mixture of climates, topography, flora and fauna, together with a rich historical and cultural heritage. The mountain peaks of the San Gabriels rising over 10,000 feet and the blue waters of the Pacific Ocean, together with sandy beaches, are prominent features of different natural regions within the county. These regions are characterized by a variety of topographic features

and native vegetation and include such diverse areas as the Coastal Lowlands, the Central Mountains and the Northern Desert. Stands of pine, fir and other evergreens cover the higher slopes of the Central Mountains, while the floor of the desert in the Antelope Valley is carpeted with fragile wildflowers during the early spring months. Memorable and distinctive scenery provides residents with a sense of place and identity, heightening the feeling of belonging and instilling a sense of uniqueness and civic pride.

The urban setting also provides a wealth of scenic resources ranging from early California missions to modern skyscrapers. Numerous historical sites have been identified by state and local groups (See Section 5.12). There are many examples of works by Frank Lloyd Wright, Greene and Greene and other notable architects which, together with other buildings recognized by professional groups as having local and nationwide significance, offer outstanding examples of many architectural styles. Numerous buildings of a cultural nature also display excellence in both landscaping and design; this is evident in many of the museums, amphitheatres, schools and parks located throughout the county. The public buildings of the civic and music centers create a vivid urban landscape which is especially picturesque when the mountains are visible in the background.

Many roads have been built which connect the urban concentrations south of the San Gabriel Mountains with the natural regions in other parts of the county. The beautiful scenery visible from these routes has been recognized for many years. Mulholland Drive and Highway, for example, have been considered a valuable scenic resource of the Los Angeles area for over a half a century. This highway runs partly along the crest of the Santa Monica Mountains connecting Cahuenga Pass in Los Angeles with Leo Carrillo Beach State Park on the Pacific Ocean, and offers not only spectacular views of the seemingly endless

urban pattern, but also panoramic views of the ocean, steep canyons, bold geologic formations and many significant ecological areas. This highway is currently receiving a great deal of attention as part of the county's Mulholland Highway Scenic Corridor Study. Many other roads are also located in areas of diverse and attractive scenery, such as the Angeles National Forest and the San Andreas Rift Zone.

Numerous roads within urban areas also have high scenic value. Some, such as Wilshire Boulevard in the Miracle Mile area, are noted for their adjacent "high rise" commercial structures. Other roads, such as Sunset Boulevard in the Pacific Palisades area, traverse attractive, well-maintained residential areas.

Angeles Crest Highway is the only officially designated scenic highway in Los Angeles County. This designation was made by Los Angeles County and by the California State Department of Transportation (CALTRANS). Other potential scenic highways are identified in the County's Scenic Highway Element.

5.14 Land Use

Urban Form -

The county is part of a major international megalopolis extending along the coast from Santa Barbara, California to Tijuana, Mexico and spreading into the desert to Palm Springs. The heart of the megalopolis, a metropolitan area of more than 1,000 square miles, lies in the southern portion of the county. Metropolitan Los Angeles is bounded by powerful natural features. The sea limits the metropolis on its southwestern margin while its landward edges are defined by ranges of steep hills and mountains. In 1975, an estimated 1,133 square miles of the county's land surface was

devoted to some form of urban land use, and more than 97 percent of this urbanization was located south of the San Gabriel Mountains.

Los Angeles is characterized as a sprawling low density metropolis. This is part fact and part cliché. In comparison with most other large American urban areas, Los Angeles suburbs tend to be more densely developed, while inner city areas are less intensely developed. The inner city areas are still denser than is generally believed. If we compare the most densely developed 100 square miles of major metropolitan areas, only New York, Chicago and Philadelphia show a higher intensity of development than Los Angeles. Single family housing has been the common denominator of the Los Angeles urban form; but, the resulting low profile is punctuated by numerous high intensity centers, a growing number of which contain clusters of high rise buildings. These clusters clearly mark Los Angeles as a multi-centered metropolis.

The urban form of Los Angeles County is distinguished from that of other large metropolitan areas by several other unique characteristics. Some of the distinguishing features include the extensive freeway system, a product of the commitment to the automobile; a great variety of ornamental vegetation introduced from around the world; and, an orientation to outdoor living, symbolized in part by the fine system of public beaches. Relative newness and modernity are major aspects of the image of the urban area. Nearly all of the region has been built since 1900, with the bulk of urban development occurring after 1945.

The county's development has been most intense in the basin and inland valley areas. Although development has also encroached into the hilly areas, the densities there are generally lower. Hillside development has occurred along the southwestern foothills

of the San Gabriel Mountains, in the foothills of the San Jose, Chino and Repetto Hills, within the Santa Monica Mountains, in the Baldwin, Signal, Dominguez and Palos Verdes Hills, and Santa Susana Mountains, especially in the canyons extending from the Santa Clarita Valley. Urban development is also found along portions of the Malibu coast and in the Antelope and Santa Clarita Valleys. Historically, urban uses expanded from established areas such as Los Angeles, Long Beach, and Pasadena into the surrounding agricultural areas with expansion resulting in a decrease in agricultural production.

Residential uses within the county account for only 16 percent of the total land surface but over 55 percent of the county's total land area devoted to urban uses. Although residential development is spread throughout the county, it is primarily concentrated in the basin and inland valleys. Large scale development of single family detached units with varying lot sizes has contributed to urban sprawl. High rise apartments or condominiums are found along a corridor between the Central City and Santa Monica, Marina del Rey, Long Beach, Pasadena, and portions of the San Fernando Valley.

To serve residential areas, commercial facilities (shopping centers, stores, offices, etc.) have developed along highways or in shopping complexes near transport routes. Although commercial uses are usually dominant, they cover only two percent of the county's total land surface, and less than seven percent of the urbanized area. Since the sixties, retail commercial uses providing substantial parking facilities have tended increasingly to locate in suburban mall-type shopping centers near residential uses. Intense concentrations of commercial facilities are found in the Central City, Wilshire Corridor, Encino, Long Beach, Pasadena, Pomona and other major centers.

Industrial growth has occurred along major transportation routes. Concentrations exist around Los Angeles International Airport, the Los Angeles-Long Beach Harbor area, south central Los Angeles, and along railroad routes through portions of the San Gabriel and San Fernando Valleys. As is the case for residential development, most industrial plants have a low profile - single story with large landscaped parking areas.

The county's architectural landmarks (See Section 5.13) help guide the county's residents through the highly structured and often confusing urban landscape. The landmarks serve an important psychological function in creating a sense of permanence and a feeling of community identity.

Figure 5-11 provides a 1975 land use inventory for the county by major land use type.

FIGURE 5-11
LOS ANGELES COUNTY 1975 LAND USE INVENTORY
BY MAJOR LAND USE TYPE
(In Acres)

<u>Major Land Use Type</u>	<u>Urban</u>	<u>%</u>	<u>Non-Urban</u>	<u>%</u>	<u>Total</u>	<u>%</u>
Residential	402,000	55	7,000	*	409,000	16
Low Density	350,000	48	7,000		357,000	14
Medium & High Density	52,000	7	-0-		52,000	2
Commercial	47,000	7	1,000	*	48,000	2
Industrial	74,000	10	11,000	*	85,000	3
Other Urban	82,000	11	N/A	N/A	82,000	3

(continued)

* Less than one percent.

<u>Major Land Use Type</u>	<u>Urban</u>	<u>%</u>	<u>Non-Urban</u>	<u>%</u>	<u>Total</u>	<u>%</u>
Other Non Urban	N/A	N/A	30,000	2	30,000	1
Vacant and Agri- cultural	67,000	9	992,000	53	1,059,000	41
Open Space**	<u>53,000</u>	<u>7</u>	<u>847,000</u>	<u>45</u>	<u>900,000</u>	<u>34</u>
TOTAL	725,000	100%	1,888,000	100%	2,613,000	100%

**Committed to a long-term open space use.

N/A - Not Applicable

NOTE: Totals may not add to 100% due to rounding.

Recreation Areas and Open Space -

Los Angeles County contains an estimated 901,100 acres of permanent public and private open space, of which approximately 54,000 acres are located within urban areas. Most remaining open and vacant land lies within desert, mountain and hillside environments including portions of the Santa Monica, Santa Susana, and Verdugo Mountains, the Malibu Coastline, the Puente, Chino and San Jose Hills and the Santa Clarita and Antelope Valleys. About 14,200 acres of this open land is privately owned, while the remainder is publicly owned. Figure 5-12 provides a countywide summary of open space land acreage by type of site.

FIGURE 5-12
COMMITTED OPEN SPACE ACREAGE
BY SITE DESCRIPTION
(Acres)

	<u>Public</u>	<u>Private</u>	<u>Total</u>
Parks and Recreation Use	67,800	4,000	71,800
Natural Areas and Arboreta	43,900	1,100	45,000
Water Supply and Conservation	13,000	200	13,200
Military Reservations	85,700	-	85,700
Other Committed Open Lands	<u>28,500</u>	<u>8,900</u>	<u>37,400</u>
Sub-total	238,900	14,200	253,100
National Forest Lands	<u>649,600</u>	-	<u>649,600</u>
TOTAL LOS ANGELES COUNTY	886,500	14,200	902,700

Approximately 72,000 acres are devoted to regional and local recreation facilities. There is a current deficiency of approximately 19,700 acres in local parks and playgrounds throughout the county (based on a county standard of four acres per 1,000 persons). A substantial deficiency exists within older urban areas populated largely by low income households, minority group members and the elderly. The county's system of regional parks furnishes a wide range of activities such as hiking, boating, biking and nature study. Other specialized features such as reservoirs, river beds and flood control channels and utility easements provide additional recreational opportunities.

The county's unique coastline, consisting of long sandy beaches fronting on bluffs, headlands and plains, also provides a valuable scenic and recreational resource. Of the county's seventy four miles of shoreline, about forty miles are publicly owned. This fact and the favorable conditions for swimming, fishing and boating make the shoreline one of the most intensively used open space resources within the county.

A large portion of the county's open space in the San Gabriel Mountains and Foothills is protected within the boundaries of the Angeles and Los Padres National Forests. The national forests comprise about 649,600 acres, and provide invaluable recreational opportunities, as well as scenic and open space amenities.

Santa Catalina and San Clemente Islands are also important reserves of committed open space in the county. Santa Catalina Island contains the largest open space easement in the state, ensuring the preservation of scenic and unique natural features.

5.15 Communities

The county consists of many different communities, as indicated by the extensive number of incorporated cities and unincorporated community areas, as well as the cultural diversity of the population (See Section 5.16). These communities provide residents with a focal point within a given geographical and/or service related area, giving them an opportunity to become more closely associated with civic and other associations.

Cities represent one form of the county's varied communities. Within Los Angeles County there are 81 cities, ranging in size from 2,000,000 people in the City of Los Angeles down to 500 people in the City of Industry in 1976. Some of these cities were incorporated for special purposes and are identified by special characteristics. The City of Hidden Hills, for example, is an area consisting of minimum one acre rural lots, with an orientation toward equestrian activities, while the City of Industry is characterized by industrial and commercial development, with a transportation network—two railroads and four freeways—in close proximity to serve such development. Most cities, however, have a balance of various land uses and, as such, do not have any one primary characteristic.

Some of the larger and/or more diverse cities and the unincorporated areas consist of a number of smaller communities. These communities usually have a common feature binding them together—from the harbor orientation of San Pedro in the City of Los Angeles to the rural atmosphere in La Habra Heights in the unincorporated area.

The county's various communities may generally be classified as rural areas (e.g., Agoura, Las Virgenes, La Habra Heights), newer

suburbs (e.g., Northridge, Diamond Bar, La Canada), older suburbs (e.g., Van Nuys, Glendale), or as a part of the inner city area. While the rural communities and newer suburbs generally consist of sound neighborhoods, the older suburbs are generally in need of maintenance and some rehabilitation and the inner city communities include deteriorated neighborhoods in need of extensive revitalization.

Communities are also based on ethnic, racial or religious affiliation. Some of the major ethnic and racial communities within the county include Mexican, Black, Chinese, Jewish, Japanese, Cuban, Korean and Filipino peoples. The impact of income differences and educational background vastly multiplies the rich cultural diversity of the county's communities.

Communities can often be further broken down into neighborhoods, which are commonly based on types and relationships of land use, or, in some cases, on ethnic or religious affiliation. The many communities and neighborhoods provide a great range of choices, services and amenities for the diversity of life styles in the county.

5.16 Population

The population of the county as of January 1976 was 6,994,700. A review of population changes over the past decades indicates that while an increase in population occurred during every decade between 1850 and 1970, beginning in 1971 growth stopped, and that between January of 1971 and July of 1976, the population of the county remained at around the 7,000,000 mark with only slight fluctuations up and down. Currently available indicators do not point toward any significant change in this trend in the immediate future.

While total population has remained relatively constant during the seventies, population within the older central core has declined, while that within the peripheral suburbs has increased (as has been the case in other major urban centers). However, most of these suburban increases have been of a much lower magnitude than those of the early sixties.

Age Groups -

The county has a wide diversity of age groups with the largest concentration in the 15-44 age bracket. Due to a lower birth rate and a net out-migration of families, the number of children under five years old is decreasing as well as the number of children in the 6-14 age group (1,043,873 in October of 1969, as compared to 932,457 in October of 1976). As is the case in other major metropolitan areas, there is a strong concentration of middle aged and a large and growing number of elderly citizens. The median age for males was 28.46, and for females was 30.68, in 1970.

Number and Size of Households -

The size of the average household in the county is constantly declining while the number of households is steadily increasing. A decline in average household size in the county has been reflected in every decennial census since 1910, when family size was 3.96. In 1950, the number had dropped to 3.0, and in 1970 the Census reported a figure of 2.83 persons. As of 1975, the average size was 2.69 persons.

While household size has been falling, the number of one person households in the county in the last quarter of a century has been rising at a relatively rapid rate, from 14.8 percent in 1950 to 20.1 percent in 1960, and finally to 24.3 percent in 1970.

Racial/Ethnic Groups -

Los Angeles County is an area of immense cultural and ethnic diversity. Influenced by a number of great migratory flows the population of the county is a unique and exciting mixture dominated by European, African, Hispanic and East Asian components. Every racial and ethnic group is represented, with different cultures, values, interests, problems and needs. This diversity represents both advantages and disadvantages: advantages include the richness of the cultural fabric and opportunity to interact with other cultures, the interchange of ideas, and the exposure to a wide range of customs, while disadvantages include the isolation and segregation that have resulted in some instances.

Of a total population of 7,032,075 persons in the county in 1970, 85.4% were white, including 17.5% Spanish-American, 10.8% were Black, and the remaining 3.7% included American-Indians, Japanese, Chinese, Koreans, Filipinos, Hawaiians and others. The 1970 Census reflected a substantial growth of minority groups in the county during the sixties and most projections see this trend continuing. During the last decade, the Spanish-American population in the county more than doubled, while the other white population (non Spanish-American whites) declined by almost 100,000 persons.

Spanish-Americans are the county's largest minority group and showed the largest numeric increase during the sixties (138% increase). As of April, 1970, the Spanish-American population totaled 1,228,595 persons. Eighty-seven percent of the population in the East Los Angeles unincorporated area is of Spanish heritage, with other concentrations located in the cities of Commerce, Pico Rivera and South El Monte. Within the City of Los Angeles, the Spanish-American population increased from 18.5 percent of the population in 1970 to 24 percent in 1975. Spanish-Americans in the county include both

Mexican immigrants and descendants of old Spanish families, in addition to others classified as being of Spanish heritage.

The county's Black citizens constitute the second largest minority group. Blacks are heavily concentrated in South Central Los Angeles where over two-thirds of the census tracts are at least 75 percent Black. Smaller concentrations are found in Long Beach, Pacoima, Pasadena, Santa Monica, Venice, Pomona and the Monrovia-Duarte areas. The Black population increased from 7.7 percent of the total population in 1960, to 10.8 percent in 1970.

Besides the Black and Spanish-American minority groups, Los Angeles County includes sizeable Japanese and Chinese, Korean, Vietnamese and Cuban communities, as well as many other groups. The Filipino and American Indian groups, for example, both increased by more than 100% over the decade of the 1960's. Less statistical information is available regarding these other ethnic groups within the county. Although Italian, German, Irish, Greek, Swedish, British and many other ethnic groups are scattered geographically throughout the county, they maintain their cultural identity through participation in social clubs, sports, churches or various forms of entertainment.

5.17 Housing

The housing stock of Los Angeles County is diverse in type and location. It is relatively new (59 percent has been built since 1950) and offers a diversity of lifestyle and neighborhood options. Nearly all of the county's housing is in urban areas, primarily in the southern portion of the county. Only one percent of the housing stock is in rural or farm land areas. Approximately 55 percent of the urban land area is residential. Within the urban residential area, housing is presently developed at an average density of 6.6 units per gross acre. Areas experiencing the greatest increase

toward high densities are the central city, the Wilshire corridor and Long Beach.

There are over 2.7 million housing units in Los Angeles County with single family units outnumbering apartment units two to one (1,720,621 units to 996,145 units, respectively). There are 40,000 mobile homes which represent about 1.5 percent of the housing stock. About five percent of the total stock is presently vacant.

The mid-1960's signaled the end of a great housing construction boom that produced an average of 74,000 units per year between 1955 and 1965. Recently construction has been averaging only 34,000 units per year.

While the annual rate of housing unit increase has been drastically reduced since the mid-1960's, the net increase of multiple units has consistently outstripped that of single-family homes, as shown in Figure 5-13. Multiple units grew from 31 percent of the total stock in 1965 to 37 percent in 1976.

The estimated age breakdown of the housing stock is shown in Figure 5-14.

While a majority of homes have been constructed since 1950, a significant increase is evident in the age of housing. The proportion of housing units 30 years old or older increased from 25 percent in 1970 to 28 percent in 1975. This trend will undoubtedly continue due to the decrease in construction of new housing units.

FIGURE 5-13

LOS ANGELES COUNTY
ANNUAL NET HOUSING UNIT CHANGE
1964 - 1976

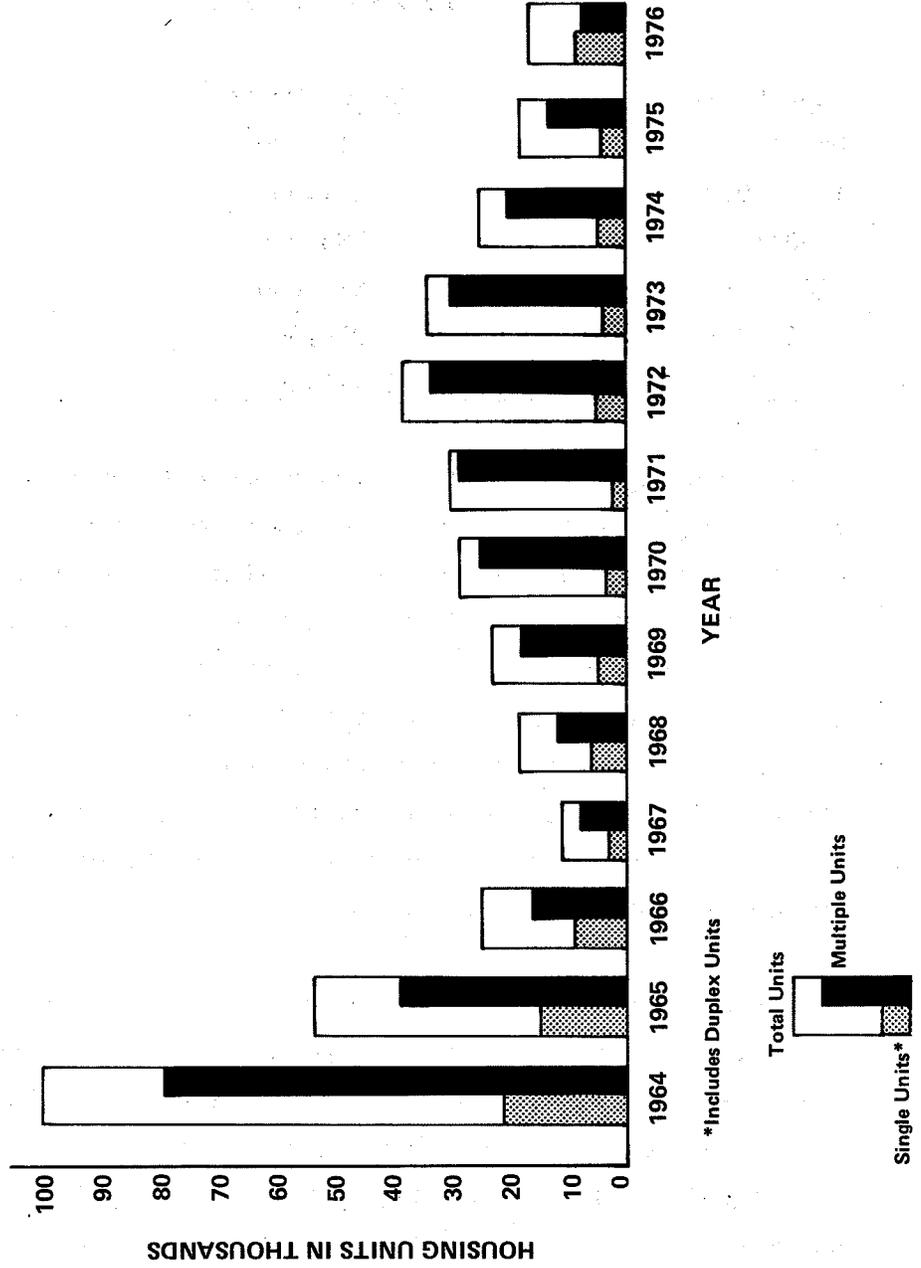


FIGURE 5-14
ESTIMATED AGE OF HOUSING
JANUARY 1, 1976
LOS ANGELES COUNTY

Year Built	No. of Units	% Units
Pre 1940	615,000	22.6
1940-1949	481,000	17.9
1950-1959	788,000	29.0
1960-1969	613,000	22.6
1970-1975	214,000	7.9
TOTAL	2,717,000	100.0%

This advancing age of the housing stock will mean significantly increased problems with future housing condition. Presently about 12% or 330,000 units are in a state of major deterioration. An estimated 86,000 of these units need to be replaced. Neighborhoods containing extensive deterioration are concentrated in a few major areas. The area south of downtown Los Angeles encompasses the largest geographic areas of deterioration, while the East Los Angeles area, portions of Long Beach, Pasadena, Pomona and some of the older suburban communities also contain concentrations of deteriorating housing.

With regard to the demand for housing, the average household size, in combination with total population, determines the number of houses actually needed in Los Angeles County. Since there are currently about seven million persons in the county and the average household size is 2.69 persons, the total demand for housing is estimated to be about 2,602,200 units. However, the total supply of sound housing is estimated to be 2,379,000 (328,000 of a total of 2,707,000 units are estimated to be unsound), indicating a shortage of 223,200 units countywide.

Housing cost is a product of housing supply and demand. The average cost of buying a home in Los Angeles County doubled in the five year period between 1972 and 1977; during this same period incomes increased by only half of this rate. The average price of a new home in 1977 was approximately \$74,000 and existing homes averaged about \$69,000.

5.18 Employment/Unemployment

Historically Los Angeles County has shown rapid growth and it now ranks as one of the largest labor markets in the nation. There are currently 3,496,000 jobs in the county, and over three million county residents are employed. A relatively high proportion of workers are employed in manufacturing and in the past the volatile aerospace industry has contributed greatly both to the periods of growth and recession in the local economy. However, in recent years the industrial structure has become more diversified, and durable goods manufacturing (including aerospace employment), which comprised about 23 percent of the total nonagricultural employment in 1967, now accounts for less than 18 percent of the nonagricultural wage and salary employment. Los Angeles remains the center of manufacturing and trade in Southern California with about 49 percent of the state's manufacturing and wholesale trade employment, while about 38 percent of all jobs in the state are in the Los Angeles area.

Figure 5-15 indicates current employment and unemployment statistics, as well as those for 1970 and 1975. The 1975 employment totals reflect the recession that has slowed the national economy since the fourth quarter of 1974. At the mid-point of 1975, manufacturing employment was eight percent below the figure recorded a year earlier and only government employment shows a significant increase over the year. During 1976, growth in jobs

resumed (120,000 new jobs were added between February of 1976 and February of 1977). As the economy recovers from the recession, however, industry growth is expected to resume. An employment growth rate of 6.8 percent was recorded during the 1970-1975 period.

Job distribution by type of industry is provided in Figure 5-16. As is indicated, the bulk of employment (70.8 percent) is provided within the service-producing sector of the economy, including services, trade, transportation-utilities, public administration, and finance, insurance and real estate. The demand for health care services, specialized business services, educational services and tourism-related services has caused rapid growth in the service industry in the county over the past two decades. Los Angeles has become the financial center of the west coast with over 40 percent of the state's employment in the finance, insurance and real estate industry. Employment in the government sector is presently at an all-time high. In line with these trends, the number of white collar jobs, and particularly clerical jobs, has been increasing.

The goods producing industries, including manufacturing, construction, mining, agriculture, forestry and fishing, accounts for only 29.2 percent of employment, down from 40 percent in 1960. Although manufacturing remains the greatest employer in the county (25.4 percent), the emphasis has shifted from electrical equipment and supplies, aircraft, instruments, etc., to food processing, apparel, printing and publishing.

FIGURE 5-15
EMPLOYMENT STATISTICS
LOS ANGELES COUNTY

	<u>1970</u>	<u>1975</u>	<u>Current</u>
Labor Force	3,039,000	3,228,000	3,310,000
Residents Employed	2,817,000	2,909,000	3,056,000
Residents Unemployed	222,000	319,700	254,000
Unemployment Rate	7.3	9.8	7.3
Number of Jobs	3,170,000	3,331,000	3,496,000

FIGURE 5-16
CURRENT JOB DISTRIBUTION BY INDUSTRY
LOS ANGELES COUNTY

	<u>%</u>
Agriculture	0.5
Mining	0.3
Construction	3.0
Manufacturing	25.4
Transportation-Communication and Public Utilities	5.4
Trade	22.8
Finance, Insurance and Real Estate	6.0
Services	21.0
Government	<u>15.6</u>
	100.0

Commuting Patterns -

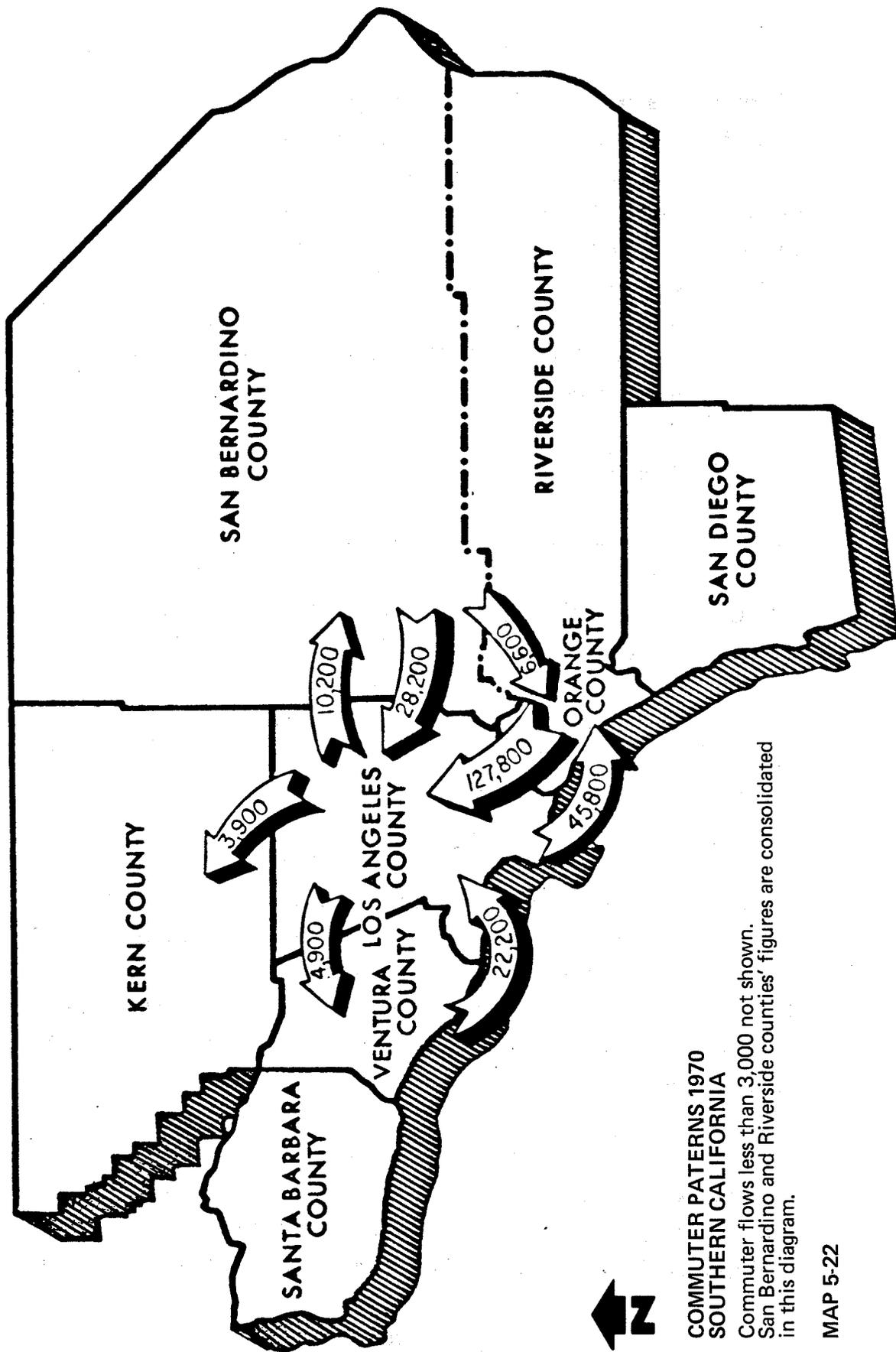
In 1970, 93 percent of those working within the county also resided in the county, compared with 96 percent in 1960. Each of the bordering counties had a greater portion of its working residents traveling to jobs within Los Angeles County in 1970 than in 1960. Most of the in-commuters came from Orange County, 25 percent of whose employed residents worked in Los Angeles County in 1970. These commuters comprised 5 percent of Los Angeles County's work force. The number of Orange County residents commuting to Los Angeles County increased 115 percent during the 1960's to 127,800. Commuters from San Bernardino, Riverside and Ventura Counties together constituted two percent of Los Angeles County's work force. (See Map 5-22: Commuter Patterns 1970 Southern California.)

Of the 2,817,000 Los Angeles County residents employed in 1970, 97 percent worked in their home county. A large majority of those who out-commuted had jobs in Orange County. This group totaled 45,818, or about 2 percent of the employed residents of Los Angeles County.

In the 1970 Census, employed residents were divided into four ethnic groups: Non-Spanish American White, Black, Other Races and Spanish American. In the Los Angeles County area, commuting by Non-Spanish American Whites was nearly 20 percent higher than that of other groups. Non-Spanish American Whites, as well as Spanish Americans, traveled farthest to their place of work.

5.19 Income

Compared to other standard Metropolitan Statistical Areas (SMSA's), Los Angeles County ranks among the top five nationally in terms



**COMMUTER PATTERNS 1970
SOUTHERN CALIFORNIA**

Commuter flows less than 3,000 not shown.
San Bernardino and Riverside counties' figures are consolidated
in this diagram.

MAP 5-22

of per capita personal income. The per capita personal income in 1975 was \$5,433. Per capita income has grown more rapidly than the Consumer Price Index (CPI) in recent years in the county, except for 1975 when per capita income grew by 5.5 percent as compared to 10.7 percent growth in the CPI. The rate of increase of taxes has also outpaced growth in per capita income in recent years. The 1970 median family income in the county was \$10,970 for the total population, \$7,573 for Black families, and \$8,937 for Spanish American families.

5.20 Investment

The assessed value of all property located within the county was \$25,627,000,000 (in current dollars) in 1976, an increase of four percent over the 1970 figure of \$18,591,000,000. However, in constant dollars (adjusted for inflation), total valuation as of 1976 was \$15,254,000,000, about one percent lower than the 1970 figure of \$16,265,000,000. The growing urban blight within the county--the large tracts of aged and obsolete housing and related commercial uses in the inner city and older suburbs, and the lack of routine upgrading and maintenance in many areas, have resulted in this lowered assessed valuation, which in turn further increases the potential for widespread urban blight. This deterioration is reflected in the fact that one of every three housing units is valued at \$20,000 or less. The lack of revitalization of the inner city areas is illustrated by the age of the buildings--over 75 percent of the buildings in downtown Los Angeles were built prior to 1933.

As indicated in the 1975 Annual Survey of Manufacturers, private capital expenditures (investment in new plant and equipment) have also recently decreased, by 1.5 percent between 1970 and 1973 (\$639,000,000 to \$580,000,000, in constant dollars), reflecting

the increasing deterioration and obsolescence of the industrial building stock. Neighborhood conditions, governmental regulations, inadequate public facilities and levels of municipal service, as well as a lack of expansion land, have all discouraged maintenance and reinvestment. While the county has over 75 percent of the existing industrial space in the region, it is building little more than one half of the new space as measured in dollar value. A comparison of the valuation of new industrial construction in Los Angeles and the four surrounding counties, particularly Orange County, indicates that the combined valuation in the other counties is nearly equal to that in Los Angeles County.

Figure 5-17 presents a comparison of the years 1970 and 1976 in terms of assessed valuation and private capital expenditures, in both current and constant dollars.

FIGURE 5-17
SHORT TERM ECONOMIC TRENDS IN
LOS ANGELES COUNTY

	<u>1970</u>	<u>1976</u>	<u>1970-76</u> <u>Annual % Change</u>
Current dollars			
Assessed Valuation (\$ millions)	17,740	22,095	4.0%
Private Capital Expenditures (\$ millions)	731	750	0.5%
Constant Dollars			
Assessed Valuation (\$ millions)	15,520	13,151	-2.5%
Private Capital Expenditures (\$ millions)	639	580	-1.5%

5.21 Governmental Expenditures

Public services are provided by an extremely large and diverse group of local governmental agencies, ranging from the county to neighborhood street lighting and landscape maintenance districts. Major governmental expenditures are required for elementary and secondary education, as well as social services and general government, in addition to transportation, parks/open space, police/fire protection, water supply liquid/solid waste, and flood control. General governmental expenditures for all jurisdictions within Los Angeles County in 1974 (in current dollars) totaled \$5,728,000,000, with a per capita expenditure of \$818. These figures can be compared to \$4,678,000 and \$664 in 1970. However, in constant dollars (adjusted for inflation), general expenditures in the county actually decreased by 0.5 percent between 1970 and 1974, from \$4,103,000,000 to \$4,020,000,000, while general revenues increased by 0.2 percent in constant dollars, thus reflecting a trend toward lower service levels. This trend becomes particularly significant when compared with the national average (for all major SMSAs) — general revenues increased by 3.7 percent between 1970 and 1974, in constant dollars, while general expenditures also increased by 2.0 percent over the same period. Figure 5-18 presents a comparison of revenue and expenditures for the county and the national average, in both current and constant dollars.

5.22 Governmental Revenue

The major means of raising revenues used by most jurisdictions in the county is the property tax. This tax is used to generate revenue to supplement other available funds to balance expenditures and pay service costs. The 1976 assessed valuation of

taxable property was \$25,627,000,000. However, partly because of assessment practices but primarily because of inflation, deterioration and blight in certain areas of the county (see Section 5.20), the county assessed valuation has actually declined in real terms (based on 1967 dollars) from \$16,265,000,000 in 1970 to \$15,254,000,000 in 1976 (see Figure 5-19), thus making an increased tax rate necessary to support governmental expenditures. Revenue sharing has helped supplement the property tax revenues especially where services are funded by special district taxes.

FIGURE 5-18
RECENT ECONOMIC TRENDS
LOS ANGELES COUNTY AND NATIONAL AVERAGE COMPARISONS
1970-1974

	All Major SMSAs National Average			Los Angeles County		
	Annual Change			Annual Change		
	1970	1974	1970-74 %	1970	1974	1970-74 %
CURRENT DOLLARS						
Gen. Revenue (million \$)	56,685	81,842	11.0%	4,833	6,108	6.5%
Per Capita (\$)	531	721	9.0%	686	872	6.7%
Gen. Revenue (million \$)	58,208	79,117	9.0%	4,678	5,728	5.5%
Per Capita (\$)	545	697	7.0%	664	818	5.7%
CONSTANT DOLLARS						
Gen. Revenues (million \$)	49,723	57,423	3.7%	42,395	42,863	0.2%
Per Capita (\$)	466	508	2.2%	608	612	0.1%
Gen. Expend. (million \$)	51,060	55,520	2.0%	4,103	4,020	-0.5%
Per Capita (\$)	478	489	0.5%	582	574	-0.2%

FIGURE 5-19
COUNTY ASSESSED VALUATION

Date	Current Dollars	Constant Dollars
	(Millions)	(1967=0) Millions
1970	18,591	16,265
1971	19,206	16,207
1972	20,075	16,414
1973	19,380	15,000
1974	20,461	14,358
1975	22,095	14,010
1976	25,627	15,254

Subventions are another source of revenue for funding services and facilities. These rely on the greater taxing authority of the state government. Major subventions from the state include taxes on liquor, cigarettes, gas, hotels, etc. Taxable retail sales provided a major source of revenue—\$27,425,161 in 1976.

Other sources of revenues include the motor vehicle in-lieu tax and the shared revenues distributed from the various highway users taxes (principally the excise tax on gasoline), as well as service charges, business license fees, and fines.

5.23 Transportation

The county's transportation system (facilities and vehicles) consists of five major modes: roadways (automobiles, buses, trucks), rail, water, air and pipelines. All of these modes are important movers of freight, while only two—roadways and air—are major movers of people. Each mode has varying degrees of capacity and different service characteristics. Buses are the major public carrier, trucks handle the major share of local

freight movement and air, water, rail, and trucks handle the long distance freight and passenger movement. Although not a major mode, bikeways are another component of the system. Nearly 25 percent of all the facilities and vehicles of the transportation system are necessary for goods movement which includes the distribution of foodstuffs, consumer products, manufacturing components, industrial goods, building products, energy and services.

Roadways (Automobiles, Buses, Trucks) -

The greater Los Angeles area contains a vast highway system directly linking the harbor and airports to a road system that extends throughout the United States, Canada and Mexico. The county's 19,284 miles of roadways—of which 493 miles are freeways and expressways—serve more than 99 percent of the daily movement of the county's residents. Figure 5-20 summarizes the components of the roadway system (1976).

FIGURE 5-20
LOS ANGELES COUNTY ROADWAY SYSTEM COMPONENTS

<u>Type</u>	<u>Length (Miles)</u>
Local and Arterial Highways	18,380
State Highways	411
Freeways	<u>493</u>
Total Roadway Mileage	19,284

The local and arterial highways are basically laid out in a grid system, where terrain and other features permit, to facilitate the transportation of people and goods within and between neighborhoods and communities. These facilities also interchange traffic

with the freeway system and serve a subordinate function as collectors and distributors of the traffic from that system.

Figure 5-21 reflects the motor vehicle population as of April 1977, in Los Angeles county:

FIGURE 5-21
LOS ANGELES COUNTY MOTOR VEHICLE POPULATION

Automobiles	3,522,167
Motorcycles	164,662
Commercial Vehicles	623,524
Mobile Homes	<u>105,947</u>
Total	4,416,300

Automobiles -

The pattern of development in the county has interacted primarily with automobile use. The automobile has become the overwhelming transportation mode, as indicated by the extensive highway and freeway system. By reducing the driving time from outlying areas to job centers, the freeway system has promoted the lower density development of outlying areas as opposed to higher density development in the central areas. A 1967 survey by the Los Angeles Regional Transportation Study (LARTS) found that about 88 percent of the people-moving trips in the county were made by private automobile.

Buses -

Buses provide municipal public transit as well as intercity transportation. The county's public transit service is provided by

the Southern California Rapid Transit District (SCRTD), as well as several other municipal transit operators. Municipal bus service is particularly important to the transit dependent-- especially the economically disadvantaged, the elderly, the handicapped and the young. Those using public transit have until recently received increasingly lower levels of service. Since 1973 SCRTD and the other municipal bus companies have improved transit service levels and increased ridership. The SCRTD bus fleet has been increased by 38 percent, operational improvements have been made and coverage and frequency have been expanded, the zone system has been simplified, and coordination and cooperation between the SCRTD and other bus companies has been improved. However, fares are again rising and some services are being cut back.

A 1967 survey by LARTS found that bus travel made up only 2.2 percent of the total person trips. For the SCRTD and the other county municipal transit operators, the current rate of person trips for transit is slightly higher, at 3.8% or 39 annual transit trips per capita. A 1976 comparison by the Road Department of municipal bus transit fuel usage and automobile fuel usage, based on such factors as number of person trips, VMT, miles per gallon of fuel, and number of vehicles registered indicated that buses averaged 0.10 gallons per person trip, while automobiles averaged 0.38 gallons per person trip. Figure 5-22 provides additional current (March, 1977) data for the overall transit system.

FIGURE 5-22
MUNICIPAL TRANSIT OPERATION DATA

Number of Buses	2,586
Boardings*/Day	1,142,918
Number of Bus Hours/Day	27,149
Boardings Per Bus Hour	42
Operating Cost/Boarding	\$0.58
Subsidy Per Boarding	\$0.32
Bus Mileage/Day	383,642

*Boardings represent that portion of a one-way passenger trip traversed aboard each bus. That is, a bus trip involving the use of two buses via a transfer counts as two boardings, but a ridership of only one.

In addition to intracity bus transit, two major intercity bus operators serve the county's residents--Greyhound Lines and Continental Trailways. In 1974 the major intercity bus services in the state carried 9,400,000 passengers 1,760,000,000 miles at an average of 23 passengers per bus and 183 miles per trip. This form of transportation is provided by the private sector without direct public assistance.

Trucks -

The principal means of goods movement into and out of the county as well as within the county is by truck. Trucking functions range from pick-up and delivery trucks privately owned by firms and businessmen, to specialized vehicles such as those used in garbage collection or construction, to trucks used for personal transport (e.g., campers, pick-ups, etc.) to inter-city carriers of all weights and sizes. The inter-city segment of the industry is in direct competition with railroads, pipelines and air freight.

There are many categories of trucks used in California. Of the basic type of carriers there are proprietary carriers and for-hire carriers. The former own the trucks and goods, while the latter own the trucks only. As of 1974, for California, registration was broken down as follows:

	<u>Pickups</u>	<u>Other</u>	<u>Total</u>
For-hire	3,000	90,000	93,000
Proprietary	<u>2,010,000</u>	<u>671,000</u>	<u>2,681,000</u>
Total	2,013,000	761,000	2,774,000

As of April 1977, the county's commercial vehicle registration was 623,524.

Rail -

Railroads cross the county carrying freight to terminal or staging areas where it is transferred to trucks, cargo ships or other trains for trans-shipment to world, state, intercounty or local destinations. Some of these facilities also accommodate passenger service to destinations within and out of state. These facilities serve an important function in transporting people and goods into and from this county.

The county is served by three transcontinental rail freight lines beginning at the harbor complex: the Atchison, Topeka and Santa Fe; the Southern Pacific; and the Union Pacific. In addition, portions of the county are served by two local, primarily switching, carriers: Los Angeles Junction Railway and the Harbor Belt Line, serving Los Angeles Harbor and the Wilmington area. Together, these companies own a total of 580 mainline and branchline miles of track and five railroad classification yards in the county.

Railroads specialize in bulk commodities and the long haul of agricultural products and heavy industry-related items, moving approximately one quarter of the total cargo moved in California. Of the statewide intercity freight ton-miles, railroads handle about 40 percent. They are of importance as an energy-efficient alternative to the increasing density of intercity highway traffic when combined with the flexibility of the bus and truck at terminals.

Passenger rail service in California is provided by AMTRAK. The total miles of rail service for passengers was 2,250 miles in 1975. At that time Southern Pacific also provided rail passenger service. For Los Angeles County there are presently eight daily trains providing interurban service. Recent arrangements between the State of California, the Counties of Orange, Los Angeles and San Diego have increased rail service between Los Angeles and San Diego. Passenger demands for intercity rail service have been decreasing because their services are less competitive than the auto, bus, or airlines. In general, passenger service has operated at a loss.

Water -

Another vital component of the county's transportation system is its harbors. The county's two major international seaports-- Los Angeles and Long Beach ports--are located within the world's largest man-made harbor. In addition to the two commercial ports, there are seven small craft harbors which are the City of Santa Monica, the City of Avalon, Marina Del Rey, King Harbor Marina, Alamitos Bay and the Ports of Los Angeles and Long Beach.

The megaport of Los Angeles and Long Beach covers 46 miles of commercial waterfront. Together the seaports constitute the

largest port on the West Coast. These ports are modern and have good interfaces with rail and highway transportation. As is the case with most ports, they are owned and operated by public entities.

The majority of the traffic at California ports is foreign commerce with origins or destinations outside California. More than half of this waterborne commerce deals in crude oil and other petroleum products which have been increasing more rapidly than other commodities. Water carriers specialize in bulk cargo, moving large quantities where speed of movement is not an important consideration. Of the cargo tonnage handled by the 13 major California ports in 1974, Los Angeles and Long Beach handled 60%:

Los Angeles	26 900 000 tons
Long Beach	25,900,000 tons
Total for all 13 Major Ports	86,800.000 tons

Air -

The county is favored with one of the best aviation systems in the world with a total of 17 public use airports and two public use seaplane bases. Only three of these facilities may be considered major airports: Los Angeles International (LAX), Hollywood Burbank and Long Beach. Palmdale Airport is planned to become the county's second largest commercial airport, but does not presently serve this function. Public use airports accommodate approximate 10,000 aircraft operations in the county daily.

LAX, the second busiest airport in the nation after O'Hare in Chicago, is the region's primary air carrier airport. It is served by a total of 36 domestic and international airlines and is the only airport in the nation served by all 12 of the top

United States based air carriers. Air cargo, which has more than doubled in volume over the last decade, included 190 million pounds of air freight and nine million pounds of air express in 1975.

Passenger travel through LAX in 1976 rose to 26 million. In the same year, airline operations (take offs and landings) were 450,000-- a drop from the 1973 total of 491,000, indicating that more passengers and cargo moved on fewer aircraft. In the six county Southern California region, LAX handles 84% of all passengers.

Hollywood-Burbank Airport was recently purchased by the cities of Burbank, Glendale and Pasadena with the intent to continue air carrier operations. The ownership is based on a joint powers agreement. The airport at one time was the only privately owned commercial airport. Since the mid-1960's there has been a steady increase in air traffic and in 1976, 1.7 million passengers used this facility, the largest number in its 40 year history.

Long Beach Airport provides mainly short-range air commuter service, serving about 400,000 passengers in 1972. However, the City of Long Beach has expressed its reluctance in accepting any more air carrier service, and envisions the airport's role as serving only general aviation activity and limited air commuter service.

Pipelines -

There are presently four for-hire pipelines in California that are under the jurisdiction of the Public Utilities Commission. Pipelines are an important component of the county's transportation network, largely because of the region's role in the production of crude oil and natural gas. Oil and gas fields

located in the county account for about 30 percent of the state's production of petroleum, and close to 27 percent of the state's natural gas output. Pipelines also play an essential role in the movement of water and liquid wastes. The exact quantity of various materials being moved by pipeline within the county is currently unavailable. In 1972, almost 17 percent of the nation's intercity freight tonnage was moved by pipeline.

Bikeways -

Bikeways presently exist in many incorporated and unincorporated areas of the county. The existing 275 miles of lanes, paths and/or routes are not totally interconnected due to the local nature of this mode of travel. Utilization rates of bicycle facilities range from 50 to 500 bikes per day. Such a mode is best suited for trip distances up to four miles.

5.24 Liquid/Solid Waste Disposal

Liquid Waste Disposal -

Overall, the trunk sewer system in Los Angeles County is one of the finest in the world. Four sewerage systems--Hyperion (Los Angeles City), Joint Water Pollution Control Plant (JWPCP) at Carson (County Sanitation Districts), Las Virgenes Municipal Water District, and Terminal Island (Los Angeles City - coastal areas)--serve the coastal basin of the county, while four community systems (Lancaster, Palmdale, Saugus, and Valencia) serve the area north of the San Gabriel Mountains. In the coastal basin of the county, sewage production--including residential, industrial and commercial--approximates 116 gallons per capita per day (g/c/d).

Figure 5-23 provides a listing of current waste water treatment plants in the county with information concerning the type of treatment provided (primary, secondary or tertiary), the quantity of flow treated (in millions of gallons per day), the type of treatment process used, and the means of effluent and sludge disposal. As is indicated, two systems (Hyperion and Terminal Island) currently discharge sludge into the ocean; effluent is discharged into the ocean at the Hyperion, Terminal Island and JWPCP plants. However, only Hyperion discharges effluent and/or sludge without secondary treatment. The effluent from other plants is used for industrial cooling, groundwater recharge and agricultural irrigation. The sludge is sold for soil conditioning, or is buried in sanitary landfills. The sludge from JWPCP is now trucked to sanitary landfills for burial. Seventeen plants recycle 143 million gallons of water per day, providing at least tertiary treatment to about 15 percent of the total waste water treated.

As indicated in Figure 5-23, the Las Virgenes Municipal Water District currently provides secondary treatment at the Tapia Park Water Reclamation Plant, discharging effluent into Malibu Creek. There is some concern as to the effect of this discharge on the Creek's water quality. The State Water Resources Control Board has established a one-year test period of effluents disposed into this creek, and a six-month evaluation of the data obtained.

In addition to the public sanitation systems described above, 200,000 county residents presently maintain small, private sewage treatment plants generally in areas where sewers are not yet desired or feasible. These installations, which may serve a single family residence, an apartment complex or a commercial center, are supervised by the County Engineer and operated under

FIGURE 5-23
 STATUS SUMMARY: CURRENT WASTE WATER TREATMENT FACILITIES
 IN LOS ANGELES COUNTY - SEPTEMBER 1977

Treatment Mgd	Current Flow	Treatment	Process	Means of Final Disposal	
				Effluent	Sludge
Los Angeles City Systems					
Hyperion ('77)	202	Primary	Solid Separation	Ocean	Ocean
	135	Secondary	Activated Sludge	Ocean	Ocean
Hyperion ('82)	330	Secondary	Activated Sludge	Ocean until Oct. 1, 1979	Ocean
Terminal Island	14	Secondary	Activated Sludge	L.A. Harbor	Harbor '80-ocean
Griffith Park	20	Secondary	Activated Sludge	80 Ocean	
Crescenta Vly	.09	Primary	Solid Separation	Irrig./cooling	Hyperion
Burbank	3.5	Secondary	Activated Sludge	Recharge	Landfill
	3	Tertiary	Dual media filter	Cooling/recharge	Hyperion
LVMWD	4.5	Secondary	Activated Sludge	Cooling/recharge	Hyperion
				Irrigation/recharge	Soil Amend.
Separate Co. Districts					
Lancaster #14	3.5	Secondary	Activated Sludge	Evaporation N-2	Soil Amend.
	.5	Tertiary	Filtration	Apollo Lakes	Soil Amend.
Palmdale #20	1.6	Secondary	Oxidation	Irrigation	Soil Amend.
Saugus #26	3	Secondary	Activated Sludge	Santa Clara	
				River	Soil Amend.
La Canada #28	.07	Secondary	Extended Aereation	Course Irrigation	JWPCP
Valencia #32	2.8	Tertiary	Advanced filters	Santa Clara River	Soil Amend.
Joint Outfall Co. Systems					
Pomona #21	8.5	Tertiary	Carbon Filtration	7mgd-San Jose Crk	JWPCP
				1.5mgd-irrigation	JWPCP
Whittier #15	13	Secondary	Activated Sludge	Mtbl Forebay	JWPCP
San Jose #18	30	Secondary	Activated Sludge	0-15mgd Mtbl	JWPCP
				15-30mgd Tidal Prism	JWPCP
Los Coyotes#12	32.5	Secondary	Activated Sludge	To Tidal Prism	JWPCP
Long Beach#19	7.5	Secondary	Activated Sludge	Irrigation/Prism	JWPCP
JWPCP (77) #8	330	Primary	Anaerobic/dry sludge	Pacific Ocean	Fertilizer/Landfill

the purview of the County Department of Health Services. They are also subject to the conditions of the Regional Water Quality Control Boards.

Solid Waste Disposal -

The principal disposition of solid waste is presently by burial in sanitary landfills. Approximately 800 contractors provide collection service in the cities and the unincorporated area of the county. The solid waste collected approximates 25 tons per square mile per day in the coastal basin. Salvaging of materials for recycling currently reduces the amount buried by one percent to five percent. In the older, more urbanized areas, the few remaining landfill sites are expected to be full by the year 2000 necessitating the substitution of transfer stations or alternative disposal facilities. Existing landfill sites are shown in the Water and Waste Management Element.

Four types of solid waste sites and facilities exist. These include transfer stations, where waste is transferred from the collection truck to another means of conveyance as well as the following types of sanitary landfills:

- Class I, which will accept non-radioactive hazardous wastes, including non-sewer liquid waste;
- Class II, accommodating the largest amounts of waste including non-hazardous liquid waste; and
- Class III, accepting inert materials only.

Quantities and types of refuse received at the major landfills located in Los Angeles County in 1974 are provided in Figure 5-24.*

FIGURE 5-24
TYPES AND QUANTITIES OF SOLID WASTE

Types of Refuse	Tons Per Day	Percent of
		Total
Household	10,905	38%
Garden Wastes	996	3
Solid Fill	5,745	20
Construction	811	3
Demolition Wastes	2,160	8
Commercial	6,734	23
Industrial	413	1
Streets and Park Wastes	801	3
Miscellaneous:		
Bulky Items	228	1
Rubber Tires	87	0
Agricultural Wastes	72	0
TOTAL	28,952	100%

*Figures shown were tabulated from data collected at 18 landfill sites surveyed in March 1974 by County Sanitation District's personnel.

The State Department of Water Resources is conducting an active search for candidate Class I sites for the disposition of hazardous liquid wastes. The Department's reports, describing Los Angeles County, will be available later this year.

Both government and private enterprise are working to create new technology to facilitate recovery, recycling and reclamation of solid waste such as paper, glass, plastics, aluminum and tin. Pilot recycling programs exist within and without the county. However, to date these programs have not proven to be economically feasible. The utilization of waste materials as an energy source has thus far also not proven to be economically feasible, especially given the prohibitive start-up costs.

6.0 ENVIRONMENTAL EFFECTS ANALYSIS/MITIGATION MEASURES¹

6.1 Geologic/Seismic

EFFECT -

Seismic -

The general plan's General Development Policy Map shows limited new urban development within active and potentially active fault zones.² Figure 6-1 provides estimates of seismic hazard acreage within urban expansion and infill areas, by planning area, for both the total county and the unincorporated area. Hazards are identified as moderate (M) where new urban development is located within a potentially active fault zone and as high (H) where such development is located within an active fault zone.

1

See Section 3.2 for an explanation of the methodology used in this analysis. It is important to note that this section discusses the effects and mitigation measures for each environmental category. No determination is made as to whether the impacts are significant. This determination is included in Section 7.0. In addition, the acreages indicated under the various environmental categories as being affected by a hazard or including a resource of some kind should not be totaled, as they overlap in some cases. A discussion of cumulative effect is included in Section 7.0.

2

Active fault zones are defined in the Seismic Safety Element of the general plan as faults which have moved in recent geologic time (up to approximately 10,000 years ago) and which are likely to move again, while potentially active faults are defined as those along which, based on available data, no known historical ground surface rupturing or earthquakes have occurred, but which show strong indications of geologically recent activity. Such faults are identified on the Fault Map, as prepared by the Los Angeles County Department of Regional Planning (see Section 15.0 - Bibliography). The fault zones represent a strip one-eighth mile wide on each side of the surface trace of the faults identified as active or potentially active.

FIGURE 6-1

ESTIMATE OF SEISMIC HAZARD ACREAGE WITHIN
 URBAN EXPANSION AND INFILL AREAS FOR THE TOTAL COUNTY
 AND UNINCORPORATED AREA, BY PLANNING AREA

Planning Area	Urban Expansion Areas				Infill Areas			
	Total County		Unincorporated Area		Total County		Unincorporated Area	
	M*	H*	M	H	M	H	M	H
San Fernando	**	100	-	-	100	200	-	-
Burbank/Glendale	-	-	-	-	-	-	-	-
West San Gabriel Valley	-	-	-	-	100	-	-	-
East San Gabriel Valley	100	-	-	-	400	-	-	-
Malibu/Santa Monica Mtns.	100	-	100	-	100	-	100	-
West	-	-	-	-	-	-	-	-
Central	-	-	-	-	-	100	-	100
East Central	-	-	-	-	-	**	-	-
Southeast	-	-	-	-	-	-	-	-
South	-	-	-	-	-	**	-	**
Southwest	-	-	-	-	100	-	-	-
Santa Clarita Valley	300	-	300	-	-	-	-	-
Antelope Valley	-	400	-	-	-	-	-	-
TOTAL	500	500	400	-	800	300	100	100

* Hazards are identified as moderate (M) where development is located in a potentially active fault zone and as high (H) where development is located in an active fault zone.

** Less than 100 acres.

It is important to note that any development, both existing and future, in Los Angeles County may be affected by an earthquake. The risk of damage is greater in a fault zone, however, since there is a potential for some ground rupture should an earthquake occur in that area.

Furthermore, while the fault zone designation indicates an area of general concern, the location of fault traces within the zone is a more precise indication of where surface ruptures could be expected during a seismic event. Thus, the analysis of areas lying within fault zones overstates the potential ground rupture hazards.

Approximately 1,000 acres of potential urban expansion within the county (both unincorporated and incorporated areas) are within active or potentially active fault zones. Five hundred (500) acres are within the moderate hazard category and 500 acres are within the high hazard category. As is indicated in Figure 6-1, 400 acres are located within unincorporated areas, while 600 acres are within cities. No urban expansion within high hazard areas is located within unincorporated areas.

On a subregional level, five county planning areas contain all the new expansion land subject to faulting. Antelope Valley contains 400 acres (located within the City of Palmdale), San Fernando contains 100 acres, most of which is located in proposed residential areas of Olive View and Porter Ranch, and Santa Clarita Valley has 300 acres (within Castaic and Valencia). East San Gabriel Valley (in the City of La Verne) and Malibu/Santa Monica Mountains (in the Malibu Beach area) each include 100 acres.

With regard to infill development for the total county (See Figure 6.1), 1,100 acres are subject to possible seismic fault—including 800 acres of moderate potential hazard and 300 acres of high potential hazard. Two hundred (200) of the total 1,100 acres, or 18 percent, are located within unincorporated areas—including 100 acres in the Central area (Baldwin Hills) subject to high potential hazard, and 100 acres in Malibu/Santa Monica Mountains (Malibu Beach) subject to moderate potential hazard. The remaining 900 acres are within cities—Mission

Hills and Porter Ranch in the San Fernando area, Duarte in the West San Gabriel Valley, La Verne and San Dimas in the East San Gabriel Valley, and Westchester in the Southwest planning area.

With reference to existing development, the plan's encouragement of revitalization efforts will result in positive effects on existing seismic hazard to the extent that hazardous old (pre-1933) buildings are rehabilitated or recycled. Policies promoting the revitalization of older portions of existing urban development, with priority to lower income deteriorated areas, will result in the clearance of some older buildings. The plan encourages the rehabilitation of 327,000 housing units, as well as the recycling of 2,800 acres of residential medium and high density uses, and 2,900 acres of commercial uses. This clearance effort will help to reduce the number of hazardous older multi-storied structures. Secondary effects of such recycling include social and economic impacts on communities where significant recycling is to occur (see Section 6.15). Reference is made to page nine (9) of the adopted Seismic Safety Element of the general plan which includes a discussion of earthquake hazardous existing development.

Geologic -

The general plan also provides for some limited urban development in areas identified as having geologic hazards, including liquefaction and slope instability.

Liquefaction -

Liquefaction, which is the sudden loss of soil strength under saturated conditions due to earthquake shock, is considered to be a minor constraint upon urban expansion because engineering techniques are available to minimize the potential for severe damage to structures and other facilities. In order to determine the extent of this constraint as related to the general plan, areas designated as having a high (H) or moderate (M) potential for liquefaction based on soil types, location

of groundwater, and potential for acceleration during a seismic event were compared to those areas shown as urban expansion and infill development on the General Development Policy Map. Acreages of urban expansion subject to either high or moderate liquefaction hazard (shown as "H" and "M") by planning area are provided in Figure 6-2 for both the total county and for unincorporated areas.

Of the 55,800 acres in the county designated as urban expansion land, approximately 6,600 acres, or about 12 percent of the total, are in the moderate class, while 2,100 acres are in the high class. Approximately 3,000 acres, or 44 percent of the 6,600 acres are located in the unincorporated areas. The remaining 3,600 acres are within the corporate limits of various cities.

On a subregional level, the East San Gabriel Valley has the largest amount of potential urban expansion on liquefaction-prone land with 3,100 acres, or 47 percent of the total. Of this land, large areas are located in the cities of La Verne, Claremont, Pomona, Walnut and Industry. The unincorporated acreage is located in the Industry, Claremont and Rowland Heights areas.

Within the North County, Antelope Valley contains 500 acres, located in the City of Lancaster. The Santa Clarita Valley contains 1,600 acres, or 24 percent of the total. Moderate potential liquefaction areas are located in Valencia, Castaic Junction, Saugus and Mint Canyon. The San Fernando acreage is located in Porter Ranch and Lakeside Park, and the Malibu/Santa Monica Mountains acreage is in the Calabasas Park, Brent's Junction and Westlake Village areas.

With regard to infill development, a total of 5,000 acres are subject to high or moderate liquefaction hazard (see Figure 6-2). All of this acreage is within the south county. Planning areas most affected by

FIGURE 6-2

ESTIMATE OF LIQUEFACTION HAZARD ACREAGE WITHIN
URBAN EXPANSION AND INFILL AREAS FOR THE TOTAL
COUNTY AND UNINCORPORATED AREA, BY PLANNING AREA

Planning Area	Urban Expansion Areas				Infill Areas			
	Total County		Unincorporated Area		Total County		Unincorporated Area	
	M*	H*	M	H	M	H	M	H
San Fernando	500	100	-	-	500	100	-	-
Burbank/Glendale	-	-	-	-	100	-	-	-
West San Gabriel Valley	-	-	-	-	200	100	-	-
East San Gabriel Valley	1,200	1,900	200	400	1,000	700	-	100
Malibu/Santa Monica Mtns.	800	-	800	-	**	-	**	-
West	-	-	-	-	-	100	-	-
Central	-	-	-	-	100	-	-	-
East Central	-	-	-	-	100	-	-	-
Southeast	-	-	-	-	100	400	-	-
South	-	-	-	-	900	**	500	-
Southwest	-	-	-	-	600	-	-	-
Santa Clarita Valley	1,600	**	1,600	**	-	-	-	-
Antelope Valley	400	100	-	-	-	-	-	-
TOTAL	4,500	2,100	2,600	400	3,600	1,400	500	100

* M indicates moderate liquefaction potential; H indicates high liquefaction potential.

** Less than 100 acres.

high liquefaction are East San Gabriel Valley (Industry, Diamond Bar, San Dimas, La Verne and Irwindale) and the South (City of Carson and unincorporated area east of Carson). Other affected areas include Cerritos, La Mirada and Santa Fe Springs in the Southeast planning area; El Segundo, Hawthorne and Torrance in the Southwest planning area; Canoga Park, Northridge, Sylmar and Van Nuys in the San Fernando planning area; Duarte in the West San Gabriel Valley; Sunland in Burbank/Glendale planning area; Compton and Carson in East Central; Monterey Hills in Central; and Marina del Rey in the West. Twelve percent of the total 5,000 acres of infill in the county (600 acres) is located in unincorporated areas, while the remaining 88 percent is within cities.

Slope Instability -

With reference to slope instability, areas are considered susceptible to slope movement when there is evidence of unstable geologic formations, the existence of old landslides, or subsidence. The majority of the plan's urban expansion areas affected by a slope instability hazard consist of areas with geologic evidence of instability. Slope failures can result in property damage and access problems (road blockage), as well as injuries and loss of life. Extensive costs to government to repair damages can also result. Reference is made to the discussion of slope instability in the adopted General Plan Safety Element (pages 11-12). Acreages of potential urban expansion and infill land subject to slope instability hazard for the total county and the unincorporated area are provided in Figure 6-3.

Of the 55,800 acres in the county designated as potential new urban expansion land, approximately 8,600 acres, or about 15 percent, are located in unstable slope areas. The East San Gabriel Valley planning area includes the largest percentage of unstable slope areas designated as new urbanized lands--about 47 percent of the total 8,600 acres. Primary areas affected are Diamond Bar, Rowland Heights, West Covina,

Pomona, Walnut and Industry. Santa Clarita Valley and San Fernando planning areas contain 17 and 15 percent, respectively, of the total 8,600 acres. The Santa Clarita Valley acreage is located primarily in the Saugus, Forrest Park, Pico Canyon and Sand Canyon areas. The San Fernando planning area acreage is located in Porter Ranch, Lakeside Park and Canoga Park. Most of the new urbanized land subject to this hazard is classified as low density residential. Approximately 4,600 acres, or 53 percent of the acreage subject to instability is located within unincorporated areas.

The plan also includes infill development within unstable slope areas-- 3,900 acres, including 1,000 acres in the South (City of Carson and the unincorporated area east of the City of Carson), 700 acres in San Fernando (Porter Ranch, Chatsworth, Woodland Hills and Mission Hills); Burbank/Glendale (Sunland); Southwest (Palos Verdes Estates and Rancho Palos Verdes); East San Gabriel Valley (Walnut and San Dimas); Central (in the Hollywood Hills and Monterey Hills); West San Gabriel Valley (Monterey Park); West (Hollywood Hills); and Malibu/Santa Monica Mountains (Malibu Beach).

MITIGATION MEASURES -

The plan is oriented toward the protection and proper management of lands subject to hazards. Conservation and Open Space Element policies intended to mitigate the impact of the plan's mapped policies showing development in geologic/seismic hazard areas include the following:

- Restrict urban development in areas subject to seismic and geologic hazards. (Policy 20)

- Manage development in hillside areas to reduce risks from fires, flood, mudslides, erosion and landslides and to protect their natural and scenic character (Policy 23).

FIGURE 6-3

ESTIMATE OF UNSTABLE SLOPE ACREAGE WITHIN
 URBAN EXPANSION AND INFILL AREAS FOR THE TOTAL COUNTY
 AND UNINCORPORATED AREA, BY PLANNING AREA

Planning Area	Urban Expansion Areas		Infill Areas	
	Total County	Unincorporated Area	Total County	Unincorporated Area
San Fernando	1,300	-	700	-
Burbank/Glendale	-	-	700	-
West San Gabriel Valley	-	-	200	-
East San Gabriel Valley	4,000	1,900	300	*
Malibu/Santa Monica Mtns.	1,200	1,200	100	100
West	500	-	100	-
Central	-	-	300	-
East Central	-	-	-	-
Southeast	-	-	-	-
South	-	-	1,000	500
Southwest	-	-	500	-
Santa Clarita Valley	1,500	1,500	*	*
Antelope Valley	100	*	-	-
TOTAL	8,600	4,600	3,900	600

*Less than 100 acres.

In addition, the General Goals and Policies Chapter includes the following policy: Direct urban development and revitalization efforts to protect natural and man-made amenities and to avoid severe hazard areas, such as flood-prone areas, active fault zones, steep hillsides, landslide areas and fire hazard areas (Policy 9); and the Transportation Element includes a policy to provide transportation facilities that will improve the safety, security, and dependability of all transportation modes; provide for seismic safety; and be effective in emergency situations (Policy 31).

The plan also includes general standards and conditions for development within major fault zones (active and potentially active fault zones as listed in the Seismic Safety Element and as mapped in accordance with the Alquist-Priolo Special Studies Zones Act). Conditions applying within Alquist-Priolo Special Study Zones include submittal of a geology report and prohibition of any structure for human occupancy (with the exception of individually constructed, wood frame, single family residences and mobile homes) within 50 feet of an active fault trace. These conditions reflect criteria established by the State Mining and Geology Board. In addition, within active or potentially active fault zones, applications for zoning or tentative subdivision approval or renewal are to be submitted to the County Engineer for review and the placing of conditions upon development as may be necessary. Uses prohibited within such zones are emergency response and vital facilities, and facilities for dependent populations. The Building Code is to be amended to implement the intent of the plan's policies for major fault zones, as one of the special management areas (Action 16 of the Land Use Element).

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While the fault zone designation indicates an area of general concern, the more specific identification of fault traces within the zone provides an indication of those locations where surface ruptures could be expected during a seismic event.

The plan's Hillside Management/Performance Review Procedure as applied to urban hillsides (See Mitigation Measures in Section 6.13), would reduce the impact on urban expansion and infill development within geologic/seismic hazard areas, to the extent that such hazards are located within hillsides. Performance review relates to the avoidance of geologic/seismic hazard areas or the identification and application of adequate engineering solutions; and the avoidance of landslide hazard areas. A finding is to be made that the proposed project will not create a significant threat to life and property due to geologic/seismic hazard.

Lower density development will also tend to reduce the impact, in that lesser numbers of persons would be subject to potential hazards. Most of the new urban land proposed for residential uses located in geologically hazardous areas would consist of low density residential uses. With reference to seismic hazard, all the residential acreage located within the unincorporated area in the Antelope Valley in areas of high hazard is at low or low/medium residential densities; the 300 acres in moderate potential areas in the Santa Clarita Valley are designated as low density residential, commercial and industrial.

With regard to existing project review practices, liquefaction and slope stability effects can generally be mitigated at the project level provided appropriate stabilization measures are applied. As was indicated above, liquefaction is considered to be only a minor constraint for development. Seismic hazard can also be reduced, depending upon specific location, design and building materials.

As private development projects within potentially hazardous areas are proposed, the project and environmental review will include an assessment of the potential hazard and appropriate mitigation measures required to reduce or eliminate such hazard. The County Building Code requirements relating to geologic and seismic safety will have to be met before a

grading or other permit can be issued or development commenced. Persons applying for a building or grading permit in areas delineated as geologic hazard areas must submit a geologic and/or engineering report demonstrating that the hazard will be eliminated or is not a danger for the intended use. It should be noted that as technology improves or problem areas are identified, County codes are amended so as to provide the best possible health and safety standards.

Although the impact of geologic/seismic hazard on non-urban development is not discussed above (see explanation in Section 3.2), such potential impact is reduced by the plan's hillside management/performance review procedure for non-urban residential development. Any non-urban hillside development exceeding the lower density threshold (see Section 6.13) will be subject to performance review criteria for geologic/seismic and slope stability conditions as a part of site plan approval.

6.2 Soils

EFFECT -

In order to determine the impact within this environmental category, the extent of urban expansion was estimated within areas having soils with moderate or high constraints for development. This estimation was based on the U.S. Department of Agriculture Soil Conservation Service's system for rating soil capability —i.e., Class VI soils representing moderate constraint and Class VII and VIII soils representing high constraint soils. This system classifies soil types according to characteristics relative to composition, permeability, cut-slope stability and erosion hazard. Figure 6-4 presents this information by planning area, for both the total county and the unincorporated area. Soils with moderate constraints are represented as "M" and those with high constraints as "H" in Figure 6-4.

As Figure 6-4 indicates, 4,700 of the 55,800 acres of potential expansion, or about nine (9) percent of the total, lie in moderate constraint areas; and 9,100 acres, or about 17 percent of the total 55,800 acres, lie in high constraint areas. These categories total 13,800 acres, or 21 percent of all land shown as potential new urban expansion on the General Development Policy Map. Seventy (70) percent of the total 13,800 acres, or 9,700 acres, are within unincorporated areas, with the remaining 30 percent within cities.

Planning areas most affected by urban expansion within areas having soil constraints are Antelope Valley (in the proposed Palmdale Airport), Santa Clarita Valley (in Pico, Newhall/Saugus, Soledad/Alpine, Sleepy Valley, Forrest Park and Valencia), East San Gabriel Valley (Walnut, Diamond Bar, West Covina, Rowland Heights and La Verne), and Malibu/Santa Monica Mountains (Calabasas Park and Westlake Village areas).

FIGURE 6-4

ESTIMATE OF URBAN EXPANSION AND INFILL ACREAGE
 RELATED TO MODERATE AND HIGH CONSTRAINT SOIL TYPES FOR
 THE TOTAL COUNTY AND UNINCORPORATED AREA, BY PLANNING AREA

Planning Area	Urban Expansion Areas				Infill Areas			
	Total County		Unincorporated Area		Total County		Unincorporated Area	
	M*	H*	M	H	M	H	M	H
San Fernando	-	1,400	-	100	-	500	-	-
Burbank/Glendale	-	-	-	-	-	700	-	-
West San Gabriel Valley	-	-	-	-	**	-	-	-
East San Gabriel Valley	900	2,100	200	800	100	200	-	-
Malibu/Santa Monica Mtns.	200	1,600	200	1,600	-	100	-	100
West	-	700	-	-	-	100	-	-
Central	-	-	-	-	-	100	-	-
East Central	-	-	-	-	-	-	-	-
Southeast	-	100	-	-	-	100	-	-
South	-	-	-	-	-	-	-	-
Southwest	-	-	-	-	700	-	-	-
Santa Clarita Valley	3,600	1,000	3,600	1,000	0	-	-	-
Antelope Valley	-	2,200***	-	2,200***	0	**	-	**
TOTAL	4,700	9,100	4,000	5,700	800	1,800	-	100

* M represents moderate soil constraints; H represents high soil constraints.

** Less than 100 acres.

*** Does not include 7,800 acres in the Palmdale Airport site.

The plan also shows development on 2,600 acres of infill land subject to soil constraints, including 1,800 acres subject to high constraints and 800 acres subject to moderate constraints (see Figure 6-4). All except 100 acres are located within cities, including 700 acres in the Southwest (in Palos Verdes Estates and Rancho Palos Verdes), 700 acres in Burbank/Glendale (in Sunland) and 500 acres in San Fernando (in Porter Ranch, Encino and Woodland Hills). The West and Central (Hollywood Hills), Southeast (Hacienda Heights) and East San Gabriel Valley (La Verne/San Dimas, Pomona and Hacienda Heights) planning areas are also affected.

MITIGATION MEASURES -

The plan includes a policy to manage development in hillside areas to reduce risks from erosion (among other) hazards (Policy 23 of the Conservation and Open Space Element). The Hillside Management/Performance Review Procedure (see Section 6.13) as applied to urban hillsides, would reduce the impact on urban expansion and infill development within areas having soil constraints. Performance review relates to the design of all excavation, roads, utilities, structures and other facilities to compensate for problem soils.

However, the soil constraints discussed above can, for the most part, be corrected, provided appropriate soils engineering technology is applied at the project level. A review of soil conditions and any measures necessary to correct soil problems are required by the County Engineer prior to the issuance of a grading or other discretionary permit.

The plan designates almost all of the new urbanized lands located in areas with soil constraints as low density residential or non-residential uses. Less than one percent of the lands designated as residential at higher than low densities are within the moderate or high constraint categories.

6.3 Flood/Runoff

EFFECT -

The removal of vegetation and coverage of land with impervious surfaces including roads and other urban uses as a result of the urban expansion process can increase natural runoff, exposing rural fringe areas, where drainage facilities have not been constructed (e.g., the Antelope and Santa Clarita Valleys and the Santa Monica Mountains) to additional flood hazard potential. Alteration of landforms, grading and trenching can alter natural drainage courses and cause flooding if compensatory measures, such as storm drains, are not provided.

In areas of sloping terrain where vegetation is removed, either through the grading process or as the result of a fire, increased erosion may also result due to both the increased water flow and the absence of stabilizing vegetation. The loss or removal of vegetation in areas of sloping terrain is also associated with mudflow hazard--especially on slopes of greater than 30 percent.

Increased runoff can cause damage to stream channels and downstream areas in mountainous areas where storm waters carry debris downstream. This process is usually controlled by debris basins at canyon mouths and stabilization structures further upstream. Construction or expansion of these basins, however, can result in impacts on scenic quality and habitat, depending on their location. In addition, traffic and noise effects are associated with trucking of the debris to debris disposal areas. However, environmental documentation is required prior to construction or expansion of such facilities.

In order to estimate the potential effect of flood and mudflow hazard related to the plan, areas were classified as High Mudflow (HM)—based on steeply sloping terrain with a high potential for mudflow; and

Flood Hazard (FH)—based on frequency and intensity of rainfall and the type of collection area or watershed. Such areas are located in foothills and near mouths of canyons, in rural communities and on the urban fringe.

Although potential urban expansion generally avoids flood and high mudflow hazard areas, eight percent of the total 55,800 acres (or 4,200 acres) are located within areas so designated. Of the 4,200 acres, 3,200 acres are located within the unincorporated area. Figure 6-5 provides estimates of urban expansion and infill acreages located in flood and mudflow hazard areas by planning area, for both the total county and unincorporated areas.

With reference to flood hazard, a total of 2,800 acres are potentially affected countywide. Two thousand six hundred (2,600) acres are located in the Antelope Valley in the vicinity of Palmdale and Lancaster (corresponding with the great outwash areas of the Amargosa and Little Rock Creeks). Two hundred (200) acres are affected in the Santa Clarita Valley, located in the Bouquet Canyon and Forrest Park areas. One thousand eight hundred (1,800) of the total 2,800 acres are located within the unincorporated area, primarily in the Antelope and Santa Clarita Valleys.

With regard to high mudflow hazard, 1,400 acres of urban expansion are potentially affected, including 1,000 acres in the Santa Clarita Valley, 200 acres in Malibu/Santa Monica Mountains and 200 acres in the Antelope Valley. The Santa Clarita Valley acreage is located primarily in the Pico Canyon area and the Malibu/Santa Monica Mountains acreage is located in the Calabasas and Agoura areas. Most of the 1,400 acres is within unincorporated areas.

FIGURE 6-5

ESTIMATE OF FLOOD AND MUDFLOW HAZARD ACREAGE WITHIN
URBAN EXPANSION AND INFILL AREAS FOR THE TOTAL COUNTY
AND UNINCORPORATED AREA, BY PLANNING AREA

Planning Area	Urban Expansion Areas				Infill Areas			
	Total County		Unincorporated Area		Total County		Unincorporated Area	
	Flood Hazard	High Mudflow	Flood Hazard	High Mudflow	Flood Hazard	High Mudflow	Flood Hazard	High Mudflow
San Fernando	-	-	-	-	-	200	-	-
Burbank/Glendale	-	-	-	-	-	-	-	-
West San Gabriel Valley	-	-	-	-	-	-	-	-
East San Gabriel Valley	-	*	-	-	-	-	-	-
Malibu/Santa Monica Mtns.	*	200	*	200	-	-	-	-
West	*	*	-	-	-	*	-	-
Central	-	-	-	-	-	-	-	-
East Central	-	-	-	-	-	100	-	-
Southeast	-	-	-	-	-	-	-	-
South	-	-	-	-	-	-	-	-
Southwest	-	-	-	-	-	-	-	-
Santa Clarita Valley	200	1,000	200	1,000	-	-	-	-
Antelope Valley	2,600**	200	600***	*	400	-	100	*
TOTAL	2,800	1,400	800	1,200	400	300	100	*

* Less than 100 acres.

** Does not include 4,700 acres in Palmdale Airport site.

*** Does not include 4,400 acres in Palmdale Airport site.

With regard to infill development, the plan includes 300 acres within the high mudflow hazard designation (see Figure 6-5), located in the San Fernando and East Central areas. Four hundred (400) acres of infill located primarily within the cities of Palmdale and Lancaster in the Antelope Valley are also within flood hazard areas.

MITIGATION MEASURES -

Conservation and Open Space Element policies which would mitigate the flood/mudflow hazards discussed above include the following:

- Restrict urban development in flood-prone areas, and thus avoid major new flood control works. Maintain natural watershed processes by regulating development in tributary watersheds. Minimize increased runoff, erosion and siltation of streambeds that would limit the uses of streams and water bodies for recreation and other beneficial water-related uses. (Policy 21)
- Encourage the multiple use of flood-prone areas for recreation, agriculture, ground water recharge and wildlife. (Policy 22)
- Manage development in hillside areas to minimize risks from fire, flood, mudslides, erosion and landslides and to protect their natural and scenic character. (Policy 23)

In addition, the Water and Waste Management Element recommends the following actions:

- Establish a flood control and water conservation district for the northern portion of the county not within the existing flood control district. (Action 16)
- Initiate flood plain management techniques whenever feasible, such as linear parks in lieu of channelization. (Action 29)
- Where feasible in hillside development, require that subdivision plans provide for the limitation of storm water runoff to the peak flow anticipated in the absence of development. (Action 28)

The General Goals and Policies Chapter also includes a policy to direct urban development and revitalization efforts to avoid flood prone areas. (Policy 9)

Flood plain management is proposed in order to reduce flood hazard within the county. The Conservation and Open Space Element policy map identifies "flood prone areas" where potential flood inundation and mudflow could occur during major storms. This designation generally includes all the major streams and rivers in the county remaining unchannelized. The county is in the process of mapping flood protection districts for all major flood prone areas. These maps will precisely delineate the existing watercourse and additional areas necessary to provide reasonable protection from flood and mudflow hazard. The Zoning Ordinance is to be amended to implement the intent of the special management "flood prone areas" (Action 21 of the Land Use Element). As provided in the General Conditions and Standards for Development listed in the Land Use Element, subsequent to establishment of a flood protection district by ordinance, no permanent structures shall be constructed, altered, modified or enlarged within the boundaries of the district, except: (a) those accessory structures that will not substantially impede the flow of water, and (b) flood control structures approved by the County Flood Control District.

Prior to the establishment of a flood protection district, any development proposed within a flood prone area is to be reviewed by county agencies who will define the area within which no permanent structures or improvements shall be permitted. Within other portions of the flood prone area, development proposals shall be reviewed for compliance with the following criteria:

1. The scale, design and intensity of proposed project will minimize exposure of current and future community residents to flood related property damage and loss;

2. The proposed project is consistent with density and use standards set forth in applicable countywide, areawide, or community land use plans, and is compatible with the character of surrounding development; and
3. The proposed project is situated and designed so as to avoid isolation from essential services and facilities in the event of flooding.

The plan's Hillside Management/Performance Review Procedure (see Section 6.13), as applied to urban hillsides, would reduce the impact on flood/mudflow hazards within urban expansion and infill areas. Performance review relates to the location of development at such distance from floodways so as not to interfere with natural drainage during severe storms, and so as not to become endangered by such runoff. A finding is required that the project will not create a significant threat to lives and property due to flood hazard or erosion.

Engineering criteria for development in hillside areas (as included in the hillside management provisions) include accounting for runoff and debris from tributary areas, computing runoff and debris amounts using Flood Control District criteria, designing lots and locating improvements so debris can be accommodated without damage to improvements and with access to street for cleanup, providing for passage of runoff and debris to a safe point of discharge without damage to improvements or slopes, and providing an adequate debris basin and open channel with access for maintenance where the runoff flow rates and debris quantities are too great to be accommodated.

Although the impact of flood/mudflow hazard on non-urban development is not discussed above (see explanation in Section 3.2), potential impacts would be limited by the Hillside Management/Performance Review Procedure as applied to non-urban hillsides, and by the conditions and standards for non-urban residential development at densities greater than one unit per five acres (see Section 6.13)

Individual projects will be evaluated with reference to flood and runoff problems through the environmental review procedure or other staff review of requirements for drainage facilities. The County Engineer's requirements with regard to storm drain improvements and erosion control must be satisfied. All developments within the flood fringe are subject to approval by the Flood Control District and County Engineer as applicable. Where channelization or debris basin projects are proposed, any effects on the natural environment (e.g., alteration of natural streambeds, loss of habitat, loss of scenic qualities) will be evaluated during the environmental review process.

An additional mitigation measure which could be implemented at the project level would be the use of clustered development in suitable areas, in that a greater percentage of the land including drainage courses could be left in a natural state and the extent of coverage by impervious surfaces reduced.

As is the case for most of the other "hazard" categories, the types of land use in flood or mudflow-prone areas is important. Of the urban expansion lands located within flood hazard areas, less than three (3) percent (200 acres) are designated for higher than low residential density (89 percent are to be in non-residential development); and within high mudflow hazard areas, 19 percent (300 acres) are designated for higher than low residential density. Thus, fewer numbers of persons would be exposed to any potential hazard (as compared to higher densities).

6.4 Fire

EFFECT -

The analysis of effects included both brush fire hazards and urban fire hazards. Brush fire hazards were quantified in terms of the location of new urbanized land and therefore the potential for property damage and/or injuries or loss of life in "wildland" areas or the urban fringe areas having a high fire hazard. Estimates of urban fire hazard were based on the extent of removal or rehabilitation of older, fire hazardous buildings on lands to be revitalized.

With reference to brush fires, Figure 6-6 provides estimates of such hazard in potential urban expansion and infill areas by planning area for both the total county and the unincorporated area. The categories identified include "high," (shown as "H" in Figure 6-6) with a condition of extreme fire hazard characterized by heavy vegetation, including timber or tall, dense chaparral, mostly steep slopes, and a high frequency of days of critical fire weather; and "moderate," (shown as "M" in Figure 6-6), consisting of areas where fire hazard potential is still high, but where vegetation is less dense and there are fewer critical fire weather days.

Although potential urban expansion generally avoids brush fire hazard areas, approximately six (6) percent of the total 55,800 acres (3,600 acres), are in areas so designated. All but 100 of the 3,600 acres are located within unincorporated areas, and all but 200 acres are within the "high" classification.

The acreage located within the Santa Clarita Valley (2,600 acres) is located in Newhall, Castaic, Pico, Valencia, Bouquet Canyon, Forrest Park, Pinetree, Canyon Country and Mint Canyon. The Malibu/Santa Monica Mountain acreage is in the Calabasas Park area and in the Brents

FIGURE 6-6

ESTIMATE OF FIRE HAZARD ACREAGE WITHIN URBAN
EXPANSION AND INFILL AREAS FOR THE TOTAL COUNTY AND
UNINCORPORATED AREA, BY PLANNING AREA

Planning Area	Urban Expansion Areas				Infill Areas			
	Total County		Unincorporated Area		Total County		Unincorporated Area	
	M*	H*	M	H	M	H	M	H
San Fernando	**	100	*	*	-	100	-	-
Burbank/Glendale	-	-	-	-	-	100	-	-
West San Gabriel Valley	-	-	-	-	-	-	-	-
East San Gabriel Valley	*	500	*	500	-	**	-	**
Malibu/Santa Monica Mtns.	200	200	200	200	**	-	**	-
West	-	-	-	-	-	**	-	-
Central	-	-	-	-	-	-	-	-
East Central	-	-	-	-	-	-	-	-
Southeast	-	-	-	-	-	-	-	-
South	-	-	-	-	-	-	-	-
Southwest	-	-	-	-	-	-	-	-
Santa Clarita Valley	-	2,600	-	2,600	-	-	-	-
Antelope Valley	-	-	-	-	-	-	-	-
TOTAL	200	3,400	200	3,300	**	200	**	**

* M represents moderate brush fire hazard; H represents high brush fire hazard.

** Less than 100 acres.

Junction area westerly to Westlake Village. The East San Gabriel Valley acreage is within Diamond Bar and Glendora. Finally, the San Fernando Valley acreage is within Porter Ranch and Lakeside Park.

With regard to infill development, the plan shows 200 acres subject to high brush fire hazard in the San Fernando (i.e., Encino) and Burbank/Glendale (i.e., Sunland, Lakeview Terrace) areas (see Figure 6-6).

The plan's non-urban development within rural hillsides would also be subject to brush fire hazard. Although it is not known how many of the projected 15,000 net additional units in non-urban areas will be located within hillsides, it can be assumed that such units may be subject to brush fire hazard, since such fires generally occur in rural hilly areas.

In terms of urban fire hazard (existing urban development--see Section 5.4), the plan's encouragement of revitalization efforts represents potentially beneficial effects. The projected 33,100 acres of land clearance and 424,000 rehabilitated dwelling units provide an indication of the reduction of potential urban fire hazard. The plan would result in a positive impact to the extent that older buildings with fire hazards such as substandard electrical wiring, open stairwells or faulty heating systems, are rehabilitated or replaced with safer structures.

MITIGATION MEASURES -

The general plan's Conservation and Open Space Element includes a policy to discourage isolated development in wildland fire hazard areas (Policy 24), and a recommended action (#14) to modify the Los Angeles County Fire Code to ban wood roofs and provide greater brush clearance protection in designated high fire hazard areas. In addition, the General Goals and Policies Chapter includes a policy to direct urban development and revitalization efforts to avoid fire hazard areas (Policy 9).

The plan's Hillside Management/Performance Review Procedure will help to mitigate the effect on fire hazard. As explained in Section 6.13, this process requires the review and approval of residential projects in hillside areas, where brush fire hazards are located. The review procedure relates to the provision of adequate fire protection capabilities based on fuel load, topography, weather conditions, access, exposure/occupancy, and water supply. For development occurring on brush-covered slopes, a pre-fire suppression plan is to be submitted for review to the County Forester and Fire Warden. In addition, the hillside review procedure provides that all development proposals should include the following: (a) the use of fire retardant construction materials, especially avoiding wood shake roofs and siding; (b) brush clearance measures within 100 feet surrounding individual structures; (c) irrigated planting areas surrounding residential structures with provisions for maintenance; (d) a development pattern which provides a defensible fire perimeter (fuel breaks, concentrated pattern, or other measures); (e) provision of adequate identification of dwelling units by prominent signs indicating street names and house numbers; and (f) location of entrances to structures within a distance of street access acceptable to the Fire Department.

Based upon the requirements of fire protection agencies such as the County Forester and Fire Warden as to access, type of building materials, brush clearance, fire flow, etc., development in brush fire hazard areas can largely be mitigated at the project level.

While brush clearance will mitigate the fire hazard, to the extent that brush is removed over wide areas, the secondary effects must also be taken into consideration—the potential loss of scenic qualities and habitat.

6.5 Noise

EFFECT -

This discussion includes an explanation of the general effects of noise, as well as an indication of the noise effects related to the general plan policies, recommended actions and projections.

General Effects - While the effects of noise on man are many, they can be placed in four main categories: physiological (physical effect); psychological (emotional effect); sociological (group effect); and economic (cost effect).

1. Physiological

Exposure to sufficient levels of noise for a long period of time can provide temporary or permanent loss of hearing. The greater or longer the exposure, the greater the potential for hearing loss. Other physical effects of noise may be rapid heart beat, blood vessel constriction, dilation of the pupils, paling of the skin, headaches, muscle tension, nausea, insomnia, and fatigue. If the noise is of sufficient level, the stomach, esophagus, and intestines may be seized by spasms.

2. Psychological

Noise can interfere with sleep. Excessive exposure to noise may also cause symptoms of anxiety, anger, vertigo, hallucinations and, in extreme cases, has even been blamed for homicidal and suicidal tendencies. It has not been scientifically proven, however, that noise is the primary cause of these symptoms.

3. Sociological

There are two alternative means of handling noise intrusions--eliminate the problem by shielding, escaping, or removing the

noise sources; or, adapt to the new environment. Adaptations to noise intrusions may adversely affect group interrelationships. The intrusion of noise can affect every facet of human existence, from one's family life to one's occupational, educational, recreational and religious activities. The possible adverse effects of man's individual reactions to noise--his physical and emotional maladies--may be compounded in the group situation. More importantly though, noise may threaten the ability to communicate and to comprehend. For example, children who live or attend school near sources of excessive noise can be handicapped, not only in their learning process, but also in their socialization process.

4. Economic

The costs of noise are appreciable and include medical care, loss of efficiency and production, reduction of property value, aviation easements, litigation, abatement measures, and increased vacancies. For example, in order to achieve acceptable interior noise levels in an area experiencing a high frequency and magnitude of aircraft noise, it cost \$12,550 to \$14,450 in 1969 for a 1,530 square foot stucco house. It would cost approximately 500 million dollars nationally to achieve the noise levels proposed by the Federal Aviation Administration for the present commercial aircraft fleet. An eight-foot wall or earth berm adjacent to a freeway costs approximately \$700,000 per mile.

In addition, the costs of increased litigation, sound insulation, acquisition of land and construction for noise mitigation of transportation facilities and vehicles contribute to higher prices for goods and services as well as higher taxation to cover these costs.

The real economic impact of noise is found by measuring the difference between social cost and private cost, with social cost defined as the cost to the suffering or impacted party (society) to eliminate or mitigate the noise impact. Private cost is simply the cost to the producer of reducing noise emissions to acceptable levels. In the majority of community noise cases, excessive noise levels have much more of an economic cost to society than to the party (industry) generating the noise.

Effects Related to the Plan - Quantification of the noise impacts associated with the plan's policies, actions and projections is not practical given the level of specificity of the plan and a lack of specific information at the project level. Greater noise levels are associated with the plan's urban development, especially given its emphasis on a concentrated pattern of development and centers as well as its increased densities. Major transportation noise sources include the construction of the Century Freeway, as well as missing segments of other freeways. The plan's Economic Development Element policy promoting a more intensive use of industrial sites (Policy 10) would also indirectly result in higher noise levels.

An additional major potential noise source is the proposed Palmdale Airport, to be located adjacent to the City of Palmdale in the Antelope Valley. As is indicated in the Final Environmental Impact Statement prepared for the Department of Airports by Arthur D. Little, the airport would result in noise impacts as follows: (1) no residential population within a 65 CNEL contour, and (2) 680 persons within a 60 CNEL contour. Airport operation in 1995 would result in no incompatible land use within the 65 CNEL noise boundary established by the State (Public Utilities

Code, Article 3, Chapter 1, Section 5000). However, according to the proposed Antelope Valley Areawide Plan, the area exceeding 60 CNEL is a "Noise Impact Management Area," which requires multiple residential structures to have an acoustical analysis and improvements so that a 45 CNEL is not exceeded in any habitable area (State Minimum Requirement). A complete summary of the effects of the proposed airport is included in the above referenced document.

Another potential noise source is the projected increase in annual passenger trips at LAX to 40 million annual passengers (MAP) in 1990. However, as indicated in Volume II of the Draft Environmental Impact Report for Los Angeles International Airport, prepared by Olson Laboratories, Inc. for the Los Angeles Department of Airports, noise levels are expected to decrease rather than increase. By 1980, only those aircraft meeting the requirements of Federal Aviation Regulation Part 36 will be permitted to operate at LAX. The reduction in noise volume is to continue through the year 1985 and remain the same thereafter even though passenger volume is to increase to 40 MAP in 1990.

MITIGATION MEASURES -

Plan policies and recommended actions which would tend to mitigate increased noise levels include:

Transportation Element

- Stress environmental compatibility and improvement, including air quality, noise, ecology and aesthetics in developing transportation systems. (Policy 21)

- Support technical research and development by automobile manufacturers directed toward reducing emissions, fuel consumption and noise. (Policy 24)
- Improve the compatibility between aviation facilities and their surroundings through improved land use control mechanisms and technological improvements. (Policy 33)
- Develop public information and education programs on transportation-related ways that people can use to make air quality, noise and energy improvements through individual effort. (Action 36)
- Support noise mitigation measures identified in the Noise Element such as encouraging use of noise abatement measures adjacent to airports, freeways and rail lines. (Action 37)
- Develop airport land use compatibility standards and administrative procedures and coordinate with the cities to assure conformance. (Action 63)

Land Use Element

- Protect the character of residential neighborhoods by preventing the intrusion of incompatible uses that would cause environmental degradation such as excessive noise, noxious fumes, glare, shadowing, and traffic. (Policy 8)
- Prepare a joint revitalization plan and program for portions of Lennox and the City of Inglewood in cooperation with the Cities of Inglewood and Los Angeles. This program will be closely coordinated with the Los Angeles Department of Airports giving special attention to developing compatible land uses within the airport noise impact area (Action 6).

Housing Element

- Prevent or minimize environmental hazards, such as noise, noxious fumes, and heavy traffic, in residential neighborhoods. (Policy 12)

In addition, the plan's adopted Noise Element includes many policies and an action program oriented toward reducing noise levels. These policies and programs relate to reducing transportation noise levels, establishing compatible land use adjacent to transportation facilities, allocating noise mitigation costs among those who produce the noise, protecting areas that are presently quiet from future noise impacts, and informing the public regarding noise effects.

The Los Angeles County Community Noise and Vibration Control Ordinance offers attenuation measures for a variety of noise sources and receptors. Coupled with design criteria and development standards for those areas and structures highly susceptible to unusual noise levels, the Noise Control Ordinance of Los Angeles County protects the public health, welfare and safety.

The State of California plays an active role in community noise control through various regulatory/legislative measures. These regulations may be found in the Health and Safety, Government, Administrative, Streets and Highways, Public Utility, Motor Vehicle, Harbors and Navigation and Labor Codes. Also, the Federal Occupational Safety and Health Act, as well as the California Occupational Safety and Health Act, protect industrial and construction workers against the detrimental effects of noise.

With regard to aircraft noise control, the Federal Aviation Agency, through Federal Aviation Regulation Part 36, requires that existing noisier aircraft be phased out. New aircraft are required to meet specified noise emission standards. Government sponsored and private

industry programs are underway to reduce the noise generated by the older jet airplanes. The FAA also issues Advisory Circulars dealing with noise abatement to airports. In addition, the California Division of Aeronautics provides noise standards for existing and future airports. The California Housing and Community Development Law (Title 25) and the County Building Code require that the interior CNEL for multiple residential structures not exceed an annual CNEL of 45 dB in any habitable room. Noise impacts on surrounding land uses could also be minimized through land use control strategies such as zoning and building code regulations, acquisition of vacant land and redevelopment of incompatible land. The use of noise abatement takeoffs or landings and/or curfew of operations can also reduce noise impacts.

Finally, the environmental review procedure at the private project level for any projects requiring discretionary county approval provides an opportunity to review and mitigate any noise impacts associated with new development.

6.6. Air Quality

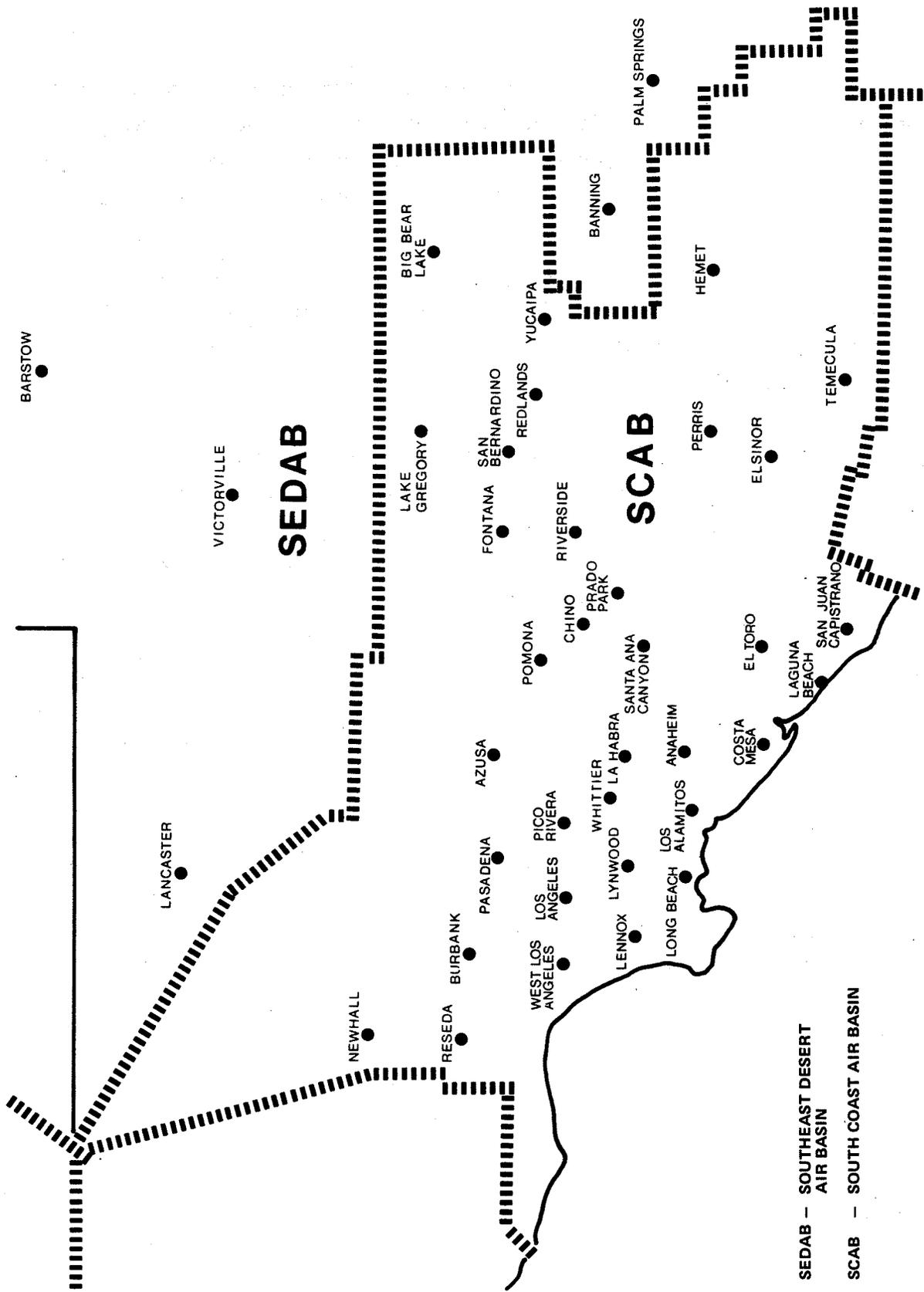
EFFECT -

In evaluating the effect on and mitigation measures for air quality, it is necessary to review programs at several governmental levels -- the federal/state, regional (the South Coast Air Quality Management District - SCAQMD and Southern California Association of Governments - SCAG), and countywide. This is important since air quality problems extend beyond local jurisdictional boundaries and involve multiple governmental agencies, which either establish standards and/or provide implementation mechanisms. Therefore, the analysis and references presented at the airshed basin scale are most important.

As stated previously, Los Angeles County encompasses portions of two air basins (see Map 6-1) -- the South Coast Air Basin (SCAB) and the Southeast Desert Air Basin (SEDAB). The SCAQMD is the agency responsible for controlling air pollutants in the SCAB which includes the coastal lowlands portion of the county containing much of the region's urban development. Air quality control services are provided under contract by SCAQMD for that portion of the county in the SEDAB.

I. Federal/State

Both the federal government and the State of California have established air quality standards for various air contaminants. National standards are separated into two categories - primary and secondary standards. Primary air quality standards are those considered necessary to protect the public health, while secondary air quality standards are necessary to protect the welfare and the environment from known or anticipated adverse effects of a pollutant. Primary and secondary standards have been delineated for photochemical oxidants (mainly ozone), carbon monoxide, nitrogen dioxide, sulfur dioxide, non-methane



MAP 6-1
AIR BASINS

(or reactive) hydrocarbons and particulate matter; however, no national standards exist for visibility nor for lead in particulate matter. National standards are expressed in terms of concentrations and durations, but in almost all cases these differ from the State of California air quality standards. California has set standards for visibility in addition to seven classifications of air contaminants - photochemical oxidants (primarily ozone), carbon monoxide, nitrogen dioxide, sulfur dioxide, hydrogen sulfide, total particulate matter and lead in the airborne particulate matter.

While there is a difference between the standards established by the federal government and the state, an allowance within the federal directive permits states to establish stricter air quality standards. It should further be noted that the Environmental Protection Agency (EPA) is responsible for prescribing the national standards, while the State of California Air Resources Board (ARB) has responsibility for state health standards. Figure 6-7 shows national and state air quality standards. EPA has recently proposed changes to federal standards. These changes are not shown since the new standards have not been received.

Federal standards are based on the Clean Air Act. Passage of this act in 1970 required the establishment of national ambient air quality standards and required each state to develop implementation plans to attain and maintain these standards. In 1977 the act was amended to set 1982 as the compliance deadline, with possible extensions to 1987 for two automobile related pollutants -- oxidant and carbon monoxide. If states do not submit plans for meeting federal standards or demonstrate reasonable progress towards submitting such plans, federal sanctions can be applied. These sanctions include withholding certain federal funds.

**FIGURE 6-7
 AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary	Secondary
Oxidant (Ozone)	1 Hour	0.10 ppm	0.08 ppm	Same as Primary
Carbon Monoxide	12 Hours 8 Hours 1 Hour	10 ppm — 40 ppm	— 9 ppm 35 ppm	Same as Primary
Nitrogen Dioxide	Annual Average 1 Hour	— 0.25 ppm	0.05 ppm —	Same as Primary
Sulfur Dioxide	Annual Average 24 Hours 3 Hours 1 Hour	— 0.04 ppm — 0.05 ppm	0.03 ppm 0.14 ppm — —	— — 0.5 ppm —
Suspended Particulate Matter	Annual Geometric Mean 24 Hours	60 $\mu\text{g}/\text{m}^3$ 100 $\mu\text{g}/\text{m}^3$	75 $\mu\text{g}/\text{m}^3$ 260 $\mu\text{g}/\text{m}^3$	60 $\mu\text{g}/\text{m}^3$ 150 $\mu\text{g}/\text{m}^3$
Lead (Particulate)	30-Day Average	1.5 $\mu\text{g}/\text{m}^3$	—	—
Hydrogen Sulfide	1 Hour	0.03 ppm	—	—
Hydrocarbons (Corrected for Methane)	3 Hours (6-9 a.m.)	—	0.24 ppm	Same as Primary
Visibility Reducing Particles	1 Observation	Visibility to less than 10 miles when the relative humidity is less than 70%.	—	—

In 1976, the California legislature enacted the Lewis Air Quality Management Act which required the SCAQMD, in conjunction with the counties and cities within the District, SCAG, ARB, and the California Department of Transportation to develop a plan to achieve and maintain state ambient air quality standards in the basin.

To achieve both federal and state mandates, the Air Quality Management (Maintenance) Plan (AQMP) came into existence. In 1975 ARB established various Air Quality Maintenance Areas throughout the state. Los Angeles County was included in the South Coast/Southeast Desert Air Quality Maintenance Area. Aiding in the ARB effort to set up a workable AQMP was the Policy Task Force composed of representatives from a wide variety of groups — local governments and governmental associations, private industry and commercial interests, environmental groups, labor interests and the low income and elderly segments of the population.

As guidance for projecting and evaluating alternate strategies and tactics, it was first necessary for those involved to evaluate a baseline set of emission characteristics — emissions for the year 1974 were selected. SCAG provided planning information (primarily in the form of population and employment projections and distributions through the horizon year of 1995) which was used to generate a preliminary emissions inventory and air quality forecast from 1974-1995. The results of the study were included in the report Preliminary Emissions Inventory and Air Quality Forecast, 1974-1995 South Coast-Southeast Desert Air Quality Maintenance Areas, Final Report of the Boundaries and Forecasting Committee to the Air Quality Maintenance Planning Policy Task Force, May 10, 1976. The SCAG data projected a 7.9 million population for 1995 as opposed to the Department of Regional Planning's current projection of 7.8 million for the horizon year 2000.

In 1977 the AQMP effort and responsibility was assumed by the SCAQMD. This change, as stated previously, was the result of state legislation.

II. South Coast Air Quality Management District

In February, 1977, the SCAQMD was created by the State of California. The District is responsible for air quality management in the SCAB which includes parts of Los Angeles, Riverside, and San Bernardino counties, and all of Orange County. In addition to creating the SCAQMD, Chapter 5.5, Article 4, Section 40460 of the State Health and Safety Code states that as part of their responsibilities SCAQMD will prepare the AQMP for this region and will be assisted by SCAG.

In order to monitor air quality and, secondarily, to prepare tactics for correcting the air pollution problem within Los Angeles County, the SCAQMD maintains thirteen operative air monitoring stations (see Map 6-2) - Central, East San Gabriel Valley, East San Fernando Valley, Northwest Coastal, South Coastal, West San Fernando Valley, Pomona-Walnut Valley, Southwest Coastal, Southeast, Upper Santa Clara River Valley, Antelope Valley, West San Gabriel Valley, and South Central. These monitoring stations provide information on ozone, carbon monoxide, nitrogen oxides, sulfur dioxides, hydrocarbons, soiling index (light reflecting properties of particulates) and total suspended particulates.

The SCAQMD has developed data on emissions and air quality for these various monitoring stations. Figures 6-8 and 6-9 show a summary of Air Quality Standards, indicating the number of days federal and state standards were exceeded.

MAP 6-2
 SOUTHERN CALIFORNIA AIR POLLUTION CONTROL DISTRICT
 LOS ANGELES COUNTY ZONE
 AIR MONITORING NETWORK

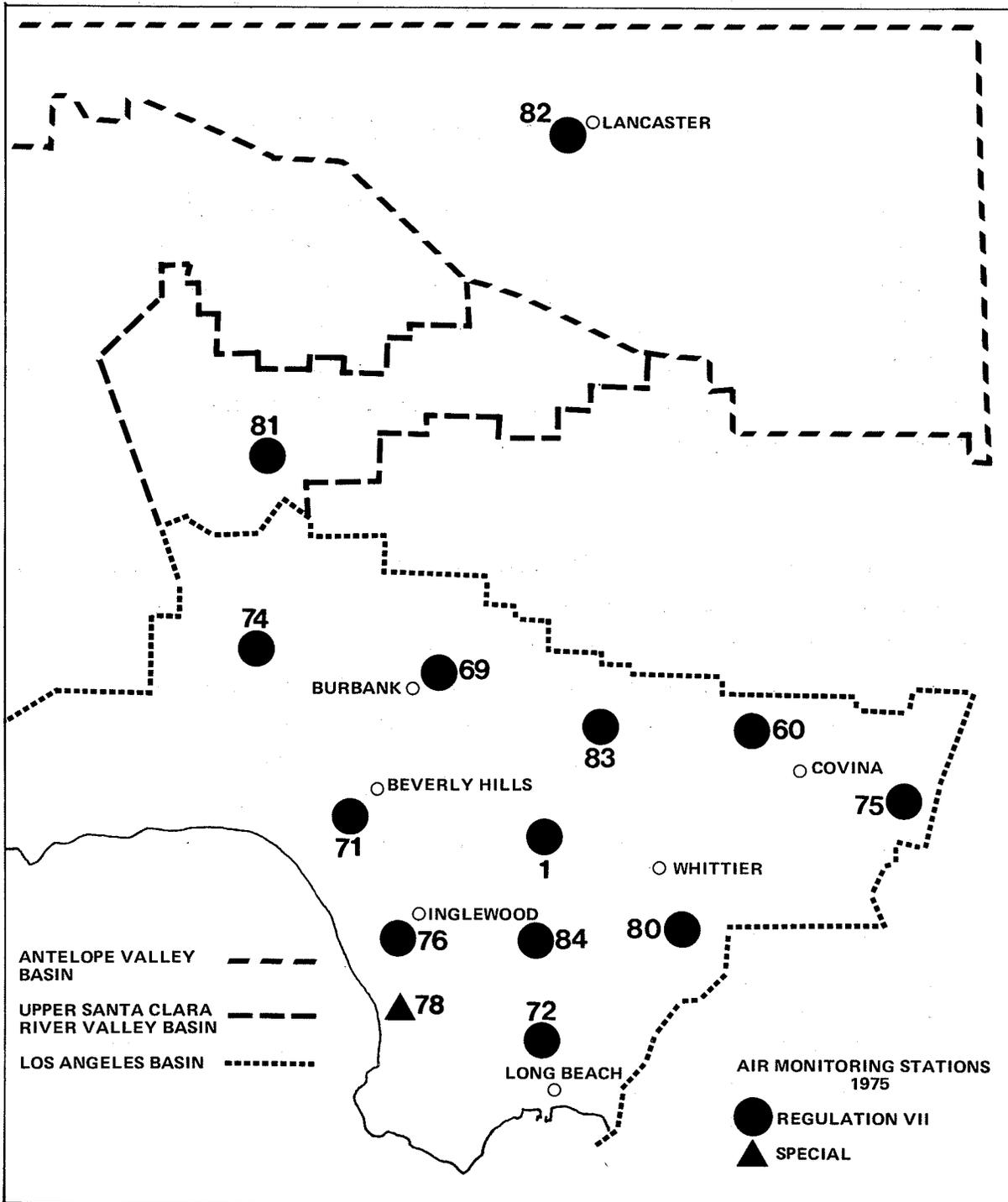


FIGURE 6-8

SUMMARY OF AIR QUALITY STANDARDS AND DATA FOR 1975
Number of Days National Primary Standards are Exceeded Using Longest Time Period

Air Pollutant Area	Oxidant (Ozone)	Carbon Monoxide	Sulfur Dioxide	Non-Methane Hydrocarbons	Particulate Matter
Central	157	77	0	271	7
North West Coastal	65	42	0	138	0
East San Fernando Valley	158	125	0	274	ND
South Coastal	9	57	0	ND	ND
South West Coastal	15	96	0	124	0
South East	87	43	0	272	ND
West San Fernando Valley	182	63	0	164	0
West San Gabriel Valley	183	84	0	251	0
East San Gabriel Valley	181	17	0	144	0
Pomona-Walnut Valley	167	6	0	191	ND
South Central	34	116	0	ND	0
Upper Santa Clarita River Valley	160	1	0	338	ND
Antelope Valley	80	1	ND	175	0

FIGURE 6-9

SUMMARY OF AIR QUALITY STANDARDS AND DATA FOR 1975
Number of Days State Standards are Exceeded Using Longest Time Period

Air Pollutant Area	Photo-chemical Oxidant	Carbon Monoxide	Nitrogen Dioxide	Sulfur Dioxide	Suspended Particulate Matter	Sulfate	Hydrogen Sulfide	Visibility Reducing Particles
Central	129	55	30	19	215	30	0	185
North West Coastal	44	26	36	1	99	12	ND	ND
East San Fernando Valley	143	97	24	1	NA	ND	ND	225
South Coastal	4	34	26	22	ND	ND	0	234
South West Coastal	10	72	10	9	150	37	0	197
South East	76	25	25	35	ND	ND	ND	ND
West San Fernando Valley	171	42	17	0	186	13	ND	ND
West San Gabriel Valley	171	46	35	0	215	24	ND	ND
East San Gabriel Valley	168	3	9	1	256	12	ND	ND
Pomona-Walnut	155	0	14	0	ND	ND	ND	268
South Central	23	93	12	5	161	12	ND	ND
Upper Santa Clarita River Valley	150	0	0	0	ND	ND	ND	ND
Antelope Valley	50	0	0	ND	164	0	ND	24

NA – Not Applicable
 ND – No Data

The data developed during the AQMP process is contained in a report entitled Final Draft Addendum - Air Quality Management Plan, adopted January 26, 1979. In 1975-76 total emissions for the air basin was 11,851 tons per day, while total emissions in the county was 8,317 tons per day. These emission figures do not include natural sources. Figures 6-10 and 6-11 show these emissions by major source category for SCAB and the county.

Once the baseline inventory was completed, growth assumptions for population, housing, employment and land use were made and projected. Emissions were projected to 1982 and 1987 using the growth assumptions. These emissions included reductions resulting from source control rules implemented in 1976 for mobile sources and in July 1978 for stationary sources. By 1982 total emissions for SCAB will be reduced to 7,773 tons per day and by 1987 to 6,763 tons per day (see Figures 6-12 and 6-13).

The Final Draft Addendum - AQMP contains approximately 75 recommended tactics for reducing air pollution, primarily through source controls. Implementation of these recommended tactics will provide for the achievement of federal air standards for all pollutants by 1987. Even without the imposition of new controls, there would be a net reduction in air emissions.

FIGURE 6-10
BASE YEAR EMISSIONS - 1975-76
BY MAJOR SOURCE CATEGORY (TONS/DAY)
AVERAGE SUMMER WEEKDAY
SOUTH COAST AIR BASIN

SOURCE	THC		RHC		CO		NO _x		SO _x		PART	
	TONS/ DAY	% OF MAN-MADE TOTAL	TONS/ DAY	% OF MAN-MADE TOTAL	TONS/ DAY	% OF TOTAL	TONS/ DAY	% OF TOTAL	TONS/ DAY	% OF TOTAL	TONS/ DAY	% OF TOTAL
Stationary (Area + Point)	676	38.9	510	34.5	215	2.6	464	36.2	313	81.9	150	56.2
On-Road Mobile	969	55.8	884	59.8	7699	91.2	694	54.1	37	9.7	94	35.2
Off-Road Mobile	92	5.3	84	5.7	527	6.2	125	9.7	32	8.4	23	8.6
Subtotal (Man-Made)	1737	100.0	1478	100.0	8441	100.0	1283	100.0	382	100.0	267	100.0
Natural Sources*	1132	39.5	215	12.7								
T O T A L	2869	100.0	1693	100.0	8441	100.0	1283	100.0	382	100.0	267	100.0

* Includes vegetative, landfills and animal waste.

FIGURE 6-11

1975-76 EMISSIONS — MAJOR SOURCES FOR LOS ANGELES COUNTY

AVERAGE SUMMER WEEKDAY

THC

Stationary Man-made	520.3
Natural	699.3
On-Road Mobile	686.9
Off-Road Vehicles	65.1

TOTAL 1971.6

RHC

Stationary Man-made	393.1
Natural	91.2
On-Road Mobile	526.7
Off-Road Vehicles	59.6

TOTAL 1170.6

CO

Stationary	18.9
On-Road Mobile	5462.2
Off-Road Vehicles	373.1

TOTAL 5854.2

NO_x

Stationary	374.8
On-Road Mobile	482.2
Off-Road Vehicles	86.4

TOTAL 943.4

SO_x

Stationary	234.2
On-Road Mobile	26.0
Off-Road Vehicles	22.8

TOTAL 283.0

TSP

Stationary	75.5
On-Road Mobile	65.5
Off-Road Vehicles	16.2

TOTAL 157.2

FIGURE 6-12
PROJECTED EMISSIONS* - 1982
BY MAJOR SOURCE CATEGORY (TONS/DAY)
AVERAGE SUMMER WEEKDAY
SOUTH COAST AIR BASIN

SOURCE	THC		RHC		CO		NO _x		SO _x **		PART	
	TONS/ DAY	% OF MAN-MADE	TONS/ DAY	% OF MAN-MADE	TONS/ DAY	% OF TOTAL	TONS/ DAY	% OF TOTAL	TONS/ DAY	% OF TOTAL	TONS/ DAY	% OF TOTAL
Stationary (Area + Point)	531	44.8	361	37.9	236	4.7	490	43.2	296	81.0	173	65.3
On-Road Mobile	544	45.9	490	51.5	4192	82.9	503	44.4	33	9.2	65	24.3
Off-Road Mobile	110	9.3	101	10.6	629	12.4	140	12.4	36	9.8	28	10.4
Subtotal (Man-Made)	1185	100.0	952	100.0	5057	100.0	1133	100.0	365	100.0	266	100.0
Natural Sources**	1132	48.9	215	18.4								
T O T A L	2317	100.0	1167	100.0	5057	100.0	1133	100.0	365	100.0	266	100.0

* Assumes currently mandated rules and regulations.

** Includes vegetative, landfills and animal waste.

*** These projections assume the non-availability of significant amounts of natural gas for use in power plants. A more generous assumption on natural gas availability was used in the District's Sulfur Dioxide/Sulfate Control Study; this would result in lower projections of sulfur dioxide emissions.

FIGURE 6-13
PROJECTED EMISSIONS* - 1987
BY MAJOR SOURCE CATEGORY (TONS/DAY)
AVERAGE SUMMER WEEKDAY
SOUTH COAST AIR BASIN

SOURCE	THC		RHC		CO		NO _x		SO _x ***		PART	
	TONS/ DAY	% OF MAN-MADE TOTAL	TONS/ DAY	% OF MAN-MADE TOTAL	TONS/ DAY	% OF TOTAL	TONS/ DAY	% OF TOTAL	TONS/ DAY	% OF TOTAL	TONS/ DAY	% OF TOTAL
Stationary (Area + Point)	531	51.0	360	44.2	252	6.1	543	46.8	316	79.0	184	64.6
On-Road Mobile	399	38.3	354	43.4	3176	77.5	474	40.8	46	11.5	70	24.6
Off-Road Mobile	111	10.7	101	12.4	674	16.4	144	12.4	38	9.5	31	10.8
Subtotal (Man-Made)	1041	100.0	815	100.0	4102	100.0	1161	100.0	400	100.0	285	100.0
Natural Sources**	1132	52.1	215	20.9								
TOTAL	2173	100.0	1030	100.0	4102	100.0	1161	100.0	400	100.0	285	100.0

* Assumes currently mandated rules and regulations.

** Includes vegetative, landfills and animal waste.

*** These projections assume the non-availability of significant amounts of natural gas for use in power plants. A more generous assumption on natural gas availability was used in the District's Sulfur Dioxide/Sulfate Control Study; this would result in lower projections of sulfur dioxide emissions.

III. Countywide

In order to provide a countywide analysis of the potential impacts of the Proposed General Plan, the Department of Regional Planning staff, in cooperation with SCAG and SCAQMD, developed a methodology in 1977 for the analysis of mobile and stationary source emissions. The data provided is not at the same level of detail as that provided by the AQMP effort; however, for planning purposes it is considered acceptable and provides decision makers with a perspective on the potential impacts. This data is presented by planning areas so as to be in conformity with material presented in other portions of this report.

The methodology used reflects the best available data and technology available to the county staff. For planning purposes it provides a comparison of emissions between 1974 and 2000 and allows an evaluation of the anticipated trends. It should be noted that the process used in the analysis does not convert the emission data to air quality data. Further, the process did not consider pollutant transport from one area to another.

Stationary--

First, data representing air quality emissions for 1974 was generated using SCAQMD material. The SCAQMD data contained type and amount of emissions generated at a particular facility for each piece of equipment. This data was matched with type of employment so that the baseline emission data could be categorized by Standard Industrial Classification (SIC). Some limitations to this baseline data were matching SICs from various sources--the Industrial Commercial Employment file, the Dunn and Bradstreet file, and the SCAQMD Emissions Inventory Subsystem - Permit and Registration file. The emissions by SIC could be compared to the number of jobs within the SIC during the same year. Then, employment projections (job growth) by SIC for the general plan

horizon year 2000 were developed based on the baseline employment figures. Finally, for certain industrial uses, employment growth factors were developed. Future emissions were estimated by multiplying the baseline emission data by the SIC growth factor. For example, if the number of jobs for a particular industrial use were expected to double by the year 2000, then the emissions for that industrial use were also assumed to double. Emissions not based on SICs were projected by using a population growth factor or dwelling units growth factor. No increases in emission from power generating facilities or petroleum refining facilities were projected because of the recently enacted New Source Review Rules and known plans. Also, no consideration was given to the expansion of existing power generating or petroleum refining facilities. This possible increase, particularly in power generating facilities is not considered significant. Current plans of the major electrical producers are to build new facilities outside of the air basin to replace some of the older facilities in the basin. Even without the increase in power generating and refining facilities, the projections may be over-estimates since they do not consider new technological development or the New Source Review Rules adopted by AQMD. These new rules are being used to decrease emissions through the use of "tradeoffs." For example, if the SOHIO project proceeds there could be a net decrease in emissions since the "tradeoff" may be a requirement to assist Southern California Edison Company in reducing pollutants at their Long Beach facility. Figure 6-14 indicates stationary source emissions for 1974 compared with projections for the year 2000.

Since development of this data, definitions for total hydrocarbons and reactive hydrocarbons have been changed and they are now called total organic gases and non-methane organic gases. The information represented in this report is actually indicative of total organic gases and non-methane organic gases. Non-methane organic gases comprises approximately 95 percent of total organic gases.

FIGURE 6-14
STATIONARY SOURCES EMISSION

Planning Areas	Pollutant Category (Total Tons Per Day)												
	Nitrogen Oxides		Carbon Monoxide		Total Hydrocarbons		Reactive Hydrocarbons		Sulfur Oxides		Particulates		
	1974	2,000	1974	2,000	1974	2,000	1974	2,000	1974	2,000	1974	2,000	
San Fernando	1.0	0.9	*	*	9.5	12.0	9.0	11.4	0.1	0.1	0.1	0.6	0.8
Burbank-Glendale	45.0	45.8	0.2	0.2	11.1	13.3	10.5	12.6	9.3	9.3	6.1	6.1	6.6
West San Gabriel Valley	9.7	10.2	1.4	1.9	10.6	14.0	10.1	13.3	3.5	3.5	1.6	1.6	1.7
East San Gabriel Valley	0.8	1.0	0.2	0.2	11.4	18.1	10.8	17.2	0.1	0.1	1.1	1.1	1.4
Malibu-Santa Monica Mtns.	*	*	*	*	0.1	0.2	0.1	0.2	*	*	*	*	*
West	1.3	1.3	*	*	8.5	9.4	8.1	9.0	*	*	0.2	0.2	0.2
Central	3.5	3.7	0.3	0.3	20.2	22.5	19.2	21.4	0.8	0.7	1.5	1.5	1.3
East Central	6.8	7.3	0.4	0.4	54.3	64.5	51.6	61.2	2.8	3.0	5.7	5.7	6.2
Southeast	6.5	6.6	0.6	0.6	29.0	33.2	27.5	31.6	13.4	14.2	2.2	2.2	2.3
South	75.5	73.2	3.6	3.4	95.9	91.6	91.1	87.0	124.5	92.2	13.6	13.6	13.4
Southwest	85.3	85.5	4.4	4.0	38.4	40.6	36.5	38.6	48.4	45.7	18.0	18.0	19.0
Santa Clarita Valley) Antelope Valley)	0.9	2.2	0.2	0.2	2.0	3.0	1.9	2.9	0.2	0.3	0.4	0.4	1.0
Channel Islands	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	236.3	237.7	11.3	11.2	291.0	322.4	276.4	306.4	203.1	169.1	51.0	51.0	53.9

* Less than 0.1 ton/day.

Mobile--

Two similar procedures were used for estimating mobile emissions. One procedure utilized the County Road Department while the other was the Los Angeles Regional Transportation Study (LARTS) group within the California Department of Transportation. The basic difference is that one (LARTS) is more detailed than the other and can provide output at the Regional Statistical Area level. In comparing the total Road Department and LARTS results, it was found that the two are within one to two percent of each other--LARTS projecting a larger decrease in emissions. Road Department data was also used in comparing the four plan alternatives (see Section 10.6). Both procedures required data on population, total occupied dwelling units, and employment (retail/non-retail).

Projections prepared by the County Road Department, as well as information for the 1975 base year, are found in Figure 6-15. These calculations are based on 0 percent transit diversion. As a result these emissions can be expected to be reduced further with the transit diversion represented in the general plan. This assumption has been substantiated by the preliminary LARTS data.

FIGURE 6-15

MOBILE SOURCE EMISSIONS*

Planning Areas	Pollutant Category (Total Tons/Day)					
	Nitrogen		Carbon		Total	
	Oxides		Monoxide		Hydrocarbons	
	1975	2,000	1975	2,000	1975	2,000
San Fernando	56	32	481	103	81	17
Burbank-Glendale	39	20	335	63	57	11
West San Gabriel Valley	52	26	442	84	75	14
East San Gabriel Valley	44	27	374	86	63	15
Malibu-Santa Monica Mtns.	8	7	71	22	12	4
West	30	15	254	49	43	8
Central	92	47	794	150	134	26
East Central	42	21	362	68	61	11
Southeast	43	23	370	73	62	12
South	45	24	391	76	66	13
Southwest	51	27	440	86	74	15
Santa Clarita Valley	11	8	91	27	15	5
Antelope Valley	16	12	134	40	23	7
TOTAL	529	289	4,539	927	766	158

*With 0% transit diversion (based on Los Angeles County Road Department calculations) -- thus figures will be lower with the transit diversion envisioned by the general plan.

Area Sources--

Miscellaneous area sources include wild fires, structural fires, farming operations, construction and demolition, unpaved roads, and utility equipment (mowers, et cetera). Base year data (1974) and projections (2000) were calculated utilizing information contained in the Preliminary Emissions Inventory Air Quality Forecast, 1974-1995, Final Report, South Coast-Southeast Desert Air Quality Maintenance Areas. The information indicated in Figure 6-16 represents an incremental, per capita increase totalled for the year 2000. The population estimates used were SCAG 1975 population for Los Angeles County (7,020,772) and Department of Regional Planning population projections for the year 2000 (7,700,000). It should be noted that because of the age and quality of the information used, the pollutant tonnages are gross estimates and were not prepared for each planning area.

Total Sources--

Figure 6-17 provides data on total source emissions, which includes stationary, mobile, and miscellaneous area sources. For comparison purposes the 1975 mobile sources, 1974 stationary sources, and 1974 miscellaneous area sources were combined to provide total emission sources for a baseline comparison. While combining two different years provides a potential for error, this error is not considered significant when compared to the total. Further it is intended to provide a comparison for general information purposes. It is not used for any technical purposes. Thus, for Los Angeles County 6,946 tons per day of total emissions were produced. By the year 2000 the total emissions will be 2,519 tons per day. This represents a decrease of 4,428 tons per day, a 64 percent reduction.

Again, it must be emphasized that all computations were made utilizing the best available data to date.

FIGURE 6-16
MISCELLANEOUS AREA SOURCE EMISSIONS
COUNTY TOTALS

Sources Types	Pollutant Category (Tons/Day)											
	Nitrogen Oxides		Carbon Monoxide		Total Hydrocarbons		Reactive Hydrocarbons		Sulfur Oxides		Particulates	
	1974	2000	1974	2000	1974	2000	1974	2000	1974	2000	1974	2000
Wild Fires	0.7	0.8	52.7	57.8	16.5	17.7	16.5	17.7	-	-	11.9	13.1
Structural Fires	0.7	0.8	62.5	68.5	19.0	20.8	19.0	20.8	-	-	14.0	15.4
Farming Operations	-	-	-	-	-	-	-	-	-	-	15.4	16.9
Construction and Demolition	-	-	-	-	-	-	-	-	-	-	9.1	10.0
Unpaved Roads	-	-	-	-	-	-	-	-	-	-	4.2	4.6
Utility Equipment: Mowers, etc.	0.7	0.8	98.3	107.8	14.0	15.4	14.0	15.4	-	-	*	*
TOTAL	2.1	2.4	213.5	234.1	49.5	53.9	49.5	53.9	-	-	54.6	60.0

*Less than 0.1 ton/day.

FIGURE 6-17

TOTAL STATIONARY, MOBILE AND MISCELLANEOUS
AREA SOURCE EMISSIONS (TONS/DAY)

Pollutant Category	Stationary Sources		Mobile Sources*		Miscellaneous Area Sources	
	1974	2000	1975	2000	1974	2000
Nitrogen Oxides	236.3	237.7	529	289	2.1	2.4
Carbon Monoxide	11.3	11.2	4,539	927	213.5	234.1
Total Hydrocarbons	291.0	322.4	766	158	49.5	53.9
Reactive Hydro- carbons	276.4	306.4	-	-	49.5	53.9
Sulfur Oxides	203.1	169.1	-	-	-	-
Particulates	51.0	53.9	-	-	54.6	60.0
TOTAL	792.7	794.3	5,834	1,374	319.7	350.4
	GRAND TOTAL BASE YEARS -- 6,946.4					
	GRAND TOTAL 2000 -- 2,518.7					

*With 0% transit diversion (based on Los Angeles County Road Department calculations).

MITIGATION MEASURES -

In the past, air pollution control efforts by the Federal Environmental Protection Agency (EPA), the State Air Resources Board (ARB), and the South Coast Air Quality Management District (SCAQMD) have succeeded in significantly reducing pollutant emission levels.

The current AQMP provides for a comprehensive approach to combine past efforts with new concepts, thus achieving and maintaining clean air. It is designed not only to evaluate source controls, but also non-source controls such as transportation and land use planning.

Since implementation of current regulations will reduce emissions by 2000, even with projected growth, and since the additional tactics recommended by the AQMP will achieve clean air standards by 1987, the plan's projected growth will not have a significant effect on air quality.

Even though it is anticipated that the SCAB will achieve clean air standards, the general plan contains policies/actions to assist in this effort. In developing these policies/actions which can be utilized by the county, it must be remembered that there are limitations. These limitations are the result of a lack of authority since many measures can only be implemented by federal or state agencies or the SCAQMD. The county cannot impose restrictions or standards for vehicular sources, airplanes, ships, railroads or stationary sources. While these limitations exist, the county can take an active role through the use of four planning techniques: (1) land use management; (2) transportation/ public facilities improvements; (3) development plan review; and (4) building

regulations. The theme of these techniques is to improve air quality by reducing vehicle miles traveled and trips and to conserve energy.

The following general plan policies and recommended actions are intended to improve air quality by reducing vehicle miles traveled and vehicle trips and by reducing energy consumption. Policies and actions are arranged according to the four planning techniques described above.

REDUCTION OF VMT AND TRIPS

LAND USE REGULATION -

Basically those land use policies oriented towards air quality improvement suggest a trend toward concentrated land use patterns. Also included in this concept is the need for revitalization of older areas and the infilling of vacant land near the urban core areas.

General Goals and Policies Chapter

- Promote the efficient use of land through a more concentrated pattern of urban development including the focusing of new urban growth into areas of suitable land. (Policy 17)

Land Use Element

- Concentrate well-designed high density housing in and adjacent to centers to provide convenient access to jobs and services without sacrificing livability or environmental quality. (Policy 1)

- Place major emphasis on channeling new intensive commercial development into multipurpose centers. (Policy 3)
- Where appropriate, promote more intensive use of industrial sites, especially in areas requiring revitalization. (Policy 5)
- Promote compatible land use arrangements that reduce reliance on the private automobile in order to minimize related social, economic and environmental costs. (Policy 21)

Housing Element

- Encourage the investment of both public and private resources to reverse neighborhood deterioration and prevent the unnecessary demolition of houses usable by lower income households. (Policy 7)

Transportation Element

- Coordinate land use and transportation policies. (Policy 5)
- Promote centers development that integrates residential, commercial and industrial land use; and encourages a reduction in the frequency and length of trips. (Action 4)

Economic Development Element

- Support the revitalization and rehabilitation of deteriorating industrial, commercial and office centers. Prepare and periodically update an Industrial and Commercial Revitalization program, and adopt policies and measures necessary for its implementation. (Policy 9)

TRANSPORTATION/HIGHWAY IMPROVEMENTS -

These policies and recommended actions emphasize two major concepts. The first is public, mass transit systems and high occupancy vehicle programs. The second is the improvement of vehicle circulation through improvements of roadways.

Conservation and Open Space Element

- Actively support strict air quality regulations for mobile and stationary sources, and continued research to improve air quality. Promote vanpooling, carpooling and improved public transportation. (Policy 1)

Transportation Element

- Plan and develop bicycle routes and pedestrian walkways. (Policy 3)
- Support the development of a mass transportation system that will provide a viable alternative to the automobile. (Policy 6)
- Support continued improvement and expansion of the present bus system as a public service. (Policy 7)
- Encourage provision of transit service at a reasonable cost to the users and the community. (Policy 10)
- Support development of rail transit or exclusive bus lanes in high demand corridors when sufficient patronage, cost effectiveness and support of land use policies are assured. (Policy 11)
- Support research for and development of new transportation technologies. (Policy 12)
- Support low capital intensive strategies that maximize the efficiency and cost-effectiveness of existing transportation facilities and systems. (Policy 13)

- Support completion of the highway and freeway routes necessary to make the system operate efficiently. (Policy 14)
- Support the development of alternate routes for through traffic to bypass the metropolitan area and provide traffic relief for the urban area. (Policy 16)
- Support use of non-vehicle improvements to reduce peak-hour congestion. (Policy 18)
- Support traffic operation improvements for improved flow of vehicles. (Policy 19)
- Stress environmental compatibility and improvement, including air quality, noise, ecology, and aesthetics in developing transportation systems. (Policy 21)
- Support technical research and development by automobile manufacturers directed toward reducing emissions, fuel consumption, and noise. (Policy 24)
- Encourage reduction of vehicle miles travelled (VMT). (Policy 25)
- Encourage greater multimodal access to major airports and improve internal circulation within these facilities. (Policy 34)
- Encourage the development of a decentralized system of major airports to serve commercial and general aviation activities. (Policy 35)
- Continue to plan, design and construct bikeway facilities for recreational and transportation needs. (Action 2)
- Support efforts by transit operators to expand the existing bus fleet, replace aging buses and renovate and expand fixed facilities. (Action 5)

- Work toward the development, adoption, and implementation of a consensus regional transit development program that is within the ability of the region to finance and operate. (Action 6)
- Urge transit operators to maintain a minimal transit fare structure by maximizing Federal and State operational subsidies and by encouraging financial support by local jurisdictions. (Action 7)
- Encourage transit operators to expand cost-effective park-and-ride programs in an attempt to persuade auto commuters to switch to public transportation. (Action 9)
- Improve bus movement on urban streets by such means as signal preemption devices, preferential lanes, and restricted auto turning movements. (Action 12)
- Endorse bus programs to provide more efficient service and greater coverage by improved scheduling and routing. (Action 15)
- Encourage commercial enterprises to offer off-peak transit usage incentives, including subsidized fares, special merchandise discounts, etc. for transit riders. (Action 16)
- Encourage agencies to seek demonstration project funds to determine the feasibility of jitney, group taxi, and para-transit service. (Action 17)
- Encourage employers to give free or discounted bus passes to their employees to promote greater use of public transit for home-to-work trips. (Action 18)
- Support rail transit or exclusive bus/HOV lane facility improvements in high demand corridors. (Action 19)
- Encourage a cooperative agreement with Caltrans and Amtrak to utilize existing railroad lines for commuter rail service. (Action 20)
- Encourage the expansion of existing intercity rail passenger service, including new equipment, expanded schedules, weekend express service, station improvements, reduced travel times, and special fares. (Action 21)

- Support high occupancy vehicle (HOV) programs such as:
 - Computerized carpool, vanpool, club buses, and subscription bus match-ups.
 - Employer sponsored programs to encourage ridesharing, such as preferred carpool parking.
 - Preferential freeway ramp meter bypass lanes for high occupancy vehicles.
 (Action 23)
- Support implementation of programs to spread peak traffic hours such as staggered work hours and flexitime, particularly where it would impact heavily traveled corridors. (Action 24)
- Continue implementation of the Uniform Traffic Control program to increase highway uniformity, capacity and safety. (Action 25)
- Implement a traffic management program to obtain maximum efficiency of the existing system with such programs as areawide interconnected traffic signal systems and necessary street improvements to reduce traffic bottlenecks. (Action 26)
- Investigate the implementation of parking surcharges in highly congested areas in an attempt to encourage increased ride-sharing. (Action 33)
- Develop public information and education programs on transportation-related ways that people can use to make air quality, noise, and energy improvements through individual effort. (Action 36)
- Monitor and report on improvements in vehicle miles traveled (VMT), vehicle speed, vehicle emissions, average auto occupancy, vehicle accidents, carpool participation, and transit rideship. (Action 39)
- Encourage the South Coast Air Quality Management District (SCAQMD), Air Resources Board (ARB) and Environmental Protection Agency (EPA) to establish emission controls for off-road vehicles, aircraft, railroads, and marine vessels. (Action 40)

- Support SCAG's program to develop mandatory vehicle inspection and maintenance programs for light-duty vehicles as one method of achieving the objectives for air quality improvements. (Action 41)
- Study the feasibility of auto control zones in key central business districts which are served by public transit. (Action 42)
- Direct the county purchasing agent to minimize energy consumption and air pollution characteristics of the vehicle fleet by obtaining high fuel economy and low polluting vehicles. (Action 46)
- Monitor the progress of advanced technology propulsion systems and vehicles, such as the electric car, hydrogen car, steam, gas turbine, diesel, and stratified charge engines, etc., and acquire selected vehicles for demonstration and evaluation. (Action 47)
- Initiate a vanpooling program for county employees. (Action 48)
- Support Los Angeles City Department of Airports' plan to improve internal circulation and access at Los Angeles International Airport. (Action 58)
- Encourage transit operators to provide adequate service to special purpose centers such as parks, sporting events, airports, beaches, etc. (Action 59)
- Encourage the decentralization of aviation passenger terminals and baggage handling facilities in an effort to reduce congestion at existing air terminals. (Action 62)

Water and Waste Management Element

- Require the use of unleaded fuel in vehicles acquired for county ownership or operation. (Action 13)

DEVELOPMENT PLAN REVIEW -

The general plan policies and recommended actions related to private development project review are oriented toward the reduction of VMT and trips through the regulation of locational and design features.

Conservation and Open Space Element

- Support preservation of heritage trees. Encourage tree planting programs to enhance the beauty of urban landscaping. (Policy 34)

Land Use Element

- Amend the zoning ordinance to provide for reduced parking requirements when employers provide for van and carpooling, private transit or other measures which reduce the need for employee parking. (Action 20)

Transportation Element

- Develop parking management plans for application in selected areas. (Policy 17)

BUILDING REGULATIONS -

Policies which will affect building codes and conserve energy will not only reduce emissions from structures, but also at the power generating plants. It should be noted that there are design oriented policies in the plan.

Conservation and Open Space Element

- Support the conservation of energy and encourage the development and utilization of new energy sources including geothermal, thermal waste, solar, wind and ocean-related sources. (Policy 2)

Housing Element

- Discourage inefficient use of scarce natural resources in the construction and rehabilitation of housing. Encourage the use of energy saving technology in the design, construction, and operating systems of residential buildings. (Policy 33)

6.7 Water Resources/Water Quality

EFFECT -

Water Resources -

The plan's impact on year 2000 water demand (municipal-industrial and agricultural) was estimated by determining per capita consumption and weighted average applied water use factors for principal crops, and applying these factors to year 2000 population and agricultural acreage projections. Water demand and supply information and projections are based largely on the measurements and estimates provided by the Metropolitan Water District (MWD), the Department of Water and Power (DWP), the Los Angeles County Flood Control District (LACFCD), and the State of California Department of Water Resources (DWR).

The plan also includes a general policy encouraging water conservation so as to ensure adequate future water supplies. To estimate future water usage, certain assumptions must be made; the key assumption is that necessary water conservation efforts will have the full backing of concerned agencies in the county—especially the water supply agencies. As was demonstrated during the drought period of 1975-76, citizens can be motivated—through both voluntary and mandatory techniques—to conserve large amounts of water. In addition, water conservation in new dwelling units is assumed to result from new state regulations for faucets, showers, line pressure, clothes washing machines and dishwashers, commencing January 1, 1980. It can also be assumed that many of the dwelling units rehabilitated by the year 2000 will be remodeled in accordance with the water conservation requirements for new construction. The plan's increased emphasis on concentrated development and moderate, rather than low densities, will also have the effect of reducing the amount of landscaping, thereby decreasing exterior water demand.

Additional measures carried out by the water supply agencies, such as leak detection and repair programs and exterior water use pressure reduction, as well as price increases, could result in even greater water savings.

Based on such measures, it is assumed that a minimum 10 percent reduction in per capita water usage will be achieved in the year 2000. Figure 6-18 presents estimates of year 2000 applied demand, by hydrologic planning areas. These figures should be compared to the 1975 water usage figures presented in Section 5.7. It is estimated that the 1975 municipal and industrial water use of 1,495,300 acre-feet will increase to 1,520,570 acre-feet by the year 2000, and that agricultural use will decrease from 166,900 acre-feet in 1975 to 124,710 acre-feet by the year 2000 (based on reduced agricultural land usage as well as improved irrigation techniques), reducing its percentage of total use by two percent. It is thus anticipated that even though a population increase of 808,000 is projected, given the ten percent per capita water usage reduction expected, and reduced agricultural consumption, overall usage will decrease slightly (by about one percent) from 1,662,200 acre-feet in 1975 to 1,645,280 acre-feet by the year 2000.

With reference to the water supply outlook, the MWD, the DWP, and the DWR have planned facilities and negotiated contracts to ensure that the county's future municipal, industrial and agricultural demands for water will be met by the year 2000. This is based largely on the quantity of water currently being imported into the county and the quantity of future imports. Implicit is the assumption that contracted annual entitlements will be met.

Although it is assumed that adequate supplies will be available, by the year 2000 the water supply may be in jeopardy if various state water projects are not implemented. The future availability of

FIGURE 6-18

Los Angeles County: Year 2000 Water Demand

		<u>% of Total Demand</u>
<u>Los Angeles Planning Area</u>		
Municipal & Industrial Demand	1,451,000 acre ft.	99
Population	7,441,000	
Unit Water Use (Per Capita)	0.195 acre ft.	
Agricultural Demand	3,280 acre ft.	1
Agricultural Acreage	5,560	
Irrigated Acreage	2,440	
Weighted Applied Water Use	1.34 acre ft./acre	
Applied Demand	1,454,270 acre ft.	
<u>Santa Clarita Valley</u>		
Municipal & Industrial Demand	23,140 acre ft.	68
Population	114,000	
Unit Water Use (Per Capita)	0.203 acre ft.	
Agricultural Demand	11,100 acre ft.	32
Agricultural Acreage	6,690	
Irrigated Acreage	5,810	
Weighted Applied Water Use	1.91 acre ft./acre	
Applied Demand	34,250 acre ft.	
<u>Antelope Valley</u>		
Municipal & Industrial Demand	46,430 acre ft.	30
Population	218,000	
Unit Water Use (Per Capita)	0.213 acre ft.	
Agricultural Demand	110,330 acre ft.	70
Agricultural Acreage	61,510	
Irrigated Acreage	46,750	
Weighted Applied Water Use	2.36 acre ft./acre	
Applied Demand	156,760 acre ft.	
<u>Los Angeles County</u>		
Total Applied Demand	1,645,280 acre ft.	
Municipal & Industrial Demand	1,520,570 acre ft.	92
Agricultural Demand	124,710 acre ft.	8

electrical energy for water pumping and transportation is being threatened and may also severely restrict the quantity of water being imported. In addition, because of continued progress on the Central Arizona Water Project, the proposed establishment of a Colorado Municipal Water District and Indian tribal water claims of Colorado River water, currently available quantities of Colorado River water will be significantly reduced by the year 2000. It is estimated that this source will provide only about five percent of the county's total supply after 1985. Greater reliance on State Water Project water will thus be necessary--this source is expected to provide 35 percent of the county's total supply after 1985. There is, however, some concern regarding construction of the Sacramento Delta Peripheral Canal and northern California attitudes regarding the exportation of water to southern California, as potential threats to the availability of increased quantities of state water from the Feather River. To help deal with the reduced Colorado River supplies, MWD and other water supply agencies are studying the use of reclaimed water to reduce the need for imported water.

The extent to which ground water can make up any losses in imported and surface water is not known. Although the Los Angeles County Flood Control District, along with other public and private agencies, has recharged the underground storage basins with more than 10 million acre-feet of water over the years, this stored ground water may not be entirely usable because of the limitations of existing facilities, poor water quality in some locations, and economic considerations relating to pumping lifts. In addition, the water table in some areas, such as the Antelope and Santa Clarita Valleys, has dropped dramatically and ground water basins require substantial replenishment to approach their safe yields.

New urban development will also affect ground water supply through impacts associated with construction, drainage facilities and increased area of impervious surfaces, especially in areas having highly permeable soils. The covering of permeable soils with impervious surfaces such as concrete, asphalt, and building foundations results in reduced capacity for ground water recharge. An average loss of approximately 50 percent of recharge capacity could be expected on developed acreage.

Where new urban development is to occur in hilly areas thereby requiring substantial grading, drainage facilities and expansion of utilities, these impacts could be severe. Figure 6-19 presents estimates of acreage of urban expansion and infill development in areas having highly permeable soil types (aquifers) by planning area, for both the total county and unincorporated area. It is assumed that, regardless of the quality of the aquifer affected, any urbanization within recharge areas represents a potential impact in a region as arid as Los Angeles County. Similar impacts could occur in recycle areas where redevelopment projects could include new building foundations and improved underground utilities; however, lot coverage and landscaping requirements would reduce this impact.

Of the 55,800 acres shown as new urban expansion, approximately 3,700 acres¹, or seven percent, are located in aquifer recharge areas. One thousand (1,000) of the total 3,700 acres are located within unincorporated areas. Aquifer recharge areas are proposed to be developed primarily in low density residential uses, thus resulting in lesser

1

Although the plan's urban expansion and infill development would preempt 3,700 acres of aquifer recharge areas, it should be noted that development in such areas would generally result in a loss of about half of the acreage involved, thus reducing, but not eliminating, the potential for ground water recharge.

FIGURE 6-19

ESTIMATE OF AQUIFER ACREAGES WITHIN URBAN
EXPANSION AND INFILL AREAS FOR THE TOTAL COUNTY
AND UNINCORPORATED AREA, BY PLANNING AREA

Planning Areas	Urban Expansion Areas		Infill Areas	
	Total County	Unincorporated Area	Total County	Unincorporated Area
San Fernando	400	-	200	*
Burbank/Glendale	-	-	100	-
West San Gabriel Valley	-	-	200	-
East San Gabriel Valley	1,900	600	400	100
Malibu/Santa Monica Mountains	100	100	-	-
West	600	-	100	-
Central	-	-	100	-
East Central	-	-	*	-
Southeast	-	-	100	-
South	-	-	*	-
Southwest	-	-	100	-
Santa Clarita Valley	300	300	-	-
Antelope Valley	400**	-	-	-
TOTAL	3,700	1,000	1,300	100

* Less than 100 acres.

** Does not include 2,000 acres within the proposed Palmdale Airport.

effects given a generally less extensive coverage of the soil by impervious surfaces—structures, parking lots, storage—as compared to non-residential uses.

On a subregional level, East San Gabriel Valley contains 1,900 acres in proposed residential uses located in Claremont, La Verne, Glendora, Walnut, Rowland Heights and Diamond Bar. The West area contains 600 acres in residential land use located in Palisades Highlands and Bel Air Estates. Antelope Valley's 400 acres are located in Palmdale. In addition, San Fernando includes 400 acres in Porter Ranch, Lakeside Park, Woodland Hills, Olive View, Chatsworth and Sylmar.

With regard to infill development, the plan shows 1,300 acres located in aquifer recharge areas, including 400 acres in the East San Gabriel Valley (in San Dimas, Glendora, La Puente and La Verne), and 200 acres each in San Fernando (in Mission Hills) and West San Gabriel Valley (in Duarte and Monterey Park). The Burbank (in Sunland), West (in Hollywood Hills), Central (in Monterey Hills), Southeast (in Cerritos), and Southwest (in Palos Verdes Estates) planning areas are also affected. All except 100 acres is located within cities (see Figure 6-19).

The plan's non-urban development would also result in some loss of recharge capability; however, given the limited loss of land to impervious surfaces which generally occurs in such areas, this effect would not be expected to be significant (see Section 6.13).

Although overall water consumption is anticipated to decrease by the year 2000, additional water service would be required on the 55,800 acres of new urban expansion land shown on the General Development Policy Map. (Figure 6-20 indicates additional water service by planning area.) In addition, upgrading of existing water systems may be required in recycle/rehabilitation and infill areas.

Water Quality -

The urban expansion projected by the plan could impact the quality of the county's coastal waters and ground water resources. The sources of pollution are complex, but the most significant source is inadequately treated sewage affecting coastal waters. Potential pollution of ground water from unusual sources such as farm runoff, or coastal waters by industrial sewage is not significant. The level of hazard to water quality which will result from the plan will vary within the county, depending upon the availability and types of treatment facilities, types of land uses, and terrain.

The plan's potential impact on coastal waters is related primarily to inadequately treated sludge and waste water from the three major waste water discharge points (see Section 6.24 -- Liquid Waste) located within 20 miles of the Palos Verdes Peninsula. However, the County's Joint Water Pollution Control Project plant has discontinued the discharge of sludge to the ocean and those plants discharging sludge into the ocean either have been or currently are being upgraded to provide secondary treatment. (See discussion under Mitigation Measures below.) Additional potential sources of coastal water pollution are polluted storm waters and runoff.

FIGURE 6-20

Additional Water Service

In Potential Urban Expansion Areas

<u>Planning Area</u>	<u>Additional Water Service (Acres)</u>
San Fernando	2,700
Burbank/Glendale	-0-
West San Gabriel Valley	-0-
East San Gabriel Valley	10,900
Malibu/Santa Monica Mtns.	3,400
West	700
Central	-0-
East Central	-0-
Southeast	-0-
South	-0-
Southwest	-0-
Santa Clarita Valley	7,900
Antelope Valley	30,100
Channel Islands	<u>100</u>
 Total Los Angeles County	 55,800

Another source of pollutants is runoff from roads which could include oil, dust and fertilizers. Most of these runoffs, however, are carried by storm drains to flood control channels. Within the Los Angeles River watershed, these runoffs would drain from the flood control channels to the ocean, primarily impacting coastal water quality.

Generating plants located on the coast represent a potential source of pollution. However, thermal discharges into coastal waters are already regulated by the State Water Resources Board's Thermal Plan. This plan sets specific requirements concerning how much the temperature of the receiving waters may be raised by a heated discharge. These requirements vary depending on the location of the receiving waters, i.e., enclosed bay, ocean waters. Using cooling towers and defogging methods is the usual method suggested to meet the requirements, but an alternative approach is to use cooler water, from deeper depths of the ocean.

However, thermal effect studies conducted by DWP during 1971 and 1972 concluded that thermal discharges appear to have a beneficial effect on the local harbor bottom community in that the biomass and community of life at the thermal discharge area exceeded that at other locations in the harbor. The local species of giant kelp is affected by the increased temperatures; however, the Los Angeles Harbor Department has successfully introduced giant kelp from warmer Mexican waters.

Plan policies include endorsing plans for the development of deep water port facilities. Dredging the harbor may adversely affect marine life in the short term, but over the long run, marine life may be beneficially affected by the cleaner waters which will result when dredging

removes accumulated pollutants. Tidal circulation within the harbor may also be affected, which could inhibit its cleansing actions. The effects, however, are limited since the harbor is a man-made complex and the marine life in that area has adapted to this type of environment. In addition, harbor improvements would be subject to an environmental analysis prior to construction — for example, the Harbor Department mitigated the impact of filling Slip 232 by planting kelp beds in the outer harbor to provide increased habitat.

With regard to ground water quality, at present less than three percent of the county's population does not have sanitary sewers. Some of these areas such as the Coastal Malibu have defeated sewer bond issues and are continuing to use either septic tanks or private treatment plants with leachfields. Since the plan would allow expansion in areas which are presently unsewered, there is a potential for contamination of ground water due to inadequate sewage treatment by septic tanks or private treatment systems. However, such systems are subject to the regulations and conditions of the County Department of Health Services and the California Regional Water Quality Control Board.

Ground water pollution can be aggravated by a lack of adequate drainage facilities. When storm waters saturate the ground around septic tanks, the ground is unable to absorb the effluent, allowing it to flow with surface storm waters. Some areas which are presently unsewered also have severe drainage problems. Mitigation measures for surface drainage problems are discussed in Section 6.3.

With reference to imported domestic water, future water sources can be expected to have a mineral quality that is better than that of the raw water currently imported. State Water Project water will have a much lower dissolved solid content than Colorado River Water.

The plan's Water and Waste Management Element also calls for the programming of water and sewer service extensions consistent with the general plan policies and in situations which pose immediate health and safety hazards (Policy 6). This policy is aimed at reducing fiscal costs and supporting the plan's urban pattern although it does imply the potential for adverse effects on water quality in some instances, where sewer service extensions are not programmed.

MITIGATION MEASURES -

Although no significant increase in total water usage is anticipated within the county by the year 2000, mitigation measures are appropriate for reducing consumption and increasing supplies, since the quantity of water available to be imported and the amount of ground water supplies is not certain.

The plan includes the following policies and recommendations which help to mitigate its impact on water resources:

Water and Waste Management Element

- Increase storage of potable water in underground aquifers through greater use of spreading grounds. (Policy 6)
- Provide protection for ground water recharge areas to ensure water quality and quantity. (Policy 14)
- Encourage development and application of water conservation, including recovery and reuse of storm and waste water. (Policy 21)
- Promote acquisition of additional water for aquifer replenishment. (Action 12)
- Require the installation of low flow or restricted flow plumbing in all new construction. (Action 14)

- Make available lists of native and domestic vegetation classified by the demand of plants for water. (Action 50)
- Investigate the potential for greater use of reclaimed water by industry and residences as well as for groundwater replenishment wherever such use will not endanger public health. (Action 51)
- Investigate the use of check dams, peak flow restrictions, and other techniques and facilities for the retention of storm water for ground water replenishment with principal effort directed to the Los Angeles River Basin. (Action 52)

General Goals and Policies

- Accept and plan for a level and rate of population and economic growth consistent with improved environmental quality and the availability of air, water and energy resources. (Policy 6)
- Conserve the available supply of water and protect water quality. (Policy 13)

Conservation and Open Space Element

- Protect and preserve ground water recharge and watershed areas, conserve storm and reclaimed water, and promote water conservation programs. (Policy 3)
- Encourage the multiple use of flood prone areas for recreation, agriculture, ground water recharge and wildlife. (Policy 22)
- Amend the Building and Grading Code to provide standards resulting in greater water and energy saving in new structures. (Action 13)

In addition, the MWD is currently negotiating the recharge of underground aquifers in the county with State Water Project water to a level higher than has been the case in the past, thus providing

additional protection should drought conditions again arise. Also, as current water contracts between water importation agencies and their electrical suppliers expire, energy costs to import water will rise, and, as potable water costs are increased to reflect energy costs, the use of reclaimed water from sewage will become more economically feasible, potentially reducing the demand for potable water. This will then permit a larger portion of imported water to be used for ground water replenishment as a reserve against future droughts.

Alternative methods should be considered as potential sources of supplemental supplies. The use of reclaimed water affords Los Angeles County an excellent opportunity for an additional source of water. Up to 90 percent of the waste water can be reclaimed. While the cost of reclaiming waste water is higher than the cost of treatment currently being practiced in the region, several factors such as increasing water shortages and technical advancements tend to make reclamation attractive. Reclaimed water can be used for ground water replenishment and salt water barrier projects, as well as agricultural and recreational purposes.

Precipitation management to increase rainfall or snowfall is another consideration. Actually, several agencies have been seeding clouds for some 15 years. The effectiveness of cloud seeding is difficult to evaluate because of the great variety of natural weather and precipitation patterns. However, the results of precipitation management experiments over the past 25 years have indicated that, under favorable conditions, cloud seeding may produce a five to ten percent increase in local precipitation.

The plan's Water and Waste Management Element also includes policies and recommended actions aimed at protecting water quality, as follows:

- Protect public health and prevent pollution of ground water through the use of sewers or viable cost-effective alternatives. (Policy 13)
- Avoid or mitigate threats to pollution of the ocean, drainage ways, lakes, and ground water reserves. (Policy 15)
- Encourage design of water and waste management systems so that they enhance the appearance of the neighborhoods in which they are located and minimize environmental impacts. (Policy 18)
- Seek funding for the acquisition of additional spreading grounds. (Action 11)
- Require riparian property owners to restrict run-off and sheet overflow in a manner adequate to prohibit such flow from transporting the manure of domestic animals. (Action 18)
- Require the use of unleaded fuel in vehicles acquired for county ownership or operation. (Action 31)
- Pursue applications for federal and state funding to accelerate the upgrading of water reclamation and sludge removal facilities in the county. (Action 33)
- Restrict the depth of quarries to permit their subsequent use as landfills without ground water pollution. (Action 44)
- When feasible, require reclamation or permanent sealing of mineral extraction sites prior to abandonment to protect against pollution of ground or surface waters. (Action 46)

The Conservation and Open Space Element includes a policy to encourage the maintenance, management and improvement of the quality of imported domestic water, ground water supplies, natural runoff, and ocean water. (Policy 4)

With regard to coastal water quality, the implementation of EPA regulations for sewage treatment, which originally required full secondary treatment (no sludge discharge into the ocean) by July 1, 1977 and the elimination of pollutant discharge by 1985, also provide mitigation for the potential effects. The County's Joint Water Pollution Control Project at Carson has discontinued the discharge of sludge to the ocean, and is to provide full secondary treatment by 1980. The City of Los Angeles' treatment plant at Hyperion now provides secondary treatment to 135 MGD and is being upgraded to provide secondary treatment to all sewage. The City's Terminal Island plant has recently been enlarged and converted to secondary treatment capability. EPA requirements are an important mitigation measure, as they set legally binding requirements and exert a strong influence on overall water quality.

It should be noted that studies under the "208" program described below either may indicate that new and stronger restrictions regarding coastal water quality should be imposed or may, on the other hand, result in a relaxation of requirements. The Los Angeles/Orange County Metropolitan Area (LA/OMA) Regional Waste Water Solids Management Program is currently analyzing various methods of disposing of sludge; a final report with recommendations is due in December, 1978. The City of Los Angeles is in litigation with EPA to mitigate existing restrictions and to permit the receipt and evaluation of the LA/OMA report. Public Law 95-217 (amends PL 92-500, the Federal Water Pollution Control Act) also permits waivers on ocean discharge, provided that certain specific criteria can be met.

The Southern California Association of Governments (SCAG) is currently in the process of preparing an areawide Waste Treatment Management Plan for the South Coast area, which includes all of Los Angeles County except the Antelope Valley, with the goal of reducing non-point source pollution in the South Coast area. The county is assisting SCAG in

this effort, along with various other governmental agencies. The draft plan, distributed November 1, 1978, includes water quality problem identification, general data collection, the development of control and abatement measures for water quality problems and assessment of institutional capabilities for implementing water pollution control measures. Actual identification of non-point source components and data collection is projected to require three to four years to complete. This program, along with the IA/OMA study described above, will permit the documentation of water quality trends and allow water quality management decisions to be made.

Other mitigating measures for the effects on water quality include present Health Department and state measures and authority (especially with regard to groundwater quality — (see Section 6.24) and review of impacts at the project level.

Although the plan would allow expansion into presently unsewered areas where septic tanks are used, water quality in these areas will be protected by existing health-related requirements, including the regulations of the County Health Department relating to the size requirements for leachfields, which can vary in relation to terrain and soils. If water pollution from septic tanks does occur, a health order can require that sewers or some other form of improved treatment be instituted.

The Regional Water Quality Control Board (RWQCB) has indicated that the Malibu area should not continue to rely on private sewage disposal methods; the RWQCB will not consider a report of waste discharge for any sewage disposal facility in the Malibu area to be complete unless it is demonstrated that such a sewage disposal facility will fit in with a comprehensive area-wide sewage plan.

6.8 Biota

EFFECT -

Vegetation and Habitat

Since vegetation is the key factor of habitat types, the plan's effect on vegetation is considered a measure of its effect on habitat. The General Development Policy Map shows development within presently undeveloped areas of the county containing vegetation of the coastal sage scrub, chaparral, grassland and woodland and savannah types. Such development is, however, not within those portions of the county identified as Significant Ecological Areas (SEAs). (See discussion and Map 5-20¹ in Section 5.8.)

Acreages of vegetation of each type affected by potential urban expansion outside of SEAS are provided in Figure 6-21. As indicated, a total of 34,800 acres involve the various categories of natural vegetation. This acreage represents 64 percent of the 55,800 acres shown as new urbanized land on the General Development Policy Map. Of the total 34,800 acres, 12,400 acres are located within the unincorporated area.

As indicated in Figure 6-21, the greatest acreage impact of urban expansion is on the grassland communities; 11,500 acres or 21 percent of the total urban expansion area affect this vegetative type. The primary areas affected within the various planning areas in the south county are as follows: Walnut, West Covina, Industry, Pomona, Diamond Bar, La Verne (East San Gabriel Valley); the area between Brent's Junction and Westlake Village north of the Ventura Freeway; Calabasas Park and Las Virgenes Canyon (Malibu/Santa Monica Mountains); Porter Ranch, Lakeside Park, Canoga Park (San Fernando).

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In addition to the SEAs identified on Map 5-20, an additional 650 acres have been identified as Habitat Management Areas in the Santa Clarita Valley and 5,250 acres in the Antelope Valley. This additional acreage is included on the General Development Policy Map under the Significant Ecological Areas/Habitat Management designation. A total of 65 SEAs are now shown on this map.

FIGURE 6-21

Estimate of Vegetation Types Within Urban Expansion Areas for the Total County and Unincorporated Areas, By Planning Area

Planning Area	Total County			Unincorporated Area				
	1	2	3	1	2	3	4	5
	Coastal Sage Scrub	Chaparral	Grassland Savannah	Woodland Savannah	Coastal Sage Scrub	Chaparral	Grassland	Woodland/Savannah
San Fernando	1,100	300	800	100	*	100	-	-
Burbank/Glendale	-	-	-	-	-	-	-	-
West San Gabriel Valley	-	-	-	-	-	-	-	-
East San Gabriel Valley	200	1,600	3,200	100	-	900	800	100
Malibu/Santa Monica Mtns.	800	300	1,000	400	800	300	1,000	400
West Central	-	500	100	-	-	-	-	-
East Central	-	-	-	-	-	-	-	-
Southeast	-	-	-	-	-	-	-	-
South	-	-	-	-	-	-	-	-
Southwest	-	-	-	-	-	-	-	-
Santa Clatita Valley	1,700	1,700	700	400	1,700	1,700	700	400
Antelope Valley	300	-	2,000	17,400	-	-	300	3,900
TOTAL	4,100	4,400	7,800	18,500	2,500	3,000	2,100	4,800

* Less than 100 acres.

1 Includes sagebrush scrub in North County.

2 Includes desert vegetation in Antelope Valley.

3 Includes desert woodland in North County.

4 Does not include 3,400 acres within Palmdale Airport.

5 Does not include 3,600 acres within Palmdale Airport.

The second largest impact is on chaparral communities; 4,400 acres, or eight percent of the plan's expansion area are affected, primarily in East San Gabriel Valley (Walnut and Diamond Bar), the West (Palisades Highlands and Bel Air Estates), San Fernando (Porter Ranch, Chatsworth, Canoga Park), and Malibu/Santa Monica Mountains (see locations under grasslands). An additional 2,100 acres or four percent of the urban expansion involves coastal sage scrub vegetation located primarily in San Fernando (Porter Ranch, Lakeside Park, Chatsworth) and Malibu/Santa Monica Mountains (see location under grasslands); another 600 acres or one percent involve woodlands and savannahs--in Malibu/Santa Monica Mountains (north of Ventura Freeway - see above) San Fernando (Porter Ranch) and East San Gabriel Valley (Diamond Bar).

As indicated in Figure 6-26, the affected vegetation types within the north county are sagebrush scrub, desert, desert woodland and chaparral. Urban expansion within the Antelope Valley primarily affects desert vegetation northerly of the City of Lancaster, while desert woodland is affected in the southerly portion of the City of Palmdale; finally, sagebrush scrub vegetation is affected within the cities of Lancaster and Palmdale.

Within the Santa Clarita Valley, urban expansion affects grassland in Newhall/Saugus and Pico; sagebrush scrub in Bouquet Canyon, Plum Canyon, Soledad Canyon, Sand Canyon, Saugus/Newhall and Canyon Country; desert woodland in Bouquet Canyon, Newhall/Saugus and Pico; and chaparral in Pico, Forrest Park, Bouquet Canyon and Soledad Canyon.

With reference to infill development, the plan affects 6,100 acres of the various types of natural vegetation in the south county (see Figure 6-22.) The greatest impact in terms of acreage is on the grassland communities; 4,600 acres are affected, with large acreages in San Fernando (Chatsworth, Porter Ranch, Mission Hills and Van Nuys),

FIGURE 6-22

Estimate of Vegetation Types Within Infill Areas
for the Total County and Unincorporated Areas,
By Planning Area

Planning Area	Total County			Unincorporated Area		
	1 Coastal Sage Scrub	2 Chaparral Grassland	3 Woodland/ Savannah	1 Coastal Sage Scrub	2 Chaparral Grassland	3 Woodland/ Savannah
San Fernando	-	1,100	-	-	-	-
Burbank/Glendale	200	300	-	-	-	-
West San Gabriel Valley	*	200	-	-	-	-
East San Gabriel Valley	*	300	100	-	100	-
Malibu/Santa Monica Mtns.	*	-	-	*	-	-
West Central	-	100	-	-	100	-
East Central	*	100	*	-	-	-
Southeast	-	100	-	-	-	-
South	-	400	-	-	-	-
Southwest	-	600	-	-	200	-
300	-	700	-	-	-	-
Santa Clarita Valley	*	-	-	*	-	-
Antelope Valley	*	100	100	-	*	*
TOTAL	500	700	200	*	400	*

* Less than 100 acres.

- 1 Includes sagebrush scrub in North County
- 2 Includes desert vegetation in Antelope Valley
- 3 Includes desert woodland in North County

East San Gabriel Valley (Glendora, San Dimas, La Verne, Walnut, Industry and Irwindale), Southwest (El Segundo, Torrance, Playa del Rey and Westchester); South (Carson and east of Carson), Southeast (Cerritos, Santa Fe Springs and La Mirada), and West San Gabriel Valley (Monterey Park and Rosemead) planning areas. Chaparral is affected by infill in Burbank/Glendale (Sunland), East San Gabriel Valley (San Dimas and Claremont), and Central (Hollywood Hills) planning areas. Coastal sage scrub is impacted in Burbank/Glendale (Sunland) and Southwest (Palos Verdes Estates, Rancho Palos Verdes and Los Angeles south of Harbor City). Finally, woodland/savannah is impacted in East San Gabriel Valley (San Dimas). In the Antelope Valley, desert woodland is affected in the City of Lancaster. As indicated in Figure 6-22, most of this acreage is in cities.

Another method of evaluating the plan's impact on vegetation is to compare the total acreage proposed for expansion and infill to the total resource acreage in the south county for each vegetative type. This comparison reveals that about five (5) percent (12,500 acres) of the county's 275,000 acres of grassland (including desert land) would be urbanized. Similarly, four (4) percent (4,600 acres) of the 108,200 acres of coastal sage scrub (including sagebrush scrub) is shown as converted to urban uses; while about 11 percent (18,700 acres) of the 165,500 acres of woodland/savannah (including desert woodland) would be urbanized. Finally, 5,100 acres or about two (2) percent of the 247,300 acres of chaparral in the county would be converted to urban uses.

With reference to Significant Ecological Areas, the Land Use Element's general conditions and standards for development provide for the management of such areas. Development proposals within an SEA must demonstrate compatibility with the biotic resources (see mitigation measures below). While adverse effects on biota might be associated

with development of the proposed highways and freeways included in the Los Angeles County Highway Plan which traverse SEAs, the plan includes mitigation measures to reduce any potential significant effects (see below). A listing of the freeways/highways affected is provided in Figure 6-23.

FIGURE 6-23

SIGNIFICANT ECOLOGICAL AREAS AFFECTED BY
PROPOSED ROADWAYS

Proposed Route	SEA Affected	Mileage (Approximate)
Azusa Avenue	Powder Canyon/Puente Hills	1.5
Pershing Drive	Ballona Creek	1.5
Parkway Calabasas	Palo Comado Canyon	1.75
Thousand Oaks Blvd.	Palo Comado Canyon	2.0
Rye Canyon Road	San Francisquito Canyon	.5
Decoro Drive	San Francisquito Canyon	1.5
San Francisquito Cyn. Road	San Francisquito Canyon	
	Santa Clara River	3.5
Santa Clara River Rd.	San Francisquito Canyon	
	Santa Clara River	2.0
Golden Valley Road	Santa Clara River	.25
Pathfinder Road	Powder Canyon/Puente Hills	.5
Longview Road	Alpine Butte	
	Big Rock Wash	4.75
Fort Tejon Road	Big Rock Wash	.5
Avenue E	Edwards Air Force Base	2.75
Avenue M	Alpine Butte	1.25
Avenue S	Desert-Montane Transect	3.0
	Little Rock Wash	4.5
Avenue Y	Desert-Montane Transect	1.0
<u>Freeways</u>		
Route 138	Portal Ridge/Liebre Mt. Joshua Tree Woodland Habitat Fairmont & Antelope Buttes Little Rock Wash Big Rock Wash	
	Desert-Montane Transect	8.0
Route 48	Fairmont and Antelope Buttes	.25
Route 126	San Francisquito Canyon Santa Clara River	2.0

1
The Los Angeles County Highway Plan is a sub-element of the Transportation Element. The highways traversing SEAs are for the most part extensions of or connections to existing improved roadways, in areas where additional capacity is expected to be needed prior to the year 2000.

MITIGATION MEASURES -

The following Conservation and Open Space Element policies and recommended actions will help to mitigate the adverse effects on biota discussed above:

- Preserve significant ecological areas and habitat management areas by appropriate measures, including preservation, mitigation and enhancement. (Policy 6)
- Protect the quality of the coastal environment. Balance natural resource protection with the need to provide public access. (Policy 7)
- Preserve and restore marine resources emphasizing the shore and near shore zone, especially lagoons and saltwater marshes. (Policy 8)
- Support an off-shore marine sanctuary from the Mexican border to Ventura County, extending fifty miles seaward. (Policy 9)
- Cooperate with the U.S. Forest Service in developing a comprehensive management program for the National Forests which will maintain high quality watershed, protect against natural hazards, provide recreational opportunities, and protect fish and wildlife habitats and designated wilderness areas. Encourage public acquisition of private inholdings in the forest. (Policy 10)
- Protect watershed, streams and riparian vegetation to minimize water pollution, soil erosion and sedimentation, maintain natural habitats and to aid in ground water recharge. (Policy 11)
- Encourage open space easements and dedications as a means of meeting scenic, recreational and conservation needs. (Policy 12)
- Encourage the multiple use of flood prone areas for recreation, agriculture, ground water recharge and wildlife. (Policy 22)
- Actively participate in the planning for acquisition and development of the Santa Monica Mountains National Recreation Area. Strongly encourage Congress to maintain a funding level adequate to meet the objectives of the National Recreation Area legislation. (Policy 25)

- Actively search for funding mechanisms at all governmental levels for the purpose of acquiring Significant Ecological Areas with the most regional importance for future generations as unique resource areas and as habitat of rare and endangered species. (Action 3)
- Actively pursue alternative methods to public acquisition for preserving valuable resources and open space (such as purchase-leaseback agreements, conservation or access easements, and dedications for acquiring land). Publicize available tax incentives where individuals or corporate entities convey land gifts to public agencies, cooperating closely in this effort with non-profit groups such as the Trust for Public Land and the Nature Conservancy. (Action 4)
- Give priority to the public acquisition of the following regional recreation areas. Actively pursue Federal and State financial assistance in this effort. (Action 9)

New County Recreation Areas

Ramirez Canyon Park
Zuma Canyon Park

Expansion to Existing County Recreation Areas

Baldwin Hills Regional Park
Beach Accessways
Charmlee Connector
Regional Trail Systems
Urban River Corridors

Major Federal and State Acquisitions

Santa Monica Mountains National Recreation Area
Backbone Trail Right-of-way
Caballero Canyon area

Cheseboro Canyon-Palo Comado area
Leo Carrillo State Park-Nicholas Flats area
Malibu Canyon area
Malibu Creek State Park area
Old Paramount Ranch area
Saddle Peak area
Saddle Rock Ranch area
Solstice Canyon area
Tuna Canyon area
Zuma Canyon area

Landfill Site Conversions

Calabasas Regional Park
La Puente Regional Park
Mission Canyon Regional Park
Rustic Canyon Regional Park
Spadra Recreation area
South Coast Regional Park and Golf Course

Other Federal and State Acquisitions and Expansions

Airport Dunes
Antelope Valley California Poppy Reserve
Antelope Valley Indian Museum
Ballona Wetlands
Beach Accessways (where appropriate)
Bouquet Reservoir
Cahuenga Peak area
Chino Hills
El Matador Beach
El Pascador Beach
Encinal Beach/Lechuza Point
Escondido Beach
Franklin Canyon - Cross Mountain Park
Hungry Valley State Vehicular Recreation Area

La Costa Beach
La Piedra Beach
Lopez Basin
Malibu Lagoon State Beach
Malibu Pier and Beach
Morris Reservoir
National Forest (private inholdings)
North Benedict Canyon
Otterbein State Recreation Area
Pan Pacific State Recreation Area
Paradise Cove Beach
Point Dume State Beach
Ritter Ridge Aquatic Park
Rowher Flats off-road vehicle area
Runyan Canyon
San Antonio Wash
San Gabriel Canyon off-road vehicle area
Santa Susana Mountain State Park
Trail Systems
West Corral Beach

- Actively pursue obtaining State Coastal Conservancy grants for the following priority coastal restoration and enhancement projects:
(Action 5)

Ballona Wetlands
Los Cerritos Area
Malibu Lagoon
Malibu Bluff Line
Malibu Coastal Trail - various lateral easements
Point Dume
Santa Catalina Island

The plan's provisions relating to Significant Ecological Areas will help to mitigate the impact on biota — the Land Use Element provides general conditions and standards relating to the protection of SEAs as one of the plan's special management areas. In order to protect SEAs, the only uses considered to be compatible by definition within such areas include regulated scientific study, passive recreation including wildlife observation and photography, and limited picnicking, riding and hiking and overnight camping. Other uses, including residential, commercial uses of a minor nature, public or semi-public uses, agricultural or extractive uses, are considered to be compatible only as determined by a detailed biotic survey and such conditions as may be necessary to assure protection of identified ecological resources. In addition, each development proposed within an SEA will be reviewed for compliance with design criteria relating to the setting aside of appropriate and sufficient undisturbed areas, the maintenance of waterbodies, water-courses and their tributaries in a natural state; the maintenance of wildlife movement corridors in a natural and undisturbed state; the buffering of critical resource areas with sufficient natural vegetative cover, or, where necessary, with fences or walls; and the location of roads and utilities so as not to conflict with critical resources, habitat areas or migratory paths.

As a part of the SEA performance review process, all development permit applications are to be accompanied by an adequate biotic analysis which is to be reviewed by an appointed Significant Ecological Area Technical Advisory Committee. This Committee is to consist of scientists knowledgeable of the county's biological resources. (Action 15 of the Conservation and Open Space Element) An environmental impact report is to be prepared for each project located within an SEA. The Zoning Ordinance is to be amended to implement the intent of the plan's special management areas policies including Significant Ecological Areas. (Action 21 of the Land Use Element.)

The following Water and Waste Management policies and recommended actions will also help to mitigate the adverse effects, by preserving riparian habitat:

- Design and construct new water and waste management facilities to maintain or protect existing riparian habitats. (Policy 17)
- Design flood control facilities to minimize alteration of natural stream channels. (Policy 16)
- Evaluate and implement feasible programs to protect riparian habitats which may be affected by flood control or water conservation projects. (Action 21)
- Evaluate all county owned or managed properties containing natural stream beds for possible retention in a natural state. (Action 24)

The plan's Floodplain Management provisions will also benefit biota — particularly riparian vegetation. Natural waterflow is to be maintained, along with streamside vegetation. Limited development is to be permitted within flood prone areas. (See Section 6.3.)

The Land Use Element's general conditions and standards for development within Hillside Management areas will also help to mitigate the impact on biota (see Section 6.13 - mitigation measures). With regard to rural residential hillside development, 70 percent of the land is to be retained in a natural or open condition; performance review criteria relate to the protection of riparian vegetation and natural drainage courses, native trees, etc. and design of the project to recognize the value of biotic resources. Within urban hillside developments, at least 50 percent of the development site is to be retained in a natural or open condition.

In addition, the National Forest Management Area designation as shown on the Special Management Area Policy Map reflects the management of the Angeles and Los Padres National Forests and those adjacent lands which protect the forest. The Forest Service manages the forest lands and is charged with protecting the significant habitat areas and natural resources. The county regulates the nearly 40,000 acres of private inholdings within the forest boundaries. The Land Use Element includes general conditions and standards which require that all proposed private and public development projects within the forests be reviewed by both the Regional Planning Commission and U.S. Forestry Service for compliance with applicable land use and resource management plans. A minimum lot size of five acres is required within the forest boundaries. The Conservation and Open Space Element includes a recommended action (#16) to continue to coordinate on land use issues with the U.S. Forest Service for areas within and adjacent to the national forests and, when completed, to integrate the Forest Plan into the County General Plan.

With reference to transportation facilities located within SEAs, the Transportation Element includes the following policy (#23):

- Avoid construction of transportation facilities within Significant Ecological Areas unless found essential following a detailed analysis of alternatives including a no project alternative. If the facility is still found to be necessary, it shall be constructed in the most environmentally sensitive manner.

The loss of natural vegetation within presently undeveloped areas can also be mitigated by actions at the project level, including low density or clustered development. Most of the acreage of vegetation loss due to urbanization would be at lower residential densities, thus generally allowing greater amounts of vegetation to be preserved. Design techniques intended to preserve vegetation can be required when an environmental review is carried out for a discretionary project.

6.9 Extractive Resources

EFFECT -

The plan would allow urban expansion and infill development in areas of known extractive resources, including oil and gas, and sand and gravel. A total of approximately 1,100 acres of mineral resources or about four (4) percent of the county's total resources, would be affected by urban expansion — slightly less than two-thirds involving areas of known sand and gravel resources, and the remaining third involving areas of known oil and gas resources. In addition, approximately 3,900 acres would be affected by infill development, 85 percent of which contains sand and gravel resources. Four hundred (400) acres of urban expansion, or 36 percent of the total, and 400 acres of infill, or 11 percent of the total, affect mineral resources within unincorporated areas.

Sand and Gravel Resources

The potential effect of urban development on the county's sand and gravel resources is that as growth takes place, additional pressure will be placed on the quarry industry. Conflicts between extractive uses and other urban uses will intensify, either resulting in the cessation of quarrying operations or some form of multiple use of resource lands. At the same time, population growth will increase the demand for construction and rebuilding, making the resources more valuable at existing locations.

Figure 6-24 provides estimates of urban expansion related to sand and gravel resources. The analysis of effects includes both those areas where such resources are currently being exploited, and areas of known value. Of the total 700 acres indicated, 100 acres are located within the unincorporated area and the remainder are located within cities. Primary areas affected are Rowland Heights and Glendora, in the East San Gabriel Valley; and the Olive View area in the San Fernando planning area (City of Los Angeles).

FIGURE 6-24

ESTIMATE OF MINERAL TYPES ACREAGE WITHIN URBAN EXPANSION AREAS FOR THE TOTAL COUNTY AND UNINCORPORATED AREA, BY PLANNING AREA

Planning Area	Total County			Unincorporated Area		
	Oil & Gas Well-Head Concentrations	Oil & Gas Areas of Known Resource	Sand and Gravel Areas of Known Resource	Oil & Gas Well-Head Concentrations	Oil & Gas Areas of Known Resource	Sand and Gravel Areas of Known Resource
San Fernando	-	200	200	-	-	-
Burbank/Glendale	-	-	-	-	-	-
West San Gabriel Valley	-	-	-	-	-	-
East San Gabriel Valley	-	-	500	-	-	100
Malibu/Santa Monica West	-	-	-	-	-	-
Central	-	-	-	-	-	-
East Central	-	-	-	-	-	-
Southeast	-	-	-	-	-	-
South	-	-	-	-	-	-
Southwest	-	-	-	-	-	-
Santa Clarita Valley	100	100	-	100	200	-
Antelope Valley	-	-	-	-	-	*
TOTAL	100	300	700	100	200	100

* Less than 100 acres.

Information on infill acreage within sand and gravel areas of known resource is provided in Figure 6-25. As is indicated, 2,800 acres are affected, primarily in the East San Gabriel Valley (in the Irwindale, San Dimas, La Verne and Industry areas). All but 100 acres affected in the East San Gabriel Valley are within cities. Other areas affected are San Fernando (Sunland), Southwest (Playa del Rey) and South (Long Beach).

A measurement of the impact of potential urban expansion and infill development on sand and gravel resources is provided by a comparison with the county's total sand and gravel known resources. Based on a summary of data from ESRI, Mineral Deposits and Mines, and Quinton-Redgate, Minerals and Unique Geologic Features (See Section 15.0 - Bibliography), the 3,500 acres of potential urban expansion and infill development represent approximately two percent of the county's total 171,500 acres of sand and gravel known resources.

Where the loss of quarrying operations in close proximity to urban uses does occur, this will necessitate transporting such materials from remote areas of the county, with a resulting increase in energy consumption and air pollution. If it were necessary to import sand and gravel, adverse impacts on resources and the construction industries of other areas (e.g., Orange County) could result.

Several of the major sand and gravel extraction sites are located near urbanized areas. Where urban growth takes place adjacent to or near such sites, adverse impacts are associated with visual changes as well as noise and safety.

FIGURE 6-25

ESTIMATE OF MINERAL TYPES ACREAGE WITHIN INFILL AREAS FOR THE
TOTAL COUNTY AND UNINCORPORATED AREA, BY PLANNING AREA

Planning Area	Total County			Unincorporated Area		
	Oil & Gas Well-Head Concentrations	Oil & Gas Areas of Known Resource	Sand and Gravel Areas of Known Resource	Oil & Gas Well-Head Concentrations	Oil & Gas Areas of Known Resource	Sand and Gravel Areas of Known Resource
San Fernando	-	-	-	-	-	-
Burbank/Glendale	-	-	200	-	-	-
West San Gabriel Valley	-	-	*	-	-	-
East San Gabriel Valley	-	-	2,200	-	-	100
Malibu/Santa Monica Mtns. West	-	-	-	-	-	-
Central	-	-	-	-	-	*
East Central	-	100	*	-	-	-
Southeast	*	*	-	-	-	-
South	300	500	200	100	200	-
Southwest	100	100	200	-	-	-
Santa Clarita Valley	-	-	-	-	-	-
Antelope Valley	-	-	-	-	-	-
TOTAL	400	700	2,800	100	200	100

Oil and Gas Resources

With reference to oil and gas resources, such extraction sites in urban areas can often operate with minimal disruption to nearby properties, although noise, air quality, and public safety effects can be concerns. As was indicated in Section 5.9, production of these resources has been declining in recent years, with local production now meeting a very limited amount of demand within the county.

The effect of urban expansion on oil and gas areas of known resources and oil and gas well-head concentrations is included in Figure 6-24. As is indicated, such resources may be impacted in the Santa Clarita Valley (Newhall area) and San Fernando (Porter Ranch) planning areas.

Infill development also affects the county's oil and gas resources. As is indicated in Figure 6-25, 700 acres of oil and gas known resources are affected (100 acres within unincorporated areas) as well as 400 acres of oil and gas well-head concentrations (100 acres within unincorporated areas). Oil and gas resources are located in Carson and the unincorporated area east of Carson, as well as El Segundo.

As was the case with sand and gravel resources, a measurement of the impact of potential urban expansion and infill development on oil and gas resources is provided by a comparison with the county's total oil and gas resources. The 1,500 acres of potential urban expansion and infill development represent approximately two percent of the county's total 69,800 acres of oil and gas resources.

MITIGATION MEASURES -

The general plan's Conservation and Open Space Element includes policies to protect and conserve existing mineral resources, evaluate the extent and value of additional deposits, and require reclamation of depleted

sites (Policy 14). In addition, the Land Use Element includes a policy to protect known reserves (including sand and gravel) from encroachment of incompatible land uses (Policy 22).

The Special Management Areas Policy Map identifies mineral resource areas--areas identified or to be identified as containing significant mineral resources by the State Mining and Geology Board, and areas suitable for the production of energy, including crude oil and natural gas. Within these areas, the Land Use Element provides that proposed development other than open space, passive recreation, agriculture, extraction or surface mining shall be reviewed for compatibility with existing or potential mineral resource production. Project review will include a consideration of the value of mineral resources located in the vicinity of the proposed development, the feasibility of extracting the identified mineral resources within a reasonable time period prior to development of the proposed use, and the cost of restoring the site in accordance with acceptable reclamation standards. In addition, development is to be designed so that it does not inhibit the future development of extractive, surface mining or energy production facilities and so that existing or future mineral resource activities are buffered from the proposed use. The Zoning Ordinance is to be amended to implement the intent of the mineral resources special management area policies (Action 21 of the Land Use Element).

One of the primary goals of the Surface Mining and Reclamation Act (SMARA), passed by the California Legislature in 1975, is the protection of significant mineral resources from land uses which would preclude mineral extraction. The act is also concerned with the reclamation of mining sites. Local lead agencies are to implement this act after receiving guidance from the state. In accordance with the act, zoning ordinances are to be amended with the intent of preserving subsurface mining deposits and regulating the operations and reclamation of surface mines.

Projects requiring discretionary action by governmental agencies can be evaluated during the environmental review process to determine their impact on mineral resources. The Land Use Element specifies that all extractive surface mining facilities are subject to conditions relating to control of slope excavations; erosion, sedimentation, water quality, runoff and flooding; protection of fish and wildlife; provision of adequate setbacks; control of noise, dust, vibration, smoke, dirt, odors and lighting; and salvage of topsoil.

As was pointed out above, extractive petroleum uses can operate with minimal disruption to adjacent uses, especially with appropriate design and screening. Quarrying operations located near other uses, especially residential uses, would require buffering to mitigate conflicts.

6.10 Prime Agricultural Soil Resources

EFFECT -

The impacts of the plan's development in terms of the agricultural resources of the county relate to both the loss of land currently used for agricultural purposes and the loss of undeveloped land having a high capability for agricultural uses but not currently used for that purpose. Such lands are highly suitable for development, given their lack of hazards and the dwindling supply of lands highly suitable for development in the south county. However, plan policy specifically encourages the retention of economically viable agricultural production within existing urban areas through the identification and mitigation of significant adverse impacts resulting from adjacent new development.

Potential conversion of lands currently used for agriculture to urban uses, estimated in acres for each planning area as well as the total county, is provided in Figure 6-26. As indicated, of the more than 92,000 acres of land currently used for agriculture in Los Angeles County, up to 13,400 acres, or about 15 percent of the total acreage, may be subject to new urban expansion and infill development. Of the 13,400 acres, 2,500 acres, or about 19 percent, are within unincorporated areas (including 800 acres in the Antelope Valley, and 1,200 acres in the Santa Clarita Valley) and the remainder is within cities.

About 8,300 of the total 13,400 acres are located in the south half of the county, representing about 62 percent of the existing agricultural land there. In the south portion of the county, where extensive urbanization has practically eliminated available agricultural acreage, the activity has become specialized, shifting toward crops of relatively high value, such as nursery products and cut flowers. Primary areas affected by urban expansion in the south county include Porter Ranch, Sylmar, Woodland Hills and Forrest Park (San Fernando planning area); and La Verne, Claremont, Glendora, Diamond Bar, Walnut, Industry and La Habra Heights (East San Gabriel Valley planning area). Infill development in the south county affects Industry, Glendora, San Dimas, and La Verne (East San Gabriel Valley planning area); the cities of Cerritos and Artesia (Southeast

FIGURE 6-26

ESTIMATE OF AGRICULTURAL LAND ACREAGE IN AREAS DESIGNATED
FOR URBAN EXPANSION AND INFILL, BY PLANNING AREA, FOR
THE TOTAL COUNTY AND THE UNINCORPORATED AREA

Planning Area	Land in Agricultural Use 1975				
	Total County	Total County	Urban Expansion Unincorporated Area	Total County	Infill Development Unincorporated Area
San Fernando	3,100	500	-	900	-
Burbank/Glendale	200	-	-	*	-
West San Gabriel Valley	400	-	-	*	-
East San Gabriel Valley	8,800	3,600	-	1,000	100
Malibu/Santa Monica Mtns.	500	*	*	100	100
West	100	-	-	-	-
Central	-	-	-	-	-
East Central	400	-	-	100	-
Southeast	1,500	-	-	500	-
South	1,300	-	-	1,100	200
Southwest	1,500	-	-	500	100
Santa Clarita Valley	8,000	1,200	1,200	-	-
Antelope Valley	66,000	3,900**	800**	-	-
TOTAL	91,100	9,200	2,000	4,200	500

* Less than 100 acres.

** Does not include 1,300 acres in Palmdale Airport site.

planning area); Long Beach, Compton, Carson (South planning area); and Torrance, Palos Verdes Estates and Rancho Palos Verdes (Southwest planning area).

In the Antelope and Santa Clarita Valleys 5,100 acres, or six (6) percent of the more than 92,000 acres of land used for agriculture in 1975, are shown in the plan as converted to urban uses. Primary areas affected in Santa Clarita Valley are Newhall/Saugus, Valencia, and Soledad Canyon. The Antelope Valley acreage is located primarily in the cities of Lancaster and Palmdale, as well as in the Quartz Hill (unincorporated) area.

Lands having a high capability for agriculture, but not currently used for agriculture, are also subject to potential urban expansion, as they are also highly suitable for urban use. The General Development Policy Map shows urban expansion on 28,000 acres of such lands (see Figure 6-27). Of the total 28,000 acres, 7,200 acres, or about 25 percent, are located within unincorporated areas. The areas affected within the various planning areas are as follows: Antelope Valley--the Quartz Hill area and the City of Lancaster; Santa Clarita Valley--Newhall; East San Gabriel Valley--Diamond Bar/Walnut and Rowland Heights (unincorporated areas) as well as the cities of Walnut, Pomona, La Verne Claremont and San Dimas; Malibu/Santa Monica Mountains--Agoura area near Westlake and Lake Lindero, and Las Virgenes Canyon; San Fernando--Sylmar and Lakeview Terrace.

With reference to infill development, the plan shows 16,600 acres having a high capability for agriculture converted to urban uses by the year 2000. As indicated in Figure 6-27, the East San Gabriel Valley, Antelope Valley, San Fernando and South areas are most affected. Of the total 16,600 acres, 1,600 acres, or 12 percent, are within the unincorporated areas. The largest area affected is located in the Del Amo area east of Carson. The remaining 15,000 acres are located in cities, including Industry, La Puente, San Dimas and Glendora in the East San Gabriel Valley; Carson; and Northridge and Woodland Hills in the City of Los Angeles.

FIGURE 6-27

ESTIMATED ACREAGE OF LANDS HAVING A HIGH CAPABILITY FOR AGRICULTURE POTENTIALLY URBANIZED BY YEAR 2000, FOR THE TOTAL COUNTY AND UNINCORPORATED AREA, BY PLANNING AREA

Planning Area	Urban Expansion Areas		Infill Areas	
	Total County	Unincorporated Area	Total County	Unincorporated Area
San Fernando	600	-	3,500	-
Burbank/Glendale	-	-	300	-
West San Gabriel Valley	-	-	100	-
East San Gabriel Valley	2,800	900	3,900	300
Malibu/Santa Monica Mtns.	700	700	-	-
West	-	-	*	*
Central	-	-	100	100
East Central	-	-	300	-
Southeast	-	-	700	-
South	-	-	3,100	700
Southwest	-	-	1,000	-
Santa Clarita Valley	1,600	1,600	-	-
Antelope Valley	22,300**	4,000**	3,600	500
TOTAL	28,000	7,200	16,600	1,600

* Less than 100 acres.

** Does not include 9,500 acres within the Palmdale Airport site.

The 28,000 acres of potential urban expansion and 16,600 acres of potential infill on high capability land represent about 10 percent of the county's total 450,000 acres of such prime lands. The new urban development (i.e., urban expansion and infill) on 13,400 acres of existing agricultural use and 44,600 acres of prime agricultural soils represents approximately 13 percent of the total 450,000 acres of land with high agricultural capability in the county.

While these acreages represent potential urban development on soils having a high capability for agriculture, it should be noted that they do not reflect other factors influencing usability for agriculture—e.g., water availability, lot sizes or ownership patterns.

MITIGATION MEASURES -

General plan policies and recommended actions which will mitigate the loss of prime agricultural lands and lands used for agricultural production include the following:

- Protect areas that have significant natural resources and scenic values, including significant ecological areas, the coastal zone, and prime agricultural lands (Policy 10 of the General Goals and Policies Chapter).
- Preserve significant agricultural resource areas and encourage expansion of agricultural activities into under-utilized lands such as utility rights-of-way and flood-prone areas (Policy 5 of the Conservation and Open Space Element).
- Implement the California Land Conservation Act (Williamson Act) and initiate contracts with farmers in order to continue the viability of commercial agriculture (Action 2 of the Conservation and Open Space Element).

- Encourage the multiple use of flood-prone areas for recreation, agriculture, ground water recharge and wildlife (Policy 22 of the Conservation and Open Space Element).
- Protect identified Potential Agricultural Preserves by discouraging inappropriate land division and allowing only use types and intensities compatible with agriculture (Policy 18 of the Land Use Element).
- In non-urban areas outside of Potential Agricultural Preserves, encourage the retention and expansion of agriculture by promoting compatible land use arrangements and providing technical assistance to involved farming interests (Policy 19 of the Land Use Element).
- In urban areas, encourage the retention of economically viable agricultural production, e.g., high value crops such as strawberries, cut flowers, nursery stock, etc., through the identification and mitigation of significant adverse impacts resulting from adjacent new development (Policy 20 of the Land Use Element).
- Assist in the preparation of a program to encourage agricultural production within significant agricultural resource areas in cooperation with farming interests, resource conservation districts, the County Agricultural Commissioner and interested state and federal agencies (Action 9 of the Land Use Element).
- Amend the zoning and subdivision ordinance and building and grading code to implement the intent of the special management areas policies (Action 21 of the Land Use Element).

The plan's support of voluntary establishment of agricultural preserves under the provisions of the California Land Conservation Act will help to mitigate the impact of the loss of prime agricultural land. This Act provides incentives for the preservation of prime agricultural lands and sets forth specific criteria governing the creation and maintenance of recognized preserves. The Land Use Element includes general standards and conditions to guide land use decisions relative to lands designated as Potential Agricultural Preserves. These conditions and standards provide that parcels designated as Potential Agricultural Preserves are subject to the use

standards and conditions established for Zones A-1 (Light Agriculture) and A-2 (Heavy Agriculture) of the County Zoning Ordinance; that such parcels of less than five acres in size may be developed for rural residential use subject to conditions and density standards established by adopted community, areawide and countywide plans, but that approval shall be subject to a finding that the proposed use will not individually, or in combination with surrounding residential use patterns, substantially impair or have a significantly adverse effect on adjacent agricultural activities. In addition, such parcels of five acres in size or larger may be developed for rural residential use at densities not exceeding one dwelling unit per ten acres, subject to the same conditions as apply to parcels of less than five acres in size relative to community and other plans and the finding of no significant adverse effect on adjacent agricultural activities.

6.11 Energy Consumption

EFFECT -

Implementation of the general plan's policies and projections—the construction of homes, businesses and other uses to serve the anticipated 7.8 million people to be living in the county as of the year 2000—will result in increased levels of energy consumption. Assuming that an additional 808,000 persons will be living in the county by the year 2000, potential significant effects to be considered include:

- I. The ability of the utilities to meet additional energy demands,
- II. Significant adverse effects on the environment, and
- III. Projected energy usage based on the general plan.

Each of these categories of impacts is discussed below.

I. Ability of Utilities to Meet Additional Energy Demands

Electrical Utilities —

Utility Demand Forecasts -

The electric utilities have traditionally forecast their own demands for upcoming years, in order to plan for additional generating, transmission and distribution facilities, to determine future fuel requirements, and to establish the most effective use of different types of generating facilities. On the basis of these forecasts, the five utilities have provided anticipated population, peak load, and kilowatthour sales within their service areas as of 1995, as is reflected in Figure 6-28 (See Energy Consumption Setting, Section 5.11, for definitions of the various terms associated with electrical energy production and use):

FIGURE 6-28
 PROJECTED DEMANDS OF ELECTRICAL UTILITIES

	Total Population Served	System Peak Loads (MW)	Total Annual Kilowatthour Sales
Burbank	95,015	358	1,667,000,000
Glendale	151,090	524	1,624,300,000
LADWP	3,500,000	6,890	32,020,000,000
Pasadena	121,131 ¹	326	1,345,000,000
SCEC	4,320,300 ³	21,593 ⁴	48,367,880,000 ⁵

Thus, as of 1995, the electrical utilities anticipate that they will serve at least 8,187,536 persons within Los Angeles County, an increase of 16% over 1975 levels, and that during the same period, total annual kilowatthour sales will increase by 93% over 1975 levels, to 85,024,180,000

1
 Population forecast was available only to the year 1990.

2
 SCEC has provided a more recent forecast (March 1978, Common Forecasting II Demand Forecast) which indicates that a peak demand of 21,059MW is projected for 1995; 23,213MW is projected for 1998. Total kilowatthour sales of 110,262,000,000 and 122,414,000,000 for 1995 and 1998 are also forecasted. These more recent figures do not, however, affect the analysis used in this report.

3
 The population figure for SCEC represents LA County only.

4
 Peak loads were available only for the entire SCEC service area.

5
 The figure given for total annual kilowatthour sales represents energy sales to 44% of the anticipated 1995 population to be served within the SCEC system, assuming an average per capita energy usage.

kilowatthours. Kilowatthour usage is thus expected to grow at a much faster rate than population, primarily due to a rising per capita consumption. Southern California Edison Company (SCEC) for example, estimates that residential kilowatthour sales per average residential customer will increase from 5,596 to 8,318 between 1975 and 1995.

Peak demand is expected to grow at lower levels, as compared to historical growth during the period 1940 to 1970 when peak demand tended to double every 10-12 years. Both SCEC and Los Angeles Department of Water and Power (LADWP) anticipate an average annual compounded growth in peak demand of 3.7% during the period 1975-1995.

Future Electrical Generating Facilities -

The various utilities have provided information as to the types of generating facilities they anticipate to construct to meet the increased energy demands forecasted within their service areas to the year 1995 or 2000. SCEC anticipates a need for 54 additional major (over 50 megawatts) generating facilities by 1995, primarily using oil, coal and uranium as fuel (additional fuel types include geothermal steam, wind and the sun), to provide an additional generating capacity of over 12,000 megawatts by 1995, nearly doubling its 1975 capacity of approximately 13,785 megawatts. These additional facilities would of course serve customers in the entire SCEC system, including Los Angeles County. SCEC indicates that its plans include a modest increase followed by a decrease in the use of oil-fired facilities, and a modest development of geothermal, solar, wind and other fuels. The bulk of its capacity additions are, however, expected to be coal and nuclear facilities.

1

SCEC's March 1978 Common Forecasting Methodology II Demand Forecast indicates that a 3.5 % annual growth in peak demand is anticipated to 1998.

2

SCEC has provided a more recent assessment of power generation needs (Future Generation Resources Program 1978-1997) which indicates that 1997 summer peak demand capacity is expected to be 26,319 megawatts. This change does not affect the analysis used in this report.

LADWP's plans include the gradual retirement of oil-fired facilities, and a major expansion of coal and nuclear capability. Nuclear capacity is expected to reach 2,065 megawatts by 1995 (as compared to zero megawatts in 1975), and coal capability is to increase from 634 megawatts in 1975 to 2,885 megawatts in 1995, with a decrease in oil capacity from 3,463 megawatts in 1975 to 2,437 megawatts in 1995. The Pasadena Water and Power Department indicates that it anticipates the construction of nuclear and coal-fired plants, to meet a peak load of 363,000 kilowatts by the year 2000 (more than double the 1975 peak load of 169,000 kilowatts), while the Glendale Water and Light Department anticipates the construction of five power plants — one oil and gas-fired, one coal-fired, one hydroelectric and two nuclear-fired — providing an additional 538.4 megawatts of capacity to meet a peak demand of 669 megawatts by the year 2000 (as compared to a peak demand of only 175 megawatts in 1975). The City of Burbank intends to construct three additional combustion turbine and nine steam generation units, to provide a total system capacity of 350 megawatts by 1995.

Because the San Joaquin and Palo Verde Nuclear Projects are no longer potential future power sources, the electrical utilities are considering other alternatives for supplying power in the 1980's. SCEC is considering development of a coal and petroleum coke generating station, and DWP is investigating various alternative means to supplying power, although nothing specific has been proposed.

State Control of Electrical Utility Plant Expansion -

The State Energy Resources Conservation and Development Commission (ERCDC), which was established by the Warren-Alquist Act (effective May 21, 1974) has been charged with the responsibility of ensuring an adequate supply of electricity, as well as establishing policies to reduce the rate of growth in energy consumption. A major responsibility

of the ERCDC is the regulation of the location of thermal electrical power plants and related transmission facilities. ERCDC policies are currently being developed to guide the rate of capacity expansion of all of the state's various electrical utilities.

The ERCDC has exclusive power to approve the number and location of all new major generating facilities (any thermal plant of over 50 mw capacity). Therefore, regardless of the utilities' demand forecasts and capacity expansion plans described above, the ERCDC will make the final decision as to the proper rate of capacity expansion, and the types and locations of proposed plants, on a statewide basis. In order to provide the basis for making these decisions, the ERCDC has prepared, and on an on-going basis will continue to prepare, analyses of the utilities' demand forecasts, plant characteristics and site-specific environmental impacts. The ERCDC has developed a forecasting approach which includes both a most likely forecast as well as higher and lower figures, in order to recognize the uncertainty in forecasting. Their forecasts are based on differing assumptions regarding population growth, future electricity and gas prices, availability of natural gas, and the effectiveness of conservation, as well as other factors as explained in Volume II of the 1977 Biennial Report (Electricity Forecasting and Planning Report). The ERCDC's 1995 projections for total kilowatthour sales and peak demand for the various electrical utilities are provided in Figure 6-29:

FIGURE 6-29

1995 ERCDC Projections for Electrical Utilities

	Total System Peak Demand (Megawatts)	Total Annual Kilowatthour Sales
LADWP (includes the cities of Burbank, Glendale, and Pasadena)	7,573	36,738,000,000
SCEC	23,288	46,716,000,000

1

These figures should be compared to those projected by the utilities, as indicated in Figure 6-28. Total kilowatthour sales projected by the ERCDC for 1995 are 1.9 percent lower than the total of the utilities own projections. However, as this percentage is much lower than the four percent difference between the utilities' projected 1995 population of 8,100,000 and the general plan's anticipated population of 7,800,000, the ERCDC's reduced kilowatthour figure still would be more than adequate to meet the needs of the general plan's projected population. The utilities' aggregated peak demand projections for 1995 are, on the other hand, lower than those of the ERCDC by 1,170 megawatts, so that ERCDC's projections would more than adequately meet the projected peak demand for the general plan's anticipated 2000 population. The ERCDC anticipates that the annual growth rate for peak demand will be 3.2 percent for LADWP and 4.2 percent for SCEC (as compared to a figure of 3.7 percent projected by both utilities).

1

As was indicated previously, kilowatthour sales within the Los Angeles County portion of the SCEC service area are assumed to be 44 percent of total projected kilowatthour sales in 1995. Therefore, the figure given is 44 percent of 106,174,000,000 kilowatthours.

Conclusion - Electrical Power -

Given the population estimates provided by the various electrical utility companies for the year 1995 and the forecasts of the ERCDC as well as its responsibility to supply adequate electrical power, it appears that there will be adequate electrical power to meet the anticipated needs of the projected population increase of 808,000 on which the general plan is based. This expectation must of course be tempered by the uncertainties surrounding the future construction of generating facilities which are not at this point considered to be either committed to be developed or in the advance planning phase (generally a 10-12 year lead time period is required for developing major generating facilities). The unknowns which cannot be accurately gauged at this time include the future climate with reference to governmental regulations (the numerous permit and other requirements at the Federal, State and local levels) as well as the political process and possible public opposition to the development of generating facilities at particular locations.

Should the electric utilities not be able to develop future plant capacity to meet the demands of their customers at some point in the future, power shortages would occur, especially during (summer) peak power use. Through the use of forced curtailments and rotating blackouts, the utilities would allocate the use of available power among all their customers if this situation developed.

Even if plant capacity remains adequate to meet peak demands of future customers, a shortage of fuel oil, as occurred during the 1973 Arab oil embargo, could also result in an inability on the part of the utilities to meet the power needs of existing and future customers. Because we are now, and will continue to be until alternate sources of fuel are developed, dependent on imported low-sulphur oil to power the major generating facilities serving the county, a shortage

of fuel oil could result in serious energy supply problems. However, reductions in energy use, energy rationing and emergency ordinances prohibiting certain types of electricity usage, would help to cushion the impact of such a shortage.

But, beyond these future uncertainties, the electrical utilities are planning to meet the anticipated future demands of over 8,100,000 persons within the county by 1995, and this figure represents 300,000 persons more than the year 2000 figure of 7,800,000 persons upon which the general plan is based.

Natural Gas Utilities --

The primary impact of population growth in the county associated with natural gas is the demand for additional natural gas, especially in the residential sector. The increased demand is expected to reflect primarily an increase in the number of customers, rather than an increased per capita consumption, due primarily to vigorous conservation programs by the Gas Company. Residential demand is expected to increase at an average rate of 0.625% per year in the Southern California Gas Company service area. It can be assumed that demand will be lessened as the price of natural gas increases, due to such factors as increased production, storage and distribution costs, the eventual deregulation of interstate prices and conservation actions of consumers. Adoption of conservation measures (e.g., lower thermostat settings, more insulation) and some substitution measures (e.g., solar energy for water or space heating) by consumers is expected to increase as costs increase. In addition to reducing demand, higher prices would also stimulate the production of additional gas supplies from interstate and supplemental sources. Higher prices will also financially impact county residents (especially residential customers) but this impact can be mitigated somewhat through reduced usage (conservation) and the use of the "lifeline" rate concept by the gas utilities.

As indicated previously, Southern California Gas Company (So Cal Gas) has been in the process of searching for additional gas supplies since 1969. New supply possibilities include liquified natural gas brought by ships from southern Alaska and from foreign sources, the gasification of coal as a substitute for natural gas, natural gas from the Alaskan North Slope or the U.S. outer continental shelf, or increased supplies from the continental U.S. or Mexico.

Projected new gas supplies which may begin to serve county residents by the early 1980's include (in addition to the existing California sources, interstate pipelines, and Federal offshore inputs) liquified natural gas (LNG) imports from South Alaska and Indonesia at the Point Conception LNG import terminal site—which was approved by the California Public Utilities Commission (CPUC) on July 31, 1978 and which could be operational by late 1982. This approval is, however, conditional upon further seismic studies and wind and wave tests, as well as archaeological studies.

In addition, if Congress passes appropriate legislation, Substitute Natural Gas (SNG) could begin to flow from an SNG plant in New Mexico.

It also appears that additional Canadian natural gas may be available within the near future. A six year contract for the delivery of 240 million cubic feet per day is in the final stages of negotiations; the new gas would help forestall potential shortages. Approval of this project by the Canadian National Energy Board and Alberta Conservancy, as well as the CPUC and the U.S. Department of Energy would allow construction of the Western leg of the Alaskan gas pipeline project, if sufficient supplies of natural gas can be obtained.

It is not, however, certain that adequate supplies will become available to meet all of the anticipated demands given possible regulatory, technical or other delays. Even when these increased supplies become

available, So Cal Gas would not expect to maintain the level of service it once provided to users such as steam generating electrical plants. Although only major industrial firms and electric generating facilities have been forced to switch to alternative fuels thus far, without new gas supplies, residential, commercial and smaller industrial users, who cannot switch to alternate fuels, also may be affected.

Supplies from existing sources (California, offshore, and interstate sources) are expected to fall to 56 percent of their present (1977) level by 1985. A modest expansion in Federal offshore gas will barely help to outweigh a decline in California supplies, but will have no impact on overall supplies, given the expected substantial drop in interstate supplies from El Paso Natural Gas Company and Transwestern Pipeline Company. Supplies from all sources are expected to drop by 18 percent between 1977 and 1980. However, supplies are expected to increase by 26 percent during the period 1980-1985, as deliveries from new supply projects (e.g., LNG from South Alaska and Indonesia, the SNG plant and the new Canadian gas) are received.

Figure 6-30 presents anticipated natural gas supplies to 1985. Projections for supplies from new sources are based on the assumption that LNG will be available by late 1980 and that supplies from the New Mexico Substitute Natural Gas Plant will be available by mid-1983. Any delays, whether of a regulatory, legal, institutional or technical nature, would lead to slippage in the project timetables, thus deferring the dates when new supplies might become available. It should be noted that, in both Figures 6-30 and 6-31, the numbers given for the So Cal Gas service area include direct sales to LADWP and SCEC for use in steam generating plants, as well as sales within the Southern California Gas Company and the Long Beach Municipal Gas Department service areas. It should also be noted that the calculations do not include new supplies of Canadian natural gas, which may become available in the early 1980's.

FIGURE 6-30

PROJECTED GAS SUPPLY, 1977-1985

So Cal Gas Service Area

Billions of Cubic Feet

<u>Year</u>	<u>Total Supply</u>
1977	766.4
1980	619.4
1985	849.2

Projected gas demand between 1977 and 1985, as provided in the 1976 California Gas Report, is given in Figure 6-36. Projections beyond the year 1985 were not available.

FIGURE 6-31

1

PROJECTED GAS DEMAND, 1977-1985

So Cal Gas Service Area

Billions of Cubic Feet

	Priority 1	Priority 2A	Priority 2B	Priority 3	Priority 4	Priority 5	Total
1977	468.2	62.8	16.3	125.2	82.4	499.3	1274.1
1980	469.7	52.3	16.0	134.3	82.7	606.4	1361.4
1985	493.7	53.9	15.9	133.5	82.8	563.7	1397.4

1

So Cal Gas now uses the following end-use priority system:

<u>Priority</u>	<u>Description</u>
1	All residential use regardless of size; all other firm use with peak-day demands of 100,000 cubic feet/day (cf/d) or less; all interruptible use with peak-day demands of 100,000 cf/d or less.
2-A	All service where primary use is as a feedstock with no alternative; all current firm non-residential use with peak-day demands greater than 100,000 cf/d; electric utilities start-up and igniter fuel.

In comparing supply and demand (Figures 6-31 and 6-32), it can be seen that while the needs of Priority Classes 1, 2A, 2B, and 3 are being met in 1977, the needs of only classes 1, 2A and 2B could be met in 1980, unless deregulation induces an increased supply of gas. However, in 1985, it is anticipated that the demands of classes 1, 2A, 2B, 3 and 4 could be met.

It should be noted that the comparison of supply and demand above is based on an anticipated five percent increase in residential gas demand between 1977 and 1985 (or approximately 0.625 percent per year) for Priority Class 1 which includes all residential uses. This should be compared to the general plan's anticipated population growth of 12 percent to the year 2000, or approximately 0.48 percent per year — about one-fourth less than the 0.625 percent per year growth rate. Since it is anticipated by the Gas Company that nearly all of the increased demand will be based on additional population growth rather than increased per capita consumption, the effects of the potential shortfalls discussed above could be less serious, based upon lower general plan growth projections.

-
- 2-B All current interruptible customers with LPG or other gaseous fuel standby facilities and peak day demands greater than 100,000 cf/d; other interruptible customers with CPUC approved deviation from requirements for standby facilities.
 - 3 All uses not included in another priority.
 - 4 Existing interruptible boiler use with peak-day demand greater than 750,000 cf/d; all use in cement kilns.
 - 5 All utility steam-electric generation plants and utility gas turbines, excluding start-up and igniter fuel.

Because of the possibility of further curtailments, the CPUC now requires all large gas customers with demands greater than 100,000 cubic feet per day to develop the capability to use alternate fuel whenever technically possible. This group includes all customers except residential, small commercial and small industrial users. It is the policy of the Gas Company to meet the anticipated demands of Priority 1 and 2 users, and to treat lower priority users (3, 4, and 5) as candidates for regular curtailment who will gradually be converted to alternate fuels. The CPUC in Decision No. 85189, has asked the State's major utilities to extend their mutual assistance agreement to cover protection of Priorities 1 and 2. While the utilities are now working on this agreement, this report does not reflect its implementation.

As lower priority customers continue to be curtailed, they will switch to a stand-by fuel—primarily fuel oil. The ERCDC estimates that the additional electrical energy required as a result of this curtailment and switching, on a statewide basis, will be five billion kilowatthours in 1980, 0.5 billion kilowatthours in 1985, and 13 billion kilowatthours in 1995. Additional peak capacity required to supply this electricity within California is estimated to be 500 megawatts in 1980, less than 100 megawatts in 1990 and 1200 megawatts in 1995. If this estimated use of electricity were to occur, ERCDC estimates that the 1975 to 1995 annual growth rate in total sales, on a statewide basis would increase by 0.2 percent, while the growth rate in peak capacity would increase 0.15 percent.

Projections of supply and demand beyond the year 1985 are not available, although So Cal Gas indicates that exploration in many parts of the world is continuing (as indicated above and in Section 5.11). The situation is very uncertain due to questions surrounding the availability of new supplies after 1985 and the course of future federal

pricing policies. Higher prices due to de-regulation and even possibly the Federal Power Commission price regulation order of July of 1976 could both stimulate supply and dampen demand enough to alleviate any potential shortages.

In conclusion, it appears that the expected new supplies would reverse the declining trend in the availability of natural gas, at least between 1980 and 1985, and that while curtailment to high priority customers is not expected, some short-term supply problems may occur.

II. Significant Adverse Effects on the Environment

The development of energy sources necessary to meet the population increase anticipated by the general plan will result in varying degrees of adverse effects on the environment, depending upon the type of energy and fuel source involved. Potentially significant adverse health and safety effects include the deterioration of air and water quality, the use of limited water resources, and the safety of nuclear power plants and disposal and transportation of nuclear wastes. In addition to health and safety effects, other effects to be considered include visual impacts associated with the construction of above ground facilities such as transmission and distribution lines and the loss of habitat associated with such activities as strip mining.

As offshore oil production and supertanker traffic increase, the potential for oil spills and marine safety risks can also be expected to increase. Even with the proposed additional use of nuclear fuels, it can still be expected that air quality will be significantly affected by proposed increases in the use of oil, coal, and geothermal fuels (the use of low sulfur oil will mitigate some of this impact). In addition, substantially increased use of water-intensive fuels (nuclear, coal, geothermal) may have significant impacts on water resources. Other impacts which may be important, depending on the

location of the particular project, include geologic hazards (e.g., fault zone), land use conflicts, and socioeconomic impacts (e.g., employment, capital resources).

In some cases, however, the construction of new plants may not result in adverse environmental effects. For example, a new plant having less serious adverse impacts may replace an older more environmentally damaging unit. Or, a nuclear generating plant may replace an oil or coal-fired generating plant, thus decreasing the impact on air quality (although nuclear safety effects, including the possibility of radiation leaks, the disposal of nuclear wastes and the possibility of sabotage would also have to be taken into consideration).

The various electrical utilities have indicated that for the most part, after a 10-year period during which imported oil will be the major fuel source, new generating facilities will primarily utilize coal and uranium, mined outside of California, as fuel. As these new facilities and those facilities associated with the production of natural gas are to be constructed primarily outside the county (only one new electric generating plant - a waste heat removing plant - is anticipated to be constructed within the county) or even outside California, the effects associated with their construction and operation will therefore also generally occur outside county boundaries. Particularly important out-of-state impacts are likely to be associated with water resources and air quality. In most cases, significant effects will be considered and evaluated in an environmental document prepared before the particular generating facility, pipeline, offshore oil platform, transmission or distribution line, refining plant, gasification plant, et cetera, can be constructed, provided that an environmental review is carried out. Any of these projects proposed within the State of California for which discretionary governmental approval is required will also be reviewed for environmental impact.

A primary impact within the county will be the visual effects associated with the construction of transmission lines. SCEC alone anticipates that at least 52 additional circuit miles of transmission lines within Los Angeles County will be required in order to integrate the electricity generated within its future plants into its existing network. For a detailed discussion of the environmental impacts associated with the construction of transmission lines, as well as generating facilities, see An Evaluation of Power Facilities: A Reviewer's Handbook, Berkshire County Regional Planning Commission, Pittsfield, Massachusetts, April, 1974.

A discussion of adverse impacts on the environment associated with the construction of electrical generating facilities is also provided in Chapter VI of Volume II of the 1977 Biennial Report (the Electrical Forecasting and Planning Report), published by the ERCDC. Since one of the fundamental goals of the ERCDC is to integrate environmentally sensitive long range planning into its energy policies and regulatory activities, it has directed the utilities to provide additional environmental data, to expand their analysis of major environmental issues and the potential implications of their proposed resource plans, and to integrate their plans for future energy producing facilities with the requirements of the State Air Resources Board and local Air Quality Management Districts in terms of existing and proposed air quality standards and air pollution regulations.

The ERCDC is also evaluating potential power plant sites, in terms of constraints or opportunities related to specific locations. A list of environmental and other factors to be considered has been developed. (See the 1977 Biennial Report, Volume VII, Power Plant Siting, ERCDC.)

Finally, SCEC has also published a generalized discussion of impacts associated with the construction and operation of new generating facilities, including impacts on water bodies, air quality, and other health and safety effects such as those associated with nuclear power plants. (See the Supplemental Submission of Biennial Forecast of Electric Loads and Resources Report, April 16, 1976.) In addition, for a discussion of air quality effects of the general plan, related both to increased use of petroleum in the transportation sector and increased emissions resulting from the development of stationary sources such as petroleum refineries, see Section 6.6.

The major effect related to the potential new sources of natural gas appears to be the potential safety risks associated with the storage and gasification of large amounts of liquified natural gas (LNG). If a spill of LNG were to occur, whether due to equipment failure, human error or natural disaster, the fluid would vaporize, and, if ignited, would result in thermal radiation. Like an accident associated with a nuclear generating facility, the likelihood of such a spill is remote, but if it were to occur, very serious consequences could result. For a detailed discussion of the impacts associated with the future use of liquified natural gas, see the Final Environmental Impact Report prepared for the proposed Oxnard LNG Facilities (Socio-Economic Systems, March, 1977).

III. Projected Energy Usage Based on the General Plan Stationary Usage

To arrive at a total figure for stationary energy usage in the year 2000 within the county, a base figure for the year 1975 was first calculated based on the information provided in Figure 6-32:

FIGURE 6-32
1975 RESIDENTIAL ENERGY USAGE FACTORS

Population	7 Million	
Average Annual Single Family Usage:		1
Natural Gas	1,000 Therms	2
Electrical Power	6,000 Kilowatthours	
Average Annual Multiple Family Usage:		
Natural Gas	600 Therms	
Electrical Power	3,600 Kilowatthours	
Total Number Single Family		
Dwelling Units	1,718,000	
Total Number Multiple Family		
Dwelling Units	989,000	

Using this data, total annual residential energy usage was determined to be 278,471,484 million BTUs. Assuming that residential usage represented 30 percent of total stationary energy usage in 1975, the remaining 70 percent, representing commercial, industrial and all other non-residential uses, would have been 649,766,846 million BTUs, with a total stationary usage of 928,238,330 million BTUs.

A projection for the year 2000 can be developed based on the following factors:

1
One therm = 100,000 BTUs

2
One kilowatthour = 3,413 BTUs

FIGURE 6-33
2000 RESIDENTIAL ENERGY USAGE FACTORS

Population	7,800,000
Average Annual Single Family	
Dwelling Unit Usage:	
Natural Gas	1,000 Therms
Electrical Power	8,300 Kilowatthours
Average Annual Multiple Family	
Dwelling Unit Usage:	
Natural Gas	600 Therms
Electrical Power	5,000 Kilowatthours
Number of Dwelling Units	
Constructed 1975-2000:	
Single Family	173,000
Multiple Family	439,000
Number of Dwelling Units	
Existing in 1975 Less	
Units Demolished 1975-2000	
Single Family	1,632,000
Multiple Family	932,000

In calculating annual residential usage, it was assumed that energy savings on homes constructed between the period 1975 and 2000 would amount to approximately 20 percent (see discussion of mitigation measures, for the types of conservation measures anticipated).

Based on these figures, residential energy usage would be projected to be 308,816,519 million BTUs in 2000. Assuming that commercial, and all other non-residential usage would increase to 72 percent of total usage in 2000, with residential usage representing 28 percent, total stationary energy usage in 2000 would be 1,102,914,000 million BTUs.

Mobile Usage

A year 2000 figure for energy usage within the transportation sector¹ was also derived. Using population, employment and housing allocations for each planning area in the county, a projected total VMT for the county was determined, and from this figure, assuming an average automobile mileage improvement from 13.5 miles per gallon in 1975 (1975 mix) to 27.5 miles per gallon for autos manufactured after 1985 (for a discussion of federal regulations requiring improved auto efficiency see the discussion of mitigation measures) total fuel usage by autos was estimated. Projected public transportation (bus) fuel usage was then added to this figure, giving a total yearly mobile energy usage figure. The 1975 and 2000 transportation energy usage factors are compared in Figure 6-34.

FIGURE 6-34
TRANSPORTATION ENERGY USAGE: 1975-2000

	<u>1975</u>	<u>2000</u>
Auto and Bus VMT/Day (millions) ²	111.0	116.0
Auto Vehicle Miles/Gallon of Fuel	13.5	27.5
Approximate Total Motor Vehicle Energy		
Consumption (million gallons/day)	8.2	4.2
Equivalent BTUs/Day (millions)	1,128,800	584,800
Equivalent BTUs/Year (millions)	412,485,000	213,452,000

¹

It should be noted however that mobile usage may be higher than indicated if the required automobile mileage improvement is not achieved.

²

A transit diversion rate of eight percent is assumed.

As is indicated, total annual mobile energy usage¹ is expected to drop to 213,452,000 million BTUs in the year 2000, as compared to 412,485,000 million BTUs in 1975.

Total Energy Usage

Total energy usage for 1975 and 2000, including projections of both stationary and mobile sources, is provided in Figure 6-35.

FIGURE 6-35
TOTAL ENERGY USAGE: 1975-2000

	1975 (Million BTUs)	2000 (Million BTUs)	Percent Change 1975-2000
Residential	278,471,484	308,816,519	+10
Commercial and Industrial	649,766,846	794,097,681	+22
Mobile	412,485,000	213,452,000	-48
Total	1,340,723,330	1,316,366,200	-2

As can be seen, net energy usage is projected to drop between 1975 and 2000, although usage within the stationary sector is expected to rise by approximately 16 percent during these years. Mobile usage is expected to drop by about 48 percent, thereby decreasing overall energy consumption by about two percent.

¹

This analysis does not include projections for energy usage within the other components of the transportation sector (i.e., railroads, aircraft, and harbors), although it can be assumed that major effects associated with transportation will be related to the use of automobiles which represents 65% of the energy usage within the transportation sector.

As is evident from the data provided above, no significant adverse effect is expected related to the increased use of energy primarily because of the anticipated significant decrease in the use of fuel by automobiles. (See mitigation measures for transportation sector fuel usage below.)

MITIGATION MEASURES

Projected total energy usage in the year 2000 is expected to be lower than in 1975 (see discussion of anticipated decreased energy usage within the transportation sector above). However, even though a net increase in the use of energy is not expected within the county, additional supplies of natural gas and increased electrical generation capacity will be necessary, and given the environmental and supply problems associated with these forms of energy usage discussed previously, mitigation measures to reduce energy usage are very important. Although the plan's emphasis on moderate density housing as well as its emphasis on infilling existing suburban areas and rehabilitating older urban areas (as compared to construction on the urban fringe), will tend to result in energy savings, the increased population will create additional energy needs beyond the present capacity of the utilities and other energy suppliers to provide.

The utilities are exploring a variety of new power sources. These include geothermal energy, solar energy, lasers/amplification of light, coal gasification, and nuclear energy. Future large scale use of geothermal and solar energy, however, is dependent upon the development of new technologies. Experts at the Rand Corporation, for example, feel that the Imperial Valley's estimated 35,000 megawatts of geothermal potential will not become a significant energy source before the 1990's. SCEC and LADWP are involved with many solar energy related projects, including a 10 megawatt solar thermal central receiver pilot plant, to be located in Daggett, California, to utilize conventional power

plant technology. SCEC feels that solar electric power plants may be available as proven commercial technology by the early 1990's. With regard to nuclear energy, while the development of the thermo-nuclear fusion reactor should solve many of the problems associated with this energy source, at best any practical application of this reactor system is still many years away.

Clean burning synthetic gas produced by coal gasification could prove to be a valuable new fuel for the power generating facilities that are now dependent on natural gas and low sulfur fuel oil for a low polluting operation. It is particularly important for local steam plants, given the close proximity to large coal deposits located in the Southwest. This resource may be rapidly developed if the adverse environmental effects of strip mining can be resolved. Rand Corporation estimates that once synthetic fuel begins to replace natural gas and oil, the domestic coal supply could be exhausted in less than 70 years.

Although alternative energy sources such as those mentioned above may be long range solutions to the energy shortage, the only realistic mitigation measure in the short range is the conservation of our existing energy sources. Conservation will both mitigate aggregate energy use and slow the rate of growth of demand while simultaneously mitigating adverse environmental and economic consequences. Therefore, the mitigation measures suggested below are intended to help conserve existing supplies of energy, in order to allow more time to develop new technologies and to work out the problems associated with such activities as coal gasification, offshore oil production and the disposal of radioactive wastes.

The types of mitigation measures described below include:

- (1) governmental regulations which are either adopted or are anticipated to be adopted in the near future;
- (2) ordinance changes or other regulations which could result in energy savings should they be adopted;
- (3) strategies which could be implemented by the utilities to reduce energy demands and peak loads;
- (4) consumer choices which could conserve energy; and
- (5) County general plan commitments to energy conservation and development.

In addition, it should be pointed out that as each subdivision or other use requiring a permit or approval by the county is considered, the environmental review will include a consideration of energy impacts, and if the project may have a significant effect on the environment, energy conservation measures may be required. Mitigation measures will also be determined by the lead agency for each future energy-providing project having a significant effect on the environment, whether it be a new generating facility, pipeline, oil refinery or transmission line, at the time the particular use is proposed. Examples of mitigating measures might include alternative locations with reduced impacts, or pollution-reducing equipment.

1. Governmental Regulations Requiring Energy Conservation

Many governmental agencies, including the California Energy Resources Conservation and Development Commission (ERCDC), the California Public Utilities Commission (CPUC), the U.S. Energy Research and Development Administration, and the Federal Energy Administration have broad responsibilities to institute energy conservation measures

in conjunction with regulating or overseeing energy supply options. Some of the more important measures affecting energy use within the residential and the commercial/industrial/utility sectors are described below.

Residential Sector

- All Federal Housing Administration loan-guaranteed houses are required to limit overall heat flow in walls and ceilings to the range of 0.05 to 0.14 BTU's per square foot per hour per degree Fahrenheit, 0.65 to 1.13 BTU's per square foot per hour per degree Fahrenheit for doors and windows, and 0.08 to 0.15 BTU's per square foot per degree Fahrenheit for floor sections over unheated spaces. Requirements for foundation insulation and special insulation of other areas are also provided for in these standards.

- All future sales of new gas-fired residential appliances in California, with the exception of water heaters, will require intermittent ignition devices rather than constantly-burning pilot lights. Senate Bill 1521 of 1974 requires that the Energy Resources Conservation and Development Commission certify intermittent ignition devices and require their installation 24 months after such initial certification. This regulation is to take effect on July 8, 1978 for all gas fired forced air central service and all gas household cooking appliances, and on February 10, 1979 for all gas clothes dryers. Based on this new regulation, 240-340 million Therms of natural gas are expected to be saved each year.

- The ERCDC has developed minimum energy efficiency standards for new appliances which are to be adopted shortly, with enforcement to begin one year after their adoption. Standards for refrigerators, freezers and air conditioners were adopted in the fall of 1976. Future appliances sold in the United States will be required to

meet labeling and energy efficiency standards set by the Federal Energy Administration, to become effective before March, 1978.

The staff of the ERCDC estimates that enforcement of mandatory building efficiency and appliance standards will result in a potential electric demand reduction of 11 billion kilowatthours per year and an annual savings of more than 580 million Therms of natural gas by 1985, on a state-wide basis. The savings in terms of electricity is anticipated to be approximately one-fifth of the 1975-1985 growth in electrical energy demand, as forecasted by the electric utilities. By 1995, the mandatory energy conservation standards are expected to save 23 billion kilowatthours of electricity per year, and between 1.2 and 1.4 billion Therms per year of natural gas.

- Other residential sector energy conservation programs currently being carried out by the ERCDC include the support of solar demonstration and implementation projects and the training of and assistance to architects, engineers and local building officials in implementing the new building standards.
- Regulations and programs anticipated to be adopted by the ERCDC in the near future include (1) the mandatory retro-fitting of ceiling insulation and other cost-efficient conservation measures upon the sale of a home or reconnection of a utility service, (2) encouraging the use of more energy-efficient heating systems by restricting the use of electric resistance heating in all new residential units unless it can be shown to be the most cost-effective system, (3) an information and marketing program (or possibly a regulation requiring the installation of night set-back devices in new centrally heated homes), to increase the use of night set-back devices or the manual setting-back of thermostats in residences at

night, (4) the incorporation of water use and water heating criteria in energy efficiency standards for new appliances and residential buildings, (5) the development of a comprehensive program for retrofitting water use and water heating conservation devices in existing homes, and (6) efforts to increase the use of solar energy, including revisions to the residential building performance standards to provide greater incentives for the use of passive design or active solar systems for space heating, cooling and water heating.

The ERCDC and the CPUC plan to jointly recommend that each major electric and gas utility implement expanded pilot programs of outreach services and the direct sale of insulation and other conservation devices to residential customers.

Commercial/Industrial/Utility Sectors

In the commercial, industrial and utility sectors, the ERCDC proposals for the near future include: (1) working with utilities and state and local agencies and other groups to initiate or extend programs of technical information, energy audits, and loan and incentive programs to encourage a reduction in lighting, other hardware retrofitting and energy efficient operations in commercial buildings (standards for maximum lighting levels and thermostat settings may be developed); (2) working with selected industries, utilities and the CPUC to plan specific co-generation projects, identify state and federal funds to support project planning and engineering costs, and assure full utility support of co-generation whenever it represents a feasible cost-effective and environmentally sound alternative to new conventional generating capacity; (3) a load management program, to reduce peak hour demand by altering the timing of loads associated with certain industrial uses of electricity, shifting use to off-peak hours. This program will include continued support, in cooperation with the CPUC

and utilities, of load management demonstration projects and the dissemination of information learned from these projects, as well as recommendations to the CPUC and utilities regarding time-of-day rates, utility purchase and installation of recycling devices, and amended regulations on the methodologies to be used by the utilities in forecasting and supply planning. Local management programs are estimated to have the potential to reduce 1985 demand state-wide.

Transportation Sector

Title 5 of the Energy Policy and Conservation Act, passed by Congress in 1975, deals with improved automobile efficiency. This Act requires that the average fuel economy for passenger automobiles manufactured by any manufacturer, beginning after the 1977 model year, be not less than 18 miles per gallon in 1978, 19 miles per gallon in 1979, 20 miles per gallon in 1980, to a maximum of 27.5 miles per gallon for autos manufactured after 1985. This Act is to be enforced by the Federal Energy Administration. Energy savings resulting from its implementation is discussed in Section 6.11 (Energy Consumption - Effect).

In addition, the ERCDC is cooperating with the State Department of Transportation and other state, regional and local agencies in the development and implementation of a number of strategies for saving transportation energy by increasing vehicle efficiency, raising average vehicle occupancy levels and reducing unnecessary VMT.

National Energy Program

It is uncertain at this point as to how great an effect the national energy policy may eventually have on energy savings within the county. Taxes on inefficient automobiles may result in substantial energy savings within the transportation sector, while other features

such as federal income tax credits for installing insulation or solar heating, utility rate reform and the eventual deregulation of interstate natural gas prices are also anticipated to result in energy saving and/or increased energy production.

2. Ordinance Changes or Other Regulations Which Could Result in Energy Savings Should They Be Adopted

Residential Sector

The State Housing Law allows for passage of modifications to the several uniform construction codes by cities and counties if "local conditions" so warrant. The County Building and Safety Code could therefore be amended to incorporate the following construction requirements for new residential dwelling units, where feasible:

- Light colored roof with a Munsel Rating of 6-10.
- R-11 batt insulation and light colored or shaded exterior walls, with 15% maximum dark area for trim.
- Exterior glazing (window area) limited to 12.5% of floor area, with credit given for double-paned windows and specific types of screening and shading. Unshaded glazing limited to 1.5% of floor area.
- Cross ventilation to provide 15 air changes per hour ducted to exterior of house.
- Orientation of dwelling units to the north/south, whenever feasible.
- Solar heating of swimming pools.

The City of Davis has estimated that the implementation of these requirements within its jurisdiction could effect energy savings of up to 50% of the energy required for heating and 20% of that required for cooling, compared to past averages in that City. Comparable savings could be expected within the county. The advisability of amending the building code to reflect these requirements should be considered as a part of the preparation of the county's General Plan Energy Element.

Commercial/Industrial/Utility Sectors

- Ordinances could require interlocking devices which prevent the simultaneous operation of major pieces of equipment. For example, heating and cooling systems could not be operated at the same time, if this type of device were installed.

- The use of spring-loaded sliding covers on commercial freezers, refrigerators, and display cases in all stores could be required, to conserve energy.

- The outdoor lighting of large commercial buildings at night and the decorative lighting of homes and use of ornamental fountains could be limited as nonessential uses of energy.

- Higher building standards for commercial uses could be developed, especially for the large indoor shopping centers where electrical load per square foot is so high.

- Advertising sign wattages and operation periods could be regulated.

- Outdoor night sporting events could be prohibited.

- Landscaping requirements could be amended to require the planting of street trees which are large enough to shade streets in the summer but are deciduous, to let winter sunlight pass, and the planting of trees in parking lots which are large enough to provide 50% shading in 10 years, as well as increased levels of landscaping with trees to encourage bicycling and walking in summer.

Transportation Sector

Within the transportation sector, measures which could reduce energy consumption include:

- The use of tax policies to price gasoline at a level that fully reflects resource scarcity and the other social costs of inefficient energy use.
- Implementation of a "transportation system management" program to reduce unnecessary travel and discourage low-occupancy automobile travel in inefficient vehicles.
- Imposition of graduated auto registration fees and excise taxes based on efficiency or weight.
- Preferential lanes for buses and carpools and ramp metering.

3. Energy Conservation and Peak Demand Reduction Measures Which Could Be Encouraged and/or Required by the Utilities

The electrical utilities are actively engaged in peak shaving and load deferment programs by encouraging customers to reduce their peak demands and postpone uses to more appropriate times. Through restructuring of rates to penalize high demand use, the utilities hope that the need for additional plant capacity may be deferred and that existing capacity may be spread over a longer period of time.

Energy conservation and peak shaving will, in addition to conserving energy, save the consumer money in both capital and operating costs while providing more time for development of less polluting power sources. Peak load controllers, rate incentives and penalties for excessive use are discussed below.

- Electric demand limiters with load-shedding devices, high voltage interior electrical distribution systems, and power factor correcting condensers can all result in energy conservation for commercial buildings and industrial plants.

- Utility customers can reduce their daily peak demands, and therefore their electrical energy costs without any serious inconvenience by deferring, reducing, or limiting demands through careful programming of preselected loads which in turn would reduce the utility's peak demand. Preselected loads can automatically be reduced according to a program preselected by the customer or remotely controlled by the utility; for example, electric storage water heaters could be de-energized while elevators are in operation in a commercial building. Similar procedures are applicable in industry so that machinery not in use may be turned off. Peak load controllers could be required to be installed in all new and remodeled structures.

- The elimination of group or master residential metering of multifamily occupancies would avoid waste and reduce consumption. Individual metering in all cases, with each consumer paying his own electric bill rather than having it included in the rental or other costs, can have a pronounced effect in reducing energy waste.

- The introduction of peak pricing or allowance of credits for load shedding at peak periods would tend to limit the growth of system peak. Separate metering of loads which contribute or add to peak demand could, by imposing corresponding appropriate charges, also

reduce peak demand. Metering for peak periods to more properly allocate costs is technically feasible.

- Additional utility rate considerations include interruptible service rates, special standby rates and billing penalties for low power factor installation by large commercial/ industrial customers.
- Rate incentives would encourage customers to purchase and install the equipment required to control their own loads.
- Other penalties include seasonal surcharge rates during summer or winter months, to reduce air-conditioning and heating uses.
- By deferring swimming pool pump and filter use to off-peak hours, through a time switch or remote radio control, system peak demand could be reduced, and therefore new plant facilities investments could be reduced.

Because of the present minor position of electric rates in relation to total expenditures for the commercial/industrial sector, it appears that considerable increases would be necessary before any appreciable change in use based on price increases would be observed.

4. Consumer Choices Resulting in Energy Savings

Much energy conservation can be brought about by such simple tasks as turning lights off when not needed, driving less by carpooling or consolidating trips, weather stripping doors and windows, lowering thermostats on cold days to reduce heating loads or raising thermostats on warm days to reduce air conditioning loads, setting the water heater temperature lower and insulating water heaters. These are, however, consumer choices which are presently being encouraged, but which are not within the control of the county to enforce.

The private sector is actively involved in pursuing energy conservation. Many old industrial processes are being phased out because of relatively low efficiencies as compared to newer processes. Also, many private companies have begun to research and develop major programs to produce energy more efficiently, such as more efficient generation and transmission of electricity, development of solar energy systems, reclaiming lost energy in processes such as waste heat recovery in foundry processes or heating, ventilation and air conditioning systems, or the substitution of lower energy raw materials in some processes. Increased energy prices, tax incentives to use reclaimed or recycled materials and energy taxes on inefficient processes would all help to encourage these actions in the private sector.

5. County General Plan Commitments to Energy Conservation and Development

The following policies and actions have been included in the General Plan:

General Goals and Policies Chapter

- Accept and plan for a level and rate of population and economic growth consistent with improved environmental quality and the availability of air, water and energy resources. (Policy 6)

- Conserve energy to ensure adequate supplies for future use. (Policy 12)

- Promote more effective recycling and reuse of resources, especially those that are non-renewable. (Policy 15)

- Promote the efficient use of land through a more concentrated pattern of urban development, including the focusing of new urban growth into areas of suitable land. (Policy 17)

- Promote jobs within commuting range of urban residential areas in order to reduce commuting time, save energy, reduce air pollution, and improve public convenience. (Policy 64)

Conservation and Open Space Element

- Support the conservation of energy and encourage the development and utilization of new energy sources including geothermal, thermal waste, solar, wind and ocean-related sources. (Policy 2)
- Develop a system of bikeways, scenic highways and riding and hiking trails; link recreational facilities where possible. (Policy 29)
- Complete and adopt an Energy Element of the General Plan which emphasizes energy conservation, local energy production, and safety requirements for energy delivery systems (i.e., ports, pipelines, storage facilities). Evaluate and develop methods for protecting solar rights. (Action 11)
- Support stronger tax and cost-saving incentives to encourage greater use of alternative energy sources such as solar energy and wind power. (Action 12)
- Amend the Building and Grading Code to provide standards resulting in greater water and energy savings in new structures. (Action 13)

Land Use Element

- Concentrate well designed higher density housing in and adjacent to centers to provide convenient access to jobs and services without sacrificing livability or environmental quality. (Policy 1)

- Promote compatible land use arrangements that reduce reliance on the private automobile in order to minimize related social, economic and environmental costs. (Policy 21)

- Amend the zoning ordinance to provide for reduced parking requirements when employers provide for van and carpooling, private transit or other measures which reduce the need for employee parking. (Action 20)

Housing Element

- Discourage inefficient use of scarce natural resources in the construction and rehabilitation of housing. Encourage the use of energy saving technology in the design, construction and operating systems of residential buildings. (Policy 33)

Transportation Element

- Plan and develop bicycle routes and pedestrian walkways. (Policy 3)

- Support the development of a mass transportation system that will provide a viable alternative to the automobile. (Policy 6)

- Support continued improvement and expansion of the present bus system as a public service. (Policy 7)

- Support development of a rail transit or exclusive bus lanes in high demand corridors when sufficient patronage, cost effectiveness and public support of land use policies are assured. (Policy 11)

- Support research for and development of new transportation technologies. (Policy 12)

- Support low capital strategies that maximize the efficiency and cost-effectiveness of existing transportation facilities and systems. (Policy 13)

- Support completion of the highway and freeway routes necessary to make the system operate efficiently. (Policy 14)
- Minimize modal conflict and encourage compatible joint use and interfacing of transportation facilities. (Policy 15)
- Develop parking management plans for application in selected areas. (Policy 17)
- Support use of non-vehicle improvements to reduce peak hour congestion. (Policy 18)
- Support traffic operation improvements for improved flow of vehicles. (Policy 19)
- Support technical research and development by automobile manufacturers directed toward reducing emissions, fuel consumption and noise. (Policy 24)
- Encourage reduction of vehicle miles traveled (VMT). (Policy 25)
- Encourage use of the most energy-efficient transportation modes for the movement of people and goods. (Policy 26)
- Promote measures that conserve energy as well as all natural and man-made resources in the development of transportation systems. (Policy 27)
- Promote the development of alternative energy sources for transportation to reduce reliance on petroleum. (Policy 29)
- Develop a contingency plan using the full resources of an expanded transit system and car and vanpooling, for use in the event of a fuel shortage or other unforeseen crisis. (Policy 30)

- Encourage greater multimodal access to major airports and improve internal circulation within these facilities. (Policy 34)
- Develop public information and education programs in transportation-related ways that people can use to make air quality, noise and energy improvements through individual effort. (Action 36)
- Support SCAG's program to develop mandatory vehicle inspection and maintenance programs for light duty vehicles as one method of achieving the objectives for air quality improvements. (Action 41)
- Direct the County purchasing agent to minimize energy consumption and air pollution characteristics of the vehicle fleet by obtaining high fuel economy and low polluting vehicles. (Action 46)
- Initiate educational programs to make the general public aware of energy conserving driving habits. (Action 49)

Water and Waste Management Element

- Facilitate the recycling of wastes such as metal, glass, paper and textiles. (Policy 19)
- Encourage use of technology for the conversion of waste to energy. (Policy 20)
- Seek funding for pilot facilities for the disposal or reduction of solid waste and the recovery of materials for recycling or for use as fuel in the field of energy production. (Action 48)
- Continue to monitor, research, develop and investigate potential programs in the field of solid waste disposal which emphasize resource recovery (waste to energy). (Action 49)

- Seek funding, and develop non-air polluting facilities, for the conversion of waste to energy. (Action 50)

- Continue and expand the recovery of methane gas from completed landfills and sewage treatment plants. (Action 51)

As indicated above, the Department of Regional Planning also intends to develop an "Energy" Element to be included as a part of the County General Plan. Such an element could be considered a mitigation measure for the energy impacts discussed above, in the sense that it will be aimed at ensuring that the county will have an adequate and continuing supply of energy, and in that it will also suggest methods for minimizing environmental problems associated with the development of new energy supplies and facilities. Through such an element, a recommended action program will be formulated regarding future sources of and demand for energy supplies, as well as the means for achieving conservation and more efficient energy usage in the county. The Energy Element is to include both the development and implementation of a short-range energy conservation program for the county, as well as a long range energy plan.

6.12 Archaeological/Historical/Paleontological Resources

EFFECT -

Quantification of the effects of the plan on the archaeological, historical and paleontological resources of the county is not feasible at this time, given a lack of specific information at the project level and the lack of a comprehensive survey of the county with regard to archaeological and paleontological resources. However, to the extent that the plan emphasizes concentrated development — the revitalization of older urban areas and infilling of bypassed parcels as opposed to the consumption of undeveloped land at the urban fringes — it can be assumed that the effect on such resources can be lessened.

The 55,800 acres of urban expansion shown on the General Development Policy Map represent a potentially adverse impact with regard to the loss of archaeological and paleontological resources. Development in areas such as the Santa Monica Mountains, the Puente Hills, and the Santa Susana Mountains, where previous surveys have generally revealed archaeological sensitivity would, in many cases, result in a loss of such resources. This would also be the case with paleontological resources which also tend to be located in hilly undeveloped areas. Development in rural hillsides could also affect such resources, although to a much lesser degree than urban development, given the generally very low densities in rural areas.

With reference to historical resources, the plan's emphasis on rehabilitation could be beneficial as older structures may be more likely to be preserved in areas which are revitalized. However, a negative effect is also possible where historic structures are replaced or modernized or where new structures are constructed on vacant parcels within historically significant neighborhoods.

MITIGATION MEASURES -

The plan's Conservation and Open Space Element includes the following policies and recommended actions to mitigate the impact discussed above:

- Protect cultural heritage resources, including historical, archaeological, paleontological and geological sites, and significant architectural structures. (Policy 16)
- Encourage public use of cultural heritage sites consistent with the protection of these resources. (Policy 17)
- Promote public awareness of cultural resources. (Policy 18)
- Encourage private owners to protect cultural heritage resources. (Policy 19)
- Add the position of staff archaeologist to the Department of Regional Planning. Responsibilities will include reviewing archaeological/paleontological sections of environmental documents received by the County, evaluating archaeological/paleontological surveys submitted by developers, and supervising the disposition of these resources in accordance with County policy. (Action 21)
- Restructure the County Historical Landmarks Committee as a Cultural Heritage Committee and by ordinance delegate to it the following powers and duties:
 - (a) Update the inventory of historic places and structures;
 - (b) Nominate additional historic places and structures for inclusion on the National and State Registers of Historic Places;

- (c) Review building and/or demolition permits as they may affect historic places and structures;
- (d) Make recommendations to the Regional Planning Commission where zoning requests may impact historic places or structures; and
- (e) Recommend to the Board of Supervisors an ordinance to protect historic places or structures. (Action 22)

The plan also includes the following policies which will mitigate the impact on archaeological/historical resources:

- Protect cultural heritage resources (General Goals and Policies Chapter, Policy 11).
- Promote the preservation and enhancement of landmarks, sites, and areas of cultural, historical, archaeological and urban design significance (General Goals and Policies Chapter, Policy 37).
- Support efforts to restore and preserve residential and other structures of historical and architectural significance (Housing Element, Policy 10).

The Land Use Element includes provisions relating to the protection of archaeological, paleontological and historical resources. Guidelines, which apply within all unincorporated areas, require that for each initial study for a public or private project, (as required for discretionary projects) a literature search for valid archaeological or paleontological surveys shall be conducted, and that if the literature search indicates a strong likelihood that such resources would be impacted by a proposed project, a study of the project site shall be made by a qualified archaeologist or paleontologist to determine the scientific value of finds and to make recommendations as to their

preservation or disposition. These guidelines also require that when a determination has been made to salvage, the archaeologist or paleontologist and project developer should be allowed, prior to the start of grading, to adequately salvage the site.

With reference to historical sites, the guidelines provide that the integrity of significant historical features of the structure and/or site should be maintained, but that if this is not economically and physically feasible, a reasonable period of time should be allowed prior to approval to explore other methods of preservation. In addition, these guidelines provide that development in the vicinity of an historical site or structure should be designed so that the uses permitted and the architectural design will protect the visual integrity of the site, including the consideration of building heights, materials, textures, colors, setbacks and landscaping.

6.13 Scenic Qualities

EFFECT -

The general plan would result in the loss to urban development of open lands which currently provide visual relief and contrast to the surrounding urban area (primarily hilly areas). Rural development also has the potential for affecting scenic qualities, although to a lesser degree than urban development. In addition, the plan would result in the alteration of the scale of existing communities through the recycling and infilling processes.

The quantification of the loss of scenic undeveloped land to infill and urban expansion was developed in two ways. First, as a gross measurement of scenic qualities, the extent of urban expansion and infill in hilly and mountainous areas (areas of 15 percent or greater slope) was calculated. While it cannot reasonably be assumed that all of the sloped acreage affected by the plan is scenic, it can be assumed that such acreage provides an indication of those areas generally considered by to be visually pleasing due to their undeveloped character. This information is provided in Figure 6-36.

In addition, for a more precise measurement, estimates of encroachment of urban expansion and infill development into areas of "high scenic quality," as identified in an experimental model developed by Environmental Systems Research Institute (ESRI) as a part of the Land Suitability/ Capability Study for the General Plan Revision Program (See Section 15.0 - Bibliography) were made. This experimental model incorporated such factors as vegetation, landform types and hydrologic characteristics in addition to slope. Since the data provided by this model was developed only for the south county and a portion of the Santa Clarita Valley, an estimate was also made (based upon the same general factors) of the

FIGURE 6-36

ESTIMATE OF SLOPE ACREAGE WITHIN URBAN EXPANSION
AND INFILL AREAS FOR THE TOTAL COUNTY AND UNINCORPORATED AREAS, BY
PLANNING AREA

Planning Area	Urban Expansion Areas						Infill Areas					
	Total County			Unincorporated Area			Total County			Unincorporated Area		
	15-30% Slope	30%+ Slope	Area	15-30% Slope	30%+ Slope	Area	15-30% Slope	30%+ Slope	Area	15-30% Slope	30%+ Slope	Area
San Fernando	400	700	-	-	200	500	-	-	-	-	-	-
Burbank/Glendale	-	-	-	-	100	500	-	-	-	-	-	-
West San Gabriel Valley	-	-	-	-	-	100	-	-	-	-	-	-
East San Gabriel Valley	2,100	2,700	500	1,100	300	200	-	-	-	-	-	-
Malibu/Santa Monica	400	1,200	400	1,200	*	*	*	*	*	*	*	*
West Central	100	600	-	-	-	100	-	-	-	-	-	100
East Central	-	-	-	-	-	700	-	-	-	-	-	-
Southeast	-	-	-	-	-	-	-	-	-	-	-	-
South	-	-	-	-	100	-	-	-	-	-	-	-
Southwest	-	-	-	-	200	100	-	-	-	-	-	-
Santa Clarita Valley	100	4,100	100	4,100	-	100	-	-	-	-	-	100
Antelope Valley	100	-	-	-	-	-	-	-	-	-	-	-
TOTAL	3,200	9,300	1,000	6,400	900	2,300	*	*	*	*	*	200

*Less than 100 acres

potential encroachment into scenic areas within the remainder of the Santa Clarita Valley and the Antelope Valley. This information is provided in Figure 6-37.

With reference to the estimates of urban expansion on sloped land, (Figure 6-36), the Santa Clarita Valley and East San Gabriel Valley are most affected. Primary areas affected within the East San Gabriel Valley include Rowland Heights and Diamond Bar. Areas within the Santa Clarita Valley include Castaic, Bouquet Canyon, Valencia, Newhall, Pico, Saugus, Mint Canyon, Forrest Park, Canyon Country and Pinetree. The 1,600 acres in Malibu/Santa Monica Mountains are located within the Calabasas, Agoura and Westlake Village areas. The Porter Ranch area within San Fernando planning area is also affected. Of the total 12,500 acres of new urban expansion on slopes of 15 percent or greater, 7,400 acres — 1,600 acres in the East San Gabriel Valley, 1,600 acres in the Malibu/Santa Monica Mountains and 4,200 acres in the Santa Clarita Valley — are located within unincorporated areas, with the remaining 5,100 acres located within cities.

Figure 6-36 also indicates those areas where infill development will affect slopes of 15 to 30 percent and greater than 30 percent. Areas most affected are San Fernando (Porter Ranch, Woodland Hills, Canoga Park and Mission Hills), Burbank/Glendale (Mount Washington), East San Gabriel Valley (San Dimas, Pomona, Walnut, West Covina and Irwindale), and Central (Monterey Hills and Lincoln Heights). The acreage in the West is located in Pacific Palisades, the acreage in West San Gabriel Valley is located in Monterey Park and that in the Southwest is in Playa del Rey. All of the infill acreage is within incorporated cities except 100 acres in the Central area (Baldwin Hills) and 100 acres in the Santa Clarita Valley (Newhall).

With regard to the second measure of scenic quality — areas of "high scenic quality," based on a combination of factors (vegetation, topography, hydrology, etc.), as is indicated in Figure 6-37, planning areas most

affected by urban expansion are the Santa Clarita Valley (approximately 39 percent of the total 2,900 acres, located in Pico, Dry, Bouquet and Mint Canyons), the East San Gabriel Valley (approximately 37 percent of the total acreage located in Rowland Heights, Hacienda Heights, Diamond Bar, Walnut, La Verne and West Covina), and Malibu/Santa Monica Mountains (approximately 13 percent of the total acreage located in Lake Lindero, Calabasas Park, Brents Junction and Calabasas). The San Fernando acreage is located in Chatsworth, Sylmar and Porter Ranch. Of the total 2,900 acres affected by urban expansion, 2,200 acres are located within unincorporated areas.

With reference to infill development on lands of high scenic quality, the plan includes approximately 800 acres, located in East San Gabriel Valley (Industry, San Dimas, La Verne); Central (Monterey Hills, Montecito Heights); Southwest (Playa del Rey, Westchester, Palos Verdes Estates); San Fernando (Porter Ranch, Sylmar, Woodland Hills); and West San Gabriel Valley (Monterey Park).

Although much of the new urban development affecting sloped land in both the north and south county would be at a low density (one to six units per acre), the existing open character would be altered even by such low density urbanization — especially as a result of the construction of access roads. Some medium density residential uses and commercial and industrial development are also included on the urban expansion and infill lands affected. The loss of lands presently used for agriculture (See Section 6.10) to urban use would also affect scenic qualities, especially in the East San Gabriel, Antelope and Santa Clarita Valleys.

FIGURE 6-37

ESTIMATED ACREAGE OF URBAN EXPANSION AND INFILL DEVELOPMENT
 IN AREAS OF HIGH SCENIC QUALITY FOR THE TOTAL COUNTY AND UNINCORPORATED AREA,
 BY PLANNING AREA

Planning Area	Urban Expansion		Infill Development	
	Total County	Unincorporated Area	Total County	Unincorporated Area
San Fernando	200	*	100	-
Burbank/Glendale	-	-	*	-
West San Gabriel Valley	-	-	100	-
East San Gabriel Valley	1,100	600	200	100
Malibu/Santa Monica	400	400	-	-
West Central	*	-	-	*
East Central	-	-	200	-
Southeast	-	-	*	-
South	-	-	*	-
Southwest	-	-	200	-
Santa Clarita Valley	1,200	1,200	-	-
Antelope Valley	*	*	-	-
TOTAL	2,900	2,200	800	100

*Less than 100 acres

The plan's non-urban development also represents a potential change in scenic qualities. Although it is not known where development in non-urban areas might be located, especially outside rural communities, the potential for 15,000 new dwelling units (See Section 3.2) represents a change in scenic qualities based on conversion of undeveloped land to residential uses.

While the greatest impact on non-urban land could be expected within hillsides, the other changes on non-urban land will also result in some changes in scenic quality — especially associated with the loss of agricultural land. The change within rural communities would be expected to represent the least impact in terms of scenic qualities, given the existing generally concentrated rural development in those areas. However, with regard to all non-urban development, the generally very low densities and the application of performance standards in hillside areas, will reduce this impact significantly (see discussion of mitigation measures below).

With reference to the alteration of the scale of existing communities associated with the recycling and new urban development processes, plan policy encourages residential infill and revitalization at densities compatible with those of surrounding uses. The plan projects the recycling of 13,700 acres to commercial/industrial use and 11,800 acres to multiple residential use. The major visual change would result from the shift from lower density to moderate and higher density residential uses. (See Figure 6-38 in Section 6.14 for an indication of the loss of low residential density units in recycle areas during the period 1975-2000, by planning area.) With an average density of 23.9 units per acre for the 325,000 new residential units on recycled land (as compared to an existing average density of 7.7 units per acre on the acreage to be recycled), a major visual change throughout various neighborhoods and communities would result. The central city and older suburb areas are most affected. (See Section 6.15 for a

discussion of the recycling effort in terms of its effects on communities.) However, because the neighborhoods which would be affected are for the most part currently blighted and deteriorated, it is assumed that recycling would result in beneficial visual effects to the extent that it is used as a vehicle for upgrading the appearance of neighborhoods through design controls.

The plan's projected new urban development also has the potential for resulting in some visual changes with regard to density (change of scale). Infill and urban expansion on currently vacant land is to take place at an average density of 7.8 units per acre as compared to a county average residential density in 1975 of 6.6 units per acre. In terms of change from single family to commercial or industrial use, the impact could be negative, given the potential conflict in those cases where the new uses are located near remaining residential uses. However, project design should mitigate this potential negative effect (see mitigation measures below), given the importance of renovating blighted commercial uses and providing jobs in close proximity to residences, especially in the deteriorated neighborhoods where unemployment tends to be higher. (Plan policies encourage the location of commercial activities in convenient proximity to residences, and the location of industrial activities in areas of high employment need.)

The revitalization of older urban areas is expected to result in positive effects in terms of visual qualities, as will the conservation and maintenance of existing sound neighborhoods, to the extent that further blight and deterioration in presently sound areas can be prevented. The plan's Housing Element includes policies encouraging the maintenance of the existing sound housing stock and promoting systematic inspection by municipalities of residential properties (Policy 4); actively soliciting greater development and use of local, state and federal programs for rehabilitation of existing housing and supporting efforts to ensure adequate funding of these programs (Policy 7);

the formation of community and neighborhood improvement organizations to encourage self-monitoring and development of community identity (Policy 12); and promoting the deferral or abatement of tax increases resulting from rehabilitation activities (Policy 33). (See Section 6.17 - Housing.) A potential negative effect of requiring strict code compliance is the abandonment of otherwise sound structures where exact conformance would be economically infeasible.

MITIGATION MEASURES -

General plan policies and recommended actions directed toward protecting scenic quality include the following:

General Goals and Policies Chapter

- Direct urban development and revitalization efforts to protect natural and man-made amenities and to avoid severe hazard areas such as flood prone areas, active fault zones, steep hillsides, landslide areas and fire hazard areas. (Policy 9)
- Protect areas that have significant natural resources and scenic values, including significant ecological areas, the coastal zone, and prime agricultural lands. (Policy 10)
- Stress the development of community parks particularly in areas of the greatest deficiency, and take advantage of opportunities to preserve large natural and scenic areas. (Policy 16)
- Protect and enhance the visual quality of natural edges and encourage superior design of major entry/exit ways. (Policy 38)

Conservation and Open Space Element

- Preserve significant agricultural resource areas and encourage the expansion of agricultural activities into under-utilized lands such as utility right-of-way and flood prone areas (Policy 5) (See Section 6.10.)
- Preserve significant ecological areas and habitat management areas by appropriate measures, including preservation, mitigation and enhancement. (Policy 6)
- Protect the quality of the coastal environment. Balance natural resource protection with the need to provide public access. (Policy 7)
- Preserve and restore marine resources emphasizing the shore and near shore zone, especially lagoons and salt water marshes. (Policy 8)
- Protect watershed, streams, and riparian vegetation to minimize water pollution, soil erosion and sedimentation, maintain natural habitats and to aid in ground water recharge. (Policy 11)
- Encourage open space easements and dedications as a means of meeting scenic, recreational and conservation needs. (Policy 12)
- Protect the visual quality of scenic areas including ridgelines and views from public roads, trails, and key vantage points. (Policy 15)
- Manage Development in hillside areas to minimize risks from fire, flood, mudslides, erosion and landslides, and to protect their natural and scenic character. (Policy 23)
- Actively participate in the planning for acquisition and development of the Santa Monica Mountains National Recreation Area. Strongly encourage Congress to maintain a funding level adequate to meet the objectives of the National Recreation Area legislation. (Policy 25)
- Provide low-intensity outdoor recreation in areas of high scenic and ecological value compatible with protection of these natural resources. (Policy 26)
- Develop local parks in urban areas as part of urban revitalization projects, wherever possible. (Policy 27)

- Develop a system of bikeways, scenic highways, and riding and hiking trails; link recreational facilities where possible. (Policy 29)
- Encourage the maintenance of landscaped areas. Integrate landscaping and open space into housing, commercial and industrial developments especially in urban revitalization areas. Use drought-resistant vegetation in non-fire hazard areas and pollution-tolerant plants in urban areas. (Policy 33)
- Support preservation of heritage trees. Encourage tree planting programs to enhance the beauty of urban landscaping. (Policy 34)
- Establish a Hillside Design Study Group comprised of representatives from county agencies, professional engineering, architectural and planning organizations, private developers, homeowner associations, and members of the general public. This group would develop recommendations for appropriate ordinance changes to implement the Hillside Management Performance Review Procedure outlined in the Land Use Element. (Action 18)
- Prepare and adopt Scenic Corridor District Ordinances for Mulholland Highway and the Simi/San Fernando Valley Freeway. (Action 26)

Transportation Element

- Stress environmental compatibility and improvement, including air quality, noise, ecology, and aesthetics in developing transportation systems. (Policy 21)
- Develop transportation facilities that are consistent with the Scenic Highway Element; and give special emphasis to esthetics in the planning, design, and construction of public facilities within scenic corridors. (Action 38)

Land Use Element

- Establish land use controls that afford effective protection for significant ecological and habitat resources, and lands of major scenic value. (Policy 17)

- Amend the zoning and subdivision ordinance and building and grading code to implement the intent of the special management policies.
(Action 21)

The plan's Hillside Management/Performance Review Procedure will help to mitigate its effect on scenic qualities. This procedure, which is described in detail in Appendix A of the Land Use Element, will apply to all development on lands of 25 percent or greater slope in the unincorporated area.

With regard to non-urban residential hillside development, density standards are as follows:

<u>Slope</u>	<u>Lower Density</u>	<u>Maximum Density</u>
25 - 49%	one unit/ten acres	one unit/two acres
50%+	one unit/twenty acres	

On slopes of 50 percent or greater, a maximum of one dwelling unit per 20 acres is permitted. In areas with slopes ranging from 25 percent to 49 percent, development proposals exceeding the lower density thresholds (as listed above) are subject to the Hillside Management/Performance Review procedures.

In addition, 70 percent of the land in non-urban residential hillside development is to be retained in a natural or open state, and density transfer is encouraged provided that adverse scenic impact on neighboring residential uses is minimized. Density transfer is not permitted to areas of 50 percent natural slope or greater.

Submittal, review and approval of a specific site plan (through the Conditional Use Permit or similar procedure) is required for all projects in non-urban hillsides where the proposed density exceeds the lower

slope/density threshold or provides for clustering of units on natural slopes of 25 percent or greater. Further, all proposed residential development in non-urban hillsides (on slopes of 25 percent or greater) is subject to a performance review procedure. Performance review criteria provide that development be reviewed with reference to the limitation of grading; protection of drainage courses, riparian vegetation, rock outcroppings, and existing native trees; preservation of significant views including those from major existing residential areas and the visual quality of highly scenic areas; landscaping to screen or soften the visual impact of new developments; location of utility lines; location and design of signs; and placement of residential structures to preserve scenic values. Major ridgelines are to be preserved whenever possible. All project approvals are to be supported by a finding that the proposed project demonstrates creative and imaginative design resulting in a visual quality that will complement community character and benefit current and future community residents, and is sensitive to and compatible with the natural scenic resources of the area.

Residential development within urban hillsides (on slopes of 25 percent or greater) is also subject to the performance review procedure with regard to public safety and quality of design (grading, preservation of significant views, etc.). Also, at least 50 percent of the development site is required to be retained in a natural or open state. Specific site plan review (through the Conditional Use Permit or similar procedure) is required where proposed development exceeds the midpoint of the permitted countywide density range or where clustering on slopes of 25 percent or greater is proposed. Densities within urban hillsides are established by applicable community or areawide plans, or the countywide plan where no local plan has been adopted.

With reference to non-residential uses in non-urban hillsides, intensive uses are discouraged. However, since certain uses such as storage of

volatile materials, landfills, etc. are appropriately located in non-urban hillsides, safeguards are to be imposed to minimize environmental disruption and the loss of scenic and open lands.

The Land Use Element's General Conditions and Standards for Development also help to mitigate the impact on scenic qualities within non-urban areas. These standards provide that proposals for non-urban residential development exceeding a baseline of one dwelling unit per five acres (to a maximum of one unit per acre) are subject to compliance with conditions relating to a positive finding as regards environmental quality and the degradation of significant natural resources, public health and safety, air and water quality, the extension or expansion of urban services and facilities, the existence of access by paved road, the existence of adequate water supplies and distribution facilities, and compatibility with surrounding development patterns. Thus development in non-urban areas and the related potential effect on scenic qualities is limited by a negative finding on any of these factors.

Another mitigating measure is the plan's special management designation of 350 miles of scenic corridors as shown in the Scenic Highway Element; the establishment of Scenic Corridors will protect those areas adjacent to and/or visible from scenic highways which contain identifiable scenic resources such as wildlife, vegetation, scenic vistas, topographical features, and cultural and/or architectural elements of note. Standards for development deal with site design, structures and landscaping, grading, access roads, watercourses, and commercial/industrial uses.

In addition, the Land Use Element's floodplain management provisions (see Section 6.3), Significant Ecological Area management provisions and National Forest Management area provisions (see Section 6.8) will also help to lessen the impact on scenic qualities in some areas of the county as will the more than 40,000 acres designated as additional open space easement lands within the county. Where such easements

are granted (generally through deed restrictions or dedication of construction rights secured at the time of development permit approval) permanent open space will be set aside for long-term use. The plan also designates over 200,000 acres as potential agricultural preserves, within the Santa Clarita and Antelope Valleys (see Section 6.10).

At the private project level, those applying for discretionary development approvals, such as grading permits, will be required to go through the environmental documentation process, including an analysis of the effects on scenic resources. Mitigation measures, including design changes, can be incorporated at that time.

The primary mitigation measures for the negative effects of the alteration of the scale of communities is design control. The plan's Land Use Element includes the following policies:

- Assure that new development is compatible with the natural and man-made environment by implementing appropriate locational controls and high quality design standards. (Policy 7)
- Promote neighborhood commercial facilities which provide convenience goods and services and complement community character through appropriate scale, design, and locational controls. (Policy 9)

The Land Use Element's General Conditions and Standards for Development also provide mitigating measures relating to higher density infill and revitalization development. Performance review includes a condition relating to compatibility with surrounding uses in terms of scale, intensity and design, through site plan review (see Section 6.15 - mitigation measures). Higher density low income housing is also to be subject to review relative to design and scale (see Section 6.17 - mitigation measures). A recommended action (#7) to prepare revitalization plans and programs for unincorporated areas in South Central Los Angeles and the Compton area includes the emphasis on improved neighborhood

design. The General Goals and Policies Chapter also includes a policy to preserve sound residential areas and protect them from intrusion of incompatible uses (Policy 44). Large-scale revitalization provides the opportunity to upgrade the quality of blighted neighborhoods.

6.14 Land Use

EFFECT -

Land use is an all-encompassing category, in that the general plan's land use policies reflect the entire physical dimension of the plan — the general location, distribution, density and intensity of land uses. In general, the policies reflect the encouragement of a compact and focused urban form, with a higher density of buildings and population, and a more intensive use of existing urban services.

Major land use changes projected in the plan include the 33,100 acres of recycling, especially in the older suburbs, the 35,900 acres of infilling on bypassed vacant land, primarily in the suburbs, and the projected demand for 27,000 acres of urban expansion.

The plan's emphasis on a balanced development pattern (with increased emphasis on revitalization and infill) and moderate densities will result in primarily positive secondary effects in terms of the more limited consumption of land and other natural resources (e.g., water, energy), and the retention of the scenic qualities of the fringe undeveloped areas. However, the 44,300 acres of urban expansion will result in potentially negative effects, especially on the physical environment. (See Section 6.13 - Scenic Qualities - for a discussion of the plan's impacts in terms of the loss of open lands related to urban expansion and the recycling of detached single family units to moderate density dwelling units and other uses; see also Sections 6.1, 6.2, 6.3, and 6.4 for the effects of fringe growth on hazards, and Sections 6.8, 6.9, 6.10 and 6.12 for the effects of fringe growth on resources.)

The plan would result in the clearance of 33,100 acres of land and the conversion of the same amount to some other use, thus resulting in no abandonment of deteriorated areas. Although no abandonment would occur,

the plan would result in certain changes in land use types. Figure 6-38 provides an indication of the change in land use types resulting from the recycling process, by planning area. As is indicated, projected recycling would result in a loss of residential low density land, especially in the older urban and suburban areas. (See Sections 6.13 and 6.15 for a discussion of the potential negative consequences of the shift to higher densities.) The projected recycling will also add 1,800 acres of open space. The projected industrial recycling primarily involves the conversion of abandoned mineral extractive sites to urban uses.

When changes resulting from urban expansion, recycling and infilling are taken into consideration, the plan would result in a net loss of residential low density uses in the older suburbs. (See discussion of communities - Section 6.15.) At the countywide level there is projected to be a net gain in all land use types except vacant and agricultural (a loss of about 112,900 acres). The greatest increases are in the open space category (about 39,800 acres) as well as in the public and semi-public facilities category (about 20,900 acres including the proposed Palmdale Airport), the residential medium and high density category (about 13,700 acres) and the residential low density category (about 15,900 acres).

Potentially negative effects related to the concentrated development pattern of the plan include increased traffic, community disruption as a result of the recycling process, adverse effects on housing such as overcrowding or loss of privacy (see Section 6.17) and the potential overburdening of service systems.

MITIGATION MEASURES -

Mitigation measures for the adverse effects mentioned above are discussed in Sections 6.13 (Scenic Qualities - urban development at the fringes

and the alteration of the scale of communities resulting from the shift to higher densities) and 6.15 (Communities - loss of lower density uses and general disruption of communities). Reference was also made above to Sections 6.23 (Transportation) and 6.17 (Housing).

FIGURE 6-38
CHANGE IN LAND USE
DUE TO PROJECTED RECYCLE ACTIVITY
1975-2000
BY PLANNING AREA

Planning Areas	Residential Low Density	Residential Medium and High Density	Commercial	Industrial	Public Services and Facil- Open ities Space	
					ities	Space
San Fernando	-1,600	+800	+500	+200	+100	*
Burbank/Glendale	-1,500	+700	+300	+500	*	*
West San Gabriel Valley	-1,800	+900	+200	+500	+100	*
East San Gabriel Valley	-500	+300	*	+100	*	*
Malibu/Santa Monica Monica Mtns.	*	*	*	*	*	*
West	-1,600	1,100	+300	+200	+100	*
Central	-2,100	+1,700	+300	-1,200	*	+1,400
East Central	-1,400	+700	+100	+600	-100	+100
Southeast	-600	+400	+100	+100	*	*
South	-700	+400	+100	+200	*	+100
Southwest	-600	+600	*	*	-100	*
Channel Islands	-0-	-0-	-0-	-0-	-0-	-0-
Santa Clarita Valley	-100	+100	*	*	*	-0-
Antelope Valley	-400	+100	+100	+200	*	-0-
Los Angeles County	-12,900	+7,900	+1,800	+1,300	+100	+1,800

* Less than 100 acres

6.15 Communities

EFFECT -

Beneficial impacts include the plan's encouragement of revitalization of older inner city areas — the extensive rehabilitation of residential, commercial and industrial areas and the rebuilding of older businesses. Four hundred twenty-four thousand (424,000) housing units are projected to be rehabilitated. The plan also includes a projected 33,100 acres of recycling to new uses.

In addition, the encouragement of conservation and maintenance of existing sound neighborhoods is a major beneficial impact — the plan's Housing Development and Neighborhood Conservation Policy map shows 525,700 acres of conservation and maintenance, the General Goals and Policies Chapter includes a policy (#39) to emphasize the preservation, conservation and maintenance of stable residential areas, and the Housing Element includes a policy (#11) to support the formation of community and neighborhood improvement organizations to encourage self-monitoring and development of community identity. Conservation of the identity and character of sound residential neighborhoods is to be implemented by the use of appropriate land use development standards. Maintenance of these currently sound areas and rehabilitation of large numbers of housing units (as well as older industrial and commercial facilities) will help to prevent or at least delay the necessity of recycling and disruption, or abandonment. The plan's policies to revitalize the inner city and the older urban neighborhoods will tend to discourage population migration from these areas, thus also helping to preserve existing neighborhoods.

The plan's General Goals and Policies Chapter deals with community identity - it includes a policy to foster community identity by the compatible interrelation of a system of centers, major transportation facilities, and open space areas (Policy 25), to encourage cultural and social diversity and the preservation of the cultural heritage of Los Angeles County (Policy 4) and to encourage the maintenance and enhancement of cultural values and the ethnic variety of communities (Policy 5). The plan attempts to retain the character of existing rural communities by promoting housing in such areas which is compatible with rural styles of life (Policy 23 of General Goals and Policies).

While the majority of impacts are considered beneficial, there are possible negative impacts relating to the emphasis on higher density residential construction, the compatibility of new local commercial and industrial uses with existing development, and the potential disruption and relocation resulting from the recycling and rehabilitation processes.

With reference to higher residential densities, the plan emphasizes medium and higher density residential construction, especially in revitalization and infill areas (see discussion in Section 6.13). Potential negative effects associated with this change include increased noise levels, greater demands on public facilities and services, and a visual change in scale. Planning areas most affected by higher densities include the Central, East Central, South, West, San Gabriel Valley and San Fernando. The plan's policy to provide for low income housing at densities exceeding those established by adopted areawide or community land use plans (see Section 6.17 - mitigation measures) also has the potential to result in impacts on public services and facilities, as well as community character.

With regard to the impacts of local commercial and industrial uses in existing communities, such uses could adversely affect a community or

neighborhood, if not regulated according to location, scale and design. While such local services are generally regulated at the community level, the general plan would apply in unincorporated areas where no community or area plan has been adopted. The Land Use Element therefore provides general conditions and standards for development of such uses, as discussed under mitigation measures below.

Potential adverse effects may also be associated with the recycling process. Some businessmen may be unable to afford to operate in newly rebuilt or rehabilitated areas (due to higher rents, taxes, etc.) and residents in rehabilitated areas may also be affected by higher taxes or rents. Former residents of recycled areas also may find it difficult to locate new housing. Where commercial or industrial revitalization activities extend beyond existing facilities, some displacement of residents may occur. Although the acreages to be recycled may be quantified, the attendant impacts such as stress, alienation, damage to physical or mental health or difficulty in finding suitable new housing are not. When a community's lifestyle is disrupted by one factor such as removal of housing, a number of related factors are also affected. Other parts of the social support system may also be removed. The total extent of related and affected factors is very difficult to determine.

The subjective nature of these impacts also makes it very difficult to determine their severity, as this largely depends on residents' perception of their community's cohesiveness and strength of identity. Some communities which have a strong sense of identity whose residents can afford to rehabilitate their homes and businesses will experience minimum disruption. Residents with higher residential mobility may be able to find better housing, or be able to afford to move back into the recycled neighborhood. Communities which have traditionally had a strong attraction for residents will continue to attract similar new residents and much of their identity will be preserved.

The plan will affect community identity by changing the demographic composition of certain communities. This will be especially true in recycle areas where, unless proper safeguards are provided, the existing residents may not be able to relocate in their current neighborhoods after completion of the recycling. An influx of new residents would substantially alter the composition of the community and thus its identity. Its physical structure may remain substantially the same in an area where more rehabilitation than redevelopment is utilized, but the psychological identity, the "sense of belonging" and "neighborhood" may be altered.

The identity and composition of a community can also be altered as a secondary consequence of dislocation. As dislocated residents relocate in other areas, they alter the composition of their new neighborhoods, possibly compounding problems of poverty and overcrowding or introducing new problems. They may also dislocate the present residents.

Community identity and lifestyle will also be changed to a limited extent in existing non-urban areas where development occurs. The existing low density "rural" lifestyle may be the reason that new residents are attracted to the area, but their mere presence in proportionately larger numbers and the higher density residential pattern that will ensue will tend to alter the community's lifestyle and identity. An expansion of the service network — i.e., roads, schools, utilities — will encourage further development which may be seen as being incompatible with the character of the community. Residents in these areas often feel that any growth in their community will threaten their lifestyle and therefore discourage any alteration as a preventative measures.

The Land Use Element's general conditions and standards for development for local services (where not regulated by a community or area plan) mitigate the potential negative effects development of such uses could have on neighborhoods and communities. Such standards relate to location, design, scale, access and traffic generation. These conditions provide that the proposed use should be located so as not to invade or disrupt sound existing residential neighborhoods nor conflict with established community land use and circulation patterns; that the scale of such uses, in terms of acreage, permitted floor area and height should be limited to that which can be justified by local community and neighborhoods needs; that such uses should be designed, in terms of setbacks, landscaping, lighting and buffering, so as to ensure compatibility with surrounding uses; that the size and intensity should be confined so that anticipated traffic generation does not adversely affect conditions on adjacent streets and highways; and that access, egress and on-site parking should be provided in a manner which maximizes safety and convenience, and minimizes adverse impacts on surrounding neighborhood and community land use patterns.

The potential negative effects relating to higher density levels in recycle and infill areas are mitigated by the following plan policies (also see Mitigation Measures in Section 6.13):

General Goals and Policies Chapter

- Preserve sound residential areas and protect them from intrusion of incompatible uses. (Policy 44)

Housing Element

- Ensure the provision of community facilities and services to enhance the vitality of older urban areas. (Policy 13)
- Ensure that lower income housing is compatible with existing neighborhoods, is situated near major employment centers, is accessible to public transportation and avoids adverse fiscal impacts on any one particular area. (Policy 15)

The Land Use Element's General Conditions and Standards for Development also provide mitigating measures relating to higher density infill and revitalization development. These standards provide that new residential development within existing urban areas, not covered by a more detailed community or areawide plan, may be permitted at densities exceeding those depicted on the Land Use Policy Map subject to the following conditions:

- 1) The proposed project will not disrupt sound residential neighborhoods nor adversely affect the character of the established community.
- 2) The proposed site is at least five acres in size.
- 3) Compatibility of the proposed project with surrounding uses, in terms of scale, intensity, and design, is assured through specific site plan review.
- 4) The proposed project will not overburden existing public services and facilities.

The potential disruption of the recycling process is mitigated by the following plan policies:

General Goals and Policies Chapter

- Ensure rehabilitation or replacement of substandard lower income units removed by public redevelopment projects. (Policy 20)

Housing Element

- Minimize displacement in revitalization areas and provide for expeditious and equitable relocation services to the occupants of dilapidated housing units that must be removed. (Policy 9)
- Ensure rehabilitation or replacement of substandard lower income housing units removed by public redevelopment projects. (Policy 19)

To mitigate the impact of a change in the identity and character of rural communities, plan policies encourage housing in such areas only at densities which are supportive of and compatible with the continuation of the rural character and lifestyle (Housing Element, Policy 3). In addition, the General Goals and Policies Chapter includes a policy (#23) to assure that development in non-urban areas is compatible with rural life styles and does not necessitate the expansion of urban service systems.

6.16 Population

EFFECT -

The general plan projects a population level in the year 2000 that is less than that which would result if 1976 fertility and death rates continued unchanged and there were no net out-migration. The plan projects a net out-migration of 315,000 between 1975 and 2000, and a fertility rate (per woman of child bearing age) of 2.00 children, which would result in a natural increase of 1,123,000 over the 25-year period.

Given the trends of recent years -- the substantial increase of the Spanish surnamed population and the substantial decrease in the non-Spanish surnamed Caucasian population (especially those in the middle and upper income brackets) -- a substantial portion of those migrating are likely to be middle and upper income non-Spanish surnamed Caucasian persons. Such persons have tended to migrate to neighboring counties. Within the county the migration pattern has been primarily from the inner city and older and newer suburbs to the urban fringe and non-urban areas. To the extent that development is allowed at the urban fringe, the plan would encourage a continuation of this trend within the county. At the same time, the plan's provision of low density development at the fringes will also tend to encourage some middle and upper income families desiring low density new housing to remain within the county, albeit at the fringes of development, rather than migrating out of the county.

The plan's emphasis on revitalizing older portions of existing urban development and on creating new job opportunities, especially in deteriorated low income areas having the best potential for attracting reinvestment in job-producing activities, is intended to reverse the past trend toward loss of population from the inner city and older suburbs and to encourage middle and upper income households to remain

in existing urban areas. The loss of these families has meant a loss of resident employment skills, a decline in average income relative to neighboring counties and shrinking real assessed valuation, thus resulting in a loss of social and economic vitality. Providing new housing in existing urbanized areas through the infilling and recycling processes, and maintaining and conserving sound existing development and stable residential neighborhoods are all intended to help reverse this trend. The plan's General Goals and Policies Chapter also includes a policy to promote a reversal of the trend toward population losses in older urban areas. (Policy 7).

MITIGATION MEASURES -

Plan policies are intended to minimize possible problems associated with growth and possible demographic changes.

A number of plan policies would help to reduce the out-migration and loss of middle and high income families. Since these families have generally migrated based on a desire for newer housing, better schools, lower taxes or personal security, improvements in such areas would help to reverse this trend. As was pointed out above, the emphasis on revitalizing the older areas and attracting reinvestment will be beneficial to all income groups. Providing new housing through the infilling and urban expansion processes, and protecting stable residential neighborhoods from unwarranted intrusion of higher residential densities should also help reduce this loss.

Economic development policies included in the plan's General Goals and Policies Chapter will also help to mitigate this loss — encouraging a strong, diversified economy which will provide business opportunities, an adequate number of jobs for the county's labor force, and an improved standard of living (Policy 60), and encouraging the retention of jobs and investments in older urban areas and preventing losses to other counties, regions and states (Policy 63).

Policies in the plan's General Goals and Policies Chapter dealing with governmental effectiveness also relate to this problem; promoting an equitable distribution of the costs and benefits of governmental actions (Policy 66), and improving communication between government and citizens by soliciting greater citizen involvement in public affairs and by increasing sensitivity and responsiveness of government to citizen needs and values (Policy 65) could help to slow the migration of families.

6.17 Housing

EFFECT -

The general plan calls for modification of the character of the housing stock to ensure maintenance of quality as well as an increase in the number of dwelling units. The plan encourages the rehabilitation of 424,000 housing units, as well as the conservation of 798,000 units through heavy maintenance, the demolition of 143,000 units, and the construction of 612,400 housing units. New construction is projected to include 172,400 low density units and 440,000 medium and high density units. Projected acreages of new residential construction by planning area are provided in Figure 6-39.

FIGURE 6-39
PROJECTED ACREAGES OF NEW URBANIZED RESIDENTIAL USE 1975-2000
(INCLUDING URBAN EXPANSION AND INFILL)

<u>Planning Area</u>	<u>Residential Low Density</u>	<u>Residential Medium and High Density</u>
San Fernando	3,900	700
Burbank/Glendale	300	300
West San Gabriel Valley	900	200
East San Gabriel Valley	6,800	1,100
Malibu/Santa Monica Mtns.	2,600	200
West	800	200
Central	300	400
East Central	300	400
Southeast	1,100	500
South	800	600
Southwest	1,400	500
Santa Clarita Valley	3,300	200
Antelope Valley	6,400	500
Channel Islands	100	*
Total	28,900**	5,800**

* Less than 100 acres.

** May not add due to rounding.

Plan policies emphasize the conservation of sound housing and encourage a variety of dwelling unit types. Most of the new housing constructed will be of moderate density (twin homes, townhouses and garden apartments) rather than low density and will primarily be focused within or adjacent to existing residential areas. There will be fewer detached single family residences constructed, but the economic realities of the housing market dictate this situation. The emphasis on moderate density housing, given the smaller accommodations for living (twin or town homes or garden apartments versus detached single family homes) may result in some overcrowding and lack of privacy. The major positive effect of moderate or higher density residences such as townhomes and condominiums is that more new housing will become available to a wider range of families, including those of moderate means. However, even with the emphasis on moderate density development, 15,900 acres of new residential urban expansion at low densities are projected in the plan. Such lower density development (as contrasted to higher density development) will generally result in a greater consumption of natural resources including the loss of habitat and scenic resources (see Sections 6.8 and 6.13), the higher costs of residential construction and land, and the need for an extension of services.

The Housing Element's policy to discourage the inefficient use of scarce natural resources in the construction and rehabilitation of housing, and to encourage the use of energy saving technology in the design, construction and operating systems of residential buildings (Policy 33) does have the potential to result in increased housing costs, in those cases where more costly technology is utilized. However, some energy-saving measures -- especially design techniques -- need not be more costly, and a long run energy, and cost, savings will result from the use of energy saving technology. In addition, the plan includes several policies oriented toward providing more affordable housing (see mitigation measures below).

The plan also includes a projected 13,600 acres of residential recycling (new use), including 18,000 low density units and 307,000 medium and high density units. Its emphasis on focused development and its encouragement of the recycling of deteriorated neighborhoods will result in a greater number of multiple family housing units (see Figure 6-38 in Section 6.14). Resulting positive effects include providing additional housing units, including lower income housing and the reduction of blight, while potential negative effects include the dislocation of residents living in homes to be recycled and the change in community density (See Section 6.15 - Communities). Additionally, the increased pressure on service systems resulting from increased densities could also be a potential negative effect.

Plan policies also encourage the conservation and maintenance of sound housing -- 2,140,000 housing units are projected to be conserved by light and heavy maintenance efforts. (See Section 6.15 for a discussion of the plan's positive impacts on sound neighborhoods with reference to housing maintenance and rehabilitation.)

A positive effect of the plan is its emphasis on providing lower income housing. Plan policies are concerned with expanding the housing opportunities for lower income individuals, including the rehabilitation or replacement of substandard lower income units, and the dispersal of lower income units throughout the community where possible.

MITIGATION MEASURES -

While the majority of impacts are considered beneficial, there are short-term negative effects -- the potential dislocation of residents and general community disruption resulting from the recycling process. Section 6.15 includes a discussion of mitigating measures for effects associated with the recycling process.

With reference to the impact of increased densities on services, the plan's General Goals and Policies Chapter includes a policy to give priority to upgrading existing facilities and services in areas needing or undergoing revitalization or lacking adequate facilities (Policy 55).

The negative impacts of the plan's projected increase of 15,900 acres of residential urban expansion at low densities — the loss of greater amounts of land per dwelling unit, the proportionately greater loss of vegetation and habitat, as well as the impact on scenic values and the cost of extending services -- can, to a certain extent, be mitigated at the project level, depending on project design (see Sections 6.8 and 6.13, Mitigation Measures). The plan's Housing Element includes a policy to provide for new urban residential development principally in those areas which are in close proximity to existing community services and facilities (Policy 3), and a policy to assure that new development is compatible with the natural and man-made environment is included in the Land Use Element (Policy 7). In addition, the General Goals and Policies Chapter includes a policy to ensure that new development in urban expansion areas will occur in a manner consistent with plan policy and will pay for the marginal public costs (economic, social and environmental) that it generates (Policy 22). The greater use of such resources as water and energy in single family detached residences can also be mitigated at the private project level by the Housing Element's policy to discourage the inefficient use of scarce natural resources in the construction and rehabilitation of housing, and to encourage the use of energy saving technology in the design, construction, and operating systems of residential buildings. (Policy 33)

The greater cost of lower density development and therefore the unavailability to most lower or moderate income families is mitigated by the plan's emphasis on providing lower income housing, as indicated by the following policies and recommended actions:

Housing Element

- Streamline administrative procedures for granting development approvals and permits and establish finite time limits for such approvals so as to minimize the time, costs and uncertainty associated with development. Provide a separate expedited process for proposals involving lower income housing. (Policy 28)
- Provide zoning, land division, and construction incentives to reduce the cost of new and rehabilitated housing and to promote increased availability of affordable housing. (Policy 31)

General Goals and Policies Chapter

- Revitalize declining parts of existing urban development, with particular attention to deteriorated industrial and low income residential areas. (Policy 19)
- Increase the availability of low and moderate income housing and encourage its distribution throughout the urban area. (Policy 45)
- Promote the provision of an adequate supply of housing by location, type and price. (Policy 47)

Land Use Element

- Amend the zoning ordinance to allow increased densities for lower income housing. (Action 19)

The Land Use Element's recommended action (#7) to prepare revitalization plans and programs for unincorporated areas in South Central Los Angeles and the Compton area includes an emphasis on increasing the supply of adequate housing.

The Land Use Element's General Conditions and Standards for Development also support the provision of low and moderate income housing. These conditions and standards provide that development proposals

specifically designed to meet the needs of lower income families and individuals may exceed the density parameters established by adopted countywide, areawide, and community land use plans. The Land Use Element provides that appropriate densities should reflect the following considerations:

- 1) The compatibility of the proposed project, in terms of scale and design, with surrounding land uses and established community character.
- 2) The viability of the proposed project in terms of a long term commitment and ability to meet identified low and moderate income housing needs.
- 3) The location of the proposed project relative to employment opportunities, and accessibility to necessary public services and facilities.

The provisions relative to community character and the availability of services would limit the potential negative effects of such higher density development.

6.18 Employment/Unemployment

EFFECT -

The plan encourages a stronger economy and reduced unemployment. The effects of the plan are anticipated to be generally favorable; the projected increase of 661,000 jobs between 1975 and 2000 and the reduction of in-commuting by 227,000 will accommodate an increase in the labor force of 769,000 and allow a decrease in the unemployment rate to an assumed five percent level -- from 319,000 in 1975 to 200,000 in the year 2000. Figure 6-40 shows the employment projections by planning area. Also, Figure 6-41 shows these projections by type of industry.

The plan's support of moderate population growth and creation of job opportunities implies a healthy and growing market for the products and services of the county's industries. While the job growth rate will be lower than historic trends, it will be sufficient to meet the job needs of most new labor force entrants.

While job growth should ideally be sufficient to absorb the entire labor force of the county and reduce unemployment to zero, this is unrealistic because of labor market imperfections, the demographics of the county population through the forecast period, and changes in national economic policies and priorities. In spite of these institutional limitations, the plan has made a strong commitment towards reducing the county's traditionally higher than average unemployment rate (approximately one to two percentage points above the national average) to the five percent level. Even with the traditionally higher unemployment rate in the county, the five percent unemployment level is realistic before the year 2000.

FIGURE 6-40
EMPLOYMENT PROJECTIONS BY PLANNING AREA
1975 - 2000

	<u>1975</u>	<u>2000</u>	<u>Change 1975-2000</u>	<u>% Change</u>
San Fernando Valley	280,000	350,000	70,000	25
Burbank/Glendale	260,000	289,000	29,000	11
West San Gabriel Valley	259,000	300,000	41,000	16
East San Gabriel Valley	202,000	275,000	73,000	36
Malibu/Santa Monica Mtns.	10,000	24,000	14,000	140
West	236,000	281,000	45,000	19
Central	957,000	1,037,000	80,000	8
East Central	297,000	348,000	51,000	17
Southeast	185,000	236,000	51,000	28
South	288,000	361,000	73,000	25
Southwest	312,000	376,500	64,500	20
Santa Clarita Valley	15,000	30,000	15,000	100
Antelope Valley	29,000	82,000	53,000	183
Channel Islands	1,000	1,500*	500	50
LOS ANGELES COUNTY**	3,330,000	3,991,000	661,000	20

Sources: 1. California Employment Development Department.
2. Department of Regional Planning, 1978.

* This projection assumes all new employment in the Channel Islands will be located on Santa Catalina Island.

** Planning area sums do not equal Los Angeles County because of rounding.

FIGURE 6-41
EMPLOYMENT PROJECTIONS FOR LOS ANGELES COUNTY
1975 - 2000

	<u>1975</u>	<u>2000</u>	<u>CHANGE</u> <u>1975-2000</u>	<u>%</u> <u>CHANGE</u>
Population	6,992,000	7,781,000	789,000	11
<u>Resident Labor Force</u>	3,228,000	3,997,000	768,000	24
Unemployed	319,000	200,000	-119,000	-37
<hr/>				
<u>Jobs by Industry</u>				
Agriculture	12,000	7,000	-5,000	-42
Mining	10,000	8,000	-2,000	-20
Construction	122,000	100,000	-22,000	-18
Manufacturing	829,000	957,000	128,000	15
Transportation,	181,000	214,000	33,000	18
Communications				
Public Utilities				
Finance, Insurance,	204,000	255,000	51,000	25
Real Estate				
Services	736,000	936,000	200,000	27
Trade	756,000	952,000	196,000	26
Government	480,000	562,000	82,000	17
<hr/>				
Total Jobs by Industry	3,330,000	3,991,000	661,000	20
Resident Employment	2,909,000	3,797,000	888,000	31
Net In-commuting	421,000	194,000	-227,000	-54

Sources: 1. California Employment Development Department
2. Department of Regional Planning, 1978.

To attain the objectives of creating job opportunities and reducing unemployment, the plan proposes the development of a strong economic development program which will include actions to:

- Revitalize older and deteriorating job centers;
- Improve and promote the advantages of Los Angeles County as a place to do business;
- Streamline the development approval process to reduce costs and uncertainties;
- Develop and implement means for encouraging and maximizing private investment for economic development;
- Coordinate economic development among various levels of government and throughout the county;
- Improve information and data on economic needs and improve the administration of programs to meet those needs;
- Establish an early warning system to identify firms planning to move out or having difficulty doing business in the County and to respond to their concerns; and
- Encourage the more intensive use of industrial land.

The plan's increased emphasis on employment opportunities in the private sector is particularly important given the potential for lower employment levels in the public sector associated with the impacts of Proposition 13.

In addition to the policies in the Economic Development Element, other major policies of the plan will have a positive impact on job retention and creation. These include:

- The provision of adequate and affordable housing in the county;
- The improvement of public transportation and the development of a rapid transit system;
- The elimination of job discrimination; and
- The improvement of the county's environment and the quality of life.

Growth in population, the physical and economic base of the county and the increased employment opportunities created would be difficult to achieve without some risks. Basic among these is the possibility of further deterioration in the physical environment of the county, including more air and water pollution and depletion of energy resources.

MITIGATION MEASURES -

As stated previously, the plan encourages measures to increase job opportunities. However, policies have been developed to mitigate potential problems associated with economic growth. These policies are oriented toward fostering a level and rate of economic growth consistent with the desired level of environmental quality and availability of resources including air, water and energy resources. To mitigate the negative impacts of economic development, the Economic Development Element of the plan includes a number of explicit policies intended to prevent such unfavorable occurrences. Among these is a policy to identify the kinds of firms which are most likely to provide stable employment and rising incomes for county residents and that will also conserve land and protect environmental resources, and to give special consideration to retaining and attracting industries that show the most favorable combination of such characteristics (Policy 7).

Negative effects on air quality and energy consumption would also tend to be mitigated by the plan's General Goals and Policies Chapter policy to promote jobs within convenient commuting range of urban residential areas (Policy 64). Mitigation measures for the potential environmental effects of growth are discussed in other sections as follows: air quality - 6.6; energy consumption - 6.11; development in hazardous areas - 6.1, 6.2, 6.3, 6.4; loss of resources - 6.7, 6.8, 6.9, 6.10, 6.12, 6.13.

6.19 Income

EFFECT -

There are several major aspects of the general plan which have implications for personal and per capita incomes. These are: the general economic conditions and health of the county as reflected through employment growth; the migration of people, commerce and industry both within the county and between Los Angeles County and other areas; and the implications of the plan for local taxes.

The general plan projects employment growth of 661,000 jobs between 1975 and 2000. This level of growth reflects a relatively healthy local economy with improved job opportunities.

The greater number of job opportunities and the filling of more jobs by county residents (in-commuting is anticipated to fall between 1975 and 2000 by 227,000) implies higher personal, per capita and family incomes. Plan policies relating to increased job opportunities are discussed in Section 6.18 (Employment/Unemployment). Obviously there are major factors influencing income that transcend the policies of the plan and are much more significant determinants of income levels. Among these are worldwide and national economic conditions such as inflation and the balance of trade, and federal fiscal, monetary, and welfare policies to name a few. These are beyond the scope of the general plan and therefore are not discussed in the EIR.

The plan emphasizes the revitalization, rehabilitation and intensification of the older urban areas of the county. This emphasis on retaining jobs and improving housing opportunities is aimed at stemming the out-migration occurring in these areas. The effect should be to reduce the differential in incomes between the older urban areas as compared to the newer suburban areas. Reduced out-migration of families, especially middle and upper income families, to neighboring counties,

will also help to reverse the trend toward lower average income for county residents as compared to adjacent counties.

The level of local taxes also has implications for people's incomes. Higher local taxes reduce the income people have available for consumption or investment. While the general plan cannot assure a lower local tax burden per capita than that which exists, it does emphasize revitalization, intensification and rehabilitation of older commercial, industrial and residential areas in order to protect the county from an erosion of its tax base. Abandonment which might otherwise occur has significant local tax implications. Preventing abandonment and protecting the tax base will have a positive effect on incomes by keeping the local tax burden from rising. Reduced outmigration of middle and upper income families will also help to maintain a higher tax base, thus also positively affecting incomes.

The delivery and extension of public services also impacts the local tax burden on residents. The general plan encourages a more focused pattern of development which will minimize the cost of extending and providing services. Section 6.22 (governmental expenditures) discusses other plan policies having a positive impact on the local tax burden.

Plan policies supporting improvement in the county's air quality may have a dual impact on the income of residents and business firms. On the one hand, compliance with mandated industrial and vehicular emissions controls will be very costly. On the other hand, non-compliance would be even more costly, since attainment of the Federal and State air quality standards is a precondition for continued economic growth. On balance, therefore, the improvement in air quality — provided the most cost-effective measures are undertaken — should have a net positive long-term impact on the income of the county's residents and businesses.

in revitalization areas. The traditional techniques of financing the public portion of investment in older deteriorated areas through the tax increment redevelopment process may no longer be viable. In addition to the questionable viability of the tax increment redevelopment process, the general expenditure pattern of the county has changed due to limited resources. This change has caused a dramatic reduction in capital expenditures, from approximately 10 percent of the total budget in 1974-1975 to approximately three percent in 1977-1978 and one percent in 1978-1979. The increasing fiscal problems of the county have made it more difficult to raise the public investment component of revitalization through local tax sources. Therefore, new approaches to encourage private investment in older communities must be developed which will not rely on local tax revenues, including increasing the county's share of state and federal funding.

Private investment is the key to any success that the general plan may hope to have in carrying out its revitalization policies. Nowhere will the importance of private investment be more critical than in the cases of commercial/industrial and residential revitalization. By implementing the commercial/industrial revitalization program and the other economic development policies outlined in the plan, the county will improve the current investment climate considerably. By taking full advantage of available state and federal funds designed to stimulate economic development, Los Angeles County would provide investors (small, individual investors as well as major institutions and corporations) with the needed reassurance that the county will not allow its commercial/industrial facilities and its major job centers to fall victims to blight, urban decay and obsolescence.

Implementation of the housing policies should encourage greater private investment. Through its rehabilitation and revitalization efforts, the county will upgrade the quality of its existing housing stock,

at first in areas where private investors and individual homeowners can be expected to invest with some confidence, then in more heavily deteriorated areas when confidence in the program has been strengthened. The plan's emphasis on the conservation and maintenance of sound housing will also result in positive effects in terms of investment.

The plan may also have potentially adverse effects on individual investors, to the extent that plan policies and actions result in the placing of restrictions on individual parcels of land. Generally, the types of policies with potentially adverse effects deal with limitations in the extension of services and infrastructure, reduced densities and the imposition of performance and other standards (e.g., in Hillside Management areas), etc. Thus, the general plan may ultimately cause some owners of property to experience losses.

However, whether or not private investors will actually experience losses from public restrictions outlined in the plan is a complex matter that cannot be precisely determined at the broad level of this general plan. The matter can be addressed adequately only at the point where specific policy decisions (e.g., zoning) are made; and then the real loss, if any, depends upon the relation between the level and type of development that is marketable versus that which is permitted by public policy.

Moreover, it is noted in other sections of this report that actions to restrict or guide development are generally associated with socially beneficial effects in terms of improved air quality, energy conservation, the preservation of scenic qualities or significant ecological areas, or the reduction of hazards.

MITIGATION MEASURES -

The plan's possible effects on investment are expected to be largely beneficial. Thus, mitigation measures are generally unnecessary. Constitutional provisions ensure that private property owners, although they may suffer from economic loss, will be permitted some reasonable use of their property. In addition, the plan consciously allocates more land to potential urban development than will be required by the marketplace, so that some investors do not gain a monopoly on developable land, while others are left with extremely limited opportunities.

6.21 Governmental Expenditures

EFFECT -

The assessment of governmental expenditures is an extremely complex process. The shifting demands placed upon local legislators, the number of taxing districts (over 600 in the county), the varying degree of age, condition and capacities of existing public facilities, changing level of productivity and inflation do not lend themselves well to quantifiable forecasts or future assessments at the countywide General Plan level. However, the plan does have general implications for local government expenditures which should be examined.

One direct approach is a review of the per capita costs of local government services and the population change forecasted in the plan. This, however, must be reviewed in light of the plan's policies which will have some impact on the level and cost of services.

First, a review of per capita costs of local governments in the county indicates that in 1978, the total costs of local government services (includes education, health, welfare, highways, etc.) in Los Angeles County was approximately \$7.1 billion.* This represented about \$1,000 per person to pay for education, highways, police and fire protection, health, welfare, sewage and the other services provided by local governments. Of the \$1,000 per person, approximately \$100 or 10% was needed for capital outlays and the remaining 90% for salaries and other operational expenditures.

Figure 6-42 shows the estimate of 1977-1978 per capita costs for major service categories that comprise the total cost of local government.

* Estimate derived from Census of Governments, Local Government Finances (1973-1974) and 1977-1978 Los Angeles County budget.

FIGURE 6-42
 PER CAPITA COSTS OF LOCAL GOVERNMENT SERVICES
 1977-1978

<u>Service</u>	<u>Per Capita Cost</u>	<u>Percent</u>
Education	\$ 361	36%
Highways	39	4
Public Welfare	186	18
Health and Hospitals	67	7
Police Protection	67	7
Fire Protection	28	3
Sewerage	12	1
Sanitation	13	1
Parks and Recreation	27	3
Financial Administration	13	1
General Control	29	3
Interest on General Debt	18	2
Other General Direct Exp.	141	14
	<u>\$1,000*</u>	<u>100%</u>

* Does not necessarily add due to rounding.

The above table excludes utility expenditures since they are generally run in a business fashion and depend upon user charges to meet expenditures.

The general plan forecasts an increase of 808,000 people between 1975 and the year 2000. Based upon today's (1977-1978) per capita costs of local

1

This analysis must be viewed as a rough approximation, since it assumes that future capital costs will be equal to present average costs. It also does not account for surplus capacity that may exist in public facilities, or changes in the ratio between operating and capital outlays. Thus, per capita costs of providing services to new residents may be less than \$1000 where existing facilities can be utilized more economically at a higher level of output; or more than \$1000 if new, more costly facilities must be constructed, services provided over longer distances, etc. Some of the other factors which will influence these costs are discussed in the text.

government, an increase of approximately \$808 million (1978 dollars) in yearly local government expenditures would be required to provide those people with the current level of local public services. Of the \$808 million increase, about 10 percent or \$80.8 million would be needed for capital outlays.

Of the 808,000 population growth projected in the plan, 198,000 are to be located in what are currently unincorporated areas. The population increase in the unincorporated areas of 198,000 by the year 2000 would require a total increase of \$198 million in yearly county expenditures of which \$19.8 million would represent capital outlays. Figure 6-43 shows the total dollar increase by type of service based upon the change in population and the per capita costs of services.

While the figures indicate the general magnitude of governmental expenditures necessary if population increases by 808,000, they do not reflect other major factors including plan policies.

An example of how factors other than the change in total population will impact expenditures for public services is the effect of the changing age structure of the population on the cost of education.

Based upon adding 808,000 people to Los Angeles County, educational costs would rise by \$291.7 million annually throughout the county of which \$71.5 million would be accounted for in the currently unincorporated portions of the county. However, the annual per capita costs of education applied to the general plan population growth greatly overstates the increase in cost for education, since it does not reflect the changing age structure of the county population.

FIGURE 6-43
 1978-2000 INCREASE IN LOCAL GOVERNMENT EXPENDITURES BASED
 UPON POPULATION INCREASE OF 808,000 AND CURRENT
 (1977-1978) PER CAPITA COSTS OF SERVICES
 (MILLIONS OF DOLLARS)

	Unincorporated <u>Places</u>	Total <u>County</u>
Education	71.5	291.7
Highways	7.7	31.5
Public Welfare	36.8	150.3
Health and Hospitals	13.3	54.1
Police Protection	13.3	54.1
Fire Protection	5.5	22.6
Sewage	2.4	9.7
Sanitation	2.6	10.5
Parks and Recreation	5.3	21.8
Financial Administration	2.6	10.5
General Control	5.7	23.4
Interest or General Debt	3.6	14.5
Other General Direct Expenses	<u>27.9</u>	<u>113.9</u>
TOTAL	198.2	808.6

The absolute number of children educated in Los Angeles County schools has been declining since 1969. The plan population projection anticipates a continuation of the decline in the number of school age children between 1975 and the year 2000. The change in the 5-18 year age group between 1975 and 2000 is a decrease of approximately 166,000 and a decrease of 32,000 in the 19-22 year age group. Based upon estimates of the per pupil cost of education (approximately \$1,400 per pupil

K-12 and \$1,500 for Community Colleges), there would be an absolute fall in the cost of education even with a population growth of 808,000. The decrease would amount to \$232 million for grades K-12 and \$48 million for institutions of higher education — a total of \$280 million. On the other hand, neither the per capita nor per pupil cost estimates take into account the future increases due to inflation and salary increases.

The emphasis of the general plan policies on revitalization of older urban areas should help to reduce the magnitude of future increases in education costs by encouraging more people into areas with existing school facilities.

While quantification is speculative, there are major policy directions set out in the plan which will have the overall impact of reducing the potential level of governmental expenditures in areas other than education. The impact of the policy direction to revitalize and intensify development in existing urban areas will be to encourage an overall reduction in the per capita cost of providing services. This will be accomplished by accommodating a greater number of the additional population in areas that have existing facilities. However, it should be noted that this anticipated saving may be affected by the condition and capacity of the facilities in a specific area. If the increase in population requires improvement or replacement of existing facilities, it could be more costly to provide them in an existing urban community than in a newly urbanizing area.

Perhaps of greater importance are the implications of not revitalizing the inner city and older suburban areas. While most of the inner city areas of Los Angeles County have not deteriorated to the extent of those in the major metropolitan areas of the East, they will continue to deteriorate without increased investment.

Where this problem has occurred, financial problems for local government have followed. The deterioration of older and inner city areas is accompanied by growing social and economic problems requiring higher governmental expenditures. The lack of investment and outmigration of higher income families and individuals from the deteriorating areas results in a larger dependent population who require a greater level of social services. Population also declines in deteriorating areas resulting in a less efficient utilization of existing infrastructure. These factors, along with growing social problems such as crime, high levels of unemployment and poverty, imply higher levels of future governmental expenditures.

Nevertheless, the revitalization and enhancement of the county's older urban communities will require increased expenditures by government in general -- at least in the short run until the conditions in these communities are considerably improved. Local government's financial participation in revitalization is likely to be quite circumscribed since the passage of Proposition 13. Therefore, revitalization efforts will depend upon increased state and federal outlays and the leveraging of these resources to greatly expand private investment in the county's older areas. The provision of lower income housing is also associated with increased governmental expenditures. However, given the constraints imposed by Proposition 13 (as described above) increased expenditures would be associated primarily with state and federal, rather than local expenditures. Plan policies call for supporting a commitment by federal and state governments to fund such housing needs, and assisting private sponsors and developers in providing low income housing.

Expansion of the county's public transportation system will also require additional public expenditures since these investments have traditionally been subsidized by government. A more efficient transportation system, however, is expected to improve the economy and the efficiency of the county's urban development pattern, so that the overall impact will be positive.

In addition to the plan's policy direction for revitalization and intensification, the policies that attempt to focus new urban expansion will also have an overall impact of reducing the potential level of governmental expenditures. The plan states that urban fringe development should be permitted only to the extent that marginal public costs for public services and facilities — exceeding average public sector expenditures in already developed areas — are absorbed by such development. The channeling of new urban expansion into areas based upon the minimum cost of extending services will have the impact of requiring fewer facilities than if old urban expansion patterns were to continue. The plan's emphasis on a more compact pattern of urban development is specifically designed to reduce the governmental expenditures needed to provide adequate service levels.

MITIGATION MEASURES -

The plan's policy direction is oriented toward ensuring beneficial effects on governmental expenditures. These policies include the following:

Land Use Element

- Improve the land use decision-making process by closely monitoring and evaluating the cumulative impacts of individual projects and by modernizing development regulations. (Policy 25)

Economic Development Element

- Improve information on labor force characteristics (supply) and job availability (demand) at both the county and community levels in order to increase the effectiveness of job training and placement programs. (Policy 5)

- Prepare a Human Resources Plan for the county which deals with such issues as priorities for public assistance to the unemployed. (Policy 6)
- Periodically review and update regulations, ordinances, codes and standards and strive to minimize impacts on development costs, delays and uncertainty, and the unnecessary consumption of scarce land resources. (Policy 14)
- Employ cost/benefit techniques in formulating codes and standards to achieve a reasonable relationship between costs, risk and benefits. (Policy 15)
- Improve financial reporting practices of the county and support such improvements in state and other local jurisdictions so as to maintain credibility with investors and assure access to credit markets; work for modifications in legislative and budget practices which will improve the financial stability of local government. (Policy 17)
- Establish procedures to enable the county to use cost/benefit/revenue studies or other appropriate methods, to evaluate new developments on a community-wide level in order to ensure that the benefits of new development exceed its costs and risks. (Policy 18)

Transportation Element

- Support research for and development of new transportation technologies. (Policy 12)

- Develop parking management plans for application in selected areas.
(Policy 17)

Water and Waste Management Element

- Program water and sewer service extensions to be consistent with General Plan policies and to mitigate situations that pose immediate health and safety hazards. (Policy 11)

While the impact of policies that call for developing new and better information and analysis will increase the level of operating expenditures in the short run, the long run impact will be to reduce the level of operating expenditures, thus mitigating any adverse effect.

6.22 Governmental Revenue

EFFECT -

The sources of revenues for local jurisdictions may be divided into receipts from other governmental units (state and federal) and general revenues from local sources. As Figure 6-49 indicates, in fiscal year 1977-78, approximately 42% of all revenues to local jurisdictions in Los Angeles County originated with the federal and state governments while 58% was accumulated from local sources.

Revenues from each of these sources are affected by a variety of factors, most of which are beyond the scope and the influence of the general plan. The rate of inflation and legislative and fiscal changes at the federal, state and local levels (such as Proposition 13) are among the factors which will significantly impact local government revenues both in the short and the long run. These two factors alone may well be responsible for the financial health of local governments during the next two decades. Yet local governments in Los Angeles County will have relatively little influence on these factors, even if there were a reliable way of predicting their course through the end of this century.

With so many external factors expected to strongly influence the revenue picture of local governments in Los Angeles County during the time period of the general plan, the plan's impact in this area is likely to be relatively insignificant. However, it is important that this impact be analyzed, to the extent possible, and its implications discussed.

As indicated in Figure 6-44, 58% of total local governmental revenues originate from local sources in Los Angeles County. This sum can be broken down into the subcategories of property taxes (39.1%), general sales and gross receipts (3.5%), current charges (6.7%),

miscellaneous (5.0%), and other (3.3%). Of these sources, property taxes and general sales and gross receipts are the most significant and most likely to be impacted by the general plan in a predictable manner.

FIGURE 6-44
ESTIMATE OF ANNUAL LOCAL
GOVERNMENTAL REVENUES BY MAJOR SOURCE
1977 - 1978*

	<u>Amount</u>	<u>Percent</u>
Intergovernmental Revenue	\$ 3,189 million	<u>42.3%</u>
From State	2,858 "	37.9
From Federal	331 "	4.4
General Revenue Sharing	197 "	2.6
General Revenue From Own Sources	4,354 "	<u>57.7%</u>
Taxes	3,470 "	
Property Tax	2,954 "	39.1
General Sales and Gross Receipts	264 "	3.5
Other	252 "	3.3
Current Charges	506 "	6.7
Miscellaneous	378 "	<u>5.0</u>
TOTAL GENERAL REVENUE	<u>\$ 7,543 million</u>	<u>100%</u>

*Source: Estimates based upon U.S. Bureau of the Census.

The estimates of revenues above are based upon the 1973-1974 "Local Government Finances," U.S. Department of Commerce, Bureau of the Census and the 1977-1978 Los Angeles County Budget. The 1977-1978 per capita breakdown of annual revenues was as follows:

FIGURE 6-45

PROPERTY TAX REVENUES FROM RESIDENTIAL UNITS
 LOS ANGELES COUNTY
 (1978 dollars)

	<u>Unit Market Price</u>	<u>Tax Rate %</u>	<u>Tax/Unit</u>	<u>Units</u>	<u>Total Tax Revenue</u>
Net Additions					
<u>1975 - 2000</u>					
Single Family Units	\$84,400	1%	\$844	85,800	\$ 72.07 mil.
Multiple Family Units	42,200	1	422	382,700	161.5 mil.
Existing Units					
<u>1975</u>					
Single Family Units	\$78,500	1%	\$788	1,718,000	\$1,348.6 mil.
Multiple Family Units	39,250	1	392	<u>989,300</u>	<u>387.8 mil.</u>
TOTALS	-	-	-	3,175,800	\$1,970.0 mil.

Source: Regional Planning Department estimates.

Property Taxes

The plan's effects on property tax revenues are expected to be positive.* Plan policies call for modest expansion in the industrial and commercial land uses of the county and a net addition of 468,500 housing units to the existing housing stock, to accommodate an additional population of 808,000. Estimates indicate (Figure 6-45) that the additional units projected in the plan will not change noticeably the current per unit cost/revenue relationship where property tax receipts from housing do not fully pay for the services required. However, the marginal revenue per new unit is expected to improve significantly and will continue to improve as long as Proposition 13 is in effect. That is because newly constructed units generally have a higher average market value than existing units and, under Proposition 13, are taxed at 1% of their current full market value. Existing units, except for the small proportion that are sold each year, can be taxed at only 1% of their 1975 market value increased by 2% annually. Because of the lag in revenues caused by Proposition 13's application, construction of new housing units will provide local governments with more revenue per unit than that received from existing units.

The positive effect of additional construction on property tax revenues is even more pronounced with commercial and industrial land uses. Since these types of buildings are not sold as frequently as residential units, the county and other local governments stand to lose an increasing proportion of property tax revenues from these existing facilities. With the exception of the small proportion of industrial and commercial

*It should be noted that plan policies calling for the protection of agricultural and environmentally sensitive lands may reduce property tax receipts where such policies result in less development than would otherwise occur. While some areas will experience these effects, the impact is considered insignificant overall since the plan generally provides adequate land for urban expansion.

buildings that are sold each year, the county and other local jurisdictions receive full tax payment from these facilities only when new facilities are built or old ones are replaced. It should also be noted since the passage of Proposition 13, property tax revenues resulting from commercial or industrial uses can no longer be presumed to be uniformly greater than those from residential uses, since residential uses are typically subject to a more rapid turnover rate and hence represent a greater opportunity for re-assessment.

Another positive fiscal impact may occur from those plan policies and recommended actions proposing revitalization of existing areas. This is because property values will increase in revitalized areas, resulting in increased property tax payments to the county and the other local governments while requiring no major expenditures to create new infrastructure.* Of course, this net positive impact assumes that revitalization efforts will be primarily financed by the private sector and by relatively cost-free public mechanisms such as tax-exempt revenue bonds. The policies supporting infilling of existing urban areas rather than extensive expansion will also have similar effects by reducing new investment in additional infrastructure, provided that improvement or replacement of existing infrastructure is not required.

General Sales and Gross Receipts

The sales tax, which is levied on most retail transactions in the state at a rate of 6%, constitutes about 3.5% of total revenues in Los Angeles County. The county and city governments together receive roughly 0.99%, or nearly one sixth of the total. (Though entitled to a full 1%, the state keeps 0.01% for administrative costs.) The sales tax, though small in proportion to the total county revenue, is significant because of its large and expanding base and the potential for greater future use by local governments.

*While policies calling for deferment or abatement of tax increases resulting from rehabilitation activities (Housing Element, Policy 32) may, in the short run, result in decreased tax revenues in rehabilitated areas, assessments will increase in the long run, while government service costs are expected to be reduced (see Section 6.21), resulting in a net revenue savings.

Taxable retail sales (the base to which the sales tax is applied) will be increased by both the projected population growth and the expansion of commercial facilities.

As Figure 6-46 indicates, per capita retail sales in recent years increased in the county by an average of 10.8% annually. Allowing for an annual inflation rate of approximately 8.3% during this period, retail sales' real growth occurred at a 2.5% annual rate. If this real growth rate were to continue to the year 2000, the per capita taxable retail sales figure for that year would be \$4,800 or 121% higher in real terms than its 1976 value.

Thus, even assuming that tax rates remain constant, the expansion of commercial facilities and the population growth envisioned by the plan will cause revenues from this source to increase at increasing rates.

In summary, while long term changes in the intergovernmental revenue portion of the county and its jurisdictions is impossible to forecast accurately, it is almost certain that the general plan's impact on these revenues will be small, but positive.

It should be pointed out at the outset that a successful implementation of the revitalization strategy of the plan is greatly dependent upon revenues from state and federal sources as well as the private sector. To the extent the plan's strategy of utilizing and leveraging federal and local funds with private investment is carried out successfully, the positive impacts on local governmental revenues will be greater.

FIGURE 6-46

TAXABLE RETAIL SALES TRENDS
LOS ANGELES COUNTY
1971 - 1976

	<u>Retail Sales</u>		<u>Population</u>		<u>Sales/Capita</u>
1971	\$ 11,063 million		7,058,000		\$ 1,567
1972	12,672	"	7,085,000		1,789
1973	14,293	"	7,096,000		2,014
1974	15,315	"	7,023,000		2,177
1975	16,149	"	7,020,000		2,300
1976	18,258	"	7,000,000		2,608

1971 - 1976 Average Annual Growth in Retail Sales = 10.8%

1971 - 1976 Average Annual Growth in Inflation Rate = 8.3%

1971 - 1976 Average Annual Real Growth in Retail Sales = 2.5%

Source: Taxable Sales in California, published quarterly by the
State Board of Equalization; Regional Planning estimates.

MITIGATION MEASURES -

Because the plan's effects are expected to be largely beneficial, no mitigation measures are suggested.

6.23 Transportation

EFFECT -

The plan's additional population and land use pattern will result in increased numbers of person trips and vehicle miles traveled. It is anticipated that person trips on an average weekday in the year 2000 will increase by about 12 percent over 1975 levels, to 27.8 million trips. Average vehicle miles traveled (VMT) on an average weekday is projected to be 116 million miles in the year 2000 (as compared to 111 million miles in 1975). The VMT figure assumes a transit diversion of eight percent of the total person trips. If a transit diversion of six percent is assumed, an additional three million VMT results.

Based on the general plan's population, housing and employment growth projections and an analysis of current travel patterns, it was determined that by the year 2000, travel patterns and magnitudes should change very little. However, some segments of the existing freeway and highway system experience traffic congestion normally in the peak hours. The plan recommends several mapped and written policies designed to lessen the problem of traffic congestion. The plan's mapped policy proposes a network of transportation corridors most of which contain freeways. All of these freeways will accommodate multimodal needs with mixed flow bus, while others will receive preferential transit and high occupancy vehicle treatments, generally in the form of ramp metering with preferential by-pass lanes. The remaining corridors, identified as "transitways", are recommended for exclusive facilities.

Additionally, a policy map was prepared of an arterial highway network to serve the projected year 2000 land use.

The plan's written policies encourage the use and expansion of public transportation, promote carpooling and vanpools and other high occupancy vehicle programs and stress low cost strategies that maximize the efficiency and cost-effectiveness of existing transportation facilities and systems. The aim of the policies is to reduce the number of auto trips and to maximize the movement of traffic.

Transportation Element policies support continued improvement and expansion of the present bus system as a public service (Policy 7), development of rail transit or exclusive bus lanes in high demand corridors when sufficient patronage, cost effectiveness and support of land use policies are assured (Policy 11), and the development of mass transportation systems that will provide a viable alternative to the automobile (Policy 6). The implementation of the public transit improvements recommended by the plan will also help to provide mobility and accessibility to the transit dependent. Transportation Element policies include supporting a public transit system that provides accessible service, particularly to the transit dependent (Policy 9).

The plan includes the potential development of additional transportation facilities and improvement of existing facilities. The construction of streets and highways as a part of the urban development process in undeveloped areas may result in impacts on scenic quality (see Section 6.13), geologic/seismic or other hazards (see Sections 6.1, 6.2, 6.3, 6.4), or natural resources (see Sections 6.6, 6.7, 6.8, 6.9, 6.10). A few of the proposed arterial highway routes traverse Significant Ecological Areas (see Section 6.8). Where facilities are constructed in already urbanized areas, potential negative effects include community disruption and dislocation of residents (see Section 6.15). Effects on air quality, energy consumption, and noise are discussed in Sections 6.6, 6.11 and 6.5, respectively.

The plan's Transportation Element includes a policy (Policy 14) to support completion of the highway and freeway routes necessary to make the system operate efficiently. The specific routes proposed, and their potential effects, are discussed below.

A major project included on the Transportation Policy Map is the I-105 Freeway-Transitway which is to be 17 miles in length, extending from El Segundo eastward to Norwalk. As discussed in detail in the Final Environmental Impact Statement (EIS) prepared for this project by the U.S. Department of Transportation and the California Department of Transportation, this project's major impacts include the displacement of 8,250 residents and 240 businesses (1,140 employees), a loss of 4,700 housing units, an initial loss of tax base given the removal of tax-producing property, an increased concentration of air pollutants (carbon monoxide) adjacent to the facility, increased noise levels, loss of park, recreation and historic land, and seismic hazard. Most of the structures within the proposed right-of-way have been acquired and removed. Major beneficial effects include the improved efficiency and service of the freeway system and reduced congestion on adjacent routes, additional access to Los Angeles International Airport and the provision of a public transit right-of-way. Mitigating measures for the negative effects, including relocation assistance and payments, are discussed in the EIS for the project.

The plan also includes the completion of several missing freeway links, including the extension of the Foothill to San Bernardino County, Artesia, Long Beach, Marina and Terminal Island (Industrial) Freeways. The plan further recommends the construction of a portion of the Santa Clara River Freeway between the Antelope Valley Freeway and the Golden State Freeway. The impacts of this route will be discussed in a future EIR. A direct access route to the Palmdale Airport from the Antelope Valley Freeway (Route 14) is also included in the plan, although the exact location of this access route will require further study pending the preparation of a final airport plan. The completion of these links

is intended to eliminate congestion on surrounding routes in some cases or provide needed access in other areas. For most of these projects, no significant displacement of people, disruption of communities, or destruction of habitat or loss of scenic qualities would be involved. Increased noise levels and increased air pollutant (carbon monoxide) levels near the structures could be expected, although regional air quality could be expected to be improved. Community disruption has, however, been an issue concerning the completion of the Long Beach Freeway in the South Pasadena area.

The plan's Transportation Element also includes a policy (#35) to encourage the development of a decentralized system of major airports to serve commercial and general aviation activities. The Transportation Policy Map shows the proposed Palmdale Airport, which is to be located on 17,700 acres adjacent to and east of U.S. Air Force Plant 42 in the Antelope Valley. This proposed airport is to serve approximately 12 million annual air passengers by 1995. The construction and operation of this facility will result in impacts on air quality, noise, surface drainage, biota, access and growth-inducement. These impacts, along with mitigating measures, are discussed in the Final Environmental Impact Statement prepared for the Department of Airports by Arthur D. Little, Inc.

Mitigation measures for these impacts are included in applicable state and federal statutes and regulations for the control of air and noise pollution. (Also see Section 6.5 - Noise, and Section 6.8 - Biota.)

The improvement of existing aviation facilities is also associated with environmental effects. The projected increase in annual passenger trips at LAX by the year 2000 will result in negative impacts relating primarily to increased noise levels. (See Section 6.5 - Noise.)

The plan's Transportation Element also includes a policy (#16) to support the development of alternate routes for through traffic to bypass the

metropolitan area and provide traffic relief for the urban area. Specifically, the plan recommends construction of the Route 138 Metropolitan Bypass Freeway, to be 73 miles in length, and Route 48 Lancaster Freeway, to be 15 miles in length. These routes are to be constructed to expressway standards using existing rights-of-way. The purpose of these routes is to allow intrastate and interstate traffic to bypass the Los Angeles metropolitan area, thus mitigating traffic-associated impacts.

With regard to air quality impacts associated with these routes, since vehicles will bypass the South Coast Air Basin, there will be a minor improvement in air quality; however, air quality will decrease in the South East Desert Air Basin. It is anticipated that the emissions per mile would be lower on the bypass freeways because vehicles will move at higher speeds by avoiding congestion in the Los Angeles Basin. Higher speeds decrease all emissions except oxides of nitrogen.

With reference to other potential effects, construction of these two routes should involve minimal displacement of people or community disruption. Some loss of biota could be expected. Prior to construction of any freeways, significant environmental effects would be evaluated in an EIS.

With regard to marine facilities, Transportation Element policies include encouraging the Los Angeles and Long Beach harbor departments to effect improvements that will better accommodate and attract deep draft vessels (#36), and supporting improvements that would increase the efficiency of cargo handling, storage and modal interfacing (#37). Improving these ports may adversely affect marine life and tidal circulation; however, the effects would be limited since the harbors are man-made complexes and their marine life has adapted to this type of environment.

MITIGATION MEASURES -

The Transportation Element includes a policy to stress environmental compatibility and improvement, including air quality, noise, ecology and aesthetics in developing transportation systems (#21). While this policy has the potential to result in lower service levels in some areas, depending upon the location of future transportation facilities, it is a mitigation measure for the potential adverse environmental effects of constructing new transportation facilities. The Transportation Element also includes a policy to promote measures that conserve energy, as well as all natural and man-made resources, in the development of transportation systems (Policy 27). A policy (#23) to avoid construction of transportation facilities within Significant Ecological Areas unless found essential following a detailed analysis of alternatives including a no project alternative is also included in the Transportation Element. If such a facility is found to be necessary, it shall be constructed in the most environmentally sensitive manner.

In addition, the General Goals and Policies Chapter includes the following policies:

- Upgrade the existing road system in a manner consistent with the policies and strategies of the plan for resource protection and urban development. (Policy 49)
- Support the development of a transportation system that will make a positive contribution to the improvement of air quality. (Policy 50)

Mitigation measures for transportation-related air quality and energy consumption effects are discussed in Sections 6.6 and 6.11.

The plan's Transportation Element also includes a policy (#22) to avoid or minimize the adverse impacts upon people, businesses and communities caused by development of transportation facilities, and a recommended action to provide fair and adequate compensation and relocation assistance for persons and businesses displaced by the expansion or construction of transportation facilities (#43).

Mitigation measures for potential effects of highways/street construction on natural resources and hazards (as part of the overall urbanization process) are discussed in the sections relating to the specific resource or hazard involved (as listed under the discussion of effects above). Where specific road or public transit projects are proposed, additional environmental studies will be required to ensure the compatibility of a particular system to the existing environment in the area. Transportation-related effects will also be considered at the private project level whenever a discretionary permit is required prior to development.

6.24 Liquid/Solid Waste Disposal

EFFECT -

Liquid Waste Disposal -

Increased population in the county will increase the amount of liquid wastes produced, placing additional pressures on existing sewerage systems and requiring additional facilities in some areas. In addition, urban expansion into presently unsewered areas creates potential problems related to groundwater pollution (see Section 6.7 - Water Quality).

Assuming a continuation of the current average sewerage production (including residential, commercial and industrial) of 116 gallons per capita per day (g/c/d) in the Coastal Basin of the county, the plan's population projection of 7,800,000 persons will produce roughly 856 million gallons per day (MGD). After the planned upgrading of the existing plants, the system will have a capacity of approximately 800 MGD; in addition, the proposed Sepulveda Basin plant, if constructed, would add an additional 40 MGD, for a total of 840 MGD. This figure is well within the ten percent margin between capacity/demand considered to be normal; thus the county's system with the Coastal Basin could accommodate, on a gross basis, the additional population projected by the plan.

Within individual planning areas, the anticipated population growth can be accommodated by the existing and planned capacity of the sewerage system, except in the Palmdale/Lancaster area, which will be deficient by approximately 5.6 MGD, requiring construction of new facilities or enlargement of existing plants to accommodate twice their current flow. Since sewerage systems normally follow natural drainage courses, it is virtually impossible to quantify sewerage system impacts by planning area, except for certain areas such as Palmdale and Lancaster.

Additional sewerage service would be required on the 55,800 acres of new urban expansion land shown on the General Development Policy Map, with the largest acreages in the Antelope Valley, East San Gabriel Valley and Santa Clarita Valley (see Figure 6-47). The plan's Water and Waste Management Element includes a policy to program water and sewer service extensions to be consistent with general plan policies and to mitigate situations that pose immediate health and safety hazards (Policy 11). This policy and the recommended action to review all water and waste management facilities and discourage those which are not consistent with the general plan, while intended to reduce impacts on the natural and man-made environment, has the potential to result in reduced service levels in some instances where facilities are not available or not adequate. Where the construction of sewer lines is required, there will be a minimal impact on the physical environment since such lines are placed underground, usually within street rights of way, and the surface area is restored after construction. The generation of additional sewerage will result in increased liquid wastes, which is associated with adverse effects on water quality (see Section 6.7).

Solid Waste Disposal -

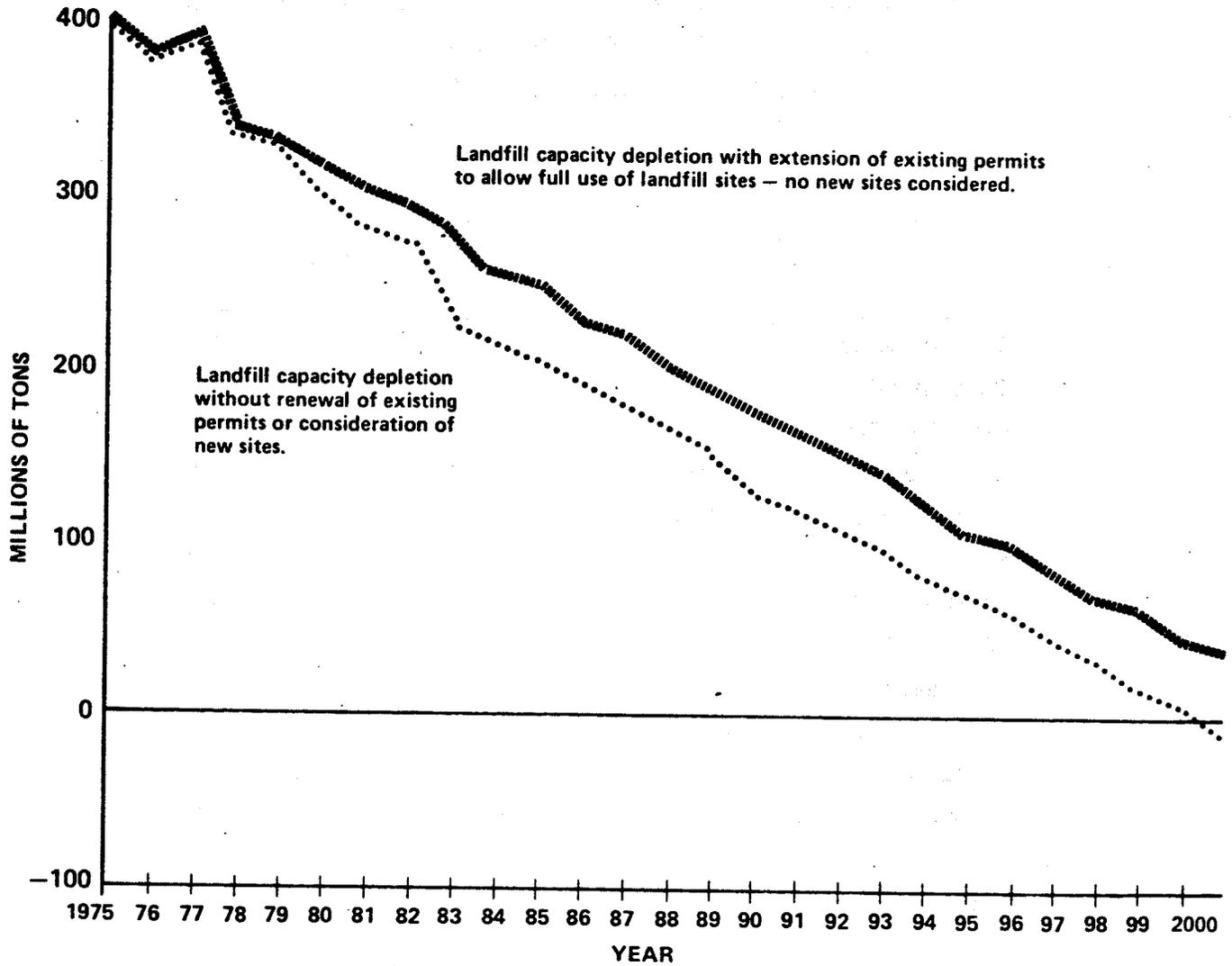
Under current technology and political constraints, a lack of landfill capacity may occur by the year 2000. Sites available as landfills are rapidly being filled; there is a shortage of class I and II facilities. If permits are not renewed for existing facilities, all landfill capacity will be depleted by 2000 (see Figure 6-48). If permits are renewed, marginally adequate capacity will be available to meet the projected population in 2000. The impending shortage of landfills will not be materially affected by the population increase projected by the General Plan since the shortage may occur under certain parameters by 2000, even without growth. However, the additional population will result in a more rapid depletion of available landfill sites.

FIGURE 6-47

ADDITIONAL SEWERAGE SERVICE ON POTENTIAL URBAN EXPANSION
 LANDS BY PLANNING AREA
 TO THE YEAR 2000

<u>Planning Area</u>	<u>Additional Sewerage Service (Acres)</u>
San Fernando	2,700
Burbank/Glendale	-0-
West San Gabriel Valley	-0-
East San Gabriel Valley	10,900
Malibu/Santa Monica Mountains	3,400
West	700
Central	-0-
East Central	-0-
Southeast	-0-
Santa Clarita Valley	7,900
Antelope Valley	30,100
Channel Islands	<u>100</u>
 Total	 55,800

FIGURE 6-48



Los Angeles County Industrial and Solid Waste Landfill Disposal Capacity Estimated for 1975-2000

SOURCE:

- 1) Unpublished staff report
Los Angeles County Department of Regional Planning, May 1978
- 2) Los Angeles County Solid Waste Management Plan
Los Angeles County Engineer, September 1975

At present, solid waste generation within the county approximates 30,000 tons per day resulting in an annual disposal capacity diminishment of about ten million tons. In 1974, unused capacity was identified as 393,210,000 tons. Annual waste generation will rise in proportion to population, with a material increase in 1977-1978 due to disposal of sludge in landfills instead of the Pacific Ocean. Annual solid waste production for landfill at five year intervals is estimated in Figure 6-49.

FIGURE 6-49
Estimated Annual Landfill Production

1975	11,499,000 tons
1980	12,350,000 tons
1985	12,626,000 tons
1990	12,902,000 tons
1995	13,177,000 tons
2000	13,453,000 tons

It will be noted that these figures differ from those contained in the County Solid Waste Management Plan which was based on the California Department of Finance population estimates and discusses all solid waste generation. Estimates reflected herein are based on more recent Department of Regional Planning population estimates and the utilization of available technology for landfill disposal.

Existing and proposed landfill sites are shown on the plan's Industrial and Solid Waste Disposal Policy Map. Adverse impacts generally associated with the expansion of existing or development of new landfills include the alteration of landform (filling of canyons), loss of habitat, potential for water quality degradation associated with leachate, and increased traffic to and from the site. Where other uses, especially residences, are located near the project site, other potential effects include the off-site migration of methane gas, odors, noise and vibration,

and substantial visual changes. These types of issues would be dealt with in environmental documents prepared for specific projects. In addition, while the plan's policy to encourage the location of landfill sites in areas geologically qualified to accept hazardous waste is important for environmental protection, there is a resulting potential for a negative effect on urban form and pattern, depending upon specific site location.

MITIGATION MEASURES -

The General Goals and Policies Chapter includes a policy to promote the development of new and improved water and waste management technology (Policy 59) and to maintain a balance between increased intensity of development and the capacity of needed facilities such as transportation, water and sewage systems (Policy 18). The plan's Water and Waste Management Element includes the following policies which could mitigate the impacts related to increased liquid waste generation:

- Increase service efficiencies, both within individual agencies and among agencies performing similar functions, while striving to reduce costs. (Policy 1)

- Improve coordination among operating agencies of all water and waste management systems. (Policy 2)

- Encourage private firms and public agencies providing water and waste management services to cooperate with all levels of government in establishing, enacting and enforcing consistent standards and criteria. (Policy 3)

- Cooperate with federal, state, regional and local agencies to develop and implement new technology in water and waste management while continuing existing methods until new alternatives are economically feasible. (Policy 5)

- Program water and sewer service extensions to be consistent with general plan policies and to mitigate situations that pose immediate health and safety hazards. (Policy 11)

In addition, the plan's policies related to water conservation (see Section 6.7 - Mitigation Measures) will help to reduce the level of sewage generation. Decreased water usage is associated with decreased sewage generation and a potentially decreased necessity for the upgrading or construction of sewerage facilities.

For a discussion of mitigating measures for the impact of additional sewage generation on water quality, (see Section 6.7 - Water Resources/Water Quality).

The plan's monitoring provisions as regards the cumulative impacts of individual projects (see the Implementation Chapter, under the discussion of "Recommended Plan Action Program") would provide a method for evaluating the capacity for additional sewage generation by service area, thus allowing the denial of a proposed project if sewerage capacity is to be exceeded.

Mitigation measures related to solid waste disposal effects include plan policies as well as the Los Angeles County Solid Waste Management Plan.

General Plan Water and Waste Management Element policies and recommendations relate to increased landfill capacity as a short-range solution in addition to waste recycling and resource recovery (energy generation) as long-term solutions, as follows:

- Protect the capacity of Class I landfills through restriction of their acceptance of non-hazardous wastes. (Policy 7)
- Promote solid waste technology, including source reduction, to reduce dependence on sanitary landfills. (Policy 8)
- Expand the countywide capacity of sanitary landfills pending the implementation of advanced technology for solid waste disposal and for the continued disposition of residual wastes. (Policy 9)
- Encourage the location, acquisition and development of landfill sites geologically qualified to accept hazardous liquid and solid wastes. (Policy 10)
- Facilitate the recycling of wastes such as metal, glass, paper, and textiles. (Policy 19)
- Encourage the use of technology for the conversion of waste to energy. (Policy 20)
- Require, in the grant of Conditional Use Permits, that the design of landfill facilities include an on-site buffer zone for the protection of neighbors. (Action 45)
- Continue to update the county's Solid Waste Management Plan. (Action 47)
- Seek funding for pilot facilities for the disposal or reduction of solid waste and the recovery of materials for recycling or for use as fuel in the field of energy production. (Action 48)

- Continue to monitor, research, develop and investigate potential programs in the field of solid waste disposal which emphasize resource recovery (waste to energy). (Action 49)
- Seek funding, and develop non-air polluting facilities, for the conversion of waste to energy. (Action 50)
- Initiate source control and waste segregation, where feasible, at appropriate county facilities. (Action 52)
- Encourage county operating agencies to work with the private sector in the development of solid waste source control for industry, commerce and residential land uses. (Action 53)
- Monitor and evaluate the City of Downey recycling program as a basis for developing recycling programs throughout the county. (Action 54)
- Monitor and evaluate the Riverside and Orange Counties solid waste recovery/recycling licensee programs. (Action 55)

It should be noted that while restricting the acceptance of Class I landfills will prolong the availability of sites for disposal of hazardous wastes, it may also result in increased hauling distances to Class II sites for non-hazardous wastes, with the potential for additional effects on air quality and energy consumption. These effects are not, however, considered to be significant.

Source control (the segregation of salvageable commodities from other refuse) and the conversion of waste to energy (resource recovery) offer alternatives to landfilling. The plan recommends the seeking of funding for pilot facilities for the disposal or reduction of solid waste and

the recovery of materials for recycling or for use in the field of energy production, and the continued monitoring, researching, developing and investigating of potential programs in the field of solid waste disposal which emphasize resource recovery (Recommended Actions 48 and 49, Water and Waste Management Element). However, the major problem associated with the conversion of waste to energy is the emission of air pollutants.

Specific resource recovery projects have also been proposed in the county. The County Sanitation Districts have applied for grant funding of a waterwall incinerator for installation in Long Beach. The system will convert 900 tons of refuse, daily, to steam for sale to nearby industries. The Air Quality Management District has indicated that the system may meet their standards. Another proposed system -- the Watson Energy System -- will be similar in design and function to that proposed by the Sanitation Districts. Other systems are being evaluated by various agencies within the county.

The adopted Los Angeles County Solid Waste Management Plan (County Engineer, October, 1975, as amended) proposes several new sites and implementation of resource recovery as the primary means of alleviating the potential shortage of landfill sites. This plan has been approved by the State Solid Waste Management Board. Consideration of the costs and time requirements for design and implementation of facilities are significant issues, as well as the need for protecting and preserving the environment.

7.0 - SIGNIFICANT ENVIRONMENTAL EFFECTS WHICH CANNOT BE AVOIDED IF
THE PROPOSAL IS IMPLEMENTED

In Section 6.0 the EIR primarily identifies and quantifies where possible the secondary impacts associated with implementing the general plan. The attempt is to discuss all possible consequences. Subsequent to the discussion of impacts, or effects, mitigation measures are identified.

This Section is intended to consider the magnitude of the impact and the available mitigation measures and to make a determination whether the impact is significant. To do this, all of the impact categories are included, even those which are beneficial, as well as those which can be reduced to insignificant levels, but not eliminated.

In determining significance consideration must be given to several factors. First, the environmental analysis for urban expansion and infill development in Section 6.0 is generally based on a "worst case" assumption. As explained previously, the discussion of physical impacts is based primarily on an analysis of mapped policies. The gross acreage shown for potential development is greater than the amount of land which is expected to be developed. Secondly, the environmental analysis assumes that development of any given parcel will result in the alteration of the entire parcel. This assumption was made since specific design plans are not available at this time. When development actually occurs, the entire parcel may not be altered — instead a planned unit development or cluster development may alter only a limited portion of the parcel. Extensive open areas will be required at the project level for parcels located in hillside areas. Thus, the acreage altered will be substantially less at the time development is proposed. In addition, the scale at which the environmental data is mapped may tend to identify a hazard or resource area as being either more or less extensive than it actually is on-site. Finally,

acres identified as encroaching within individual hazard or resource categories are not additive since some of this acreage includes more than one (1) category.

The following discussion is divided into three parts. First, the impacts of individual factors are evaluated in terms of their significance. Secondly, the evaluation by individual factor is summarized. Finally, the cumulative impact of all of the factors taken together is discussed.

EVALUATION BY INDIVIDUAL ENVIRONMENTAL FACTOR

Geologic/Seismic -

The amount of urban expansion within high seismic hazard areas (active fault zones) is 500 acres, or about one (1) percent of the total urban expansion area of 55,800 acres. Three hundred (300) acres of infill are within a high seismic hazard zone.

A large portion of the acreage affected by a high seismic hazard is located in the San Andreas Rift Zone in the southerly portion of the City of Palmdale. This area is within a low or low/medium residential density classification.

While there is relatively limited acreage within active fault zones, low densities, and, perhaps most importantly, the need to comply with the building codes and requirements (including prohibition of certain types of structures and construction within fifty (50) feet of an active fault trace), the seismic hazard is considered as significant since there is a potential for widespread damage and loss of life both within the fault zone (due to ground rupture) and in other areas of the county (due to ground shaking).

While an extensive amount of acreage--both urban expansion (6,600 acres) and infill (5,000 acres)--is located in areas having a potential liquefaction problem, possible impacts are considered insignificant since engineering techniques provide adequate mitigation.

Eight thousand six hundred (8,600) acres of urban expansion and 3,900 acres of infill are located within areas having potentially unstable slopes. Most of this land is designated for low density residential uses. While engineering techniques and use of the Hillside Management/Performance Review Procedure will reduce possible impacts, this may be considered a potentially significant adverse impact due to the damage and destruction which could result (see discussion in Section 6.1).

Soils -

Even though 9,100 acres (17% of the total) of urban expansion and 1,800 acres of infill are within areas having high constraint soil types, the impact is not considered significant. This conclusion is based on the requirement for soil reports at the project level and the incorporation of engineering techniques. The Hillside Management/Performance Review Procedure also provides a major mitigation measure.

Flood/runoff -

About five (5) percent (2,800 acres) of the urban expansion area is subject to flood hazard. Given the flood plain management system proposed by the plan and the need to comply with County ordinances in order to eliminate flood hazard, this impact is not considered significant.

However, high mudflow problems can pose a serious problem. While only 1,400 acres of urban expansion (two (2) percent of the total) fall in this category, failures are sometimes spectacular--an example was provided during the 1977-78 rainy season. The Hillside Management/Performance Review Procedure and engineering techniques provide major mitigation; however, since this problem can result in widespread damage and costs, it is considered to be significant.

Impacts within infill areas are considered insignificant since acreage affected is very limited and drainage facilities will be constructed to eliminate or minimize this potential hazard.

Fire -

Approximately six (6) percent of the urban expansion acreage falls within a high fire hazard area. Although development projects are required to provide for adequate water flows, hydrants and brush clearance, and, although the plan's Hillside Management/Performance Review Procedure will help to mitigate the impact, the effect on urban expansion is considered significant, given the potential for widespread damage and economic loss.

The impact on non-urban development within hillside areas is also considered to be significant; the recent Agoura-Malibu fire provides an example of the destruction and economic loss which can occur due to major wildland fires. Providing adequate access, brush clearance, water and building materials (particularly fire retardant or non-wood roofs) will significantly reduce this hazard. However, this impact is considered significant since out-of-control brush fires can become massive and impact many people.

With regard to infill development, the impact is considered insignificant given the very minimal acreage involved (200 acres).

Noise -

Impacts within residential development can be reduced to acceptable levels through compliance with the County Building Ordinance and development design. Development design is also important in reducing outdoor noise to acceptable levels; however, mitigation measures can be expensive particularly if buffering walls are constructed. Current efforts to reduce transportation noise and careful review of projects should reduce possible problems to insignificant levels.

Air Quality -

Based on the air quality analysis in Section 6.6, there will be a reduction in emissions by 2000 due primarily to controls on mobile sources. Also, the Final Draft Addendum - Air Quality Management Plan* identifies approximately 75 tactics which, if implemented, will allow the air basin to meet Federal air quality standards. Thus, as explained in Section 6.6, the impact on air quality due to population growth and distribution is not considered to be significant.

Water Resources/Water Quality -

Water resource data indicates that adequate resources will be available for the projected level of population, particularly with the use of water conservation measures and the completion of key State water projects. No significant impact is anticipated.

The impact on aquifer areas is also considered insignificant. While 3,700 acres of urban expansion and 1,300 acres of infill development potentially encroach into aquifer areas, only 50 percent of this

* Adopted January 26, 1979 by the South Coast Air Quality Management District.

acreage would actually be lost due to construction and coverage by impervious surfaces. The aquifer recharge program will also reduce the impact.

Extension of sewer service and expansion of water treatment plants consistent with the general plan should minimize and reduce water quality problems to insignificant levels. Compliance with applicable state and county regulations provide mitigation in unsewered areas.

Biota -

Implementation of general conditions and standards relating to the protection of Significant Ecological Areas (SEAs) as one of the plan's special management areas is a major mitigation measure. This will provide protection for unique and critical resources. With regard to vegetative communities not within SEAs, urban expansion and infill areas impact between two (2) and 11 percent of the total resource acreage. Projects located outside of SEAs will be subject to an environmental analysis and may also be subject to special management (e.g., in hillside management areas and the National Forests). This impact is considered insignificant.

Extractive Resources -

While the amount of urban expansion and infill development (two (2) percent of the total county resources) encroaching into potential sand and gravel resource areas appears minor, this impact is important. To minimize conflicts these areas have been identified as Special Management Areas. Implementation of these management policies and the Surface Mining and Reclamation Act of 1975 will reduce the impact to insignificant levels and minimize conflicts with other land uses.

The impact on oil and gas resources (encroachment on two (2) percent of the county's total resources) is also considered to be insignificant. This is based primarily on the compatibility of these operations with urban uses. It should also be noted that extraction of these resources has declined significantly over the past years.

Prime Agricultural Soil Resources -

Urban expansion and infill development encroaching into agricultural lands (both with an existing agricultural use and with a high capability for such use) impact about 13 percent of the total agricultural resource land countywide. While several factors -- the minimal loss of food production in the south county (most of the land in the south county is devoted to nursery stock), the high cost of water in the North County, and the plan's efforts to preserve significant agriculture resources and expand agricultural activities -- do help to mitigate the impact on agricultural resources, the impact on such resources, particularly in the North County, is considered to be significant, given the extensive acreage potentially impacted.

Energy Consumption -

There is estimated to be a two (2) percent reduction in total energy usage due primarily to the reduction in mobile usage. The decrease in mobile energy usage is primarily the result of Federal regulations requiring improved auto efficiency. Thus, based on the energy analysis in Section 6.11, no significant effect on energy consumption due to population growth and distribution is anticipated.

Archaeological/Historical/Paleontological Resources -

Due primarily to the protection provided at the time a project is subjected to an environmental analysis, no significant effect is anticipated on these resources. In addition, the creation of a

Cultural Heritage Committee will provide positive direction for overall protection.

Scenic Qualities -

If the criterion of slope alone is used, the impact of urban expansion and infill development on scenic qualities can be considered as significant. This is the result of 15,700 acres of presently vacant undeveloped land having a slope of 15 percent or greater being converted to urban uses. Most of this new urban development is to be at relatively low residential densities. Using criteria in addition to slope—vegetation, topography, hydrology to measure areas of "high scenic quality"—reduces the acreage to 3,700 acres, about seven (7) percent of the urban expansion lands. Development within hillside areas having a slope of 25 percent or greater will be subject to Hillside Management/Performance Review, which will provide a substantial reduction in the impact. The impact on scenic qualities, however, is still considered significant since a relatively large amount of undeveloped acreage may be converted to urban uses.

The impact on non-urban development -- the potential for a projected net 15,000 new dwelling units -- is not considered significant. Since the potential impact would be greatest in hillside areas, the hillside management performance standards and very low densities are expected to reduce this impact to insignificant levels.

Project design review and compatible densities will result in an insignificant impact on scenic qualities within areas to be recycled.

Land Use -

The plan's land use emphasis encouraging a compact and focused urban form is considered a beneficial impact.

Communities -

The plan will result in major beneficial impacts on existing communities, particularly the emphasis on revitalization (including conservation and maintenance) efforts to retain community identity and cultural values and to provide for compatible development.

Population -

Since the plan is not intended to encourage or discourage migration, but rather to accommodate moderate future growth, its impact is not considered as significant. Further, plan policies are intended to minimize possible problems associated with growth and possible demographic changes.

Housing -

The plan's impact is considered beneficial since it calls for an increase in new housing and rehabilitation of older homes.

Employment/Unemployment -

The anticipated increase of jobs, reduction of in-commuting and reduction of unemployment are considered beneficial effects.

Income -

Since the plan is intended to improve the general economic conditions and health of the county, this effect is considered favorable.

Investment -

The plan's effect on investment is considered beneficial since it encourages focused development and revitalization resulting in a reversal of the deterioration process in older areas and in better utilization of existing facilities.

Governmental Expenditures -

Plan policies directed towards effective use of existing facilities and services will have a favorable impact on expenditures, as will ensuring that new development in urban expansion areas will pay for the marginal public costs it generates.

Governmental Revenue -

The plan's emphasis on revitalization is anticipated to reverse the decline in property values and tax base and retain sales tax revenues, thus resulting in a beneficial impact.

Transportation -

Expansion of the transportation network (both auto and non-auto systems) consistent with the general plan's projections should not result in a significant adverse impact. The plan recommends several mapped and written policies designed to lessen existing traffic congestion problems. Further, environmental analysis on individual projects provides an additional opportunity to ensure consideration of environmental factors.

Liquid/Solid Waste Disposal -

Construction and/or expansion of treatment facilities to meet anticipated population growth will reduce to insignificant levels the effect on liquid waste disposal.

By the year 2000, existing landfill capacities (if allowed full use) should meet future population needs; therefore, no significant effect is anticipated. In addition, the evaluation of alternatives to land filling (including source control and the conversion of waste to energy) called for in the plan will provide a positive direction for improved waste disposal mechanisms.

SUMMARY OF INDIVIDUAL ENVIRONMENTAL FACTORS -

The intent of this subsection is to identify those environmental factors which may be impacted in a significant adverse manner or

which may create significant adverse problems on an individual basis.

In urban expansion areas significant impacts include seismic and unstable slopes (Geologic/Seismic), mudflow (Flood/Runoff), fire hazard, Prime Agricultural Soil Resources, and Scenic Qualities. In infill areas significant impacts include seismic and unstable slopes (Geologic/Seismic) and Scenic Qualities. A significant impact in non-urban areas is fire hazard. The impacts associated with the remaining environmental factors are either considered beneficial or insignificant due to mitigation measures and/or amount of acreage involved.

CUMULATIVE EFFECT -

While the evaluation of the plan's potential impacts on individual environmental factors is important, an analysis of areas subject to several constraints and/or containing multiple resources is more meaningful since it approximates the capability of land for development. Data prepared by Environmental Systems Research Institute (ESRI) was utilized to analyze this potential cumulative encroachment. This data provides information on the capacity of land to sustain development and the appropriateness of land for development.

Lands encroaching into D and E categories provide the focus for this analysis. D lands are described as those having a low capability for development, with major environmental constraints; E lands have a very low capability for development and have severe environmental constraints.

The environmental constraints in Class D include: potentially active faults, slopes greater than 30 percent, potentially unstable slopes exceeding 15 percent, sand/gravel extraction sites, and significant ecological area buffer zones. Class E constraints include active faults, active landslides or unstable sea cliffs, flood proneness, and significant ecological areas.

Urban expansion and infill development in D lands amounts to 7,100 acres. These areas are shown in Figure 7-1. The 5,600 acres of urban expansion represent about 10 percent of the total 55,800 acres of urban expansion.

FIGURE 7-1

ESTIMATED ACREAGES OF URBAN EXPANSION AND INFILL DEVELOPMENT IN CLASS D
(ESRI CAPABILITY)

<u>Planning Area</u>	Urban Expansion		Infill Development	
	<u>Total</u> <u>County</u>	<u>Unincorporated</u> <u>Area</u>	<u>Total</u> <u>County</u>	<u>Unincorporated</u> <u>Area</u>
San Fernando	300	-0-	300	-0-
Burbank/Glendale	-0-	-0-	300	-0-
West San Gabriel Valley	-0-	-0-	100	-0-
East San Gabriel Valley	800	400	200	-0-
Malibu/Santa Monica Mtns.	400	400	*	*
West	300	-0-	-0-	-0-
Central	-0-	-0-	300	-0-
South	-0-	-0-	*	*
Southwest	-0-	-0-	300	-0-
Santa Clarita Valley	3,800	3,800	*	*
Antelope Valley	-0-	-0-	-0-	-0-
Total	5,600	4,600	1,500	*

Primary urban expansion areas affected within D lands by planning area are as follows: San Fernando--Porter Ranch; East San Gabriel Valley--Diamond Bar, La Habra Heights, Walnut and La Verne; Malibu/Santa Monica Mountains--Calabasas Park area, Agoura and area north of Ventura Freeway between Brent's Junction and Westlake Village; West--Palisades Highlands and Bel Air Estates.

* Less than 100 acres

The 3,800 acres affected by urban expansion in the Santa Clarita Valley are located primarily in the Castaic, Valencia, Newhall, Saugus, Pico and Bouquet Canyon areas. The major environmental constraint is primarily unstable slopes and slopes over 30 percent.

The infill development in D lands is located in Sunland (Burbank/Glendale); Porter Ranch and Woodland Hills (San Fernando); Palos Verdes Estates and Rancho Palos Verdes (Southwest); Monterey Hills and Hollywood Hills (Central); San Dimas and La Verne (East San Gabriel Valley), Monterey Park (West San Gabriel Valley) and Lancaster area (Antelope Valley).

Eight thousand five hundred (8,500) acres of urban expansion and infill development are in Class E. Figure 7-2 shows their location by planning area.

FIGURE 7-2

ESTIMATED ACREAGE OF URBAN EXPANSION INFILL DEVELOPMENT IN CLASS E
(ESRI CAPABILITY)

<u>Planning Area</u>	<u>Urban Expansion</u>		<u>Infill Development</u>	
	<u>Total</u> <u>County</u>	<u>Unincorporated</u> <u>Area</u>	<u>Total</u> <u>County</u>	<u>Unincorporated</u> <u>Area</u>
San Fernando	200	-0-	100	-0-
Burbank/Glendale	-0-	-0-	*	-0-
West San Gabriel Valley	-0-	-0-	*	-0-
East San Gabriel Valley	-0-	-0-	100	-0-
Malibu/Santa Monica Mtns.	100	100	*	-0-
Central	-0-	-0-	*	*
East Central	-0-	-0-	*	-0-
South	-0-	-0-	100	100
Santa Clarita Valley	100	100	*	*
Antelope Valley	<u>2,800**</u>	<u>200***</u>	<u>300</u>	<u>*</u>
Total	3,200	400	600	100

*Less than 100 acres

**Does not include 4,700 acres in Palmdale Airport site.

***Does not include 4,400 acres in Palmdale Airport site.

Primary areas affected by urban expansion within E lands by planning area are as follows: San Fernando--Sylmar and Lakeview Terrace; Malibu/Santa Monica Mountains--Las Virgenes Creek and Medea Creek; Santa Clarita Valley--Soledad Canyon; and Antelope Valley--Antelope Valley Freeway and 10th Street West, 16th Street East and Division Street, City of Palmdale, and City of Lancaster.

Potential infill development in E lands is located in Mission Hills (San Fernando); Irwindale and Industry (East San Gabriel Valley) and the unincorporated area east of the City of Carson (South).

Of the 3,800 acres of urban expansion and infill development, 3,100 acres are located in the Antelope Valley, representing about 82 percent of the total Class E lands. Most of the land in this class is flood prone; however, the plan's flood plain management and compliance with ordinances relating to flood hazard would reduce the impact to insignificant levels.

8.0 - DESCRIPTION OF ALTERNATIVES

The policies contained in the general plan evolved from an extensive analysis of four plan alternatives. These four alternatives had two basic dimensions: population level and urban pattern. Two population levels were evaluated. One possibility considered was that the population of the county would stabilize at seven million until the year 2000. The other possibility was that natural increase and reduced movement of people out of the county due to an expanded economy could generate a population growth of up to a million by the turn of the century. Thus, a range for possible population alternatives between seven and eight million was considered reasonable at that time.

Two possible urban patterns were considered. One choice was to encourage a dispersed pattern with an emphasis on development in the newer suburbs and at the outer fringes of the presently built up areas. This has generally been the traditional trend of urban development but would increasingly result in the abandonment of older urban areas. The dispersed pattern, even if clustered, would result in a somewhat lower average density of development than we have at present.

The other choice was to encourage a concentrated urban pattern with emphasis on filling in existing suburban areas and rehabilitating and reconstructing the older urban areas. This would require new incentives to attract investments to the older urban areas and new

strategies to restrain fringe development. The concentrated pattern would result in a somewhat higher average density of development throughout the built up area than we have at present.

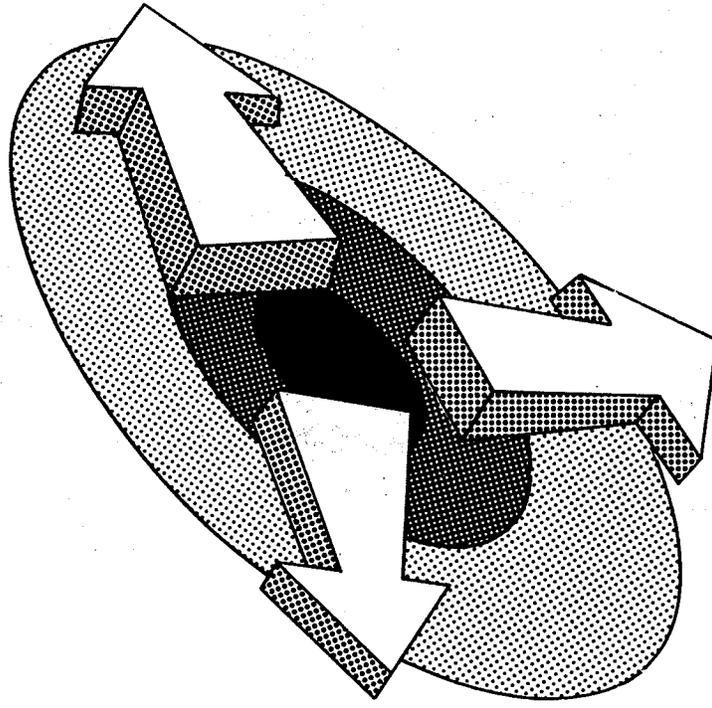
The two population levels and the two urban patterns result in four alternatives. "A" features a population of 7 million people and a dispersed lower density urban pattern. "B" provides for a population level of 7 million people and a more concentrated urban pattern. "C" involves a population of 8 million people and a lower density urban pattern. "D" provides for 8 million people and a higher density urban pattern. (See Figures 8-1 and 8-2.)

Both of the dispersed alternatives (A and C) would result in more jobs, located primarily in the suburban areas. New low and moderate income housing, primarily at a low density, would be located in suburban areas in proximity to job opportunities. The automobile would continue to be the major means of transportation, with no mass rapid transit. While both alternatives would complete the missing freeway segments and the Century Freeway, Alternative C would also provide two additional freeways.

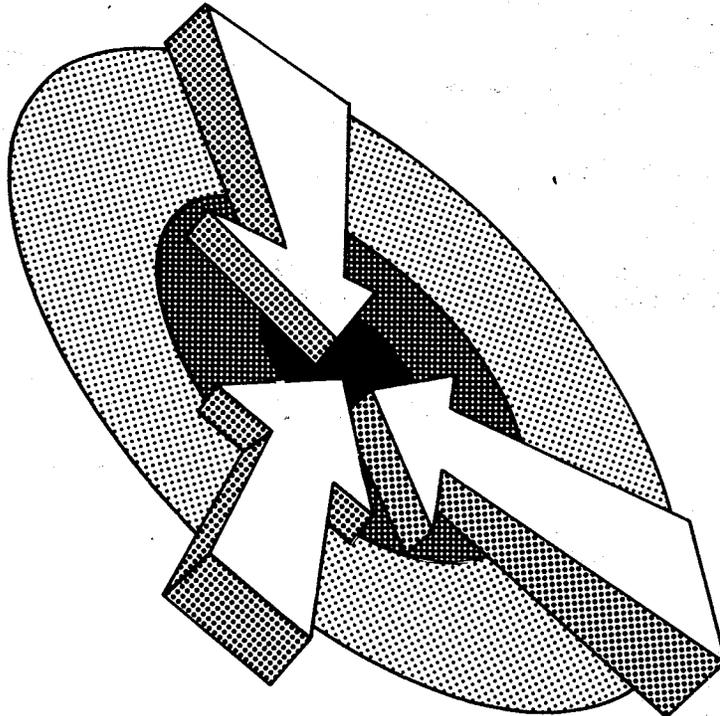
Both of the concentrated alternatives (B and D) would result in an extensive rehabilitation and reconstruction of older residential, commercial and industrial areas. Most new dwelling units would be townhouses and garden apartments, located in inner cities and older suburbs. There would also be a major increase in jobs, located

FIGURE 8-1

urban pattern choices



DISPERSION

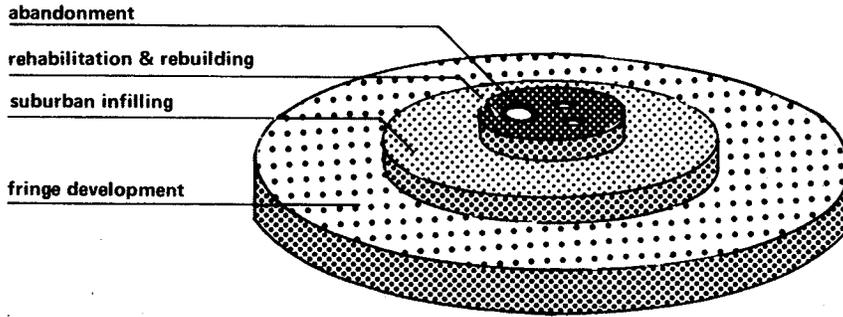


CONCENTRATION

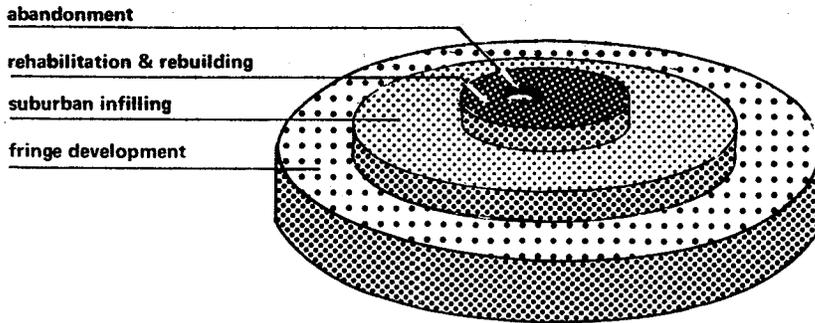
FIGURE 8-2

the four alternatives

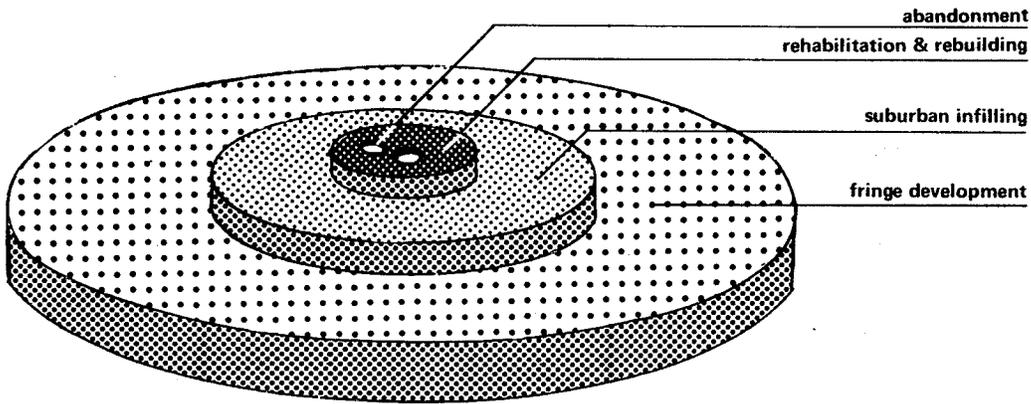
alternative A emphasis on dispersal - 7 million



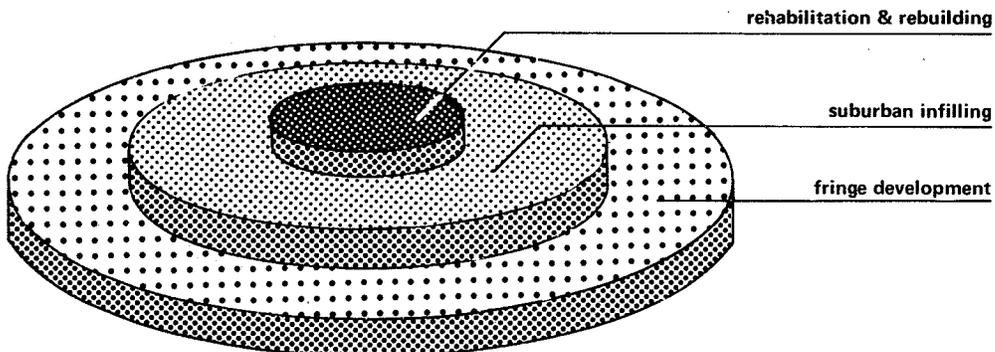
alternative B emphasis on concentration - 7 million



alternative C emphasis on dispersal - 8 million



alternative D emphasis on concentration - 8 million



primarily in older urban areas. Alternative D, with its increased population, would result in a substantial expansion of the urban area. While Alternative B would provide an expanded bus system, Alternative D would also provide a new mass rapid transit system, connecting the urban area with the inner urban areas, as well as a vastly expanded bus system. Alternative D approximates, somewhat, the concentrated urban form set forth in the Environmental Development Guide (EDG). The EDG, however, envisioned a higher population projection and a greater amount of vacant land converted to urban uses.

Figure 8-3 compares the four alternatives in terms of population, employment, types of dwelling units and extent of urbanization and rehabilitation. For a detailed discussion of the four alternatives, see "Alternative Directions For Los Angeles County," published by the Department of Regional Planning.

FIGURE 8-3
MAJOR FEATURES OF THE ALTERNATIVES

	Alternative A	Alternative B	Alternative C	Alternative D
Population-Year 2000	7,000,000	7,000,000	8,000,000	8,000,000
Net Change from 1975	Little or none	Little or none	+1,000,000	+1,000,000
Jobs-Year 2000	3,540,000	3,540,000	3,940,000	3,940,000
Net Change from 1975	+209,000	+209,000	+609,000	+609,000
Total Dwellings-Year 2000	2,893,000	2,974,000	3,342,000	3,442,000
Net Change from 1975	+186,000	+267,000	+635,000	+735,000
*Low Density Units-Year 2000	1,756,000	1,675,000	1,092,000	1,694,000
Net Change from 1975	+38,000	-43,000	+185,000	-24,000
**Medium Density Units	1,137,000	1,299,000	1,440,000	1,748,000
Net Change from 1975	+148,000	+309,000	+450,000	+758,000
Square Miles Vacant Land				
Converted to Urban Uses	+70	+34	+202	+101
Square Miles of Older Urban				
Area Rehabilitated or Rebuilt	+90	+144	+114	+192

*Low density includes single family detached units and mobile homes.

**Medium density includes twin homes, townhouses, garden apartments and limited tower apartments.

9.0 NO PROJECT ALTERNATIVE

Section 65300 of the Government Code requires local jurisdictions to adopt a general plan. As set forth in state regulations, the mandatory elements of the general plan include the following: land use, open space, conservation, housing, circulation, seismic safety, safety, noise and scenic highways. Since the county does not have an adopted general plan meeting state requirements (See Section 2.3, History), consideration of a "no project" alternative is not appropriate.

10.0 - COMPARATIVE IMPACT ANALYSIS OF ALTERNATIVES

The comparison of the alternatives is intended to: (1) test major policy directions in terms of the potential maximum/minimum range of effects (i.e., continuation of population and employment growth versus maintenance of existing population and employment levels; concentration of new development in or near existing urban areas versus low-density accommodation of new development in fringe areas); (2) help identify modifications to the alternatives, or combinations of provisions from the various alternatives, which would either reduce adverse effects or increase benefits to the public; and (3) distinguish those factors or effects where there is a significant difference among alternatives.

This section provides a generalized comparison of the relative impacts of the alternatives. It is based on two documents: (1) a broad overview of the four alternatives as set forth in the report "Alternative Directions for Los Angeles County," prepared by the Department of Regional Planning; and (2) a more detailed three volume report comparing the four alternatives, prepared by McDonald and Grefe, Inc.

The general plan is not compared to the four alternatives in this section because of the different level of detail on which the two types of analyses are based. The alternatives analysis was prepared early in the planning process in order to provide some indication of the potential maximum/minimum range of effects, based on different population levels and development patterns. No specific land use distribution or population allocations were developed for the four alternatives. The plan direction was then chosen based, in part, on this comparison, and a detailed analysis of impacts was prepared. Thus, a direct comparison between the four alternatives and the general plan cannot be made.

Section 6.0 -- Environmental Effects Analysis/Mitigation Measures -- presents a detailed analysis of the effects of the plan based on specific policies and projections.

Figures 10-2 through 10-6 provide the year 2000 population, housing, employment and land use data on which the analysis of the alternatives was based. Table 10-1 provides comparative baseline data for 1975.

FIGURE 10-1

POPULATION, HOUSING, EMPLOYMENT AND URBAN AREA: 1975

Planning Area	Population	Housing (No. of Units)	Employment (Jobs)	(1)
				Urban Area (Acres)
San Fernando	781,000	270,100	280,000	96,000
Burbank/Glendale	543,000	230,400	260,000	62,000
West San Gabriel Valley	652,000	248,800	259,000	73,000
East San Gabriel Valley	627,000	188,800	202,000	93,000
Malibu/Santa Monica Mtns.	45,000	16,300	10,000	13,000
West	405,000	187,600	236,000	36,000
Central	1,246,000	546,100	957,000	76,000
East Central	577,000	213,700	297,000	49,000
Southeast	613,000	198,700	185,000	63,000
South	642,000	254,400	288,000	72,000
Southwest	708,000	274,000	312,000	71,000
Santa Clarita Valley	63,000	19,300	15,000	8,000
Antelope Valley	89,000	34,500	29,000	12,000
Channel Islands	<u>2,000</u>	<u>1,200</u>	<u>1,000</u>	<u>(2)</u>
TOTAL	6,993,000	1,706,900	3,331,000	725,000

(1) Includes vacant land within the urban area.

(2) Less than 1,000 acres.

FIGURE 10-2

YEAR 2000 POPULATION

Planning Area	ALTERNATIVES			
	A	B	C	D
San Fernando	836,000	809,000	958,000	881,000
Burbank/Glendale	519,000	546,000	579,000	590,000
West San Gabriel Valley	620,000	669,000	694,000	726,000
East San Gabriel Valley	714,000	654,000	810,000	746,000
Malibu/Santa Monica Mtns.	70,000	58,000	116,000	80,000
West	410,000	432,000	455,000	470,000
Central	1,145,000	1,192,000	1,211,000	1,352,000
East Central	510,000	532,000	551,000	661,000
Southeast	601,000	617,000	681,000	654,000
South	605,000	631,000	719,000	735,000
Southwest	689,000	703,000	765,000	779,000
Santa Clarita Valley	110,000	75,000	142,000	115,000
Antelope Valley	170,000	95,000	289,000	227,000
Channel Islands	2,000	2,000	3,000	3,000
TOTAL	7,001,000	7,015,000	7,973,000	8,019,000

FIGURE 10-3

YEAR 2000 HOUSING
(NUMBER OF UNITS)

Planning Area	A L T E R N A T I V E S			
	A	B	C	D
San Fernando	308,400	313,600	361,500	344,100
Burbank/Glendale	237,000	255,000	270,600	278,300
West San Gabriel Valley	258,300	281,100	294,100	311,600
East San Gabriel Valley	234,100	218,000	268,200	253,700
Malibu/Santa Monica Mtns.	26,900	22,500	44,600	31,500
West	202,000	218,100	227,500	238,600
Central	550,500	584,300	590,700	666,000
East Central	210,700	224,500	232,500	282,600
Southeast	214,600	220,400	241,500	236,100
South	261,900	276,800	312,600	325,200
Southwest	284,700	295,400	332,600	341,700
Santa Clarita Valley	35,900	25,000	49,000	40,400
Antelope Valley	67,200	38,000	114,700	90,800
Channel Islands	<u>1,200</u>	<u>1,200</u>	<u>1,800</u>	<u>1,800</u>
TOTAL	2,893,400	2,973,900	3,341,900	3,442,400

FIGURE 10-4

YEAR 2000 EMPLOYMENT
(NUMBER OF JOBS)

Planning Area	A L T E R N A T I V E S			
	A	B	C	D
San Fernando	315,000	305,000	369,000	328,000
Burbank/Glendale	265,000	270,000	287,000	287,000
West San Gabriel Valley	263,000	275,000	289,000	298,000
East San Gabriel Valley	251,000	230,000	292,000	268,000
Malibu/Santa Monica Mtns.	23,000	19,000	30,000	24,000
West	249,000	255,000	277,000	289,000
Central	960,000	970,000	1,025,000	1,056,000
East Central	270,000	289,000	292,000	311,000
Southeast	204,000	200,000	232,000	220,000
South	310,000	315,000	339,000	358,000
Southwest	338,000	335,000	362,000	370,000
Santa Clarita Valley	30,000	19,000	35,000	30,000
Antelope Valley	55,000	28,000	101,000	76,000
Channel Islands	1,000	1,000	1,500	1,500
TOTAL	3,534,000	3,511,000	3,931,500	3,916,500

FIGURE 10-5

1

INCREASE IN NEW URBANIZED LAND: 2000
(ACRES)

Planning Area	A L T E R N A T I V E S			
	A	B	C	D
San Fernando	6,710	3,830	9,880	3,930
Burbank/Glendale	10	130	2,920	310
West San Gabriel Valley	0	40	2,010	570
East San Gabriel Valley	11,840	5,340	18,140	6,420
Malibu/Santa Monica Mtns.	5,120	3,310	15,300	5,510
West	750	290	6,350	570
Central	-2,200	-190	-660	940
East Central	-2,020	-390	-460	540
Southeast	3,000	2,230	5,540	2,450
South	220	1,200	4,160	3,330
Southwest	2,180	1,280	8,010	2,940
Santa Clarita Valley	6,890	2,730	10,810	5,750
Antelope Valley	12,280	1,790	47,530	31,490
Channel Islands	20	20	50	50
TOTAL	44,800	21,600	129,580	64,800

1

A base year of 1970 is used.

FIGURE 10-6

INCREASE IN RECYCLED LAND: 2000
(ACRES)

Planning Area	A L T E R N A T I V E S			
	A	B	C	D
San Fernando	2,160	1,860	2,900	5,230
Burbank/Glendale	2,450	2,260	3,270	4,110
West San Gabriel Valley	3,470	2,860	4,560	6,010
East San Gabriel Valley	1,810	1,350	2,390	3,430
Malibu/Santa Monica Mtns.	370	250	370	610
West	3,340	3,030	3,800	4,610
Central	4,820	3,280	5,510	7,140
East Central	4,270	3,050	4,530	5,690
Southeast	1,880	1,620	2,390	3,360
South	2,940	2,280	3,380	4,160
Southwest	2,140	1,690	2,570	3,010
Santa Clarita Valley	420	350	460	550
Antelope Valley	1,400	1,050	1,450	2,170
Channel Islands	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
TOTAL	31,470	24,930	37,580	50,080

NOTE: Totals may not add due to rounding.

10.1 Geologic/Seismic

The dispersed Alternatives A and C would have the greatest impacts, as the widespread urbanization required by these alternatives would result in more infrastructure development over a larger land area. Alternatives B and D offer fewer impacts because of their concentration of urban uses and infrastructure. However, all of the alternatives would increase the possibility of infrastructure damage, particularly in the Antelope and Santa Clarita Valleys. Alternatives A and C would impact the East San Gabriel Valley. Figure 10-7 presents potential infrastructure damage for each alternative by planning area.

FIGURE 10-7
RELATIVE IMPACT UPON PLANNED INFRASTRUCTURE
IN EACH PLANNING AREA

<u>Planning Area</u>	Because Infrastructure Will Probably Cross an Earthquake Fault				Because of Slope Instability			
	ALTERNATIVES				ALTERNATIVES			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
San Fernando							x	
Burbank-Glendale							x	
West San Gabriel Valley								
East San Gabriel Valley	x		x		x		x	
Malibu/Santa Monica Mts.	x		x		x	x	x	x
West								x
Central								
East Central								
Southeast							x	
South								
Southwest				x				
Santa Clarita Valley	x	x	x	x	x		x	x
Antelope Valley	x	x	x	x				

Figure 10-7 also presents a relative indication of impacts due to slope instability. Such problems would be the highest with Alternative C; next would be Alternative A. Alternative B would have the least impact. The Santa Clarita Valley, Malibu/Santa Monica Mountains, and East San Gabriel Valley areas would be the most susceptible.

In comparing geologic/seismic hazards in urban areas, an analysis of pre-1933 unreinforced masonry structures was used. Alternative B retains the highest inventory of older structures susceptible to seismic damage. Alternatives C and D provide for the highest land clearances, thus the removal of more older structures. Figure 10-8 presents this information.

FIGURE 10-8
ACRES OF LAND CLEARED 1970-2000

Planning Area	A L T E R N A T I V E S			
	A	B	C	D
San Fernando	2,830	1,860	3,590	5,230
Burbank/Glendale	2,950	2,260	3,770	4,110
West San Gabriel Valley	4,080	2,860	5,180	6,010
East San Gabriel Valley	2,280	1,350	2,860	3,430
Malibu/Santa Monica Mts.	370	250	370	610
West	3,800	3,030	4,260	4,610
Central	5,100	3,280	5,790	7,140
East Central	4,450	3,050	4,710	5,690
Southeast	2,020	1,620	2,530	3,360
South	3,160	2,080	3,590	4,160
Southwest	2,340	1,690	2,780	3,010
Channel Islands	-0-	-0-	-0-	-0-
Santa Clarita Valley	420	350	460	550
Antelope Valley	1,400	1,050	1,450	2,170
TOTAL LOS ANGELES COUNTY	35,200	24,730	41,340	50,080

10.2 Soils

All of the alternatives would allow development in areas having soils with moderate or high constraints for development (i.e., soils having constraints related to characteristics such as composition, permeability, cut-slope stability or erosion hazard). Alternative C would result in the greatest relative impacts, allowing the greatest amount of urban expansion in areas with soils having moderate or high constraints, such as the Santa Monica Mountains and hilly areas in the Santa Clarita, San Fernando and East San Gabriel Valleys. Alternative D would also result in major impacts. Alternative A would result in moderate impacts, while Alternative B, with its stable population and concentrated pattern of development, would result in the least impacts. However, it should be noted that potential adverse impacts related to soil types can, for the most part be mitigated with proper engineering techniques.

10.3 Flood/Runoff

Flood hazards due to development within major flood plains (i.e., the natural streams in the Antelope Valley and Santa Clarita Valley, the Santa Monica Mountains, Big and Little Tujunga Washes, and isolated areas below the San Gabriel Mountains) and increased urban runoff were estimated for each alternative.

Planned urban development in the major flood plains would occur only in the Malibu Mountains and the Santa Clarita Valley. Alternatives B and D have the least impact. The number of acres of flood plain preempted for urbanization is as shown in Figure 10-9.

FIGURE 10-9

ACRES OF PROPOSED URBAN DEVELOPMENT IN THE FLOOD PLAIN

<u>Planning Area</u>	<u>A L T E R N A T I V E S</u>			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Malibu/Santa Monica Mts.	290	-0-	290	-0-
Santa Clarita Valley	<u>250</u>	<u>250</u>	<u>250</u>	<u>250</u>
TOTAL LOS ANGELES COUNTY	540	250	540	250

With regard to impacts due to increased runoff, Figure 10-10 indicates the relative acres of watershed land preempted by planned urban development. As can be seen, the Malibu/Santa Monica Mountains would be most heavily impacted, especially by Alternative C.

FIGURE 10-10

WATERSHED PREEMPTED BY PLANNED URBAN DEVELOPMENT (ACRES)

Planning Area	A L T E R N A T I V E S			
	A	B	C	D
San Fernando	-0-	-0-	1,951	-0-
*Burbank/Glendale	-0-	-0-	410	-0-
West San Gabriel Valley	-0-	-0-	-0-	-0-
East San Gabriel Valley	140	-0-	140	-0-
*Malibu/Santa Monica Mts.	5,806	2,246	10,591	3,556
West	-0-	-0-	1,420	-0-
Central	-0-	-0-	-0-	60
East Central	-0-	-0-	-0-	193
*Southeast	-0-	-0-	1,680	-0-
*South	-0-	-0-	170	90
*Southwest	-0-	-0-	2,180	-0-
Santa Clarita Valley	150	150	150	150
Antelope Valley	-0-	-0-	-0-	-0-
TOTAL LOS ANGELES COUNTY (Excluding Channel Islands)	6,096	2,396	18,692	4,069

*Subsequent analysis of land demand/land supply indicates that greater preemption is likely in these planning areas.

The percentage of coverage by impervious surfaces (e.g., buildings, parking, etc.) by alternative was also calculated, and is summarized in Figure 10-11.

FIGURE 10-11

IMPERVIOUS SURFACE AREA IN WATERSHED CAUSED
BY PLANNED URBANIZATION

<u>General Plan Alternative</u>	<u>Percentage of Impervious Surface Per Acre</u>	<u>Acres of Watershed Preempted</u>	<u>Acres of Impervious Surface Area in the Watershed</u>
A	46%	6,096	2,792
B	39%	2,396	934
C	47%	18,692	8,785
D	43%	4,049	1,741

The dispersed development, Alternatives C and A, respectively, preempt the most watershed acres. The concentrated developments B and D, which require less urbanization of new lands, preempt fewer watershed acres because fewer roads and less development surface area are required.

10.4 Fire

The impact of planned urban development in terms of fire hazard was determined by calculating the number of acres located in high fire hazard zones. This information for each planning area, as well as the county as a whole, is summarized in Figure 10-12. Greatest impacts would occur with Alternative C, followed by Alternative A. Alternative D would result in more moderate impacts. The area most affected is the Santa Clarita Valley.

FIGURE 10-12
 PLANNED URBANIZED ACREAGE IN HIGH FIRE ZONES
 BY PLANNING AREA

<u>Planning Area</u>	A L T E R N A T I V E S			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
San Fernando	30	-0-	450	-0-
*Burbank/Glendale	-0-	-0-	1,380	-0-
West San Gabriel Valley	-0-	-0-	-0-	-0-
East San Gabriel Valley	20	-0-	220	-0-
Malibu/Santa Monica Mts.	3,520	206	3,520	1,620
West	-0-	-0-	910	-0-
Central	-0-	-0-	-0-	-0-
East Central	-0-	-0-	-0-	-0-
*Southeast	-0-	-0-	140	-0-
South	-0-	-0-	-0-	-0-
*Southwest	-0-	-0-	30	-0-
Santa Clarita Valley	1,720	-0-	5,310	1,230
Antelope Valley	-0-	-0-	-0-	-0-

TOTAL LOS ANGELES COUNTY (Excluding Channel Islands)	5,490	206	11,960	2,850

*Subsequent analysis of land demand/land supply indicates more intensive intrusion into high fire hazard areas for these planning areas.

10.5 Noise

Although quantification of the level of noise impacts associated with the alternatives is not possible, given a lack of specific information at the project level, general comparisons as to relative impact can be made. More noise would, generally, be associated with the greater

population and level of development of Alternatives C and D. However, the more concentrated development patterns and higher densities of Alternative B, and especially D, would tend to result in greater noise levels, as compared to the low density dispersed development of the other alternatives. On the other hand, the greater level of new infrastructure, especially highways, associated with development in the fringe areas, in Alternatives A and especially C, would also result in increased noise levels in currently undeveloped areas.

Completion of the missing freeway links and the Century Freeway, which are included in all of the alternatives, are associated with greater noise levels; Alternative C, which includes the construction of three new freeways, would result in the greatest relative impact. Increased transportation noise levels would also be associated with construction of the new mass rapid transit system included in Alternative D. In the Antelope Valley, higher noise levels could be anticipated under Alternatives C and D because of the construction of the Palmdale International Airport.

In conclusion, it can be assumed that Alternative D, with its increased population and emphasis on development at higher densities, would result in the greatest relative noise impact, while Alternative A would have the least level of impact, based on its lower population and dispersed development.

10.6 Air Quality

A comparison of the alternatives in terms of both mobile source pollutants and stationary source pollutants indicates that all alternatives would result in minor improvements in air quality. Alternatives A and B would show the greatest reductions in the production of air pollutants within the county because of their relatively low population figures, while Alternatives C and D would effect negligible reductions in pollutant generation. However, the more limited impact of Alternatives A and

B should be viewed within the context of potential increases in regional population and, therefore, regional air pollution increases. With reference to mobile sources, projections of the Road Department indicate major declines in mobile source pollutants for all alternatives, but minor and probably insignificant differences among the alternatives (See Figure 10-13 below).

FIGURE 10-13

CHANGE IN MOBILE SOURCE POLLUTANT
GENERATION WITHIN LOS ANGELES COUNTY
1975-2000

	A L T E R N A T I V E S			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
CO	-80%	-81%	-78%	-81%
HC	-81%	-82%	-79%	-81%
NOx	-49%	-52%	-43%	-50%

Mobile source impacts are based on the Road Department's estimates of vehicle miles traveled (VMT) (See Section 10.23). As noted in Section 10.11 (energy consumption), the transit use assumptions may be high, especially for Alternatives B and D. Assuming lower maximum transit diversion, such as six or seven percent for all alternatives, Alternatives B and D would have greater air quality impacts than indicated above.

In regard to stationary sources, the air pollutant generation is assumed to be proportional to the energy consumed by these sources (See Page 10-27 for a ranking of the alternatives in terms of both residential and non-residential stationary source energy consumption).

However, because of the probable location of power plants outside the county, the impact of residential-related pollutants on air quality within the county would be less than those figures indicate.

Finally, the alternatives can be compared in terms of pollutant exposure. The concentrated development of Alternatives B and D should reduce vehicle miles traveled (VMT), but would increase pollution concentrations, with an undetermined net effect on public health. Figure 10-14 shows planned population increases in those areas of the county with the most serious air pollution conditions for each of the alternatives.

FIGURE 10-14
POPULATION CHANGE IN AIR QUALITY IMPACTED AREAS

	2000				
	<u>1975</u>	<u>Alt. A</u>	<u>Alt. B</u>	<u>Alt. C</u>	<u>Alt. D</u>
Santa Clarita Valley					
Population	63,000	110,000	75,000	142,000	115,000
Change 1975-2000		+47,000	+12,000	+79,000	+52,000
% Change		+75%	+19%	+125%	+83%
West San Gabriel Valley					
Population	652,000	620,000	699,000	694,000	726,000
Change 1975-2000		-32,000	+17,000	+42,000	+74,000
% Change		-5%	+3%	+6%	+11%
East San Gabriel Valley					
Population	627,000	714,000	654,000	810,000	746,000
Change 1975-2000		+87,000	+27,000	+183,000	+119,000
% Change		+14%	+4%	+29%	+19%
Total					
Population	1,342,000	1,444,000	1,398,000	1,646,000	1,587,000
Change 1975-2000		+102,000	+56,000	+304,000	+245,000
% Change		+8%	+4%	+23%	+18%

Throughout the three impacted areas, major increases in population would occur under all alternatives except B. Alternatives C and D have the greatest effect on increased exposure to pollutants, reflecting their overall higher population levels. In absolute numbers, the East San Gabriel Valley subregion has the highest impact, with 27,000 to 183,000 more persons located in an area having already serious air pollution problems.

10.7 Water Resources/Water Quality

Water Resources -

Impacts to the water supply due to urbanization of the aquifer recharge areas and due to increased demand (population growth) were compared for the four alternatives. Figure 10-15 shows the acreage impacted by loss of recharge areas for the north county (no aquifer recharge areas were preempted in the south county). It should be noted that development in recharge areas would generally result in a loss of about half of the acreage involved, thus reducing but not eliminating, the potential for aquifer recharge.

FIGURE 10-15
NORTH COUNTY ACRES OF RECHARGE SOILS PREEMPTED
BY URBAN ACTIVITIES

<u>Alt.</u>	<u>Percentage of Impervious Surface per Acre</u>	<u>Areas of Recharge Soils Preempted</u>	<u>Acres of Impervious Surface Area on Recharge Soils</u>
A	46%	5,140	2,364
B	39%	2,150	839
C	47%	42,940	20,181
D	43%	22,550	9,697

The alternatives were also compared in terms of water consumption and availability as well as the adequacy of the distribution system. Water consumption is compared in Figure 10-16. As is indicated, Alternatives A and B would result in a decrease in water consumption; Alternatives C and D would result in an increase.

FIGURE 10-16
WATER CONSUMPTION: Year 2000

<u>Year</u>	<u>Total Annual Water Use (Acre Feet)</u>	<u>Percent Change</u>
1975	1,662,200	
2000		
Alternative A	1,554,220	-6%
Alternative B	1,490,690	-10%
Alternative C	1,850,905	+11%
Alternative D	1,704,040	+10%

The capacity of important supply facilities and the existing water entitlements are more than adequate for the increased demand of Alternative C - the highest use alternative.

The Antelope Valley is the only planning area where there might be a shortfall in the availability of water. Local supply and import entitlements from the California Water Project will support a population of 219,000, plus 30,000 acres of irrigated agricultural land. Alternative C, with a 289,000 population, and Alternative D, with a population target of 227,000, would require some form of water reclamation and re-use.

Two general plan alternatives - Alternative C and, to a lesser extent, Alternative A - would require an extension of the water distribution system; but under the current policies of the water agencies, the cost of the distribution system would be borne by the developers.

Water Quality -

Water quality impacts on both surface water and ground water caused by non-point source pollution (e.g., urban runoff) were considered for each alternative.

A review of Figure 10-10 (Watershed Preempted by Planned Urban Development) indicates that the dispersed Alternatives C and A, respectively, will contribute the most non-point source pollution to surface water, since they preempt the highest acreage of watershed, and that the concentrated Alternatives B and D, respectively, offer a lesser non-point source pollution impact since they preempt a lower amount of watershed acreage.

With reference to non-point pollution of groundwater, a review of Figure 10-15 indicates that Alternative C preempts the highest number of recharge lands because of its dispersed form and therefore would increase non-point source pollution to the groundwater, and that Alternative D would contribute about one-half as much non-point source pollution to the groundwater as Alternative C. Alternatives A and B would produce the least non-point source pollution impact upon the groundwater because they preempt smaller amounts of recharge soils. In addition, because much of the agriculture in the North County is being preempted for urban activities, the salinity and other non-point source pollution due to agriculture would be reduced.

10.8 Biota

The impacts to biota primarily result from the preemption of habitat within Significant Ecological Areas (SEAs) and their designated buffer zones by planned urbanization. The utilization of lands with significant wildlife habitats would occur under Alternative C conditions.

The major preemption of wildlife habitat land would be by Alternative C in the Southwest subarea where land demand would be in conflict with three wildlife areas on the Palos Verdes Peninsula -- Portuguese Bend Landslide, Rolling Hills Canyon and Agua Amarga Canyon. These areas are in SEA Class 3, defined as biotic communities, vegetative associations and habitat of plant and animal species that are either one-of-a-kind or are restricted in distribution in Los Angeles County. They are particularly important as habitat for both migratory birds and three species of resident birds found nowhere else except the Channel Islands. Additionally, SEAs in the Southeast subarea would be preempted by development along with marsh and marsh-related habitats in the South subarea. Alternatives A and B would not preempt land located within the designated SEAs.

10.9 Extractive Resources

As areas of known rock, sand and gravel resources and reserves are located primarily in the undeveloped areas of the San Fernando, East San Gabriel and Santa Clarita Valleys, it can be assumed that Alternatives A and C, which emphasize development at the fringes of currently developed suburbs, would result in a relatively greater impact on these resources, while Alternatives B and D, with their more concentrated development pattern and emphasis on infilling, would result in a relatively lesser level of impact.

With reference to oil and gas resources, since these resources are widely scattered over the already built-up areas of the county, they could be affected by all of the alternatives, including B and D which emphasize infilling; the higher population levels of C and D would be more likely to result in the loss of such resources. The impacts are considered minor since extraction can take place in urban areas.

10.10 Prime Agricultural Soil Resources

The urbanization of productive agricultural lands could have impacts upon the agricultural economy, while also visually altering the open space structure of subareas within the county. The loss of productive agricultural acreage would result from both direct and indirect impacts. Direct impacts would result both from the urbanization of land currently in agricultural production and the urbanization of land with prime agricultural soils that, although not currently in agricultural use, can never be used for agricultural purposes because of preemption.

Indirect impacts would result from the fragmentation of agricultural acreage into uneconomically small parcels.

The alternatives were assessed using the following three categories:

- Estimates of acres of existing agricultural lands preempted by urbanization.
- Estimates of acres of undeveloped land with prime agricultural soil preempted by urbanization.
- Estimates of acres of agricultural parcels of less than economic size (20 acres) fragmented by planned urbanization.

The agricultural lands preempted by the planned urbanization of the alternatives are shown in Figure 10-17.

FIGURE 10-17

AGRICULTURAL LANDS PREEMPTED BY URBANIZATION

<u>Alt.</u>	<u>Preempted Existing Agriculture (Acres)</u>	<u>Preempted Undeveloped Prime Soil (Acres)</u>	<u>Agricultural Parcels Less Than 20 Acres (Acres)</u>	<u>Total Acres</u>
A	3,304	-0-	475	3,779
B	867	-0-	100	967
C	7,014	-0-	800	7,814
D	4,139	-0-	510	4,649

In all cases, the primary preemption of land would be of existing agricultural lands through urbanization.

Alternative C would have the greatest impact in terms of absorption of prime agricultural lands, preempting about 12 percent of the total existing agricultural supply, with the majority of the land supply coming from the Antelope Valley and the Southeast planning areas. Alternatives D and A would have lesser impacts, preempting about six to seven percent of the total existing agricultural land, with the majority of the land supply coming from the Southeast and East San Gabriel Valley subregions. Alternative B would preempt the least amount of existing agricultural land (about one percent), with about two-thirds of this land coming from the south county. Preemption in the south county would primarily impact nursery stocks.

10.11 Energy Consumption

A comparison of the alternatives shows only a ten percent difference between the minimum and maximum increase in energy usage. All of the alternatives would result in a decreased net energy usage, as compared

to 1975 levels, based on a decreased use of petroleum within the transportation sector. As would be expected, lower population levels (i.e., Alternatives A and B) are associated with lower energy usage. A description of the factors compared, and the specific projections for each of the alternatives, are provided below.

Mobile Usage (Transportation) -

Projections for mobile energy usage are provided in Figure 10-18. Differences between the alternatives are minor and can be attributed to two factors: (1) difference in total vehicle miles traveled (VMT) within the county; and (2) different transit usage levels, as is indicated in Figure 10-18. (Levels assumed are six percent for Alternative A, ten percent for B, seven percent for C and fifteen percent for D.)

Alternative C would result in the greatest increase in VMT and therefore the least decrease in energy usage, while Alternative B would result in the lowest increase in VMT and therefore the greatest energy savings.

FIGURE 10-18
ENERGY CONSUMPTION - MOBILE

	<u>1975</u>	<u>A L T E R N A T I V E S</u>			
		<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Auto VMT/Day (Millions)	111	111	103	123	105
Approx. Total Motor Vehicle Energy Consumption (Millions Gallons/Day)	8.3	4.1	3.8	4.6	4.0

Stationary Usage -

The analysis of stationary usage included projections for usage both within the residential and non-residential (i.e., commercial, industrial, and other) sectors. Projections for the sectors were based on the number of single-family and multiple-family residences (both existing and to be constructed), and the average annual consumption of electricity and natural gas for each of these types of residences, as well as a projected energy savings of 20 percent for all new residences to be constructed. As is shown in Figure 10-19, a difference of only 11 percent is projected between the highest (Alternative C) and the lowest (Alternative A) figures.

With reference to non-residential stationary usage, it was assumed that this category will represent 72 percent of the total energy usage by the year 2000 (with residential consumption, therefore, representing 28 percent). As is indicated in Figure 10-19, year 2000 consumption for Alternatives A and B would be 125,379,000 EBOs (727,200,000 million BTUs) per year. For Alternatives C and D, the figure would be 140,474,000 EBOs (814,750,000 million BTUs) per year.

Total Energy Usage -

Total usage (including both mobile and stationary) for the four alternatives is provided in Figure 10-20. Limitations to these energy usage projections which should be pointed out involve the unavailability of data on a county-wide basis, the fact that the energy projections for the various sectors do not reflect the total energy required to produce the energy consumed, the possibility that the transit usage figures are inflated, and the possible underestimation of the effects of conservation.

FIGURE 10-19

RESIDENTIAL ENERGY CONSUMPTION

	A L T E R N A T I V E S				
	1975	A	B	C	D
Million BTUs	278,600,000	287,000,000	290,000,000	318,200,000	315,500,000
EBOs	48,034,000	49,483,000	50,000,000	54,862,000	54,397,000
Increase Over 1975 Use		3%	4%	14%	13%

FIGURE 10-20

TOTAL ANNUAL ENERGY CONSUMPTION 1975-2000
(EQUIVALENT BARRELS OF OIL PER YEAR)

	A L T E R N A T I V E S				
	1975	A	B	C	D
Mobile (i.e., Transportation)	70,779,793	35,116,021	32,779,517	38,907,490	34,183,131
Residential	48,034,000	49,483,000	50,000,000	54,862,000	54,397,000
Non-Residential	119,085,000	125,379,000	125,379,000	140,474,000	140,474,000
Total Los Angeles County	237,898,793	209,978,021	208,296,517	234,243,490	229,054,131
Percent Change		-12%	-13%	-2%	-4%

10.12 Archaeological/Historical/Paleontological Resources

Although a quantification of the potential loss of archaeological, historical and paleontological resources associated with the four alternatives is not feasible at this time, the alternatives can be compared as to their potential relative impact on these types of resources. With reference to archaeological resources, no comprehensive survey of the county has been made; however, it is known that many sites are located within the currently undeveloped areas (particularly the Santa Monica and Santa Susana Mountains), and it can thus be assumed that Alternative C, which involves the greatest consumption of undeveloped land, would have the greatest impact on such resources. This would also be the case with paleontological resources, which also tend to be located in currently undeveloped, especially hilly, areas such as the Santa Monica Mountains and the Santa Clarita Valley. Alternative D could also have a major impact on these resources, although such impact could be expected to be less than that of C, given the more concentrated development pattern. Alternative A could be expected to have a more moderate impact. Alternative B would have the least impact, given its lower population levels and more moderate consumption of undeveloped lands.

With reference to historical resources, because any of the alternatives might result in the loss of specific structures or sites of potential historical significance, no relative impacts can be determined. While it might be assumed that those alternatives (B and D) featuring widespread demolition of existing structures could result in a potentially greater impact, at the same time these alternatives are also associated with an emphasis on rehabilitation and conservation of existing structures, thus potentially having a beneficial impact on some structures of potential historical significance.

10.13 Scenic Qualities

In evaluating the alternatives, consideration was directed to two aspects: (1) potential effects on major open lands which provide visual relief and contrast with prevailing urbanized areas, serve as community or regional scale landmarks, or act to visually define communities within the overall countywide pattern of urbanization; and (2) potential alteration of the physical scale of existing communities.

With regard to the preemption of natural landscape features, an analysis of the alternatives indicates that, with the exception of the Malibu/Santa Monica Mountains planning area, no significant impact is necessary with Alternatives A, B or D, although limited impacts are associated with development in the San Fernando, San Gabriel Valley and Santa Clarita Valley planning areas. Significant visual impacts, however, could be expected in Alternative C for nine of the planning areas. Alternative C would result in the destruction of almost all of the remaining natural features in the south county, including: (1) agricultural lands in the Southeast planning area; (2) hilly areas located in the San Fernando (lower elevations of Santa Susana Mountains), Burbank/Glendale (San Rafael Hills and San Gabriel foothills), East San Gabriel Valley (San Jose and Puente Hills), Malibu/Santa Monica Mountains, West (Santa Monica Mountains), and Southwest (Palos Verdes) planning areas; and (3) open lands in the South planning area. The existing natural features in these areas would be preempted by urban development, including the construction of homes and infrastructure - especially access roads to serve the residential development. Major preemption of agricultural lands in the Antelope Valley would also be required under Alternative C.

All of the alternative pose a significant visual threat to the Malibu/Santa Monica Mountains area. The problem is created by the dispersed pattern of land suitable for urban uses. For the

most part, development in this area would rely upon Class B lands (15-30 percent slope, minor-moderate suitability for development). Of the total supply of 5,270 acres of Class B land, the land allocations for the alternatives would require the following: Alternative A - 5,270 acres; Alternative B - 2,056 acres; Alternative C - 5,270 acres and Alternative D - 3,366 acres. Development for residential purposes would require scattered housing construction throughout the planning area and an extensive network of access roads.

In terms of the effects of land recycling, although the plan alternatives do not specify the locations of the lands to be recycled, a countywide comparison does provide an indication of the relative differences among the alternatives. Shown below (Figures 10-21 and 10-22) is the amount of land proposed to be reused for commercial/industrial and multiple residential development. Also shown is the deficiency in recycled land required and the land in commercial, industrial or multiple residential use which would be cleared for these uses. With few exceptions, the deficient acreages represent land presently in single-family use which would have to be cleared and redeveloped for either commercial/industrial or multiple residential use.

FIGURE 10-21
DEFICIENT RECYCLABLE LAND FOR COMMERCIAL/INDUSTRIAL USE

<u>Alternative</u>	<u>Commercial/Industrial Land Required (acres)</u>	<u>Deficit (acres)</u>
A	7,160	3,670
B	3,830	1,120
C	6,960	2,450
D	10,400	3,310

FIGURE 10-22

TOTAL COUNTY LAND RECYCLED FOR MULTIPLE RESIDENTIAL USE

<u>Alternative</u>	<u>Multiple Residential Land Required (acres)</u>	<u>Deficit (acres)</u>
A	10,430	7,270
B	14,310	12,340
C	15,780	12,080
D	26,080	22,210

As indicated by these figures, the greatest shift in present land use as a result of commercial/industrial development would occur in Alternative A, followed closely by Alternative D. For multiple residential development, Alternative D represents by far the greatest alteration of present land use within single-family housing areas. Most affected by residential recycling are the West, Central, East Central, Southeast, South, Southwest and West San Gabriel Valley planning areas.

The major visual change would result from the shift from the lower density, single family pattern of housing which prevails throughout the county to multiple residential uses. The housing required would range from three story apartments under Alternative A conditions to four or five story construction under Alternative D. However, design could serve as a means of eliminating conditions which presently blight neighborhoods and for upgrading the appearance and condition of many neighborhoods.

In the case of conversion to commercial and industrial development, it would probably not be possible to clear land within existing residential areas without conflicts in scale.

10.14 Land Use

Alternatives A, B and C all involve approximately the same amount of land that is assumed to be cleared and converted to another use, as is indicated in Figure 10-23. For all three alternatives, more land is removed from its present uses than is returned to another use, indicating some extent of abandonment. Alternative D assumes that significantly more land area would be converted to other uses and that all land converted from a given use would be reused in some other way.

Alternatives B, C and D involve increasing amounts of recycled land from uses other than single family residential to some other use. Alternative D in particular visualizes the conversion of 1,000 acres of industrial land, and 1,110 acres of land classified as "other urban." In the South planning area, the conversion of industrial land to another use would involve approximately five percent of the 1970 industrial land supply.

In terms of the cost of recycling, if it is assumed that the recycling is carried out by public agencies rather than the private sector, and that a single, very approximate average area cost per acre would apply under each of the alternatives, upper bound cost estimates for the alternatives would be as indicated in Figure 10-24.

FIGURE 10-23
NET CONVERSION (CHANGE) BY
LAND USE TYPE FOR ALTERNATIVES

Targets for Land Recycling (Area figures are in acres)

	Single Family Land	Multi- Family Land	Commercial Use Land	Industrial Use Land	Other Urban Land	Total Shift In Land Use
ALTERNATIVE A						
Net Land						
Conversion	-16,730	+7,270	-1,840	+1,830	+1,570	-4,220
ALTERNATIVE B						
Net Land						
Conversion	-13,740	+12,350	+740	+480	-300	-470
ALTERNATIVE C						
Net Land						
Conversion	-15,720	+12,080	+1,670	+780	+70	-1,120
ALTERNATIVE D						
Net Land						
Conversion	-25,610	+22,210	+2,060	+1,250	+90	0

FIGURE 10-24

UPPER-BOUND COST ESTIMATES FOR LAND RECYCLING

COST OF CONVERTED LAND (MILLIONS OF 1976 DOLLARS)

	<u>Converted Single Family Land</u>	<u>Converted Multi- Family Land</u>	<u>Converted Commercial Use Land</u>	<u>Converted Industrial Use Land</u>	<u>Converted Other Urban Land</u>	<u>TOTAL</u>
ALTERNATIVE A	\$3,744	-	-	\$ 17	\$ 10	\$3,771
ALTERNATIVE B	3,089	-	\$38	191	220	3,538
ALTERNATIVE C	3,582	-	35	308	252	4,177
ALTERNATIVE D	5,162	-	70	435	435	6,656

10.15 Communities

Alternatives B and D would result in major beneficial impacts on existing communities, as well as adverse impacts. Beneficial impacts include the revitalization of neighborhoods and communities in inner city areas - the extensive reconstruction of residential, commercial and industrial areas and the rebuilding of older businesses - while negative impacts resulting from such revitalization would include the potential disruption of neighborhoods and the possible destruction of the character of neighborhoods. Alternative D would result in 192 square miles of rehabilitation and rebuilding, while Alternative B would result in 144 square miles (as compared to 114 square miles for C and 90 square miles for A). Alternatives A and C would thus result in less revitalization of existing communities and neighborhoods in inner city areas. Alternative A would result in the abandonment of as much as seven square miles of existing urbanized area, and both Alternatives A and C would allow significant increases in the spread of blight into previously strong urban neighborhoods.

The recycling required by the alternatives would involve the conversion to commercial, industrial and multiple residential uses (See the discussion of the effects of land recycling, including Figures 10-21 and 10-22). Conversion to any of these uses would have the potential for disrupting existing neighborhoods, whether from increased densities or from conflicts of uses. The potential disruption due to conversion to commercial or industrial uses would occur in Alternative A, followed closely by Alternative D. For multiple residential development, Alternative D represents the greatest shift from single family to multiple family development.

10.16 Population

The most basic difference among the four general plan alternatives is that they have different population targets. Alternatives A and B visualize a population in the year 2000 of approximately 7,000,000 people and Alternatives C and D have a target population of approximately 8,000,000 people. All of these population levels are significantly below the hypothetical population which would result from natural increases in the population that existed in 1975. The increase in population implied by the current birth rate reduced by decreases in population implied by current death rate (assuming no out-migration and no in-migration) would produce a population in the year 2000 of approximately 8.3 million people. Alternatives C and D thus imply a net out-migration from the county of approximately 300,000 people by the year 2000, and Alternatives A and B imply a net out-migration of nearly 1.3 million people. In fact, Alternatives A and B, in spite of their high level of implied net out-migration, are consistent with the trend during the period 1970 through 1975. Alternatives C and D imply a significantly lowered rate of out-migration. Figure 10-25 compares the alternatives in regard to their population targets.

An analysis of the implied rate of net out-migration for each county sub-area indicates that the inner cities and older suburbs would have significant out-migration under each of the alternatives. The newer suburbs, urban fringe area and non-urban area population targets would be achieved only with positive in-migration for Alternatives C and D.

Alternative D, and to a lesser extent Alternative B, would help to maintain the ethnic diversity of the county by encouraging recycling of neighborhoods in the inner city and older suburbs, and by providing housing opportunities for families and households at all income levels.

FIGURE 10-25

IMPLICATIONS OF POPULATION TARGETS

	<u>2000</u>
"Natural" ¹ Population	8,281,000
Population Under Each General Plan Alternative:	
<u>Alternative A</u>	
Population Target	7,001,000
Implied Net Migration	-1,280,000
<u>Alternative B</u>	
Population Target	7,015,000
Implied Net Migration	- 1,266,000
<u>Alternative C</u>	
Population Target	7,973,000
Implied Net Migration	-308,000
<u>Alternative D</u>	
Population Target	8,019,000
Implied Net Migration	-262,000

1

"Natural" population is defined as the 1975 population plus estimated births, minus estimated deaths. The estimates of births and deaths are based on current experience for major ethnic groups in the county. Neither the birth and death rates, nor the resulting total or ethnic distribution of the "natural" population should be interpreted to be a forecast.

10.17 Housing

All of the general plan alternatives involve significant shifts in the location and characteristics of the housing stock. Two significant trends for all of the alternatives and the plan are: (1) a substantial amount of demolition of the existing stock at a rate exceeding historical experience, along with a substantial amount of residential construction activity throughout the county; and (2) a marked increase in the number of households in multi-family units, as is indicated in Figure 10-26. In particular, for Alternatives C and D with their increased population targets, there is a significant decrease in the number of individuals who would be living in single family housing.

FIGURE 10-26
THE SHIFT TO MULTIFAMILY HOUSING

<u>Alternative</u>	<u>Increase in Households in Multifamily units 1975-2000</u>
A	148,035
B	309,405
C	450,035
D	758,795

In general terms, this shift from single family to multifamily units establishes the more compact, concentrated form of Alternatives B and D and limits the consumption of new lands in A and C.

Figure 10-27 compares the location of housing activity by groups of planning areas. The geographical distribution indicates that both of the stable population alternatives would allocate more than one-quarter of the new units to the urban fringe and that Alternative D would allocate 22 percent to those areas.

FIGURE 10-27

LOCATION OF HOUSING ACTIVITY

Area	Percent of Countywide Totals											
	Alternative A		Alternative B		Alternative C		Alternative D					
	Demolitions	New Additions	Demolitions	New Additions	Demolitions	New Additions	Demolitions	New Additions				
Inner City	41.7	10.7	-11.6	35.0	16.5	9.8	38.4	12.9	6.4	38.5	26.0	22.6
Older Suburbs	29.4	24.6	21.2	32.2	36.4	37.9	31.7	29.9	29.4	30.4	29.6	29.8
Newer Suburbs	19.1	15.7	13.3	22.7	20.2	19.3	19.1	16.2	15.5	17.8	16.3	16.1
Urban Fringe	8.2	38.0	59.5	8.4	25.5	31.7	9.4	30.6	36.1	12.0	22.0	23.8
Non-Urban Fringe	1.7	10.9	17.6	1.7	1.4	1.3	1.4	10.4	12.6	1.3	6.1	7.7
County Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

With reference to relative cost impacts of the alternatives, if it is assumed that replacement housing units for demolished units could not be created at rent levels that existed for the demolished units, and that the units demolished would be those of the least value, a relative cost can be determined for the alternatives. If Alternative B, which would have the lowest costs, is scaled to 1.0 and the "costs" of the other alternatives are expressed as a multiple of 1.0, the result would be as shown in Figure 10-28.

FIGURE 10-28

RELATIVE COST IMPACTS --
LOW AND MODERATE INCOME HOUSING

<u>General Plan Alternative</u>	<u>Relative Housing Cost Compared to Alternative B</u>
A	1.4
B	1.0
C	1.8
D	2.6

10.18 Employment/Unemployment

The forces influencing changes in the number of jobs (demand side) and affecting variations in labor force characteristics (supply side) are complex. However, a brief discussion of the major variables at work and their impacts on the county economy will be helpful in fully understanding the total impacts of these alternatives.

As Figure 10-29 indicates, the impacts of the four alternatives on the county's labor market can be generally broken down into two distinct outcomes, closely matching the projected population. Under Alternatives A and B it has been estimated that the county labor force eligible population (those 16 years or older) will reach 5,320,000 by the year 2000. Alternatives C and D also reach 76 percent of the total population. This constitutes 76 percent of the total population of 7,000,000, a considerable increase over the current 46 percent in 1975. In addition, as trends indicate, the labor force participation rates of this future population (the percent who actually are in the labor force either employed or looking for work) will continue to increase. There are a number of reasons that explain this long term trend.

There has been a dramatic increase in the labor force participation rate of females 16 years of age and over during the past fifteen years, from 37 percent in 1960 to 45 percent in 1975. During the same period, male labor force participation rates declined from 82 percent to 78 percent. Current trends in marital and life style patterns of men and women indicate a continued increase in labor force participation rate for women. In the past, women have married earlier, leaving the labor force to establish families and then returned some years later to accept employment, generally

FIGURE 10-29

POTENTIAL LABOR FORCE
(LOS ANGELES COUNTY POPULATION 16 YEARS AND OLDER)

<u>Year</u>	<u>Alternatives A & B (7 Million)</u>	<u>Alternatives C & D (8 Million)</u>
1980	5,269,145	5,317,465
1990	5,312,664	5,674,614
2000	5,320,000	6,080,000

at lower skill levels than their male counterparts. The most recent tendency has been for female labor force participants to remain in the labor force longer, advancing their career status and then marrying later, leaving the labor market for a shorter time, if at all, while establishing families.

With a considerably larger population in the 16 and over age group and with a greater proportion of this population joining the labor force, the size of that labor force will grow significantly even though according to Alternatives A and B, total population would remain virtually unchanged.

In order to determine what proportion of the labor force will be employed and how high unemployment will be, the number and types of jobs (the demand for labor) that would be available in Los Angeles County in the year 2000 under Alternatives A and B must be determined.

Projections indicate that economic conditions prevailing under A and B could generate a maximum of 3,540,000 jobs (Figure 10-30) or 209,000 over the 1975 level. Figure 10-31 shows the average annual increase in export base employment. Further analysis reveals that a growing proportion of these jobs will be primarily in the service industries with the manufacturing sector in a state of stagnation. Given these demand conditions and the increasing percentage of minorities in the county population (minorities historically tend to have high unemployment rates) the following conclusions on the state of the county's employment picture in the year 2000 under Alternatives A and B can be reached:

- The county's long term unemployment rate would remain at levels significantly above 7.5 percent of the resident labor force, or over 250,000 workers.

- The net number of workers commuting to jobs into Los Angeles County from adjacent counties would remain at its current level (approximately 11% of the total resident employment).

FIGURE 10-30

TARGET FOR TOTAL EMPLOYMENT

<u>Year</u>	<u>Alternative A</u>	<u>Alternative B</u>	<u>Alternative C</u>	<u>Alternative D</u>
1980	3,409,000	3,406,000	3,441,000	3,435,000
1990	3,470,000	3,549,000	3,657,000	3,623,000
2000	3,540,000	3,540,000	3,940,000	3,940,000

FIGURE 10-31

AVERAGE ANNUAL INCREASE IN EXPORT BASE EMPLOYMENT
REQUIRED TO ACHIEVE EMPLOYMENT TARGETS OF ALTERNATIVES

<u>Time Period</u>	<u>Alternative A</u>	<u>Alternative B</u>	<u>Alternative C</u>	<u>Alternative D</u>
<u>1975-1980</u>				
Jobs Per Year	752	552	2,892	2,492
Rate of Increase (% Per Year)	0.07	0.05	0.25	0.22
<u>1980-1990</u>				
Jobs Per Year	2,030	1,770	7,200	6,260
Rate of Increase (% Per Year)	0.18	0.15	0.61	0.53
<u>1990-2000</u>				
Jobs Per Year	2,340	2,700	9,340	10,570
Rate of Increase (% of Increase)	0.20	0.23	0.75	0.84

Alternatives C and D are characterized by labor force demographic characteristics and the commuting patterns of workers not drastically different than those under A and B. However, the forecasts for both of these alternatives reflect an expanding, vibrant economic system (C extending into new areas and D taking a more concentrated form with emphasis on revitalization of existing facilities). For Alternatives C and D, year 2000 employment would be 3,940,000 jobs, or an increase of 609,000 over 1975 levels.

The total number of jobs projected for the year 2000 for the general plan is 3,925,000 or 595,000 over the 1975 level (Figure 10-4). These additional jobs will be primarily in services, trade or finance, insurance and real estate but some modest expansion in manufacturing will also take place. The supply side of the labor market will also show considerable growth, with the 16 years of age and over population reaching 3,904,000 by the year 2000.

An effective public/private alliance forged to combat problems of obsolescence, industry flight and competition from other areas is proposed by the plan. The impacts of the plan on employment will be similar to those described for Alternatives C and D.

10.19 Income

The level and the growth of per capita and family incomes are obviously sensitive to a variety of factors and conditions which transcend the policy of the county and the general plan. Worldwide and national economic conditions as well as federal fiscal, monetary, welfare and tax policies have major impacts on income levels. The plan alternatives have little impact on changes in income levels.

However, the alternatives do speak to two general levels of economic growth in the county through consideration of two employment projections. The level of employment and the rate of employment growth do have implications for the level of per capita or family income. Higher rates of job growth and greater availability of job opportunities in Alternatives C and D would place the county in a better relative position in terms of per capita and family income when compared with the lower economic growth rate and level of jobs in Alternatives A and B.

The increase of 609,000 jobs in Alternatives C and D compared with the increase of 209,000 jobs in Alternatives A and B, reflect much healthier economic conditions and thus higher incomes in Alternatives C and D.

The other major aspect of the general plan alternatives impacting per capita and family incomes is their attention to the migration of people. The patterns of migration both between the county and other areas and within the county have implications for the level and distribution of family and per capita income.

Alternatives C and D imply a significantly lower net out-migration of people than Alternatives A and B. This lower net out-migration results from several factors related to income and the propensity to migrate. The greater number of job opportunities available in Alternatives C and D and the corresponding retention of young people to fill those positions reduces their tendency to migrate. Additionally, A and B reflect greater migration from the inner city areas and older suburban areas. This migration is also reflective of shifting income patterns within the county; persons and individuals with higher incomes and greater mobility will represent those most likely to migrate out of the inner city and older urban areas. Thus, in Alternatives A and B the out-migration from the county as well as the out-migration from the inner city and older suburban areas would result in lower overall family or per capita income than that in Alternatives C and D. Also, A and B would have a greater differential in income levels of families and individuals between the older suburban and inner city areas and the newer suburban areas.

Alternative B, with a stable population and an emphasis on concentration, reflects less migration of people and income from the inner city and older suburban areas when compared with Alternative A. Alternative D would also have less migration of people and income from the inner city and older suburban areas than Alternative C.

10.20 Investment

All four alternatives imply certain levels of private and public investment which would be induced by the policies they advocate. However, there is a sharp distinction between the types of commitment implied by A and C vis-a-vis B and D.

Alternatives A and C and their policies suggest that historical development trends will continue into the future with a minimum of governmental guidance or interference. This would result in expansion of the urban periphery, particularly under Alternative C, which anticipates 1,000,000 additional population. Under A, expansion would be more modest but still the emphasis would remain on investing in new areas, presumably because the profit potential for the private sector would be attractive. Both Alternatives A and C, through their policies, advocate no action to encourage commercial or industrial investment outside the existing urban areas. However, since this expansion is what has been happening in the past and continues to take place in Los Angeles County, presumably it needs no encouragement. The contrary is true with B and D. That is, it will take strong actions on the part of the county and other governmental units to reverse current trends and generate a favorable climate for investment to take place where it is needed most, namely, in older commercial and industrial areas and other major job centers, as is the case with Alternatives B and D.

It must be understood that the two concentrated Alternatives B and D are more sensitive than are Alternatives A and C to attitudes and perceptions of the business community. Since concentrated development is not an extension of current trends, a decision to invest counter to this trend will probably require either: (1) an opportunity for higher than usual profits to justify the perception about greater risk; or (2) external constraints that are precursors of a mandatory reversal in the trend.

An example of the first factor applicable to the alternatives would be availability of subsidies (public investment) for revitalization that would produce cost advantages. An example of the second would be a zoning policy, whose effectiveness was accepted by the private sector, that would effectively preclude the choice of a suburban location for an expanding enterprise and could induce investment in revitalizing existing facilities.

In summary, the commitment to a concentrated, rather than a dispersed development alternative is extremely sensitive and vulnerable to the attitudes of the business community. Leveraging private investment through use of public funds to reduce the element of risk and reassure the private sector of a commitment to support revitalization would be vital.

One factor which favors the concentrated alternatives in terms of their ability to meet the employment targets is that a political -- and preferably financial -- commitment to revitalization is, in part, a commitment to existing enterprise and to a continuation or renewal of confidence of those who have already made the decision to locate in the county. In a mature, diversified economy, growth of existing enterprises is an important ingredient in overall economic growth. Encouragement to remain in the county can, in the situation of declining employment, be as important as the decision of an employer outside the region to relocate to the county. A strong commitment to a strategy of concentrated development is a demonstration that the existing infrastructure and the existing capacity to do business will not deteriorate.

Once again, for this factor to work in favor of the concentrated development alternatives, there must be a high level of acceptance by the business community of the reality of the political and financial commitment.

The positive attributes of the concentrated development strategies should not be allowed to mask the fact that Alternatives A and C -- the dispersed alternatives -- are "safer" in that there is less risk associated with the feasibility of meeting the employment target since they more closely mirror current trends.

10.21 Governmental Expenditures

The cost and difficulty of providing services depends on the service being considered, but generally speaking, providing services to previously nonurbanized areas normally requires extension of infrastructure, which is more costly than making greater use of existing infrastructure. Those services for which infrastructure costs are relatively high include highways, water supply, sanitation, flood control, schools and fire protection. Thus, Alternatives A and especially C would tend to result in greater cost impacts for these services. In addition, many public services are more costly if the service area includes steep or otherwise difficult terrain. Services which could be affected include highways, police protection, fire protection, water supply, flood control and, possibly, sanitation. The costs of general government are also slightly higher, because of the need for more sophisticated land use controls and regulatory procedures.

Figure 10-32 provides a general comparison of public service costs for the fourteen planning areas, for the four alternatives. As is indicated, Alternative C calls for substantially more development in difficult terrain. Alternative A calls for a somewhat greater amount of public service extension to areas that would have higher than average service costs than would Alternative D, with the exception of the Malibu/Santa Monica Mountains area. Alternative B would have the least impact.

FIGURE 10-32

AN INDICATION OF PUBLIC SERVICE COSTS
IN EACH PLANNING AREA

<u>Planning Area</u>	Higher Than Average Costs Can Be Expected Because of Service <u>Extensions to Vacant Land</u>				Higher Than Average Costs Can Be Expected Because of Difficult <u>Terrain</u>			
	A L T E R N A T I V E S				A L T E R N A T I V E S			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
San Fernando	x		x				x	
Burbank/Glendale								
West San Gabriel Valley								
East San Gabriel Valley	x		x		x		x	
Malibu/Santa Monica Mts.			x		x	x	x	x
West							x	
Central								
East Central								
Southeast								
South								
Southwest			x					
Santa Clarita Valley			x		x		x	x
Antelope Valley	x	x	x	x				

An analysis of public service costs was carried out for schools, parks and open space, criminal justice, fire protection, flood control, water supply, sewage disposal, solid waste and highways and mass transit. These services generally involve significant expenditures for capital investment or significant ongoing operating costs, and cost differences among the alternatives may be assumed. (Additional discussion of the comparison of the impacts of the alternatives on on specific public services is provided in Section 10.3 (Flood/Runoff), 10.23 (Transportation), and 10.24 (Liquid/Solid Waste).

Generally speaking, a more detailed analysis of the service costs related to the alternatives led to the same general conclusions stated previously concerning increased cost impacts relative to Alternatives A and C (i.e., increased costs for the alternatives related to fire protection, criminal justice, schools, and water supply). However, exceptions relative to certain other services are pointed out below.

Parks and Open Space - The costs of developing regional scale parks in those areas of the county where a deficit of such park acreage currently exists was determined for each alternative. This determination was based upon the county's current standard (i.e., six acres per 1,000 population) and the short-term investment programs of the various local governments in the county. As is indicated in Figure 10-33, Alternative D would have the greatest cost impacts, followed by Alternatives C, B and A.

Flood Control - In contrast to many other public services, to the extent that new development tends to occur in presently undeveloped areas (as is the case with Alternatives A and C), public costs would be lower. New development would be required to provide drainage control at no cost to public agencies. However, whether there would actually be a cost disadvantage to Alternatives B and D would depend on the pattern of development - whether more intensive development occurs in an already developed area that has limited capacity, which requires corrective action by the Flood Control District at County expense.

Sewage Disposal - Capital investments may be required to provide increased capacity in localized areas of the county with existing undercapacity. Actual cost estimates would, however, require a detailed engineering study. In areas with trunk line capacity problems, more intensive uses would require the installation of relief lines.

Solid Waste - Public agency costs are generally insignificant since financing comes entirely, or almost entirely, from user charges or specifically levied property taxes. Variation of costs among the alternatives would be insignificant, as solid waste generation varies less than 13 percent among them.

Highways and Mass Transit - The cost implications of extensions to the freeway system (and, in the case of Alternative D, a mass transit system) are shown in Figure 10-34. As is indicated, Alternative D would have the greatest potential cost impact, while the other alternatives could have a wide range of cost impact.

FIGURE 10-33
 COST IMPLICATIONS OF THE PARK DEFICIT
 (DOLLAR FIGURES IN 1975 DOLLARS)

	<u>Acres Required</u>	<u>Land Costs</u>	<u>Development Costs</u>	<u>Total Capital Costs</u>	<u>Annual Maintenance</u>
1975 Deficit	19,677	\$196,670,000	\$590,001,000	\$786,668,000	\$2,950,000
2000 Deficit:					
Alt. A	18,359	193,590,000	550,077,000	733,667,000	2,753,850
Alt. B	19,271	192,710,000	578,130,000	770,840,000	2,890,650
Alt. C	21,827	218,270,000	654,810,000	873,080,000	3,274,050
Alt. D	23,081	230,810,000	692,430,000	923,240,000	3,462,150

Based on countywide average unit costs: Land Acquisition - \$10,000/acre
 Park Development - \$30,000/acre
 Annual Maintenance - \$150/acre/yr.

FIGURE 10-34
 CAPITAL COSTS FOR FREEWAYS AND MASS TRANSIT

<u>General Plan Alternative</u>	<u>Cost Range for the System (Billions of 1976 Dollars)</u>
A	\$1.2 - 1.9 billion
B	\$1.2 - 3.3 billion
C	\$1.1 - 3.7 billion
D	\$2.7 - 4.8 billion

1

Cost estimates include the completion of the freeway links assumed by the general plan alternatives, completion of a people-mover system at the Los Angeles International Airport, completion of a downtown people-mover system and, in the case of Alternative D, a mass transit system that includes preferential treatment lanes for buses. The cost estimate does not include the cost of rolling stock for the mass transit system.

10.22 Governmental Revenue

Although nearly every revenue of the county and the cities and special districts within the county would vary in the future according to the varying impact of the alternatives, two sources of revenue are particularly important - the property tax base and taxable retail sales.

Property Tax Base - Shifts in market value (and assessed values as 25% of market value), as well as land value, were calculated for each alternative. Shifts in land values (based on land use classification) were calculated on the basis of an average change per acre, for new land uses and land cleared and recycled. Commercial and industrial improvements were estimated on the basis of average investment per new population serving job. The value of investment in state-assessed property was also estimated, assuming that incremental population would require the same investment as the average per capita investment of 1975-76. Changes in the tax base between 1975 and 2000, by planning area, are estimated for each alternative, in Figure 10-35. As might be expected, the countywide increase in assessed value would be highest for Alternative D, followed by Alternatives C, A and B. However, the increase in assessed value per added dwelling unit would be highest for the dispersed, low density alternatives C and A, with lower increases for D and B. D and B would generally tend to raise land values in the currently urbanized areas, while stabilizing or lowering values in the outlying areas; C and A would have the reverse effect.

FIGURE 10-35

CHANGES IN THE PROPERTY TAX BASE BETWEEN 1975 AND 2000
(ASSESSED VALUE IN \$-000; BOTH PER CAPITA AND TOTAL IN 1975 \$)

Planning	Alternative A		Alternative B		Alternative C		Alternative D	
	Increase in Assessed Value	Increase Per Dwelling Unit	Increase in Assessed Value	Increase Per Dwelling Unit	Increase in Assessed Value	Increase Per Dwelling Unit	Increase in Assessed Value	Increase Per Dwelling Unit
San Fernando	\$404,756	\$10,600	\$335,444	\$7,700	\$911,426	\$9,975	\$621,396	\$8,400
Bubrank/Glendale	98,484	14,925	184,663	7,500	363,034	9,025	389,302	8,125
West San Gabriel Valley	120,120	12,650	247,636	7,625	405,842	8,950	520,888	8,300
East San Gabriel Valley	514,143	11,350	266,077	9,100	904,900	11,400	637,943	9,825
Malibu/Santa Monica Mtns.	186,563	17,600	108,931	17,515	37,210	15,450	238,309	15,675
West Central	194,407	13,500	273,194	8,950	438,808	11,000	525,885	10,300
East Central	68,623	Decline	213,938	14,075	492,984	22,825	977,290	10,075
Southeast	13,110	Decline	84,485	7,825	164,085	8,725	479,075	6,950
South	186,016	11,700	173,082	7,975	443,592	10,350	347,764	9,300
Southwest	163,859	21,850	234,268	10,450	551,021	9,475	658,782	9,300
Santa Clarita Valley	163,859	14,700	182,485	8,650	535,021	9,200	538,414	8,000
Antelope Valley	192,676	11,600	55,705	9,800	311,277	10,500	204,893	9,850
TOTAL	\$2,703,889	\$14,525	\$2,419,184	\$9,075	\$6,552,691	\$10,325	\$6,792,310	\$9,250

Source: McDonald & Greffe, Inc.

Taxable Retail Sales - The analysis of taxable retail sales was based on the employment targets for the alternatives, on the assumption that retail sales per employee would be approximately equal. A comparison by planning areas is provided in Figure 10-36, which indicates that there is very little difference in impact among the alternatives for any given planning area. However, the comparison between planning areas for a given alternative is significant.

FIGURE 10-36
 TAXABLE RETAIL SALES PER CAPITA IN THE YEAR 2000
 (1975 DOLLARS)

<u>Planning Areas</u>	A L T E R N A T I V E S			
	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
San Fernando	\$3,240	\$3,160	\$3,340	\$3,160
Burbank/Glendale	3,500	3,340	3,440	3,320
West San Gabriel	3,725	3,670	3,760	3,640
East San Gabriel	3,170	2,940	3,280	2,980
Malibu/Santa Monica Mts.	2,410	3,370	2,430	2,230
West	4,890	4,800	5,170	4,860
Central	4,540	4,760	4,640	4,810
East Central	2,590	2,960	2,580	2,840
Southeast	3,040	2,780	3,060	2,830
South	4,080	3,990	4,090	3,920
Southwest	3,610	2,440	3,660	3,450
Santa Clarita Valley	2,990	2,190	2,480	2,450
Antelope Valley	3,040	2,670	3,410	2,890
Los Angeles County Totals	\$3,630	\$3,600	\$3,670	\$3,590

10.23 Transportation

The Los Angeles County Road Department has projected year 2000 person trips (including both transit and auto trips) and vehicle miles traveled for the four alternatives. Figure 10-37 provides this information, for an average county weekday. As a review of Figure 10-37 indicates, Alternatives C and D would result in a significant increase in the number of person trips - a fifteen percent increase over the 1975 figure. Alternatives A and B would result in a one percent increase in person trips.

Figure 10-37 also indicates approximate vehicle miles traveled (VMT) for the alternatives. As might be expected, Alternative A would result in a figure equivalent to that in 1975, while Alternatives B and D would result in a decrease in VMT. Alternative C would require the greatest increase.

The assumed transit usage levels for Alternatives A, B, C, D are six percent, ten percent, seven percent, and fifteen percent, respectively. If a lower transit diversion level were assumed for Alternatives B or D (e.g., six or seven percent), the impact on traffic congestion would be proportionately increased.

Alternative D also includes a rail rapid transit system, with an assumed 2.6 percent of person trips using this mode of travel. Although this form of transit would probably reduce congestion in the Central subregion, it would probably not have a significant effect on a countywide basis, nor on the mobility needs of the transportation disadvantaged. For a discussion of the effects of the increased trips on air quality and energy consumption, see Sections 10.6 and 10.11.

FIGURE 10-37

AN ESTIMATE OF VEHICLE MILES TRAVELED

	Approximate Total Person <u>Trips (Millions)</u>	Approximate Vehicle Miles <u>Traveled (Millions)</u>
1975 Situation	24.7	111
Year 2000:		
Alternative A	25.4	111
Alternative B	25.3	103
Alternative C	29.0	123
Alternative D	28.9	105

10.24 Liquid/Solid Waste Disposal

On a gross basis, there exists sufficient sewage treatment capacity to accommodate more total growth in the county than that contemplated by any of the general plan alternatives. The alternatives that involve a dispersal of growth call attention to the existing and planned capacities in the fringe and outlying areas of the county. Three planning areas with potential adverse impacts are Malibu/Santa Monica Mountains, Antelope Valley and Santa Clarita Valley. Figure 10-38 summarizes the situation.

FIGURE 10-38

SEWAGE TREATMENT CAPACITY IN PROBLEM PLANNING AREAS

Malibu/Santa Monica Mountains

Las Virgenes Municipal Water District

Present Served Population	14,000
Present Capacity	73,000
Future Planned Capacity	73,000

Sub-Area Population

Present Population	44,000
Year 2000 Population:	
Alternative A	70,000
Alternative B	58,000
Alternative C	116,000
Alternative D	80,000

Antelope Valley

Lancaster Plant

Present Served Population	41,000
Present Capacity	41,000
Future Planned Capacity	41,000

Palmdale Plant

Present Served Population	9,000
Present Capacity	10,000
Future Planned Capacity	41,000

FIGURE 10-38 (continued)

Sub-Area Population	
Present Population	89,000
Year 2000 Population:	
Alternative A	170,000
Alternative B	95,000
Alternative C	289,000
Alternative D	227,000

Santa Clarita Valley

Valencia Plant	
Present Served Population	11,000
Present Capacity	14,000
Future Planned Capacity	41,000

Saugus Plant	
Present Served Population	35,000
Present Capacity	45,500
Future Planned Capacity	73,000

Sub-Area Population	
Present Population	63,000
Year 2000 Population:	
Alternative A	110,000
Alternative B	75,000
Alternative C	142,000
Alternative D	115,000

Solid Waste -

A comparison of the total amounts of solid waste generated by the alternatives was based on indications such as total population, acreage in commercial use, acreage in industrial use, amount of demolition and type (density, value) of dwelling units.

When combined effects of these various factors are considered, the differences between the alternatives are found not to be significant. As indicated in Figure 10-39, the total amount of solid waste generated in the year 2000 varies less than 13 percent among alternatives.

FIGURE 10-39
SOLID WASTE GENERATION: Year 2000
(TONS PER YEAR)

	A	B	C	D
Total (Year 2000)	13,597,100	13,367,200	15,111,100	14,467,600
Increase From 1975	2,098,000	1,868,000	3,612,000	2,968,600
Per Capita	1.94	1.90	1.89	1.80

(Note: These estimates do not allow for any future advances in source reduction or resource recovery.)

In summary, there is little reason to distinguish between the general plan alternatives on the basis of their impact on the solid waste disposal system. In all cases, there is very limited remaining capacity in disposal sites that conveniently serve the South and West portions of the Los Angeles Basin.

11.0 THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

The discussion of environmental impacts in this report is based on the assumption that all of the plan's projections, policies--both written and mapped--and recommended actions will be implemented by the year 2000. Thus the plan evaluation is based, primarily, on long-term impacts. However, where appropriate, short-term impacts are also discussed under the various impact categories.

Where development occurs as shown on the plan's mapped policies, the options of future generations with regard to the use of this land would be limited or eliminated. However, it must be emphasized that this future urbanization is not inevitable, i.e., the map is not a prediction, but an indication where various processes of development are appropriate. The plan is a dynamic document which will be reviewed and revised in the future in response to changing needs and technological advances. (See discussion of the plan's monitoring provisions in Section 13.0). Thus, urbanization will occur only to the degree it is demanded. Further, the plan is intended to indicate where growth would be appropriate, should the demand exist, thus directing development away from areas which are less accessible or which might pose long term risks to health or safety (see discussion of the plan's criteria for new development within urban expansion areas in Section 13.0).

The direct impacts of the general plan on both current and future generations will be limited, consisting of restrictions on permitted land use densities and in hazardous and sensitive areas. The majority of the impacts will result from the cumulative impact of the secondary consequences associated with the urban expansion permitted by the plan in

areas presently undeveloped or in areas to be developed to higher densities. In those areas where urban expansion and, to some extent, infill is permitted, some loss of archaeological/paleontological resources, as well as agricultural lands and mineral resources, will result. Most of the major impacts on the long-term productivity of the environment cannot be completely quantified at this time, as specific densities or designs are not part of the plan. Therefore, while the anticipated impacts are discussed, the magnitude of the impacts can be evaluated more completely at the area or community plan level and at the project level when specific proposals are submitted. However, quantification of effects has been provided for those impact categories where a county-wide evaluation is practical.

In some parts of the county, the urban expansion areas delineated in the land use designations may seem to encourage short term expansion and exploitation of finite land resources, thereby reducing or eliminating long-term options. This is especially true in the case of the limited amount of readily accessible land which is available for development. Development of this land during the short-term will leave the less accessible and the revitalization areas for long-term development. Since development of these areas is more difficult and often more expensive, it may be difficult to maintain the vitality of the process and the long-term productivity of the overall area. However, the plan establishes a high priority for urban revitalization, in terms of the use of public resources, as well as conservation and maintenance of sound areas. Use of public resources for these development strategies will protect and extend the life of existing investment, reduce the necessity for public expenditures for fringe development, and thus contribute to both short and long term productivity of the county's resources.

The plan recognizes the limited availability of resources by providing for the preservation and management of valuable resource areas and emphasizing energy conserving concepts such as development of transit corridors, concentration of high intensity uses and encouraging urban expansion in more accessible areas. While growth will require some additional resource production and consumption, continued research efforts should also produce methods which are more efficient in terms of fossil fuel usage and land and water requirements, while pollution reduction should also provide long-term protection.

The plan includes many policies aimed at safeguarding long-term productivity while balancing it with short-term needs. The Open Space and Conservation and Land Use Elements, in particular, attempt to safeguard natural resources (e.g., hillside land, significant ecological areas, agricultural land) and the environment in general against immediate exploitation for short-term gain at the expense of long-term preservation of these valuable amenities. The plan also recognizes mineral resources and seeks to encourage compatible land uses or preservation in such areas.

Another important safeguard in terms of long term productivity is the environmental assessment required by the California Environmental Quality Act at the project level. Evaluation of each project's impact will help maintain an integrated land use pattern and identify individual impacts and ways to mitigate them.

An important consideration in evaluating urban uses is the benefits to be gained. These include increased property tax revenue, the amenities of a well-developed residential area, employment opportunities and increased housing stock. There is also an economic advantage to installing service networks now as costs of providing such services is continually rising. A service

12.0 ANY SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES WHICH WOULD BE INVOLVED IN THE PROPOSED ACTION SHOULD IT BE IMPLEMENTED

Implementation of the plan will cause irreversible long-term environmental changes by allowing the conversion of undeveloped land to urban uses and the recycling and infilling of some areas to more intensive uses.

Conversion of undeveloped land to urban uses could involve substantial alteration of landforms, especially in hilly areas where substantial grading may be involved, and a substantial financial commitment in additional public facilities. Development in hilly areas will require additional facilities for drainage and erosion control which could further alter landforms. Once the landforms are altered it would not be either financially or physically feasible to return the area to its original condition. In addition, residential development can be the impetus for commercial and service facility development, possibly leading to further alteration of landforms. However, the plan's Hillside Management provisions (see Land Use Element) provide a means for controlling development in hillsides so as to reduce the impact on natural resources and hazards. The plan's flood plain management provisions also limit erection of flood control structures.

The plan's new urban development also entails the loss of agricultural land. In addition, loss of agricultural land is likely to occur in rural areas as property values increase in areas undergoing development and the potential income from speculation becomes higher than that from existing agricultural uses.

Development also causes irreversible environmental changes to the natural vegetative cover. As open lands are urbanized, native species of plants and animals are narrowed in type and number, depending on the species' tolerance to human invasion. Urban uses also introduce ornamental species, many of which are not compatible with native species. A prime example is the introduction of ornamental species into a semi-arid habitat such as chaparral or southern oak woodland where the required irrigation can be fatal to natives. The end result may, in fact, be an increased variety of species but also an irreversible change to the ecology. The change in vegetation will result in a loss of animal habitat.

Implementation of the plan in recycle areas will cause some irreversible socio-economic changes. Removal of some older buildings to eliminate fire, seismic and other hazards will cause disruption in communities and force relocation of residents and businesses. Further disruptions will be created by converting low intensity uses to high intensity uses and by the construction of some public facilities, such as transportation systems and public buildings. Such dislocation can cause severe trauma for some residents, especially dependent populations such as the elderly and minority groups. The plan, however, emphasizes rehabilitation rather than recycling, except to replace unrepairable, unsafe structures, or where essential as part of the revitalization process.

While the plan will result in an irreversible commitment of natural resources in urban expansion, infill, and recycle areas, its policies will direct growth into areas most suitable for development, allocate services commensurate with orderly expansion of urban development, and ensure that new development within urban expansion areas will pay for the marginal public costs that it generates. In effect, such policies will result in the most efficient use of resources, especially non-renewable ones such as land and energy. The plan also curbs urban sprawl by emphasizing the infilling and rehabilitation of existing urbanized areas and focusing high intensity development and recycling around existing

centers. Emphasis on improving the quality and standards of housing production may initially consume more resources, but over the long run will result in less deterioration and loss of usable resources by demolition.

Further environmental protection can be provided through the environmental assessment process at the project level. By identifying the more localized impacts, suitable mitigation measures can be developed to minimize and/or reduce them to an acceptable level.

13.0 THE GROWTH-INDUCING IMPACT OF THE PROPOSED ACTION

The proposed general plan can be considered, by definition, to be growth-inducing since it provides for a population growth of 808,000, an additional 661,000 jobs, and an additional 468,500 dwelling units by the year 2000. Figure 13-1 provides the projected changes in population, housing, employment and land use on which the plan is based. However, it should be emphasized that the plan neither encourages in-migration nor forces out-migration. It is based on an assumed fertility rate of 2.00 children per woman of childbearing age, and a continued net out-migration, thus reflecting current fertility and migration trends within the county. The urbanization the plan reflects is not inevitable; it will occur only where demand exists.

More importantly, the plan's growth-inducement will be limited by its monitoring provisions, as described in the Implementation Chapter. The countywide monitoring system will involve the accumulation of demographic, housing, economic, land use, environmental and transportation data, to allow an assessment of cumulative impact of individual development proposals, including assessment of effects on the environment. The system proposed for the unincorporated area will involve data collection to identify the cumulative effects of various land use and urban infrastructure decisions, allowing the identification of growth-inducing uses. This process will allow the prevention of unwanted growth-inducing effects based upon the changes identified.

Growth-inducement is also limited by the plan's criteria for new development within urban expansion areas as described in the Implementation Chapter. The plan's projected population of 218,000 for Antelope Valley is based upon the development of a regional airport at Palmdale to a level of 12 million annual passengers in the year 2000, with related industrial and commercial activities. However, if a regional airport does not

develop, lower population projections can be assumed, and, until such time as the airport is completed, the plan provides that the decision makers in the county and cities of Antelope Valley should encourage development in areas presently served by existing water and sewer services in a logical, incremental manner. The plan is directed toward providing for urban expansion in those areas within the county where services are available or can be easily extended. Plan action program #2 (in the Implementation Chapter) calls for enacting an ordinance which will establish a set of clearly articulated criteria for new development within urban expansion areas to ensure that it will occur in a manner consistent with stated plan policies and will pay for the marginal public costs (economic, social and environmental) that it generates.

The plan also provides for the management of hazardous and sensitive areas such as hillsides, flood prone areas and significant ecological areas. It provides for only limited expansion in fire, flood and geologic hazard areas, scenic and natural areas, and for sensitive development of unique coastal, mountain and desert areas. The intent of the plan is to encourage urban development on lands which will minimize the need for further public investment, and minimize the pressure to expand the urban area into marginal lands with consequent private and public cost.

A discussion of the plan's projected land demands relative to mapped land supply is provided in Appendix C.

FIGURE 13-1
PROJECTED CHANGES IN POPULATION, HOUSING, EMPLOYMENT AND LAND USE: 1975-2000 ¹

	Population	Housing (No. of Units)	Employ- ment (Jobs)	New Urbanized Land		Recycled Land (Acres)
				Urban Expansion (Acres)	Infilled Land (Acres)	
San Fernando	96,000	55,700	70,000	2,000	4,500	3,000
Burbank/Glendale	35,000	22,900	29,000	200	900	2,700
West San Gabriel Valley	35,000	26,900	41,000	200	1,600	3,300
East San Gabriel Valley	96,000	65,600	73,000	6,700	9,200	1,700
Malibu/Santa Monica Mtns.	35,000	14,400	14,000	3,600	700	100
West	44,000	35,700	45,000	700	600	3,200
Central	90,000	60,900	80,000	0	1,200	6,800
East Central	42,000	25,600	51,000	0	1,700	3,800
Southeast	36,000	29,000	71,000	200	3,400	2,300
South	64,000	31,800	73,000	0	4,800	3,500
Southwest	54,000	35,300	64,500	0	3,900	1,900
Santa Clarita Valley	51,000	20,700	15,000	4,200	1,400	200
Antelope Valley	129,000	43,400	53,000	9,100 ²	1,900	800
Channel Islands	<u>1,000</u>	<u>600</u>	<u>500</u>	<u>*</u>	<u>*³</u>	<u>*³</u>
TOTAL	808,000	468,500	661,000	27,000	35,900	33,100 ⁴

¹These figures are not predictions, but are projections of trends modified to be consistent with plan policies. They are approximations and are subject to error. The state of the art does not allow precise quantification of future events.

²Does not include 17,300 acres in the proposed Palmdale Airport.

³Less than 100 acres

⁴Includes urban open space.

NOTE: Totals may not add due to rounding.

14.0 - CONSULTATION AND PUBLIC REVIEW

Organizations and Persons Consulted

The following cities, county departments, special districts, regional governments, state and federal agencies and utilities were consulted during the preparation of the Draft EIR:

Cities

- Burbank Public Services Department
- Glendale Water and Light Department
- Los Angeles Department of Water and Power
- Pasadena Water and Power Department

County Departments

- Department of County Engineer
- Flood Control District
- Department of Health Services
- Natural History Museum
- Road Department

Special District/Regional Government

- South Coast Air Quality Management District
- Southern California Association of Governments
Air Quality Management Planning Group

State Agencies

- California Air Resources Board

Federal Agencies

- Environmental Protection Agency

Utilities

- Southern California Edison Company
- Southern California Gas Company

Comments/Responses to Draft EIR

The following are comments on the Draft EIR received during the public review period. All comments dealing with significant environmental issues are summarized, and responses are provided. A complete record of the written testimony received is available at the Department of Regional Planning's main office -- 320 West Temple Street, Los Angeles, Room 1382. Comments are organized as follows: I. General Comments, II. Comments Directed To Specific Environmental Categories, and III. Comments on Sections 7.0 - 10.0.

I. GENERAL COMMENTS

Citizens Planning Council

1. Comment: The Draft EIR does not provide an analysis of impacts on areas designated as rural (i.e., rural communities, rural hillside, other rural).

Response: Potential impacts on rural areas are addressed in the Final EIR (see in particular Sections 3.2 and 6.13). Rural areas other than rural communities are referred to as "non-urban" areas.

2. Comment: The EIR should include a map or series of maps showing areas where new urbanization encroaches into environmentally sensitive areas.

Response: A series of maps used by the staff in preparing the EIR are on file at the Department of Regional Planning and are available for public review. Due to problems of scale and map quality, they could not be included in the Final EIR. Given the scale of the general plan, it is felt that an identification of impacts at the planning area level is appropriate, although an attempt has been made to identify communities/cities affected.

Malibu Township Council

1. Comment: The Draft EIR omits a discussion of rural, rural communities, hillside and other rural areas.

Response: See response to comment #1 of Citizens Planning Council above.

2. Comment: The reference to balancing the loss of resources with the positive aspects of development (page 6-4) should also make reference to the cost of development (as a negative aspect of development).

Response: This discussion on page 6-4 of the Draft EIR has been eliminated in the Final EIR. A discussion of governmental expenditures related to development is included in Section 6.21 of the Final EIR.

Association of Environmental Professionals

1. Comment: Residential expansion and construction in hazardous areas does not construe a "loss of resources" which can be balanced nor justified with economic or social tradeoffs.

Response: This statement has been eliminated in the introduction to the effects section.

Southern California Association of Governments

1. Comment: The specific plan policies to mitigate specific impacts should be identified, and a matrix should be developed in order to make this determination.

Response: The Final EIR has been revised to make reference to specific policies (by number in each element) which are identified

as mitigation measures. The plan's recommended actions are also identified by element and number where cited as mitigation measures.

Coalition For Los Angeles County Planning in the Public Interest

1. Comment: The EIR should assess the plan's implementation techniques as mitigation measures.

Response: The Draft EIR did not discuss implementation techniques as these were not to be included as part of the plan approval process. However, the Final EIR does discuss recommended actions in Section 6.0. (See explanation in Section 3.2.)

2. Comment: The EIR must clearly indicate the impacts of urban expansion on hillside land and include mitigating measures.

Response: The Final EIR has been revised to include a more thorough discussion of the effects of the plan on hilly areas (see Section 6.13). The effects/mitigation measures section discusses the effects of urban expansion and infill development on sloped land (above 15 percent) and indicates mitigation measures.

3. Comment: The EIR must fully assess the impacts of 25,200 acres of new urban development in the Antelope Valley.

Response: The Draft EIR was based on a worst case assumption of 47,000 acres of urban expansion in the Antelope Valley as shown on the General Development Policy map (see discussion on page 6-2). The methodology was based on a factor by factor analysis of impacts on the countywide level but an indication of impacts by planning area was also included. Thus, the discussion of effects by various resource and hazard categories included an indication of impacts

within the Antelope Valley. However, the Final EIR has been revised to reflect 30,100 acres of urban expansion in the Antelope Valley shown on the General Development Policy Map, and the plan's Implementation Chapter includes criteria for new development within urban expansion areas to ensure that such development will pay for the marginal public costs that it generates (see discussion in Section 13.0 of Final EIR). A discussion of effects of infill development by environmental factor and planning area has also been added to the Final EIR (see Sections 6.1, 6.2, 6.3, 6.4, 6.7, 6.8, 6.9, 6.10, 6.12, 6.13) along with a general discussion of impacts in rural areas (see Section 6.13).

4. Comment: The Draft EIR must measure the impact of the plan's 38,000 acres of urban expansion.

Response: The Draft EIR did include an analysis of the impact of the plan's urban expansion. The effects/mitigation measures section (Section 6.0) included 24 different impact categories, all of which dealt with the effects of the plan's urban expansion. The extent of expansion within areas having natural resources and/or hazards was quantified and presented by planning area, based on a "worst case" assumption of the development of all 73,000 acres of urban expansion shown on the plan's mapped policies (see explanation in Section 6.0 of the Draft EIR). An analysis of the plan's urban expansion is also included in the Final EIR, as explained in Section 3.2.

5. Comment: The EIR must deal with the impacts of the availability of water in terms of the loss of hillsides, agriculture, and air quality brought about by urban and rural expansion. The growth inducing and other impacts of extending water and waste water lines into the Puente and San Jose Hills and agricultural areas must be addressed in the EIR. The growth inducing impacts on hillsides are not considered.

Response: Section 13.0 acknowledges the growth-inducing effect of extending services, including water and waste lines, into urban expansion areas. Sections 6.13 and 6.10 of the Final EIR discuss the effects of development on hillsides and agricultural land as a result of the urban expansion and infill processes. With regard to air quality, see response to comment #6 by the Air Resources Board under Air Quality.

Center For Law in the Public Interest

1. Comment: Little environmental impact analysis is provided regarding policies and designations for the "rural" areas.

Response: See response to comment #1 by Citizens Planning Council.

2. Comment: The Draft EIR lacked an impact analysis of "infill" and "recycle" policies and designations.

Response: A discussion of the plan's revitalization policies (this category includes both recycle and rehabilitation — the General Development Policy Map does not distinguish between the two) was considered primarily in Sections 6.13, 6.14, 6.16 and 6.17 (scenic qualities, land use, communities and housing). The sections dealing with air quality, energy consumption and services (which were based on the plan's projections) also considered revitalization and infill development, as well as urban expansion and rural development. The Final EIR has been revised to explain the methodology for the analysis of effects in revitalization, infill and rural areas, in addition to urban expansion areas (see Section 3.2). It has also been revised to provide a detailed quantification of the effects of infill development on the various hazard and physical resource categories (Sections 6.1, 6.2, 6.3, 6.4, 6.7, 6.8, 6.9, 6.10, 6.13).

3. Comment: See comment #2 by the Coalition For Los Angeles County Planning above.

Response: See response to comment #2 by the Coalition For Los Angeles County Planning above.

4. Comment: The Draft EIR did not identify the areas of conflict between proposed urban expansion areas and hazards/natural resources or explain the necessity for such conflicts.

Response: The Draft EIR does discuss and quantify urban expansion in hazard/resources areas by planning area. However, no map was provided showing where the specific acreage affected is located. This is felt to be justified given the type and scale of project (general plan) and the amount of area included in the county. Such maps used by the staff in preparing the Draft and Final EIRs are available for review at the Department of Regional Planning and an effort has been made in the Final EIR to identify cities/communities affected. The Final EIR also discusses areas of multiple constraints (identified as "D" and "E" lands) in Section 7.0. These maps were not included in the Final EIR due to problems of scale, but are also available for review at the Department of Regional Planning. The Resolution of the Regional Planning Commission on the Proposed Plan, dated March 2, 1979, provides an explanation as to why development is permitted in the various "constraint" areas.

5. Comment: The Draft EIR does not discuss the need for and/or impact of the plan's 62,000 acres of "commercial" uses or the unspecified number of "industrial" uses.

Response: The Draft EIR's discussion of effects of urban expansion was based on all of the land use types included within this category — several residential land use types, as well as

commercial, industrial and public and semi-public facilities. The effects on hazard/resource lands were considered for the urban expansion category as a whole, although the acreage of non-residential uses was pointed out in most cases, and effects related to specific land use types were also indicated where appropriate. The Final EIR has been revised to include a discussion of infill (see response to Comment #2 above) -- thus presenting additional information. However, the discussion of effects reflects the broad scale of the general plan -- the Land Use Policy map generally shows major commercial and industrial uses, not local serving commercial and industrial uses; these uses are felt to be more appropriately addressed at the areawide or communitywide plan level (see Land Use Element of the general plan). The general plan provides only a broad indication of where commercial and industrial uses might be appropriate, while the "need" for such uses is to be determined at the area or community plan level, as well as at the specific project level.

6. Comment: The EIR must set forth and explain the supporting facts and data, as well as methodology behind the plan's year 2000 person per dwelling unit figure of 2.60.

Response: The persons per dwelling unit figure of 2.60 given in the Preliminary Plan was a typographical error. The correct figure indicating the relationship between projected total population and projected total dwelling units is 2.53. However, taking into account a vacancy factor and non-household population, the projected person per housing unit figure is 2.45. This is the figure indicated in the general plan, and is in agreement with the SCAG projection.

7. Comment: The EIR should set forth the method of calculation and assumptions on which the plan's 38,100 acres of urban expansion are based, what overage was used in calculating this demand, how

it was distributed among the various residential densities, and now it was determined that 73,400 acres of urban expansion should be mapped, and why a lower "overage" couldn't have been used.

Response: This issue is responded to in Appendix C of the Final EIR.

8. Comment: The Department's worksheets used to determine effective population capacity estimates within the unincorporated area should be included as part of the EIR.

Response: This information is on file at the Department of Regional Planning. It was not felt to be appropriate to include this type of background information in the EIR.

9. Comment: The supporting facts and data upon which the plan's post-1985 projections and allocations were made should be included in the EIR or plan.

Response: This information is included in the paper "Methodology for Developing Year 2000 Population, Housing, Employment and Land Use Projections for the Revised Los Angeles County General Plan," included in Appendix A.

10. Comment: The EIR should note and identify on maps those areas identified as having hazards, or as being agricultural or scenic, or as affected by urban expansion at higher than "low" residential densities, and provide specific reasons why such densities are proposed.

Response: The impacts of the plan are discussed by planning area because of the level of the project involved and the size of the project area. As indicated previously (see response to comment #4

by the Center for Law in the Public Interest above), the maps used by the staff in preparing the EIR are available for review at the Department of Regional Planning. Significant effects are identified in Section 7.0 and the Resolution of the Regional Planning Commission on the Proposal Plan, dated March 2, 1979, indicates why such significant effects are permitted.

11. Comment: The Draft EIR never states any overriding reasons why urban expansion is allowed in areas affected by hazards or discusses any mitigation measures relating to deleting such lands from proposed urbanization. In addition, it does not describe the specific need for extending urban uses into areas identified as being agricultural or scenic.

Response: The "Resolution of the Regional Planning Commission of the County of Los Angeles Approving a Major Revision to the General Plan of Los Angeles County" (March 2, 1979) as well as Appendix C of the Final EIR address this issue.

American Association of University Women

1. Comment: The need for urban expansion in hazardous and sensitive areas is not apparent; development in hazardous areas is not appropriate, even with mitigating measures.

Response: Where urban expansion or infill development is permitted in hazardous or sensitive areas, mitigation measures are provided. The Regional Planning Commission's resolution (see response to previous comment above) and Appendix C, of the Final EIR also address this issue.

II. COMMENTS DIRECTED TO SPECIFIC ENVIRONMENTAL CATEGORIES

Geologic/Seismic Hazards

Citizens Planning Council

1. Comment: The mitigation measures proposed for urbanization in geologic and seismic hazard areas are not adequate; although low density is cited as a mitigation measure, 27 percent of the land in seismic hazard areas is designated for residential uses at higher than low density.

Response: Section 6.0 of the Draft EIR does indicate that there are important mitigation measures for geologic/seismic hazards -- e.g., low densities and building codes and requirements. However, Section 7.0 of the Final EIR indicates that seismic hazard is considered to be a potentially significant effect. Also see response to comment #11 on page 14-11.

Association of Environmental Professionals

1. Comment: The Draft EIR should recognize the loss which could be incurred by the clearance of seismically unsafe structures in recycle areas.

Response: The potential loss -- in terms of the effects on communities where recycling occurs -- is discussed in Section 6.15 of the Draft and Final EIR.

Coalition for Los Angeles County Planning In the Public Interest

1. Comment: The Draft EIR does not adequately assess the impacts of urban expansion in unstable slope areas.

Response: The Draft EIR (Section 6.1) indicates acreages of urban expansion subject to unstable slope hazard by land use, for each planning area as well as the entire county, and presents mitigation measures. It is also explained what factors contribute to this geologic hazard. Sections 5.1 and 6.1 in the Final EIR have been revised to indicate that property damage and human injury/loss of life, as well as economic costs are associated with slope instability hazard. Section 7.0 of the Final EIR indicates that unstable slope is considered a potentially significant effect.

Flood/Runoff

Association of Environmental Professionals

1. Comment: The statement on page 6-21 regarding the restriction of intense urban development in brushfire hazard areas in order to preserve vegetative cover and thus reduce the potential for increased runoff, mudflow and erosion needs expansion.

Response: This statement (regarding the restriction of intense urban development) is not intended to preclude cluster-type development where such development would help to preserve resources and limit urbanization on hazardous lands.

Fire Hazard

Citizens Planning Council

1. Comment: The Historical Brush Fire Areas map (page 5-24 of Draft EIR) should be updated to include fires that occurred in 1975 and 1976.

Response: This map has been updated in the Final EIR (Section 5.4).

2. Comment: The cumulative impact of development in fire hazardous areas will not be adequately mitigated by project level measures.

Response: The mitigation measures included are considered to be adequate by the Fire Department. The EIR attempts to quantify the cumulative effects -- the Final EIR indicates that 3,200 acres of urban expansion and 200 acres of infill in fire hazardous areas are shown in the plan. The 3,200 acres of urban expansion represent about six percent of total expansion land shown on the General Development Policy Map. See discussion of mitigation measures in Section 6.4 of the Final EIR, and Section 7.0 dealing with significant effects.

County Fire Department

1. Comment: Several corrections to the Setting (Section 5.4 and 5.7) and Effects/Mitigation Measures Sections (Section 6.4 and 6.7) were suggested relating to urban fire hazards, the adequacy of water for fire flows and the acreage of urban expansion subject to extreme fire hazard in the Malibu/Santa Monica Mountains.

Response: High-rise residential buildings have been included in the list of urban fire hazards (Section 5.4 of Final EIR) as requested. The correct figure for urban expansion subject to high fire hazard in the Malibu/Santa Monica Mountains is 200 acres (see Section 6.4 - Figure 6-6). With regard to adequate fire flows, the physical facilities for importation of water are adequate for fire flows during droughts as well as normal conditions. Fire flows do not represent a significant portion of water demand.

Air Quality

Citizens Planning Council

1. Comment: The air quality setting should consider the effect of wind patterns on air pollution.

Response: The Final EIR has been revised to include a discussion of the transport of pollutants as a result of wind patterns (Section 5.6). It should also be noted that the Air Quality Management Plan (AQMP) effort considered the transport problem in its analysis.

2. Comment: Description of AQMP tactics is not a part of the transportation element, and some of the suggested measures are speculative. Public transportation is a more adequate mitigation measure.

Response: The discussion of AQMP tactics prepared by the Policy Task Force has been deleted. The Final EIR now acknowledges the current AQMP effort, particularly the emission projections to the year 1987.

3. Comment: The energy conservation discussion is totally inadequate.

Response: More specific mitigation measures have been identified and included in the Final EIR.

South Coast Air Quality Management District

1. Comment: The air quality analysis is generally comprehensive. AQMP data should be used if it is available prior to publication of the Final EIR.

Response: The Final EIR includes a more detailed reference to the Draft AQMP.

2. Comment: New source rules apply only to new facilities and do not preclude increased emissions from existing power plants.
Response: The text in the Final EIR has been amended accordingly.

Southern California Association of Governments

1. Comment: The Draft EIR should broaden its discussion of lead as an air pollutant.

Response: It is not intended to minimize the importance of lead as an air pollutant; however, given the availability of data and the critical nature of the other air pollutants, the lead discussion in the EIR is considered adequate for planning purposes.

2. Comment: It is suggested that the latest data from AQMP be used if it is available in the appropriate time frame.

Response: See response to comment #2 by the South Coast Air Quality Management District above.

3. Comment: The Draft EIR does not attempt to quantify the effectiveness of the various mitigation measures in reducing air pollution. Also, the Draft EIR does not specify which measures will be implemented.

Response: An evaluation of some of the basinwide AQMP mitigation measures has been completed by SCAG and SCAQMD. The results show that the federal air standards can be met by 1987. These AQMP measures include stationary and mobile source controls, which are not within the implementation authority of the county or its general plan. Also, an evaluation of the county's mitigation measures (general plan policies) was made in mid-June. This

evaluation was made a part of the countywide AQMP effort. It was not based on individual measures but rather on a combination of all of the measures. This total analysis indicates up to a six (6) percent reduction of emissions if the subregional AQMP is implemented.

4. Comment: If the mitigation measures do not mitigate the increase of emissions, how will the AQMP be utilized to provide additional measures.

Response: The air quality analysis prepared for the Draft AQMP indicates a reduction in emissions by implementing current standards only. Implementation of the recommended tactics results in achieving federal clean air standards.

Association of Environmental Professionals

1. Comment: The micro-scale analysis should include a discussion of pollutant transport and monthly changes.

Response: A general discussion of the transport of pollutants and maps showing typical summer and winter wind patterns have been included in Section 5.4 of the Final EIR. A detailed micro-scale analysis was not considered appropriate since the problem is basinwide. As stated previously, the South Coast Air Basin AQMP has evaluated the transport problem. The air basin analysis is considered the appropriate scale for a transport evaluation.

2. Comment: The Draft EIR ignores the environmental effects of power generating plants located outside of Los Angeles County.

Response: The impacts of remote power generating plants were discussed in general terms in Section 6.11 (Energy Consumption). Further, any new plants will be subject to an environmental analysis and required to meet federal emission standards.

3. Comment: The Draft EIR should indicate why some of the AQMP mitigating measures were not included in the General Plan.

Response: The Final EIR has been amended to incorporate only those mitigating measures included in the general plan.

4. Comment: The Draft EIR should evaluate the mitigation measures. Also, these mitigation measures should be discussed in the general plan.

Response: See response to comment #3 by SCAG.

California Air Resources Board

1. Comment: There is no indication whether the National Ambient Air Quality Standards will be attained by the prescribed deadlines stipulated in the Clean Air Act. If they will not be attained, the reasons should be given and an indication when the standards will be attained.

Response: The Final EIR has been amended to indicate that it is very probable that the standards set forth by the 1977 Amendments to the Clean Air Act will not be met by 1982, but will be met by 1987. The 75 tactics included in the current AQMP, if implemented, will allow the basin to meet these standards.

2. Comment: The Draft EIR should analyze the impact of nine million people, not 7.7 million. The large growth in the Santa Clarita and Antelope Valleys needs to be examined.

Response: Since a population growth of nine million is not anticipated, any analysis of the air quality impact of this population level would be of little value and not realistic. While a growth of two million additional people is not anticipated, it is necessary for planning purposes that the land supply shown on plan maps be greater than projected land demands. The plan's monitoring provisions (see Section 13.0) will allow an adequate air quality analysis at a future date if actual population growth exceeds current projections. With regard to the Santa Clarita and Antelope Valleys, the effects of growth in these areas was discussed in the Draft EIR. Also see the discussion of plan capacity/overage contained in Appendix C of the Final EIR.

3. Comment: The relationship between mapped policies and written policies should be examined in the Growth-Inducing Section. Also, the impact of two million additional people needs to be brought out in the Summary Section.

Response: The EIR deals with the effects of written and mapped policies, as well as projections. Section 13.0 — dealing with growth-inducement — references Appendix C, which deals with the issue of mapped policies (the "capacity" question) as compared to projected demands. The Final EIR is based on a projected population growth of 808,000 persons.

4. Comment: The Draft EIR needs to indicate a commitment to specific air quality mitigation measures.

Response: The Final EIR has been amended to include specific plan policies which will assist in the reduction of air pollution.

5. Comment: The construction of the Route I-105, 138, and 48 Freeways may conflict with air quality improvement.

Response: The Route I-105 Freeway has been subjected to the preparation of an EIS prepared by the State of California. A detailed air quality analysis may be found in that environmental document. Past EISs on freeways indicate a general reduction in air pollution within the corridor served by the freeway. This is the result of smoother traffic flows and more stringent mobile emission standards. With regard to the I-105 Freeway, a transitway is to be included. The Route 138 and 48 Freeways are generally considered as by-pass freeways and are not considered to be growth-inducing. These freeways will serve traffic travelling between central and northern California and points east. Since they serve as by-pass routes, they will remove through traffic from the South Coast Air Basin resulting in a reduction of air pollution. While air pollution may increase in the South East Desert Air Basin, it will be reduced on a per mile basis since there will be less congestion on the by-pass freeways. It should also be remembered that the construction of these freeways will be subject to the preparation of an EIS.

6. Comment: The Draft EIR does not recognize the relationship between sewer expansion and secondary impacts on air quality.

Response: The Draft EIR, in the Growth-Inducing Section, acknowledges the relationship between growth and the need for public services, including sewage facilities. It is also recognized that growth will increase emissions; however, the air quality analysis in the Draft EIR is based on the projected growth.

Malibu Township Council

1. Comment: The comment that the evaluation of cost effectiveness of the county's mitigation measures should be determined at higher governmental levels appears in conflict with the county's desire for local control.

Response: The intent of this statement is that higher levels of government should provide the necessary research and methodology for evaluating mitigation measures. After completion of this initial work local jurisdictions can determine which measures are best suited for their area. This process would avoid a duplication of effort by hundreds of agencies, thus resulting in governmental savings and a common approach.

2. Comment: The discussion of vehicle miles traveled and auto trips is weak.

Response: The Final EIR has been amended to include specific mitigating measures.

Coalition for Los Angeles County Planning in the Public Interest

1. Comment: The EIR neglects to disclose existing and future air pollution conditions in Los Angeles County.

Response: Section 6.6 discusses air pollution conditions. The South Coast Air Quality Management District and Southern California Association of Governments found the air quality analysis adequate. Further, the California Air Resources Board is in basic agreement with the methodology for estimating current and future air emissions.

2. Comment: The EIR is totally silent on proposals to improve air quality.

Response: See Response to Comment #1 above. Section 6.6 contains numerous mitigation measures which can be used to reduce emissions to varying degrees.

3. Comment: The EIR fails to adequately articulate the impacts of the general plan and alternatives on air quality.

Response: See Sections 6.6 and 10.6. Also see response to comment #1 above.

Water Resources/Water Quality

Citizens Planning Council

1. Comment: The discussion of water resources unrealistically relies on voluntary actions for conservation; the assumption that adequate water supplies will be available is questionable.

Response: The Final EIR has been revised to explain that the water demand and supply projections are based on measurements and estimates provided by the various water suppliers, and to describe the types of measures expected to result in conservation. In addition, the Final EIR has been revised to explain in greater detail why it is assumed that adequate water supplies will be available. It is explained in Section 6.7 that while the supply of Colorado River water is expected to be reduced significantly, State Water Project water is expected to be increased and the water supply agencies are studying the use of reclaimed water to help reduce the need for imported water.

2. Comment: The bias against septic sewage systems (page 6.7 - 11) should be removed from the Draft EIR, and the sewer district serving the Las Virgenes area should be considered in Section 6.7.

Response: The Draft EIR does indicate that there is a potential for contamination of groundwater by septic tanks in unsewered areas, and that such private sewerage systems are subject to regulations

and conditions of the Department of Health Services and the California Regional Water Quality Control Board (RWQCB). These statements are based on the policies and regulations of the agencies referred to (see comment #4 below). The Las Virgenes Municipal Water District is listed as a wastewater treatment facility on page 5-105 of the Draft EIR. A discussion of its current effluent discharge activities has been added to Section 5.8 in the Final EIR, indicating that testing and evaluation of the discharge effluent is currently in progress.

Malibu Township Council

1. Comment: See comment #2 by Citizens Planning Council above.

Response: See response to comment #2 by Citizens Planning Council above.

California Regional Water Quality Control Board

1. Comment: The proposed Septic Tank Maintenance District is not an acceptable mitigation measure for the use of septic tanks in the Malibu area. The Board will not consider a report of waste discharge for any sewage disposal facility in the Malibu area to be complete unless it is demonstrated that such facility will fit in with a comprehensive areawide sewerage plan.

Response: This information has been incorporated into the Final EIR (Section 6.7). The Septic Tank Maintenance District is no longer included as a recommended action in the plan, but is recognized as one alternative to dealing with the health hazards associated with development in unsewered areas.

Association of Environmental Professionals

1. Comment: Several suggestions and corrections relating to water quality (Section 6.7 in the Draft EIR) were offered. These dealt with effects of dredging and temperatures on kelp, EPA requirements for secondary treatment of sewage discharge at Hyperion and the schedule for the 208 areawide Waste Management Treatment Plan.

Response: These comments have been addressed in Section 6.7 of Final EIR.

2. Comment: Water quality on the whole is not of an acceptable nature for domestic uses.

Response: This comment relates to the quality of Owens River Aqueduct water, which, as is indicated in the Draft EIR, represents approximately 20 percent of the county's total supply. The EPA maximum limits for turbidity cited, which Owens River water has exceeded on occasion, are recommendations, not requirements.

But while it is noted that this water source represents 20 percent of the total supply, it can be safely assumed that water quality on the whole is of an acceptable nature for domestic uses.

Coalition for Los Angeles County Planning in the Public Interest

1. Comment: The Draft EIR's data indicating loss of water recharge acreage is not accurate.

Response: The Draft EIR indicates that 6,500 acres of urban expansion are located in aquifer recharge areas. It also indicates that urban uses would generally result in a loss of about half of this acreage, thus reducing but not eliminating the potential for

groundwater recharge on the acreage affected. This data was based on a comparison of the proposed urban expansion acreage with a Department of Regional Planning map entitled N 1/2 Groundwater Recharge Areas Map from U.S.D.A. Soil Conservation Service, Soil Survey for the Antelope Valley Area, 1970, and an ESRI Land Capability/Suitability Study map "Suitability for Development Considering Interpretations of Watershed (Variable 24)," 1977. The Final EIR indicates that 3,700 acres of mapped expansion and 1,300 acres of mapped infill development are within recharge areas (see Section 6.7).

Biota

Southern California Association of Governments

1. Comment: The role that flora and fauna played in the methodology used for the Draft EIR is not clear, the role the SEA's played in determining impacts should be made clear, and more attention to flora and fauna would be desirable.

Response: In the Draft EIR, SEAs are discussed in Section 5.8 (Setting Section). The Setting Section of the Final EIR has been revised to include a more detailed discussion of vegetative types and endangered plants/animals. The effects on biota, including loss of vegetation as a measure of loss of habitat, and the protection of SEAs is discussed in Section 6.8 of the Draft EIR.

The methodology for the effects section (pages 6-1 to 6-2) in the Draft EIR explains that the measurement of effects on natural resources (including biota) was based on a "worst case" assumption that all of the acreage shown as new urban expansion would be developed. The Final EIR has been revised (Section 6.8) to reflect the plan's provisions for the management of SEAs.

Citizens Planning Council

1. Comments: The significant ecological areas within the National Forest should be identified on Map 5-15 (page 5-56) since the county issues permits on the unincorporated holdings within the forest.

Response: The 1976 Significant Ecological Area Study carried out for the county did not include the National Forests as a part of its study area. Therefore, no recent complete information as to significant ecological areas within the forests is available. However, the 1976 study did include a listing and brief description of those areas in the forests known to possess special ecological value, and a listing has been added to the Final EIR (see Section 5.8).

Extractive Resources

Association of Environmental Professionals

1. Comment: The discussion of the impact on sand and gravel resources is not complete without mention of where the displaced industry might go, and the impacts of such a move.

Response: The Draft EIR (pages 6.9 -2 to 6.9-3) indicated that where the loss of quarrying operation in proximity to urban uses does occur, this will necessitate transporting sand and gravel from remote areas of the county. However, as noted in the Final EIR, only two percent of the county's sand and gravel resources are potentially affected by new urban development. Mitigation measures are also discussed on page 6.9-5 of the Draft EIR and in Section 6.9 of the Final EIR.

Prime Agricultural Soil Resources

Citizens Planning Council

1. Comment: The acreage of the county's prime agricultural land needs to be reconciled with state figures; the bias against preservation of agricultural land should be removed, and a map showing the location of existing and potential prime agricultural lands should be added.

Response: The wording of Section 5.10 in the Final EIR has been revised to eliminate any "bias" against the preservation of agricultural land, and the county's acreage of prime agricultural land has been corrected.

2. Comment: The Draft EIR's mitigation measures for loss of agricultural land are too weak.

Response: The Final EIR does indicate that the proposed agricultural preserves in North County are to be implemented based on voluntary actions by farmers. The loss of potential and existing agricultural acreage is acknowledged to be a significant effect (see Section 7.0).

Coalition For Los Angeles County Planning in the Public Interest

1. Comment: The EIR must indicate the impacts of the loss of agricultural land, including the loss of open space and the proposal to include small lots in areas designated for agriculture, the importance of such lands for aquifer recharge and water quality, and the alternatives available to preserve such land; it must also adequately map such land. This group was particularly concerned with the Antelope and East San Gabriel Valleys.

Response: The Draft EIR indicated the acreage of existing agriculture which could be affected by new urban development, and potential agricultural land which could be affected by urban expansion. The Final EIR has been revised to indicate the potential loss of prime agricultural land to infill development (see Section 6.10), and to acknowledge the potential effect on scenic qualities (see Section 6.13). No discussion of the effects on the size of agriculturally-designated parcels is provided, due to the broad scale of the plan. Lot size is discussed only in relation to areas designated as Potential Agricultural Preserves (see Mitigation Measures in Section 6.10 of the Final EIR). With reference to aquifer recharge, there is no direct relationship between the loss of agricultural acreage and the loss of water recharge. As noted under the response to comment #1 of the Coalition for Los Angeles County Planning in the Public Interest under Water Resources/Water Quality, urban uses (structures, pavement, etc.) would generally result in a loss of about half of the acreage actually shown for urban uses. In addition, with the exception of the San Fernando Valley area downstream of the Sepulveda Basin, storm water runoff is collected in storm drains and percolated back to the aquifers, thus resulting in the salvaging of much of the rainfall which would have percolated naturally into the aquifers.

Energy Consumption

Association of Environmental Professionals

1. Comment: The EIR should include a discussion of the effects of generation of the County's electrical power, wherever it occurs.

Response: Section 6.11 -- Energy Consumption (Environmental Effects Analysis/Mitigation Measures) -- includes a discussion of the potential adverse effects of electrical power generation on pages 6.11-18 through 6.11-22 of the Draft EIR.

Citizens Planning Council

1. Comment: The conclusion that there will be adequate electrical power is too optimistic, given the number of new generating facilities — especially coal and nuclear-powered — required.

Response: As is pointed out in the Draft EIR (page 6.11-5), the State Energy Resources Conservation and Development Commission, (ERCDC) is charged with ensuring adequate supplies of electricity. Because of the generally controversial nature of new generating plants, the ERCDC considers several alternative sites for each new facility, makes a 20 year forecast for power needs and allows lengthy planning times. As the EIR indicates, the ERCDC currently forecasts electrical power needs in excess of that necessary for the plan's projected population. Therefore the EIR assumes that adequate electrical generating plants will be developed.

2. Comment: The assumption that the Gas Company conservation programs will prevent increased per capita natural gas consumption cannot be relied on; the plan lacks mandatory gas conservation measures; social impacts will result from increased costs for natural gas; the assumption that three LNG facilities will be operative by 1983 appears unrealistic.

Response: The Draft EIR indicated that increased demand for natural gas would reflect primarily an increase in new customers, rather than an increased per capita consumption. This statement was based on the Gas Company's recent experience which reflects decreased overall consumption (conservation) for the average residential customer each year from 1974 to 1976 as compared to 1973 figures. Given the Gas Company's conservation program, and especially the anticipated increased use of insulation, this trend is expected to continue. While the plan includes no mandatory

natural gas conservation measures, existing and proposed governmental regulations to reduce consumption are included in the Draft EIR (pages 6.11-31 - 6.11-34), and the plan's emphasis on twinhome/townhome development and garden apartments (as opposed to detached single family development) is also oriented toward decreased consumption. While the probable increased cost of natural gas does have the potential for social impact, as indicated in the Final EIR, the required "lifeline rates" will reduce this impact (see Final EIR, Section 6.11). With regard to the selection of an LNG site, the Final EIR has been revised based on more recent information.

3. Comment: The energy conservation measures included in Section 6.1 (page 6.11-27 to 6.11-41) of the Draft EIR are not a part of the general plan.

Response: It is explained in Section 6.11 of the Draft EIR that in addition to plan policies, several different types of mitigation measures are included. Pages 6.11-27 to 6.11-41 in the Draft EIR include governmental regulations which are in effect or are to be adopted, as well as ordinance changes which could result in energy savings, should they be required or encouraged by the utilities. The State EIR Guidelines (Section 15143) require that both measures which are proposed to be included and measures which could reasonably be expected to reduce adverse impacts be included. The various types of measures are to be considered during the preparation of the Energy Element of the general plan.

Southern California Association of Governments

1. Comment: The Draft EIR does not make clear how the energy mitigation measures will be implemented.

Response: See comment #3 under Citizens Planning Council above; the Energy Element of the general plan is to develop short and long range energy plans including implementation measures.

Kern County Planning Department

1. Comment: The Draft EIR does not clearly state energy demands for Los Angeles City and County, and, specifically, it does not indicate where the power which would have been supplied by the Palo Verde and San Joaquin Nuclear Projects will be obtained.

Response: The Draft EIR does supply information as to the power demands of Los Angeles City and County (pages 6.11-1 to 6.11-3). With regard to new sources of supply, the Draft EIR was prepared prior to the recent decisions on the Palo Verde and San Joaquin projects. The Department of Water and Power is presently investigating alternative means of supplying power, although no specific projects have been proposed to replace these sources. SCEC is proposing to develop a coal and petroleum coke generating station. However, as is noted in the Draft EIR, the ERCDC is responsible for assuring adequate supplies of electricity. (See Final EIR, Section 6.11.)

The City of Los Angeles Department of Water and Power

1. Comment: We do not intend to retire any hydroelectric generating facilities in the near future.

Response: The Final EIR has been revised to reflect this fact.

Archaeological/Historical/Paleontological Sites

Natural History Museum

1. Comment: The statement that there are 150 officially recognized historic sites is misleading and erroneous; the general plan does not include any criteria for the protection of cultural heritage resources; the Draft EIR should recognize the historic district concept.

Response: The Setting of the Final EIR -- Section 5.12 -- has been revised to indicate that over 1,000 sites are currently being evaluated, and that more potential sites are located within the county. The statement relating to criteria for the protection of cultural heritage resources has been deleted and the Final EIR (Section 5.12) also has been revised to reflect the historic district concept.

Association of Environmental Professionals

1. Comment: The discussion of historical resources is devoted to specific sites, not to areas or neighborhoods of potential historic significance.

Response: See response to comment #1 by the Natural History Museum above.

2. Comment: The plan's recycling could have a negative impact on the historical integrity of neighborhoods.

Response: The Final EIR (Sections 6.12 and 10.12) has been revised to reflect this comment.

Scenic Qualities

Association of Environmental Professionals

1. Comment: The Setting Section for visual quality should be rewritten to eliminate writer bias; the Draft EIR should indicate what percentage of total scenic lands would be developed, and discuss the relative ability of different types of terrain to absorb visual modification; the discussion of impact of recycling on scenic qualities should indicate that strict code enforcement could result in the abandonment of otherwise sound structures.

Response: It is acknowledged that the Draft EIR's scenic qualities setting is oriented more toward the notable as opposed to the commonplace, based on the assumption that the more unusual (notable) tends to be more scenic. However, the Final EIR has been revised to note that scenic qualities are highly subjective (see Section 5.13 of Final EIR). The comment that strict code enforcement could result in the abandonment of otherwise sound structures where exact conformance would be economically infeasible has been incorporated into the Final EIR (Section 6.13). The acreage of scenic lands affected by urban expansion was discussed in the Draft EIR in Section 6.13. The Final EIR includes a discussion of the effects of urban expansion, infill, recycle, and rural development on scenic qualities (see Section 6.13).

Citizens Planning Council

1. Comment: Transfer of densities will be a growth-inducing measure and not a mitigation measure to preserve scenic qualities unless closely controlled by hillside management specifications and a strict slope/density formula.

Response: The plan's hillside management provisions (see Section 6.13 of Final EIR) provide slope/density formulas as well as a required minimum amount of land retained in a natural or open condition, and a series of standards/conditions for development. Therefore, it is maintained that transfer of densities will not be growth-inducing.

Coalition for Los Angeles County Planning In the Public Interest

1. Comment: The EIR must address the issue of scenic areas and the impacts of urban expansion.

Response: The Draft EIR included a discussion of the impacts of urban expansion on scenic qualities in terms of an ESRI model for areas of high scenic quality in the south county and areas of various slope in the north county. The Final EIR (Section 6.13) has been revised to indicate encroachment of potential infill development into hilly areas and areas of high scenic quality. Mitigation measures are also provided. The Final EIR indicates that the loss of agricultural lands represents the loss of a scenic resource.

Land Use

Association of Environmental Professionals

1. Comment: The Draft EIR's base line level of growth should be made more explicit and Figures 6-55 and 6-59 should be combined to allow a comparison of pre -and post-recycling uses.

Response: The Final EIR (Section 6.14) has been revised to reflect these comments.

Communities

Association of Environmental Professionals

1. Comment: A potential negative effect of rehabilitation on businesses is that merchants may be unable to afford to operate in newly rebuilt areas; infilling will have many of the same impacts as recycling.

Response: These comments have been incorporated into Section 6.15 of the Final EIR.

2. Comment: A map of communities within the county might be instructive.

Response: It is felt that a map on a scale which could be reproduced in the EIR would not be appropriate -- some communities would be lost at this scale. In addition, the discussion of communities in the Draft and Final EIR is not limited to geographic location.

Population

Center for Law in the Public Interest

1. Comment: There is a discrepancy between the fertility rate per woman of child-bearing age of 1.8 given on page 6.16-1 of the Draft EIR, and that of 1.92 given in the plan.

Response: The Draft EIR (Preliminary General Plan) was based on a fertility rate of 1.92 children per woman of childbearing age (the figure of 1.8 given on page 6.16-1 was a typographical error). However, the Final EIR is based on a rate of 2.00 children per woman of child-bearing age (see Section 6.16).

Governmental Revenue

City of Cerritos

1. Comment: The EIR should consider, analyze and appraise the effects of the Jarvis-Gann and Behr tax reform initiatives.

Response: The Final EIR (Section 6.22) examines effects on governmental revenue, including the property tax as affected by the approval of Proposition 13 (the Jarvis-Gann initiative).

1. Comment: See comment of City of Cerritos above.

Response: See response to comment of City of Cerritos above.

Transportation

Malibu Township Council

1. Comment: The statements in the Setting Section (Section 5.23) relating to the capabilities of the transportation system to serve almost all of the citizens' travel needs (page 5-95) are inaccurate and the statements made in the first paragraph on page 5-97 relating to the automobile should be stricken.

Response: The Final EIR has been revised to reflect these comments (see Section 5.23).

2. Comment: Section 6.23 in the Draft EIR neglects the plan's transportation-created impacts on local congestion, energy consumption and air quality reduction.

Response: The Draft EIR reflected the County Road Department's conclusion that, based on an analysis of current travel patterns and the plan's projected population, housing and employment growth, travel patterns and magnitudes should change very little by the year 2000. Several mitigation measures (plan policies and recommended actions) listed in Section 6.23 of the Final EIR are oriented toward decreasing existing congestion problems. In terms of energy consumption and air quality impacts, the Draft and Final EIR do discuss transportation-created effects. Section 6.11 includes a discussion of year 2000 projected mobile usage, based on projected auto and bus VMT and fuel usage, and indicates a reduction of fuel usage. Section 6.6 includes projected year 2000 mobile source emissions based on general plan population, occupied dwelling units and employment data. A reduction in mobile source emissions (Figure 6-33) is indicated.

3. Comment: The EIR should include a discussion of the impact of Palmdale Airport on increased energy consumption by autos and aircraft.

Response: The 12 MAP projected for Palmdale Airport would require 21.46 million gallons of gasoline annually, as compared to 16.99 million gallons of gasoline annually if alternate airports were used to absorb the 12 MAP (these figures represent auto and bus fuel usage in trips to and from, rather than within Palmdale Airport, as it is assumed that terminal facility fuel requirements, including aircraft fuel usage, would be the same whether or not Palmdale Airport is built). The 21.46 million gallons annually represent an average daily usage of 0.059 million gallons, or about one percent of the 4.3 million gallons per day given for total motor vehicle energy consumption in the Draft EIR. However, since 16.99 million gallons annually, or 0.047 million gallons average daily usage

represents the fuel used for auto and bus VMT to and from other airports absorbing the MAP demand, the 4.67 million annual gallons difference, or 0.012 million gallons average daily usage represents the actual additional fuel usage above and beyond what would be generated whether or not Palmdale Airport were built -- or less than a fraction of one percent of the 4.3 million gallons per day of the total motor vehicle energy consumption given in the Draft EIR.

In terms of aircraft activity fuel usage, 25 million annual gallons are estimated by 1995, with another 4.46 million annual gallons used by vehicles serving these aircraft and vehicular traffic within the airport; the attendant airport facilities will require 2.4 million annual gallons.

However, these energy requirements are estimated to occur equally at other airport sites, if Palmdale Airport is not built. (See Volumes four and five of the Final Environmental Impact Statement for Palmdale International Airport -- January 1978, prepared by Arthur D. Little for a discussion of energy requirements both within and to and from the airport).

Citizens Planning Council

1. Comment: An analysis is needed of the plan's impact on traffic congestion and the impact of Palmdale Airport on automobile and airplane fuel consumption.

Response: See responses to comments #2 and #3 by Malibu Township Council above.

2. Comment: The EIR should include a discussion of the effects of the Master Plan of Highways and Arterial Highway Network.

Response: The plan has been amended to reflect highways only within urbanized and urban expansion areas; the analysis of urban expansion in terms of loss of resources (see Sections 6.8, 6.9, 6.10, 6.11, 6.13) reflects the extension of infrastructure, including highways, within urban expansion areas. Proposed highways are not shown within rural areas.

3. Comment: The transportation setting (p. 5-95 to 5-103) needs to reflect problems of transit dependency; the pro-automobile bias should be deleted; statistics on auto, bus, truck, air and train modes regarding energy, emissions and cost per passenger mile are needed.

Response: The setting in the Final EIR has been amended to indicate the problems of the transit-dependent, and to eliminate the pro-automobile "bias". Statistics on the various types of travel modes have not been included, given the lack of availability of this information for all modes, the number of assumptions required, and the time required to generate the data.

Association of Environmental Professionals

1. Comment: The role the freeway system has played in development should be included in the setting (Section 5.23); the proposed Route 138 and 48 freeways could be growth-inducing. Transit alternatives other than the bus should be discussed; the controversy surrounding completion of the Long Beach Freeway should be mentioned; the plan's provision for deep draft vessel facilities at the ports may result in the release of heavy metals.

Response: A brief description of the role the freeways have played in development has been included in the Final EIR (Section 5.23). With regard to the proposed Route 138 and 48 Freeways, these routes

are generally considered to be by-pass freeways and are not considered to be growth-inducing. They will serve traffic traveling between central and northern California and points east. This information has been incorporated into the Final EIR (Section 6.23). With reference to the completion of the Long Beach Freeway, the Final EIR has been revised to indicate that there is controversy surrounding completion of the freeway in the South Pasadena area, on the basis of the community disruption generated. Finally, the Final EIR has also been revised to indicate that the dredging of the harbors may result in the release of heavy metals which could adversely affect marine life. With regard to transportation alternatives to the bus, see response to comment #2 by the Center for Law in the Public Interest under Alternatives to the Proposed Project.

Coalition For Los Angeles County Planning In the Public Interest

1. Comment: The EIR does not discuss alternative modes of travel if trip changes occur due to rapidly increasing fuel costs, energy shortages or demands for air quality improvement.

Response: The EIR discusses impacts related to the plan, and alternatives to the plan, rather than the impacts of other events which may occur independently of the plan.

2. Comment: The EIR does not adequately address the environmental impacts of the automobile in terms of land use, air quality, noise and safety issues, nor does it offer sufficient mitigation measures, nor alternative transportation options in sufficient detail.

Response: As indicated in the Draft EIR, the plan emphasizes a concentrated form of development which is reflected in the land use pattern and the air quality analysis. The VMT resulting from

this land use pattern is discussed in Section 6.23 of the Final EIR, the air quality analysis in Section 6.6. Transportation noise is discussed in Section 6.5. Safety issues are not discussed, given the lack of measureable impact at the generalized level of the plan. Mitigation measures are also provided in Section 6.23 of the Final EIR. See response to comment #2 by the Center for Law in the Public Interest under Alternatives To The Proposed Project with regard to the consideration of alternative transportation options (an explanation of the level at which alternatives were considered is provided), as well as Section 6.23 in the Final EIR.

3. Comment: The EIR does not address the environmental problems that can occur when trip behavior is altered by land use changes.

Response: The EIR addresses the transportation-related impacts of the plan.

4. Comment: What is the impact of roads to serve urban and rural areas (the Arterial Highways Network and Master Plan of Highways) especially in hillside areas where hillside management regulations do not apply? The growth-inducement issues must be addressed in the EIR.

Response: See response to comment #2 by Citizens Planning Council above. Growth-inducement is addressed in Section 13.0 of the Draft and Final EIR.

5. Comment: The increase in VMT, clusters of congestion and shifting travel patterns caused by changes flowing from local plans must be measured in the EIR.

Response: See response to comment #2 by Malibu Township Council above and Section 6.23 of the Final EIR.

6. Comment: The EIR must reflect the alternatives that flow from the communications impact on transportation.

Response: This is not considered to be an impact of the general plan, and thus is not included in the EIR.

Liquid/Solid Waste Disposal

Citizens Planning Council

1. Comment: Specific minor suggestions relating to Map 5-18 and the discussion of recycling on page 5-106 were made.

Response: These suggestions have been incorporated into the Setting (Section 5.24) of the Final EIR.

State of California Department of Water Resources

1. Comment: Puente Hills should not be shown as a Class I landfill site on the map on page 5-107.

Response: The map has been corrected in the Final EIR.

Coalition For Los Angeles County Planning In the Public Interest

1. Comment: The EIR is silent regarding recent EPA and State policy decisions which require that Federal/State assistance in municipal wastewater facility construction grants not be in conflict with air quality goals.

Response: The Final EIR has been amended to address this point (see Section 6.7).

Association of Environmental Professionals

1. Comment: The county's liquid waste disposal system could accommodate the plan's additional population only if Hyperion and JWPCP continue to dispose of primary sludge in the ocean, and the additional sludge generated may have an adverse impact on the ocean.

Response: See the discussion of water quality in Section 6.7 of the Final EIR. JWPCP no longer discharges sludge into the ocean — it is buried in landfills.

The "208" and IA/OMA studies described in the Final EIR are to make recommendations on ocean discharge of sludge. The completion of these studies will allow a more accurate assessment of the effects of sludge on ocean waters. It is true that the Hyperion plant would have difficulty in disposing of its sludge using sanitary landfills, as it currently has no location where sludge could be dried before transport to landfills.

III. COMMENTS ON SECTIONS 7.0 - 10.0 IN THE DRAFT EIR

Significant Adverse Effects Which Cannot Be Avoided (Section 7.0)

Malibu Township Council

1. Comment: This section is not adequate, in that it ignores rural and hillside development.

Response: Rural and hillside development are addressed in the Final EIR (see Sections 3.2 and 6.13). Those effects considered to be significant are addressed in Section 7.0 and the "Resolution of the Regional Planning Commission of the County of Los Angeles Approving a Major Revision to the General Plan of Los Angeles County" (March 2, 1979).

2. Comment: We disagree that impacts related to geologic/seismic, soils, flood/runoff and fire hazards can to a large extent be mitigated, and that impacts on air quality and energy consumption are not significant.

Response: It is maintained that these impacts can be mitigated to a large extent, as explained in Sections 6.1, 6.2, 6.3 and 6.4. It is acknowledged that there may be a potential significant effect with reference to seismic hazard, unstable slopes, mudflow and fire hazard, as explained in Section 7.0 of the Final EIR and the resolution of the Regional Planning Commission (see response to previous comment). As indicated in Sections 6.6 and 6.11 of the Draft and Final EIR, an overall improvement in air quality and an overall decrease in energy usage is expected over the planning period.

Citizens Planning Council

1. Comment: The cumulative impact of development in rural and hillside areas will be significant.

Response: See response to comment #1 by Malibu Township Council above.

2. Comment: Impacts related to development in hazardous areas cannot be properly mitigated -- avoidance is the best mitigation. In addition, air quality and energy impacts will be significant.

Response: See response to comment #2 by Malibu Township Council above.

Alternatives To The Proposed Project (Sections 8.0, 9.0, 10.0)

Center For Law in the Public Interest

1. Comment: The EIR must contain sound reasons for the recommended course of action and the rejection of alternatives. It should be revised to address Section 21002 of the Public Resources Code which requires that projects not be approved if there are feasible alternatives or feasible mitigation measures which would substantially lessen the significant environmental effects, unless specific economic, social or other considerations make such alternatives or mitigation measures infeasible.

Response: These issues are dealt with in the resolution of the Regional Planning Commission (see response to comment #1 on page 14-44) and the paper "Genesis of the General Plan Policy Direction" by the Department of Regional Planning (see Appendix B).

2. Comment: The possibility of using a lower "overage", particularly in the urban fringe and rural areas, should be addressed in detail in the EIR as an alternative to the plan as proposed.

Response: Sections 9.0 and 10.0 of the Draft EIR dealt with alternatives to the proposed plan. These alternatives were considered by the Regional Planning Commission prior to their recommendation on the plan itself. The alternatives were developed to provide an identification of the range of potential impacts involved, at the early stages of the project. Alternatives to the plan as a whole were considered, rather than alternatives to each individual impact. The alternatives considered did include higher and lower population levels, as well as greater or lesser levels of development at the urban fringes (as opposed to older developed areas), in addition to several other aspects. With reference to the land demand/land supply question, see Appendix C.

3. Comment: The EIR should address eight additional alternatives in detail, including (1) making planning area population projection allocations more in line with stated policies and with S.C.A.G. and L.A. City figures; (2) matching population projections more closely to land use designations, so that a recommended SCAG maximum of 25% overage on a planning-area-by-planning-area basis is followed; (3) incorporating a phasing mechanism into the plan; (4) revising the land use designations so that no urban expansion or infill is permitted in hazard/natural resource areas, and particularly so that no higher than "low" residential densities are permitted; (5) developing more restrictive resource management standards/densities; (6) scaling back the 73,400 acres of urban expansion to the projected demand figure of 38,000 acres; (7) utilizing higher residential land use densities and a greater emphasis on multiple dwelling units particularly in the urban fringe planning areas; and (8) revising the persons per dwelling unit assumption to be more in keeping with the SCAG and L.A. City projections, thus requiring fewer new dwelling units.

Response: Four project-level alternatives to the plan were considered (see response to comment #2 above -- previous comment). With regard to the methodology used in the plan's population and land use allocations, see Appendix A -- "Methodology For Developing Year 2000 Population, Housing, Employment and Land Use Projections For the Revised Los Angeles County General Plan". The reasons for using the mapped "supply" figure rather than the lower "demand" figure are explained in Section 3.2 of the Final EIR. The plan capacity issue is discussed in Appendix C. The plan's projected persons per dwelling unit figure is explained in the response to comment #6 of the Center for Law in the Public Interest under "General Comments". As indicated, the projected persons per dwelling unit figure is in agreement with SCAG's projection.

4. Comment: The supporting facts and data underlying the Department of Regional Planning's report "Methodology for Developing Alternative Projections" of March 11, 1977, as well as the report itself, should be included in the EIR.

Response: This report, along with the supporting data on which it is based, are on file in the General Policies Section at the Department of Regional Planning. Briefly, the report documents the major steps taken in the preparation of projections for the four countywide general plan alternatives, and identifies major underlying assumptions. Projections were made on a countywide basis for population, housing, employment and land use, and were allocated to the 14 planning areas. A description of the detailed methodological steps taken in developing the alternative forecasts is included in the report.

Citizens Planning Council

1. Comment: With reference to Section 9.0 (No Project Alternative), the overage comparison between the plan and EDG does not make sense -- the EDG overage is given as 10 percent (compared to the plan's 18 percent). But the EDG was much more restrictive, accommodating 1.5 million more people on 17,000 fewer acres of land.

Response: The comparison between the EDG and recommended plan has been deleted from Section 9.0 in the Final EIR. Since the EDG did not establish densities, it was felt that this comparison could not legitimately be made. The "overage" issue is discussed in Appendix C of the Final EIR.

2. Comment: Section 10.0 (Comparative Impact Analysis of Alternatives) should include data from the EDG and the proposed plan, in order to be useful for comparison purposes.

Response: A general comparison of the EDG and the proposed plan -- in terms of population and overage, areas of projected growth, protection of sensitive areas, and services -- was included in Section 9.0 - No Project Alternative - of the Draft EIR. Because the EDG did not establish density standards, it would be difficult and speculative to provide a more detailed comparison to the proposed plan. With regard to a comparison of the plan with the four alternatives discussed in Section 10.0, this was not considered practical or of value, given the fact that the four alternatives were analyzed at a different level of detail prior to the time the plan direction was chosen. The analysis of the alternatives provided an indication of the range of potential impacts, given the different population levels and land use patterns (see Section 10.0).

Malibu Township Council

1. Comment: The overage comparison with the EDG is not correct; the EDG assumed a greater population growth and higher total population, all with less urbanized land. Also, the comparison of EDG and plan errors in neglecting the development in rural hillside areas allowed in the plan.

Response: See response to comment #1 by Citizens Planning Council above.

Coalition For Los Angeles County Planning In the Public Interest

1. Comment: The EIR does not adequately cover alternatives to urban expansion onto unstable slopes, existing agricultural land or hillside land, the alternatives of separating unincorporated areas population from population in cities, or of adding 25 percent overage to the existing unincorporated population of 1,000,000 to represent an overage of 1,250,000, or of allocating land uses and determining overage on a subregional basis, are not covered.

Response: See response to comment #2 and 3 by the Center for Law in the Public Interest above. The Final EIR has been revised to reflect effects on hazards/resources within unincorporated as opposed to incorporated areas.

2. Comment: The EIR should include a discussion of alternative methods for population projection, land use allocation and determining overage.

Response: See responses to comments #2 and 3 by the Center For Law in the Public Interest above on pages 14-46 and 14-47.

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APPENDIX A
METHODOLOGY FOR DEVELOPING YEAR 2000
POPULATION, HOUSING, EMPLOYMENT AND LAND USE PROJECTIONS
FOR THE REVISED LOS ANGELES COUNTY GENERAL PLAN

METHODOLOGY FOR DEVELOPING YEAR 2000

POPULATION, HOUSING, EMPLOYMENT AND LAND USE PROJECTIONS

FOR THE REVISED LOS ANGELES COUNTY GENERAL PLAN

A. Introduction

Briefly summarized is the methodology used to develop the population, housing, employment and land use projections. Identified are the general approach, principles and methodologies used to develop the projections contained in the Preliminary General Plan (January, 1978). Also discussed are the subsequent revisions made to update these projections and derive those contained in the Proposed General Plan (March, 1979).

B. General Approach and Principles

This section reviews the general principles applied in developing the projections.

1. Projections are Based on an Analysis of Alternatives

Projections for the General Plan are based on an analysis of alternative projections which bracketed the various growth possibilities. For example, an analysis of alternative population projections indicated a population growth range of 7 to 8 million people by the year 2000.

2. Projections are Population Based

Population projections are the foundation of the various general plan forecasts. Population projections were

developed first, with housing and employment projections developed next. Finally, land use projections were prepared, using the foundation provided by the housing and employment forecasts.

3. "Tow Down" Approach (Progression from the General to the Specific)

For the population, housing and employment projections, estimates were developed first for the entire County and then allocated to specific planning areas.

4. "Bottom Up" Approach (Progression from the Specific to the General)

With regard to land use, projections were developed first by planning areas and subsequently aggregated to develop the countywide projection.

5. Policy Modification of Extrapolated Trends

Preparation of the projections involved the extrapolation of recent and long term trends into the future and their modification by proposed plan policies.

C. Summary of Specific Methodologies

This section summarizes specific methodologies used to develop population, housing, employment and land use projections.

1. Population

A two-phased approach was used in developing population projections for the County. The first phase involved the preparation of a countywide projection for the year 2000. The second phase involved allocation of the countywide

forecast to the 14 planning areas.

Countywide projections were developed through the use of a "cohort survival" model (the Chevan Model). This model was used to generate a countywide estimate by applying projections of birth, death and migration rates to the benchmark (1975) population. Birth and death rates are extensions of recent trends. Assumed migration rates reflect the policy of encouraging middle income families to remain in Los Angeles County.

The allocation of the year 2000 countywide projection to the 14 planning areas was prepared by a DRP staff team after considering recent trends in the planning areas, land capability, service availability and proposed plan policy. The decision process involved the application of proposed plan policy to a supply/demand model with suitable land and available services representing the supply factor, and growth trends reflecting demand factors. Allocations to planning areas thus represent varying degrees of policy intervention in the supply/demand (market) situation existing within each planning area.

2. Housing

Countywide housing projections were developed initially and then allocated to planning areas in a manner analogous to the development of population projections.

Total county housing units projected for the year 2000 were estimated by applying an assumed average number of persons per dwelling unit to the year 2000 population. The assumed average persons per dwelling unit was derived by an analysis of trends in household size and their extrapolation into the future. This was supplemented by a projection of household formations in the period up to the year 2000, giving an estimate of the probable demand for housing as implied by the population projection. A comparison of the year 2000 projection with the 1975 housing stock permitted calculation of net change from 1975 to 2000.

A countywide projection of new housing construction was also developed. This was derived by projecting demolitions to the year 2000, based on an extrapolation of recent trends modified by proposed plan policy. Demolitions were added to net change from 1975 to 2000 to estimate new construction.

The allocation of countywide projections to planning areas was carried out by a staff team in a manner similar to the subarea allocation of population. The projection of total units by type, housing construction and housing demolitions was allocated to planning areas after analyzing trends, land capability, service system capacity and applying proposed plan policy. An analysis of the trends indicated the demand factors, while capability and service availability

analysis indicated the supply of suitable sites for housing. The imposition of policy was essentially an intervention in a supply/demand (market) situation.

3. Employment Projections

As in the case of population and housing projections, employment projections were initially developed for the County and then allocated to planning areas. Projected labor force participation was developed by applying assumptions of future male and female labor force participation rates to projected population. The assumed participation rates were based on an analysis of recent trends and their extrapolation. The projected labor force represents the supply of labor. Future unemployment was projected by analyzing and extrapolating trends and modifying this by the application of proposed plan policy. The total number of jobs (demand for labor) was projected in the same manner as unemployment, i.e., policy modification of anticipated trends.

The allocation of jobs to planning areas was based on an analysis of trends (indicating demand for jobs) and an analysis of the supply of sites (locations) suitable for the location of jobs. This was performed by a staff team that used proposed plan policy to modify the supply/demand factors identified above.

4. Land Use

Land use projections were developed for the various planning areas and aggregated to derive a countywide estimate. Projections of residential land demand were based on the application of anticipated future housing densities to projected housing units by type. The projections of commercial and industrial land were derived by the application of future worker densities to projections of jobs. Anticipated residential densities and worker densities were estimated from an analysis of trends modified by policy. Open space projections were based on an examination of open space opportunities and proposals in relation to the existing pattern of land use and trends in the population and urban growth. Agricultural land projections were derived from an analysis of trends as modified by policy.

Land use projections were developed for the three major development processes: recycling, infilling and new urban expansion. They were as follow:

- a) Recycling was estimated on the basis of demolition and rebuilding. Demolitions (mainly residential demolitions) are based on trends as modified by proposed plan policy. Rebuilding on cleared land is governed largely by policy.

- b) Infilling of vacant lands is based partly on the available supply of suitable land and the local demand for land modified by proposed plan policy.
- c) New urban expansion is based on the balance between the supply of suitable, accessible land, and the demand for land. The supply/demand situation was modified in accordance with proposed plan policy.

D. Update of Projections from the Preliminary General Plan

The projections for the Preliminary General Plan, using the aforementioned methodology, were based largely on trend data taken from the 1970 - 1975 period. The projections were subsequently revised to reflect more up-to-date trend data from the 1975 - 1978 period and ongoing public and staff reviews. In addition, limited modifications were made to the projections to ensure consistency with newly developed growth forecasts used for the Regional Air Quality and "208" Water Quality Plans. As a result, the population figures contained in the Proposed General Plan were increased to 7,808,000.

The revised population projections in the Proposed Plan reflect an overall 11% increase in countywide population from 1975 to 2000; whereas the Preliminary General Plan indicated a growth of 10%. This change was made to reflect an update in the fertility birth rates, from the 1975 estimate of 1.92, used in the Preliminary Plan to a 1976 estimate of

2.00, used in the Proposed Plan. The allocation of the projection increases were made in a manner similar to the previously described methodology.

The housing projections were increased to reflect additional new construction of both low and medium density units. This change was based on the population increase as well as an updated figure for the average household size. Also the distribution among the number of units requiring routine maintenance, heavy maintenance and rehabilitation was shifted, based on new information on housing conditions and the concern for preserving a sufficient number of existing units to meet future housing needs.

Finally, employment figures were changed to reflect the need for more jobs derived from the larger resident labor force. Employment by industry type was also modified to reflect the 1975 to 1978 trends.

APPENDIX B
GENESIS OF THE GENERAL PLAN POLICY DIRECTION

GENESIS OF THE GENERAL PLAN POLICY DIRECTION

The alternatives represented four general options for the future of Los Angeles County. They were developed to aid decision making by the Regional Planning Commission on the policy direction for the revised General Plan. Also, the alternatives were designed to bracket a range of realistic growth possibilities or strategies and provide a generalized analysis of the impacts of each policy direction.

The number of alternatives was purposely limited to four to facilitate both public understanding and discussion. Also, it was felt that additional alternatives would only serve to confuse rather than clarify.

The four plan alternatives had two basic dimensions: population level and urban pattern. Two population levels--seven and eight million, and two urban patterns--concentrated and dispersed, were considered. By combining the two population levels and the two urban patterns, four alternatives were derived and designated as 'A', 'B', 'C' and 'D'.

Alternative A emphasized a stable population and a continuation of a traditional low density urban development. Similarly, Alternative B emphasized a stable population, but in a more concentrated pattern of urban development with the filling in of existing suburban areas and rehabilitation of older urban areas. Alternative C represented moderate population growth in a dispersed development pattern, while Alternative D considered the same population growth projection in a more concentrated pattern of urban development.

Each of the four alternatives was built upon an analysis of the interrelationship between population, land use, the economy,

natural resources, the environment, transportation and services. The alternatives allowed for the testing of these interrelationships and compared their potential impacts (i.e., continuing population and economic growth versus maintenance of the existing population and employment levels, concentration of new development in or near existing urban areas versus low density accommodation of new development in fringe and dispersed areas).

However, it should be noted that from the very beginning of the alternatives process, there was a recognition that the revised General Plan would not necessarily adhere to any one alternative in its original form. The alternatives were always viewed as bracketing a range of options from which a preferred policy direction could be determined. In fact, the tabloid, "Alternative Directions for Los Angeles County", "... recognized that no one is likely to be entirely satisfied with any one of the four alternative directions..." (p. 5). Furthermore, the report suggested means by which the alternatives could be altered to produce a more acceptable approach, including elaborating on or varying from a given alternative, or combining different features of two or more of the alternatives.

It was anticipated that actual selection or development of a policy direction would be based on the insights derived from assessment of the impacts of the alternatives. The assessment process involved an analysis of the four alternatives to test their reliability and feasibility, impact analysis studies conducted with the aid of consultants and a series of discussions and reviews by the staff and public.

The underlying basis of the analysis was a comparative evaluation, using the following general criteria:

- The relative effectiveness in meeting needs;
- The relative social, economic and environmental impacts;
- The public preferences among the alternatives; and,
- The feasibility of implementing the alternatives.

These evaluations are contained in several departmental working papers and documents, including "Alternative Directions for Los Angeles", (Tabloid, Los Angeles, December, 1976) and, "Impact Analysis of General Plan Alternatives, Volumes I, II and III (Report prepared for Los Angeles County Department of Regional Planning by McDonald and Grefe, Inc.; Sedway/Cooke and others, San Francisco, 1977). As indicated in these studies, the alternatives were reviewed singly, by evaluating how each alternative would impact on the criteria; and comparatively, in terms of the benefits to be derived from the selection of one alternative over another. A summary of these evaluations were subsequently submitted as background information to the Regional Planning Commission on February 15, 1977 in a report entitled, "Shaping the Future of Los Angeles County".

In summary, the Commission's final decision on the policy direction and subsequent guidelines to be used in preparation of the General Plan were based on:

- The preparation of the "Alternative Directions for Los Angeles County" report, and the analysis of the responses of several hundred people received after a wide distribution of the report;
- Discussions of the report with advisory groups, cities, regional and state agencies and the public at large through "town meetings" held throughout the County;
- An opinion survey of a randomly selected sample of County residents;
- The comparative evaluation of the plan alternatives;
- An evaluation of city and unincorporated area and community planning programs; and,
- Public testimony from citizens and representatives of public agencies and other groups.

After having considered all of the above input, the Commission found:

- An apparent consensus that a more concentrated pattern of urban development focused on suitable target areas will best meet the County's critical needs and reduce adverse impacts;
- Substantial evidence that a strengthened local economy is needed to stimulate private reinvestment in deteriorating areas as well as other parts of the County;
- Preference for a population target for the County, predicated on natural population increase (i.e., a policy which neither promotes in-migration nor forces out-migration).
- A strong desire on the part of local communities that their plans be recognized in the Countywide General Plan; and
- General support for protecting the environment, including the conservation of water, energy and air quality, to provide an improved quality of life.

Thus, the Commission established on March 16, 1977 a policy direction to promote a more concentrated urban pattern of development focused in suitable locations, to accept moderate population growth resulting from natural increase, to strengthen the economy and to slow out-migration from existing urban areas.

The Commission's policy direction and guidelines were within the bounds specified by the four plan alternatives and, indeed, represented a mixture of the four alternative strategies. As with the alternatives, the policy direction focused on the level and distribution of population growth and the pattern of urban development. However, the Commission did not reach a consensus on a specific population target for the year 2000; instead, it directed that population projections be based on natural population increase and the reversal of the then prevailing trend of population losses from the County.

The Commission's position on urban form centered on concentrating and focusing new urban and outlying development into suitable and specifically defined target areas throughout the County. This aspect of the policy direction represents a combination of the four alternatives. It attempts to ensure the revitalization of older urban areas while recognizing current urban dispersal trends by allowing growth, in a contained manner, in urban fringe areas. Also, the concentration of new development was specified to encourage more efficient utilization of public services and facilities, reduce energy consumption and improve air and water quality.

Consequently, the development strategy for existing urban areas emphasizes the infilling of bypassed vacant parcels, extensive rehabilitation and selective recycling of older deteriorated urban areas to more intensive uses. With regard to urban fringe areas, the strategy is to direct urban development to suitable non-urban lands, particularly those already provided with, or in close proximity to, urban services. In combination, these complementary strategies are designed to effectively reverse such existing trends as: older area deterioration, abandonment and the by-passing of buildable urbanized areas.

A complete statement of the Commission's policy direction can be found in the document entitled: "Resolution of the Regional Planning Commission of the County of Los Angeles Establishing Policy Direction for the Revised General Plan", (Working Paper, Los Angeles, March 16, 1977).

APPENDIX C
RESPONSE TO COMMENTS PERTAINING TO THE CONCEPT OF
PLAN CAPACITY/OVERAGE AS SET FORTH IN THE JANUARY 1978
PRELIMINARY GENERAL PLAN

I. Introduction & Summary

The following discussion constitutes a response to testimony submitted during public hearings on the Preliminary General Plan relative to the concept of Effective Plan Capacity. Broadly outlined, the content of this discussion is as follows.

- Definitions of terms and phrases utilized throughout the following materials are provided to assist the reader in understanding the concept discussed.
- A summary of testimony submitted regarding the concept of Effective Plan Capacity is provided.
- Based on a careful re-evaluation, major deficiencies in the concept of plan capacity are identified and discussed. As a result of these deficiencies, it is concluded that the population-oriented plan capacity concept does not adequately serve its intended objective, and is not applicable on a countywide basis.
- Recognizing the underlying objective of plan capacity analysis, and its relationship to State planning law, an alternative concept is suggested involving a comparative analysis of plan policies relative to projected land demand vis-a-vis allocated land supply. (However, it is noted that even this analysis is limited by the probable error associated with making long-term projections of demand.)
- The relationship between projected land demands and allocated land supplies for selected major planning areas within the County is presented and discussed.
- Finally, identified land demand/supply relationships are discussed within the context of proposed Plan policies addressing future growth and development within Los Angeles County. Such recommended policies and action programs are designed to insure that; (1) future development occurs in a manner consistent with stated plan policies and objectives; (2) social, economic, and environmental costs associated with new urban expansion are minimized; and (3) the existing urban service and facility infrastructure created as a result of past public and private investment is efficiently utilized; thus, premature (unnecessary) conversion of open space lands to urban use is avoided.

II. Definitions

The following definitions are provided in order to clarify the meaning of terms and phrases utilized in this response to testimony.

Plan Capacity

Plan Capacity, sometimes referred to as Population Holding Capacity, is defined as the total number of people who could be accommodated within Los Angeles County (i.e., housed, employed, etc.) should all lands be developed in accordance with the use type and intensity parameters established by General Plan Policy.

Two variations of this term include Maximum Theoretical Capacity and Effective Plan Capacity. They are defined as follows.

Maximum Theoretical Capacity

Maximum Theoretical Capacity is defined as the total number of people who could be accommodated within Los Angeles County should all lands be developed to the maximum intensity authorized by General Plan policy.

Effective Plan Capacity

Effective Plan Capacity is defined as the total number of people who could be accommodated within Los Angeles County should all lands be developed at an intensity estimated on the basis of current conditions, development practices and trends. The Effective Plan Capacity assumes an overall intensity of development less-than-the-maximum authorized by plan policy.

PHEL Projections

This term refers to quantified projections of future Population, Housing, and Employment levels, and projected Land acreage necessary to accommodate anticipated growth. Such projections constitute an estimate of future conditions and growth levels based upon past experience, and assumptions about future trends as influenced by proposed Plan policies.

Overage

Overage, sometimes referred to as Excess Plan Capacity, is defined as the difference between the population level anticipated or projected by General Plan policy, and the Plan's population holding capacity as calculated on either a Maximum Theoretical or Effective basis.

III. Summary of Testimony

During the public hearings held on the Preliminary General Plan, testimony was submitted regarding alleged deficiencies in the concept of Effective Plan Capacity/Overage as presented in the countywide Land Use Element. According to the testimony and subsequent written statements, the concept was deficient for three primary reasons. First, the projected population growth used as a baseline for calculating overage was said to be inflated and without support. Second, the overall concept of Effective Plan Capacity was characterized as little more than speculation as to a "less-than-maximum" population holding capacity, and as such, wholly unacceptable. It was contended that instead, the concept should address and disclose the maximum theoretical holding capacity authorized by the Plan. Finally, the methodology for calculating overage, i.e., measuring the difference between the projected year 2000 population and the effective Plan holding capacity was considered faulty. It was suggested that the appropriate method of calculating overage was to measure the difference between the current population level and the maximum theoretical holding capacity of the Plan, and to compare this difference with anticipated or projected population growth.

III. Response to Testimony

As a result of testimony submitted at public hearings, as well as comments and suggestions offered by the Regional Planning Commission during a series of General Plan workshops, the overall concept of Plan Capacity was carefully re-evaluated. Serious consideration was given to the relevance of capacity and overage statistics generated, as well as to the

fundamental purpose of developing such measurements. As a result of this re-evaluation, it was apparent that some of the criticism voiced had merit. It was equally apparent however, that alternative Plan capacity/overage concepts offered in testimony were themselves subject to similar deficiencies.

V. Review of the Plan Capacity/Overage Concept

As suggested in testimony offered by the Center for Law in the Public Interest, "....the concept of "overage" provides an effective comparison between the proposed available (but currently unused) supply of residential land uses designated by the plan and the potential new demand to be placed upon that supply by projected population increases." When viewed from this perspective, the concept of capacity/overage is promoted as an analytical device for comparing land demands based on projected population, housing, and employment levels, vis-a-vis land supply as reflected on Plan policy maps allocating (or making available) land for various use types and intensities. Such analysis should clearly identify the relationship between textual policy statements and projections, and mapped land use and development policies of the Plan.

The underlying objective of such a policy analysis can be related to State planning law. More specifically, this objective is relevant in terms of those provisions of planning law requiring internal consistency among both mapped and textual policies, and in terms of the Open Space Lands Act as it related to the premature (unneeded) conversion of open space lands to urban use. However, while the validity of the objective is acknowledged, the usefulness of the capacity/overage concept within this context is

questionable. Moreover, the effectiveness of the concept in terms of analyzing land demands vis-a-vis land supply, and relating this analysis to State planning law, is diminished by three characteristic flaws:

- 1) The concept's focus on the comparison of potential population levels, rather than the analysis of land demand vs. supply;
- 2) The inherent difficulties in a comparison of policy related population assumptions (projections) with non-policy related population assumptions (capacity); and
- 3) The methodological problems of calculating and combining the potential holding capacity of all lands within the County, i.e., open space lands not proposed for future urban use, lands already developed or substantially urbanized, and currently vacant lands proposed for future urban development.

These conceptual deficiencies are discussed below.

1) If a fundamental purpose for conducting the plan capacity/overage analysis is to compare projected land demand with allocated land supply, the 'population oriented' capacity analysis is at best an indirect procedure. Population statistics produced through such an exercise are not only of questionable reliability, but are difficult to relate to the provisions of State planning law. For example, population statistics in themselves indicate little about potential plan impacts relative to the premature conversion of open space lands. Instead, total population capacity figures must be reduced to the underlying assumptions identifying anticipated household size and formation trends, estimated number of housing units needed, assumed residential density patterns, and the resulting quantity of new lands consumed for urban use. Depending on the nature of such independent variables, a large total capacity figure may have little or no relevance within the context of the Open Space Lands Act.

2) The population capacity concept's usefulness in terms of analyzing the internal consistency of Plan policies is also suspect due to the inherent comparison of policy based and non-policy based assumptions. To expand upon this dichotomy it is necessary to clarify the 'policy' orientation of General Plan projections, and contrast them with the speculative nature of capacity/overage calculations.

During the early phases of Plan preparation, the Regional Planning Commission considered alternative growth parameters to guide formulation of more specific General Plan policies. As a result of this analysis, the Commission adopted a position of neither forcing the out-migration of County residents, nor encouraging the in-migration of new residents. Instead, the Commission established a strategy of accepting (planning for) moderate population growth equivalent to natural increase, as an underlying tenet of the Plan. This position is reflected in the Population Growth and Distribution policies set forth in the first chapter of the General Plan.

Based upon this policy direction, population projections were developed for the year 2000. These projections reflected an extrapolation of current trends and conditions relative to population characteristics, fertility rates, migration, etc., as modified by Plan policies addressing environmental quality, urban form, and service availability. Essentially, it is the proposed policy of Los Angeles County to plan for and allocate the necessary public resources to accommodate a year 2000 population of approximately 7.8 million people. Utilizing a series of assumptions relative to residential density patterns, employment levels by type, and associated land acreage requirements, this policy based population

projection was translated into Housing, Employment, and Land Use projections.*

Unlike the PHEL projections of the countywide General Plan, population capacity figures are not rooted in, or derived from an extrapolation of Plan policy. In fact, a number of assumptions utilized in calculating capacity and overage figures are themselves contrary to articulated Plan policies. For example, it is not the intent of General Plan policy that all lands identified for possible future urban use will be provided with the public services and facilities necessary to support urbanization by the year 2000. Nor is it the policy of the Plan to authorize development of all such lands at the maximum intensity prescribed. Furthermore, the Plan does not anticipate, promote, or authorize development of non-urban lands within the County without concern as to the presence of significant natural resources or identified threats to public health and safety.

In short, the assumptions underlying plan capacity calculations do not reflect the policy intent of the Plan, but rather represent speculation as to future growth and development trends should the policies of the Plan be largely ignored. Even within this context, the reality, or probability of such speculative assumptions is suspect, particularly when viewed in light of current and anticipated market trends.

*It should be noted here that due to the difficulties associated with developing long term population, housing, employment and land use projections, and the uncertainty associated with such projections, figures generated should not be viewed as absolute. (See the discussion of the limitations of making long-term projections in the Technical Appendix of the Plan) Thus, any analysis of plan capacity is subject to error regardless of the methodology employed, because it presumes that the future can be accurately predicted.

Due to the policy/non-policy dichotomy inherent in the comparison of policy projections and capacity calculations, the resulting product, i.e. "overage", appears to be an argumentative and inappropriate basis for gauging the internal consistency of Plan policies. This overage argument infers that in all instances, mapped land use policy will override and render moot all other policies of the Plan. This is not the case, and as is indicated throughout the Plan document, policy maps are to be viewed, interpreted, and applied within the overall context of General Plan goals and objectives.

3) The practice of calculating and combining the holding capacity of all urban, rural, and open space lands within the County obscures the relevancy of the plan capacity/overage analysis in terms of both "internal consistency" and "premature conversion" aspects of State planning law. With regard to designated non-urban lands, the Plan does not promote premature conversion to urban use. The Plan instead states unequivocally, that such lands are not designated for, or scheduled to receive services and facilities necessary to support urbanization. While the Plan does set forth general standards and conditions identifying types of development which may be appropriate within such areas, capacity and overage figures for non-urban areas are, to a large degree, driven by the total acreage involved.

Similar difficulties are encountered when applying the concept of capacity/overage to existing urban areas. Within large portions of the presently urbanized area, General Plan policy calls for "maintenance" and "rehabilitation" strategies. Since the Plan does not foresee or advocate significant intensification of land use and development patterns

within such areas, effective plan capacity figures are dictated by existing development patterns, and maximum theoretical capacity calculations are again counter-policy, and must be viewed as specious.

Within urban areas identified for "infilling" or "recycling" the Plan does envision and promote intensification of existing development patterns. However, rather than indicating potential inconsistencies among Plan policies, the somewhat higher capacity figures which may be associated with such areas are in fact supportive of, and consistent with Plan policies addressing the need to revitalize older urban communities, to make more efficient use of the existing urban infrastructure, and to encourage a more concentrated urban form. Of course, within existing urban areas, the concept of "premature conversion" has little relevance regardless of the maintenance, revitalization, or intensification strategy established by Plan policy.

VI. Summary of Findings

As the above discussion has attempted to suggest, the re-evaluation of the Effective Plan Capacity concept has led to two primary conclusions. First, the underlying objective of the plan capacity analysis, i.e., the comparative analysis of projected land demands vis-a-vis allocated land supply, has validity and can be related to State planning laws governing the formulation of long range planning policy — although it should be noted that plan capacity by itself is neither a necessary nor sufficient test to determine Plan validity. Second, the concept of plan capacity as an analytical device for comparing land demands with land supply, is at best indirect and argumentative. Its usefulness is limited by the undue focus on estimated population levels, the inherent comparison

of policy based and non-policy based assumptions, and the failure to identify and focus on those forms of land use and development policy relevant to the provisions of State law addressing "internal consistency" and "premature conversion of open space lands".

It should be noted that these conclusions are based upon an evaluation of plan capacity analysis within the context of the countywide General Plan. Within another context, population capacity analysis may be applicable and serve a useful purpose. For example, jurisdictions establishing definitive population growth policies due to the presence of severe environmental constraints or the inability to adequately provide necessary urban services, may elect to conduct population capacity analysis to assure that proposed planning policies will not aggravate existing problems. This application, however, is not appropriate on a countywide basis within Los Angeles County.

VII. An Alternative Approach

Recognizing the limitations of land demand/supply policy analysis, an alternative method of evaluating and comparing proposed Plan policies, within the context of State planning law, has been developed. The revised methodology avoids most of the conceptual pitfalls associated with population capacity analysis by directly focusing on the land use-related policies of the Plan, i.e., textual statements, statistical projections and policy maps. However, the analysis still suffers from the difficulties of making accurate long term projections of land demand.

The following discussion constitutes an analysis of urban lands allocated by mapped policy in excess of projected demand. It is primarily focused on designated Urban Expansion Areas, and does not specifically deal with existing urban areas where Maintenance, Infill and Revitalization policies are proposed.* Neither does it address Rural Areas where urbanization is not authorized nor projected to occur. The discussion of urban land/supply will not then address the County as a single entity, i.e., all urban and rural areas, but will rather focus on those areas where a significant conversion of vacant lands to urban use is anticipated. This includes five (5) major Planning Areas: 1) East San Gabriel Valley; 2) Malibu/Santa Monica Mountains; 3) Santa Clarita Valley; 4) San Fernando; and 5) Antelope Valley. Within the remaining nine Planning areas covering Los Angeles County, little or no future urban expansion lands have been allocated.

VIII. Urban Land Demand/Supply Analysis

Presented below is the urban land demand/supply analysis for each of the five major planning areas identified. The presentation format includes 1) an identification of allocated (mapped) urban expansion acreage by land use type; 2) an identification of the projected demand for such acreage; 3) an identification of the difference between demand and supply acreage; 4) an identification of adjustments that must be made due to differences between mapping and projection methodologies; and 5) an identification of the relationship between projected demands and allocated supplies. Each planning area analysis is followed by a

*The urban land demand/supply analysis indirectly recognizes future development within presently urbanized areas in that projected demand for new urban expansion areas was developed in concern with projected growth levels for urban infill and revitalization areas.

discussion of specific factors influencing the identified demand/supply relationship. Finally, identified relationships are discussed within the context of plan policies addressing the regulation of future growth and development.

ANALYSIS OF URBAN LAND DEMAND/SUPPLY: East San Gabriel Valley
Planning Area

Allocated Urban Expansion by Use Type	Projected Land Demand by Use Type	Difference	Adjustment	Relationship
Low & Low/Medium Density Residential 8,300 acres 69% within Incorporated Cities 31% within Unincorporated Communities	Low Density Residential 4,600 acres (S.F. & Duplex)	+3,700 acres	Less 300 acres of public facilities	Allocated supply exceeds projected demand by 3,400 acres - 74% over-allocation
Medium & High Density Residential 400 acres 25% within Incorporated Cities 75% within Unincorporated Communities	Medium Density Residential 400 acres (Mult Res.)	0 acres	(none)	Allocated supply reflects projected demand
Major Commercial 800 acres 56% within Incorporated Cities 44% within Unincorporated Communities	Commercial 400 acres	+400 acres	(none)	Allocated supply exceeds projected demand by 400 acres 100% over-allocation
Major Industrial 1,400 acres 100% within Incorporated Cities	Industrial 700 acres	+700 acres	(none)	Allocated supply exceeds projected demand by 700 acres 100% over-allocation
Public & Semi-Public Facilities 0 acres	Public Services & Facilities 300 acres	-300 acres	Unmapped public facilities allocated to lower density residential classifications	Allocated supply reflects projected demand

ANALYSIS OF URBAN LAND DEMAND/SUPPLY: East San Gabriel Valley
 Planning Area

Allocated Urban Expansion by Use Type	Projected Land Demand by Use Type	Difference	Adjustment	Relationship
Open Space 0 acres	Urban Open Space 250 acres	-250 acres	Unmapped 250 acres of urban open space absorbed with urban residential, commercial, and industrial expansion areas.	Allocated supply reflects projected demand
All Urban Expansion Lands Allocated 10,900 acres 70% within Incorporated Cities 30% within Unincorporated Communities	Projected demand for new urban land 6,700 acres	+4,200 acres	(N/A)	Allocated supply exceeds projected demand by 4,200 acres 63% over-allocation

*All figures rounded to nearest 50 acres.
 **Totals may not add correctly due to rounding.

FACTORS INFLUENCING DEMAND/SUPPLY RELATIONSHIP: East San Gabriel Valley
Planning Area

As indicated by the preceding analysis, 70% of the total 10,900 acres of allocated urban expansion land is located within incorporated jurisdictions. These lands are designated for future urban growth by adopted city plans covering the areas in question, and in keeping with the Regional Planning Commission's position regarding 'sensitivity' toward locally adopted plans, have been similarly reflected by the proposed countywide General Plan.

With regard to urban expansion lands allocated within unincorporated areas (totaling approximately 3,300 acres), almost all are located within the communities of Hacienda Heights, Rowland Heights, and Diamond Bar. On reviewing the distribution of such urban expansion areas, as reflected on Plan policy maps, it is apparent that the allocated acreage is comprised of lands physically suitable for urban use, surrounded by or immediately adjacent to existing urban development. In addition, much of the allocated area has been committed to urban use by adopted and proposed community plans and previously approved development permits.

The allocation of urban expansion lands within the East San Gabriel Valley Planning Area is in keeping with the general principles as stated in the discussion of urban expansion areas (General Goals and Policies Chapter, Pg. 51);

"The general intent is to delineate major areas within which the process of urban development may take place; to direct development toward areas having appropriate services or where it is most feasible to extend necessary

services; to direct urban growth away from areas with severe potential hazards to the health and welfare of the public; and to protect areas exhibiting high environmental sensitivity to intensive urban development.

Within the framework of population allocations, the expansion areas were defined by use of the following criteria: areas committed for urban development and planned for urban use in the near future including areas shown on city and community plans; areas with existing or programmed services or in close proximity to existing urban areas and service systems; and, unincorporated land suitable for urban use, i.e., without major hazards or significant natural resources."

The allocation of urban expansion lands is further supported by sub-regional growth and development policies specifically addressing the East San Gabriel Valley Planning Area (General Goals and Policies Chapter, Pg. 27). These include the following.

15. Encourage the development of new regional centers in the Diamond Bar and the Glendora/San Dimas areas.
16. Encourage the development of an expanded economic base in the East San Gabriel Valley to provide more jobs within convenient commuting range of residential areas.
17. Focus new urban growth on the most suitable lands near existing urban areas and into by-passed vacant land within the eastern and southern parts of the planning area.

ANALYSIS OF URBAN LAND DEMAND/SUPPLY: Malibu/Santa Monica Mountains
Planning Area

Allocated Urban Expansion by Use Type	Projected Land Demand by Use Type	Difference	Adjustment	Relationship
Low & Low/Medium Density Residential 2,400 acres	Low Density Residential 2,200 acres	+200 acres	Less 200 acres of Public Services & Facilities	Allocated supply reflects projected demand
Medium & High Density Residential 100 acres	Medium Density Residential 100 acres	0 acres	(none)	Allocated supply reflects projected demand
Major Commercial 600 acres	Commercial 300 acres	+300 acres	Less 250 acres of commercial recreation facilities associated with national recreation area and coastal rec. resources	Allocated supply exceeds projected demand by 50 acres 17% over-allocation
Major Industrial 300 acres	Industrial 100 acres	+200 acres	(none)	Allocated supply exceeds projected demand by 200 acres 200% over-allocation
Public & Semi-Public Facilities 0 acres	Public Services & Facilities 200 acres	-200 acres	Unmapped public & semi-public facilities allocated to lower density residential areas	Allocated supply reflects projected demand
Open Space 350 acres	Urban Open Space 700 acres	-350 acres	Unmapped 350 acres of urban open space absorbed within urban residential, commercial and industrial expansion areas	Allocated supply reflects projected demand

ANALYSIS OF URBAN LAND DEMAND/SUPPLY: Malibu/Santa Monica Mountains
Planning Area

Allocated Urban Expansion by Use Type	Projected Land Demand by Use Type	Difference	Adjustment	Relationship
All Urban Expansion Lands Allocated	Projected Demand for New Urban Land		Urban expansion acreage does not include 350 acres of mapped urban open space	Allocated supply exceeds project demand by 150 acres
3,400 acres	3,600 acres	-200 acres		4% over-allocation
(Totally within unincorporated area)				
100% within unincorporated communities				

* All figures rounded to nearest 50 acres.

** Totals may not add correctly due to rounding.

FACTORS INFLUENCING DEMAND/SUPPLY RELATIONSHIP: Malibu/Santa Monica
Mountains Planning Area

As can be seen from the preceding analysis, the projected demand for, and allocated supply of future urban expansion areas in the Malibu/Santa Monica Mountains Planning Area reflect nearly a one-to-one relationship. The limited flexibility provided for future urban development within this Planning Area reflects its status as a significant regional open space and recreational resource area. Such regional resource values are illustrated by local, state and federal involvement in both the coastal Malibu and interior mountain areas.

The apparent imbalance between demand and supply of commercial expansion lands results from the inclusion of 250 acres proposed for commercial recreation use within the Major Commercial land use classification of the countywide Land Use Policy Map. Such commercial recreation areas, specifically delineated on the draft Malibu/Santa Monica Mountains Areawide General Plan, are accessory to and supportive of current and proposed recreation facilities, and are responsive to demands originating at both the local and regional levels. Demand for commercial lands reflected in the Plan's subregional land use projections, on the other hand, are based solely on commercial service needs resulting from projected population growth within the Planning Area.

The over-allocation of industrial lands involves relatively minimal acreage, and is associated with the growing Westlake industrial community. Such industrial lands are distributed in a manner consistent with subregional policies addressing resource preservation.

Finally, the apparent net deficiency in allocated urban expansion areas results from differences between mapping and projection methodologies. Specifically, future urban open space areas reflected on Plan policy maps are not included with urban expansion area acreage calculations. Projected demands for new urban expansion lands do however include urban open space figures. This discrepancy produces the apparent 200-acre under-allocation.

In summary, the allocation of new urban expansion lands within the Malibu/Santa Monica Mountain Planning Area is consistent with Plan policies recognizing the area as a regional recreational and open space asset.

Allocated Urban Expansion by Use Type	Projected Land Demand by Use Type	Difference	Adjustment	Relationship
Low & Low/Medium Density Residential 2,600 acres (Urb Res I & 2)	Low Density Residential 1,700 acres (S.F. & Duplex)	900 acres	Less 50 acres of public services & facilities	Allocated supply exceeds projected demand by 850 acres 50% over-allocation
Medium & High Density Residential 0 acres (Urb Res 3 & 4)	Medium Density Residential 150 acres (Mult Res.)	-150 acres	(Policy maps do not reflect small scale multiple residential use patterns)	Allocated supply is assumed to reflect projected demand
Major Commercial 0 acres	Commercial 50 acres	-50 acres	(Policy maps do not reflect small scale local commercial use patterns)	Allocated supply is assumed to reflect projected demand
Major Industrial 100 acres	Industrial 0 acres	+100 acres	(none)	Allocated supply exceeds projected demand by 100 acres 100% over-allocations
Public & Semi-Public Facilities 0 acres	Public Services & Facilities 50 acres	-50 acres	Unmapped public facilities allocated to lower density residential classifications	Allocated supply reflects projected demand
Open Space 0 acres	Urban Open Space 50 acres	-50 acres	Unmapped 20 acres of urban open space absorbed in urban residential, commercial, and industrial expansion areas	Allocated supply reflected demand

ANALYSIS OF URBAN LAND DEMAND/SUPPLY: San Fernando
 Planning Area

Allocated Urban Expansion by Use Type	Projected Land Demand by Use Type	Difference	Adjustment	Relationship
All Urban Expansion Lands Allocated	Projected Demand for New Urban Lands	700 acres	(N/A)	Allocated supply exceeds projected demand by 700 acres
2,700 acres	2,000 acres			35% over-allocation
<u>100%</u> within Incorporated Cities				

*All figures rounded to nearest 50 acres.

**Totals may not add correctly due to rounding.

FACTORS INFLUENCING DEMAND/SUPPLY RELATIONSHIP: San Fernando Planning Area

The preceding analysis indicates a close relationship between the projected demand for new urban expansion lands within the San Fernando Planning Area and the allocated supply. As is true of other urbanized areas in the southern portion of Los Angeles County, the limited allocation of urban expansion acreage is in part due to the lack of remaining undeveloped lands suitable for future urban development.

It should be further noted that all allocated urban expansion lands are located within the corporate boundaries of the City of Los Angeles, and are designated for future urbanization by adopted citywide and community plans. The countywide General Plan's designation of such lands as urban expansion areas is consistent with the Regional Planning Commission's position regarding 'sensitivity' toward locally adopted plans, as well as countywide planning policies supporting a more concentrated pattern of urban development and more efficient utilization of the existing urban infrastructure.

ANALYSIS OF URBAN LAND DEMAND/SUPPLY: Santa Clarita Valley
Planning Area

Allocated Urban Expansion by Use Type	Projected Land Demand by Use Type	Difference	Adjustment	Relationship
Low & Low/Medium Density Residential	Low Density Residential		Less 200 acres of local public facilities - Less	Allocated supply ex- ceeds projected demand by approximately 2,400 acres
5,400 acres	2,800 acres	+2,600 acres		85% over-allocation
(Urb Res 1 & 2)	(S.F. & Duplex)			
Medium & High Density Residential	Medium Density Residential		(None)	Allocated supply ex- ceeds projected demand by approximately 50 acres
100 acres	50 acres	+50 acres		100% over-allocation
(Urb Res 3 & 4)	(Mult Res.)			
Major Commercial	Commercial		Mapped allocation includes approximately 350 acres of regional commercial recrea- tion associated with Magic Mountain and Castaic Lake	Discounting Regional Recreation areas, allocated supply reflects projected demand
650 acres	300 acres	+350 acres		
Major Industrial	Industrial		(None)	Allocated supply ex- ceeds projected demand by approximately 1,300 acres
1,700 acres	400 acres	+1,300 acres		325% over-allocation

ANALYSIS OF URBAN LAND DEMAND/SUPPLY: Santa Clarita Valley
Planning Area

Allocated Urban Expansion by Use Type	Projected Land Demand by Use Type	Difference	Adjustment	Relationship
Public & Semi Public Facilities	Public Services Facilities		Accounted for in lower density residential classification	Supply reflects demand
0 acres	200 acres	-200 acres		
Open Space	Urban Open Space		Unmapped 450 acres of urban open space absorbed in urban residential, com- mercial, and industrial expansion areas	Supply reflects demand
0 acres	450 acres	-450 acres		
All Urban Expansion Lands Allocated	Projected for New Urban Land		Does not include 350 acres allocated for commercial recreation uses associated with Magic Mountain and Castaic Lakes	Allocated supply ex- ceeds projected demand by approximately 3,700 acres
7,900 acres	4,200 acres	+3,700 acres		88% over-allocation
100% within unincor- porated communities				

* All figures rounded to nearest 50 acres

** Totals may not add correctly due to rounding

FACTORS INFLUENCING DEMAND/SUPPLY RELATIONSHIP: Santa Clarita Valley
Planning Area

As indicated by the preceding analysis, the total allocated supply of new urban expansion lands within the Santa Clarita Valley Planning Area exceeds projected demand by approximately 3,700 acres (88% over-allocation). This total figure has been adjusted to exclude approximately 350 acres allocated for commercial recreation use associated with Magic Mountain and Castaic Lake recreational areas. As is true in the Malibu/Santa Monica Mountains area, this allocation responds to a regional demand not reflected in the subregional demand projections for commercial services and facilities.

Commercial recreation areas notwithstanding, the mapped over-allocation of urban expansion lands is primarily associated with lower density residential and industrial use types (66% and 33% respectively). This allocation reflects the stated and mapped policies of the adopted Santa Clarita Valley Areawide General Plan. Specific local plan policies include the following:

- 1.1 Accommodate 2000 population and land use demand as projected for the Santa Clarita Valley designating sufficient area for appropriate use and a "reasonable" excess to provide adequate flexibility.
- 1.2 Closely monitor growth in the Santa Clarita Valley, accommodating such growth until the capacity of the environmental, economic, man-made or social systems is attained.

(Santa Clarita Valley Areawide General Plan, pg. 17)

- 1.1 Participate in developing jointly with local groups and government agencies an active program to attract new industries to the Santa Clarita Valley.

ANALYSIS OF URBAN LAND DEMAND/SUPPLY: Antelope Valley Planning Area

Allocated Urban Expansion by Use Type	Projected Land Demand by Use Type	Difference	Adjustment	Relationship
Low & Low/Medium Density Residential	Low Density Residential 6,000 acres	+13,200 acres	Less 500 acres of public services and facilities	Allocated supply exceeds projected demand by 12,700 acres
67% within Incorporated Cities				211% over-allocation
33% within Unincorporated Communities				
(Urb Res. 1 & 2)	(S.F. & Duplex)			
Medium and High Density Residential	Medium Density Residential 300 acres	+400 acres	Less area subject to phasing	Allocated supply exceeds projected demand by 400 acres
700 acres				133% over-allocation
86% within Incorporated Cities				
14% within Unincorporated Communities				
(Urb Res. 1 & 2)	(Mult Res.)			
Major Commercial	Commercial 600 acres	+2,600 acres	Less area subject to phasing	Allocated supply exceeds projected need by 2,600 acres
3,200 acres				433% over-allocation
97% within Incorporated Cities				
3% within Unincorporated Communities				

ANALYSIS OF URBAN LAND DEMAND/SUPPLY: Antelope Valley Planning Area

Allocated Urban Expansion by Use Type	Projected Land Demand by Use Type	Difference	Adjustment	Relationship
Major Industrial	Industrial			
7,000 acres	1,400 acres	5,600 acres	Less area subject to phasing	Allocated supply exceeds projected need by 5,600 acres
90% within Incorporated Cities				400% over-allocation
10% within Unincorporated Communities				
Public & Semi Public Facilities	Public Services & Facilities			
17,300 acres	17,800 acres	-500 acres	17,300 acres allocated to proposed Palmdale Airport - Additional 500 acres unmapped, allocated to lower density residential classifications	Allocated supply reflects projected demand
5% within Incorporated Cities				
95% within Unincorporated Communities				
Open Space	Urban Open Space			
0 acres	300 acres	-300 acres	Unmapped 300 acres of urban open space absorbed within urban residential, commercial, and industrial expansion areas	Allocated supply reflects projected demand
All urban expansion area allocated	Projected Demand for new urban land			
30,100 acres (excluding airport)	9,100 acres (excluding airport)	+21,000 acres	(N/A)	Allocated supply exceeds projected demand by 21,000 acres
76% within Incorporated Cities				231% over-allocation (excluding airport)
24% within Unincorporated Communities				

*All figures rounded to nearest 50 acres.
 **Totals may not add correctly due to rounding.

FACTORS INFLUENCING DEMAND/SUPPLY RELATIONSHIP: Antelope Valley
Planning Area

As indicated by the above analysis, both projected growth levels, and allocated supply of land suitable for urbanization are greatest in the Antelope Valley Planning Area. Demand projections respond to Plan policies, at both the countywide and local levels, supporting development of an autonomous urban area in the Antelope Valley, concomitant with the proposed development of a major regional airport at Palmdale. Specific policies in this regard include the following.

55. Promote the development of an autonomous urban area with an expanded and diversified economic base that will minimize the need for long distance commuting to southern Los Angeles County.
56. Encourage the development of new regional centers, as needed, in Lancaster and Palmdale.
57. Support the efforts of the City of Los Angeles to develop a commercial airport at Palmdale.

(Proposed countywide General Plan, General Goals and Policies Chapter, Pg. 30)

- 1.1 Accommodate 2000 population and land use demand as projected for the Antelope Valley designating sufficient area for appropriate use and a "reasonable" excess to provide adequate flexibility.
- 1.2 Closely monitor growth in the Antelope Valley accommodating such growth until the capacity of the environmental, economic, and man-made or social systems is attained.

(Preliminary Antelope Valley Areawide General Plan, Pg. 23)

With regard to urban land supply, the allocation of future urban

expansion areas reflects mapped and textual policies of city and unincorporated community plans covering the planning area*

Of the total 30,100 acres designated for urban use, 76% fall within the cities of Palmdale and Lancaster. The remaining 24%, or 7,200 acres, lying within unincorporated county territory is primarily associated with the community of Quartz Hill.

Virtually all urban expansion lands allocated within unincorporated areas have been designated for future industrial or residential use. Approximately 90% (6,300 acres) is shown within the Low Density Residential classification of the Land Use Policy Map. As briefly mentioned above, both the quantity and distribution of residential expansion lands reflect the attitudes and preferences of community residents as expressed in the Preliminary Antelope Valley Areawide General Plan. In addition, such lands are relatively undifferentiated in terms of capability to support urban development i.e., limited environmental constraints.

*The City of Lancaster is currently in the process of revising its general plan. The countywide General Plan will be modified to reflect the newly adopted city plan at such time as it becomes available.

IX. Proposed General Plan Policies Addressing the Regulation of Future Growth and Development

The analysis of land demand/supply relationships for each of the five major planning areas involved indicates that sufficient lands have been allocated to accommodate presently projected growth levels. In many instances, future urban lands have been allocated in excess of projected demand to reflect local community attitudes and provide flexibility relative to the precise distribution of growth within the planning area. However, the Plan recognizes that while lands allocated for future plan expansion are generally suitable for such use, it further acknowledges that the following safeguards are necessary to avoid the unnecessary conversion of open space lands to urban uses:

- (1) Future development occurs in a manner consistent with stated Plan policies and objectives;
- (2) Public and private costs, including social, economic, and environmental costs associated with new urban expansion are minimized;
- (3) Existing urban service and facility infrastructure created as a result of past public and private investment is efficiently utilized.

To this end, the Proposed General Plan contains a policy and action recommendation to develop and implement a development review procedure applicable to new development proposed within identified urban expansion areas. Specifically, the Plan states as a major implementation recommendation:

ENACT AN ORDINANCE THAT WILL ESTABLISH A SET OF CLEARLY ARTICULATED CRITERIA FOR NEW DEVELOPMENT WITHIN URBAN EXPANSION AREAS TO ENSURE THAT IT WILL OCCUR IN A MANNER CONSISTENT WITH STATED PLAN POLICIES AND THAT IT WILL PAY FOR THE MARGINAL PUBLIC COSTS (ECONOMIC, SOCIAL AND ENVIRONMENTAL) THAT IT GENERATES.

APPENDIX D
DATA RELIABILITY

DATA RELIABILITY

Purpose

The data was developed to provide input, at the countywide level, for the General Plan EIR analysis of areas designated as "urban expansion" or "infill" by the General Development Policy Map. This data indicates the general location and extent of such areas that: (1) may be subject to hazardous conditions, and/or (2) potentially impact existing natural resources.

Since the General Plan is concerned with EIR impact analysis at the countywide level, it was felt there was no need to develop site specific data. As a result, the acreage figures developed serve only as very general estimates (rounded to the nearest 100 acres) and should not be used as precise calculations.

Categories Used in the Analysis

A. Constraint Categories

Historical experience has demonstrated that urban uses in inappropriate areas can result in unacceptable levels of damage to life and property. With regard to Los Angeles County, the most frequent kinds of such constraints identified for analysis were:

- I. Seismic constraints which are most severe in areas along active or potentially active faults
- II. Geologic Constraints
 - Unstable slopes
 - Liquefaction
- III. Soils with potential development constraints (Class VI to VIII soils)
- IV. Fire Hazard (wildland fires)
- V. Flood/mudflow

B. Resource Categories

Within Los Angeles County certain resources exist that are especially vulnerable to urbanization. For the EIR analysis, the following were identified:

- I. Aquifers
- II. Vegetation
 - Coastal sage scrub
 - Chaparral
 - Grassland (Sagebrush Scrub in North County)
 - Woodland Savanna (Desert Woodland in Antelope Valley)
- III. Minerals
 - Oil and gas
 - Sand and gravel
- IV. Soils
 - Prime soils (Classes I and III)
 - Existing agricultural lands
- V. Scenic Areas
 - Areas of High Scenic Quality
 - Areas of 15% or greater slope

Methodology

A. For the First Draft of the General Plan

The procedures used to identify the general location and extent of these aforementioned constraints and resources in the Draft General Plan (July 1, 1977) was essentially the same and involved:

1. Use of the most reliable available map resources to identify the general location of the constraints and resources (see Attachment "1" for an assessment of their respective reliability).
2. If not already at the 1:6,000 scale, the original source maps were converted to be comparable with the General Development Policy Map. Such an exercise, especially in the case of reduction, can result in some distortion and loss of details.

3. Through the use of overlays, comparisons were made between the source maps and the General Development Policy Map to identify the general location and extent of the constraints and resources in urban expansion/infill areas by land use categories and planning areas. Acreages for each category were subsequently calculated, using "cut" and "weigh" procedures. Some of the limitations inherent in this process are:
 - a. The map paper used may not be uniform in weight for each unit area;
 - b. The lack of sensitivity in the scale used did not allow for weighing of very small pieces of paper;
 - c. Possible cutting errors; and
 - d. Areas of less than 50 acres were not included in the calculations.

B. For the Preliminary and Proposed General Plans

Subsequent changes to these acreage figures were made to reflect revisions contained in the Preliminary and Proposed General Plans, using the "Grid Cell" method to estimate the magnitude of acreage change. This method is particularly limited in cases of irregular small areas that do not completely fill a grid square (1 sq. inch = 100 grid squares totalling 824.46 acres). As a result, the acreage involved had to be subjectively estimated. Generally, this method is considered to be less accurate than the "cut and weigh" method.

C. Conclusion

Each of these steps in the aforementioned methodology, individually and cumulatively, is susceptible to error. Thus, the information contained in the EIR can only be characterized as general indicators of location and magnitude. Any precise knowledge must be derived from site specific analyses.

ATTACHMENT 1

Constraint/Category	Source Data	Reliability	Staff Opinion
<p>1. Seismic</p> <p>a) (Moderate M) Potentially active faults</p> <p>b) (High H) Active faults</p>	<p>Los Angeles County Department of Regional Planning, Fault Map, (derived from California State Division of Mines and Geology, Fault Hazard Zones in California, Special Publication No. 42, Alquist-Pirlo Special Study Zone Maps, January, 1977, and Geologic Map of California, Los Angeles, Santa Ana, San Bernardino, and Long Beach Sheets 1971). Scale 1" = 6,000'.</p>	<p>- Data reliability is considered good for active faults. This by no means insures against the occurrence of slippage along older faults or the creation of entirely new faults; nor does it ensure the location of all faults is known.</p>	<p>Fair</p>
<p>2. Unstable Slopes</p>	<p>Environmental Systems Research Institute, Land Capability/Suitability Study: Natural Resources Inventory, "Slope Stability (Variable 14)", 1977. Scale 1" = 6,000'.</p> <p>Quinton-Redgate (principal editor), North Los Angeles County General Plan, "Slope Stability Data Map 43)", 1974. Scale 1" = 1 mile.</p>	<p>- Source maps are too general and not consistent with each other.</p> <p>- Use of computer grid cells created significant distortion in location.</p>	<p>Poor</p>
<p>3. Liquefaction</p> <p>a) (Moderate M) Potential for liquefaction</p> <p>b) (High H) High potential for liquefaction</p>	<p>Environmental Systems Research Institute, Land Capability/Suitability Study: Natural Resources Inventory, "Capability for Development Considering Interpretation of Seismic and Geologic Conditions (Variable 21)", 1977. Scale 1" = 6,000'.</p> <p>Quinton-Redgate, North Los Angeles County General Plan, "Faulting and Seismic Zones (Data Map 44)", 1974. Scale 1" = 1 mile.</p>	<p>- Source maps are too general and not consistent.</p> <p>- Use of computer grid cells created significant distortions in location.</p>	<p>Poor</p>
<p>4. Fire</p> <p>a) (Moderate M) High fire hazard</p> <p>b) (High H) Extreme fire hazard</p>	<p>Department of Regional Planning, Brush Fire Hazard Severity (methodology from California Division of Forestry, A Fire Hazard Severity Classification System for California's Wildlands, 1973) 1976. Scale 1" = 6,000'.</p>	<p>- The resolution of data exceeds that of the General Plan.</p>	<p>Excellent</p>
<p>5. Flood and Mudflow</p> <p>a) (HM) High mudflow</p> <p>b) (FH) Flood hazard</p>	<p>1. Los Angeles County Engineer and Flood Control District, Flood and Mudflow Hazard Maps, 1976. Scale 1" = 6,000'.</p> <p>2. U.S. Department of Housing and Urban Development, Flood Hazard Maps, 1978. Scale 1" = 2000'.</p>	<p>1. The County Engineer has stated the data is more liable at the site specific scale.</p> <p>2. The resolution of data exceeds that of the General Plan.</p>	<p>1. Fair to poor.</p> <p>2. Excellent</p>
<p>6. Aquifers</p>	<p>Department of Regional Planning, Groundwater Recharge Areas Map, (from U.S.D.A. Soil Conservation Service, Soil Survey for the Antelope Valley Area, 1970), 1976. Scale 1" = 6,000'. (North half only)</p> <p>Environmental Systems Research Institute, Land Capability/Suitability Study: Natural Resources Inventory, "Suitability for Development Considering Interpretations of Watershed (Variable 24)", 1977. Scale 1" = 6,000'.</p>	<p>- Assessment of groundwater quality not provided.</p> <p>- ESRI's map is less accurate than the 1st map due to distortions derived from use of computer grid cell mapping.</p>	<p>Fair</p>

Constraint/Category	Source Data	Reliability	Staff Opinion
<p>7. Vegetation</p> <p>a) Coastal Sage Shrub for South County and Sagebrush Shrub for North County</p> <p>b) Chaparral</p> <p>c) Grassland for South County and Desert for North County</p> <p>d) Woodland, Savana for South County and Desert Woodland for North County</p>	<p>Environmental Systems Research Institute, Land Capability/Suitability Study: Natural Resources Inventory "Vegetation" (Variable 13), January 25, 1977. Scale 1" = 6,000'.</p> <p>Quinton-Redgate, North Los Angeles County General Plan, "Vegetation" (Data Map #23) November, 1974. Scale 1" = 1 mi.</p>	<p>- A large distortion is in the scale.</p> <p>- Source maps are too general and not consistent.</p> <p>- None of the data has been field checked</p>	Fair
<p>8. Mineral Resources</p> <p>a) Oil and gas well head concentration</p> <p>b) Oil and gas of known resource</p> <p>c) Sand and gravel</p>	<p>Environmental Systems Research Institute, Land Capability/Suitability Study: Natural Resources Inventory, "Mineral Deposits and Mines (Variable 16)", 1976. Scale 1" = 6,000'.</p> <p>Quinton-Redgate, North Los Angeles County General Plan, "Mineral Resources" (Data Map #42), November, 1974. Scale 1" = 1 mile.</p>	<p>- Use of computer grid cells created significant distortions in location.</p>	Fair
<p>9. Existing Agriculture (1975)</p>	<p>Department of Regional Planning, 1975 Land Use Map, 1976. Scale 1" = 6,000'.</p>	<p>- Land Use Map is very accurate and reliable for year 1975.</p>	Good
<p>10. Soil Types</p> <p>1. (Moderate M) Class VI</p> <p>2. (High H) Class VII & VIII</p> <p>11. Prime Soils Class I & II</p>	<p>Soil Capability Map (Derived from U.S. Dept. of Agriculture, Soil Conservation Service Report and General Map, December, 1969. Scale 1:300,000) 1976. Scale 1" = 6,000'.</p>	<p>- Source map scale is too general.</p>	Poor
<p>12. Areas of High Scenic Quality</p>	<p>Environmental Systems Research Institute, Scenic Recreation Map (Variable 32), 1976. Scale 1" = 172,000 (South Half of County and portion of Santa Clarita Valley). North County - utilized subjective staff evaluation of geomorphic, vegetative and hydrologic characteristics.</p>	<p>- Data resolution of 10 acres for South County.</p> <p>- None of the data has been field checked.</p> <p>- No data base for North County.</p>	Poor
<p>13. Hillside</p> <p>a) 15% - 30% slope</p> <p>b) 30% and over</p>	<p>Los Angeles County Engineer, Slope Map (prepared from U.S.C.S. quad sheets in early 1976). Scale 1" = 6,000'.</p>	<p>- Resolution of data not consistent throughout the source map.</p> <p>- Some areas more detailed than others in depicting slope variability.</p>	Good