

Figure 1

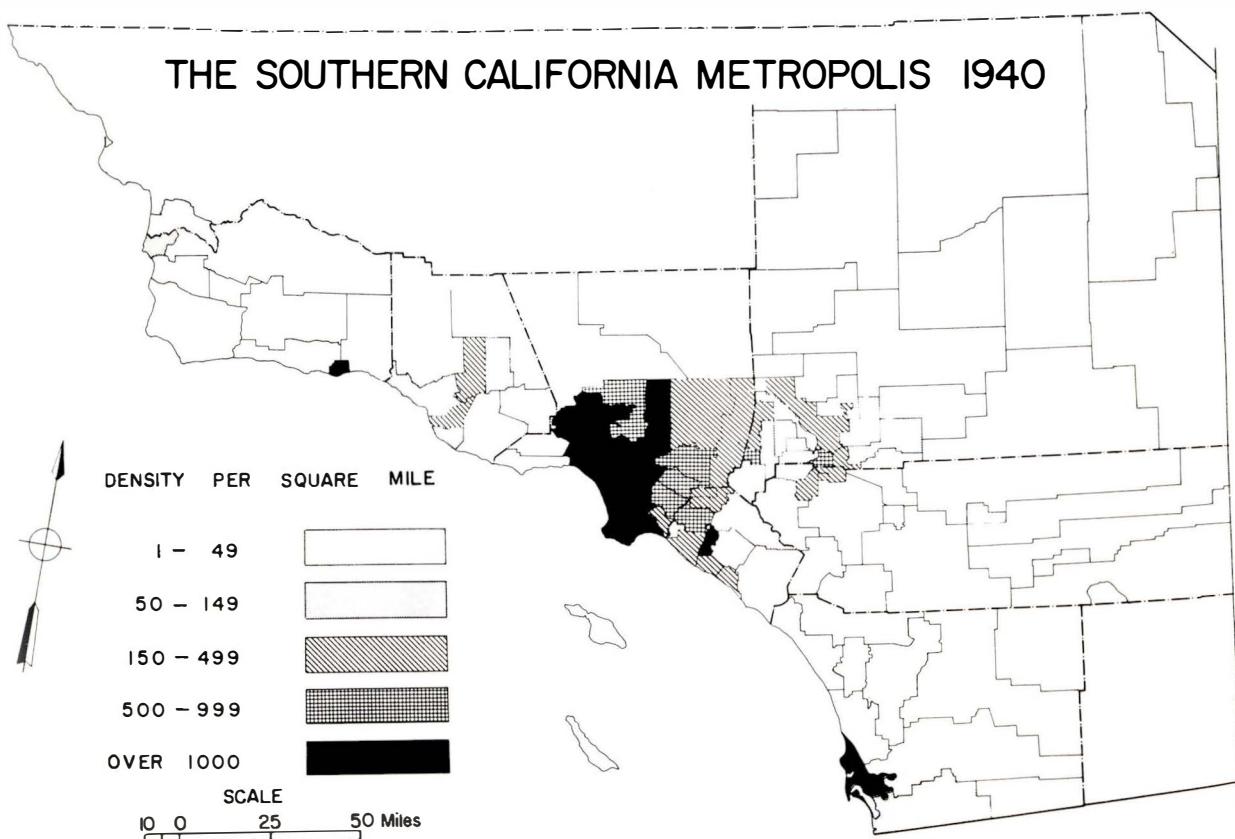


Figure 2

THE CHANGING FORM AND STRUCTURE OF THE SOUTHERN CALIFORNIA METROPOLIS

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PART I*

The framework of a giant, sprawling, super-city has emerged in Southern California. Housing approximately 12 million persons, its urban landscape is scattered over 13,000 square miles and stretches along the Pacific Ocean for 300 miles between northern Santa Barbara County and the Mexican Border. This new regional city is focused on a narrow coastal strip and in adjacent mountain valleys, and has taken on the form of a loosely knit complex of people, commerce, and industry—all fused in a single system by highly developed freeway and communication networks, a common technology, and numerous shared values.¹

The primate city is Los Angeles, but the overall pattern is polynuclear. There are five distinct metropolitan sub-systems in addition to Los Angeles-Long Beach; namely, Santa Barbara, Oxnard-Ventura, Anaheim-Santa Ana-Garden Grove, San Bernardino-Riverside-Ontario, and San Diego (Figure 1). All are related within the structure of the regional economy and all lie within the sphere of influence of Los Angeles but, at the same time, each is separate and dominates its own cluster of lesser cities.

This report considers: (1) how, and some of the reasons why, the urban landscape presently existing in Southern California has evolved; (2) recent spatial trends contributing to the form and structure of Greater Los Angeles; and (3) some broader implications of this example of urban development.

URBAN DEVELOPMENT IN SOUTHERN CALIFORNIA SINCE 1940

In this section, the study area is viewed from two perspectives. One perspective is based on the expanding built-up portions of Santa Barbara, Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego Counties, while a second angle is gained by examining data for the seven counties as a whole. Both areas are referred to here as the "Southern California Metropolis."²

Population Change

Total population has grown rapidly in the Southern California Metropolis and, when number of people rather than percentage growth is used as a yardstick, 1940 is the takeoff point. The build-up for World War II was under way and Southern California aircraft plants and shipyards were hiring large numbers of workers. Rapid population growth continued until after the war, when job scarcity caused a reduction in immigration, but the flow of new people increased in 1948 and did not slacken appreciably until the middle of the last decade. During the 1950's and 1960's the keys to population growth were jobs in defense and other government-related programs, first tied to the Korean War and then to the missile-space program and Southeast Asia.

The population of the seven-county area was three and one-half million in 1940, five and one-half million in 1950, about nine million in 1960, and in January, 1970, the California State Department of Finance offered an estimate for July 1, 1970, of 11,700,000, a figure accounting for 55 percent of the estimated population for the state of California.³ Growth rates over the past thirty years were striking. From 1940 to 1950, population increased at a rate of about 700 persons per day; between 1950 and 1960, the rate was approximately 1,000 persons per day; and between 1960 and 1970, about 750 persons per day. Population forecasts for the immediate future indicate that growth will continue. Population in the seven counties is expected to increase from the 1970 level of approximately twelve million to about seventeen million in 1985.⁴

*Part II of this article will appear in the next issue of the *California Geographer*.

THE SOUTHERN CALIFORNIA METROPOLIS 1960

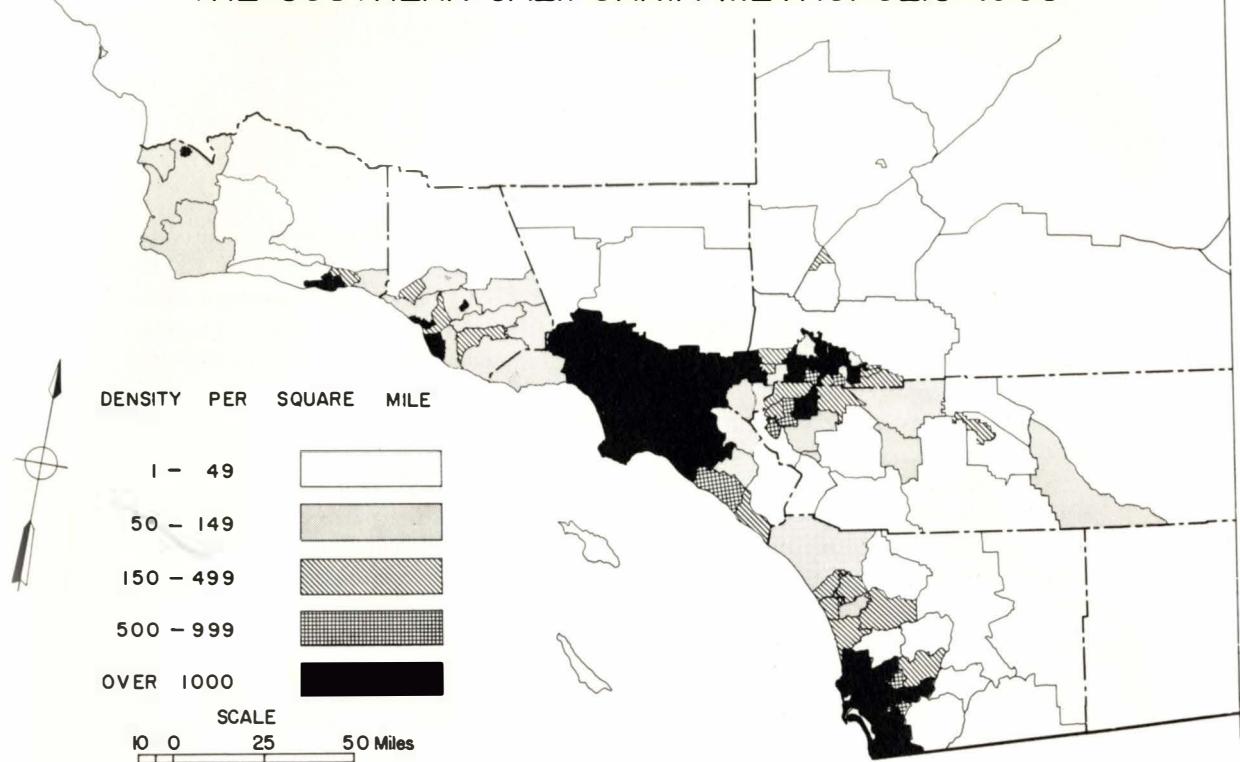


Figure 3

THE SOUTHERN CALIFORNIA METROPOLIS 1970

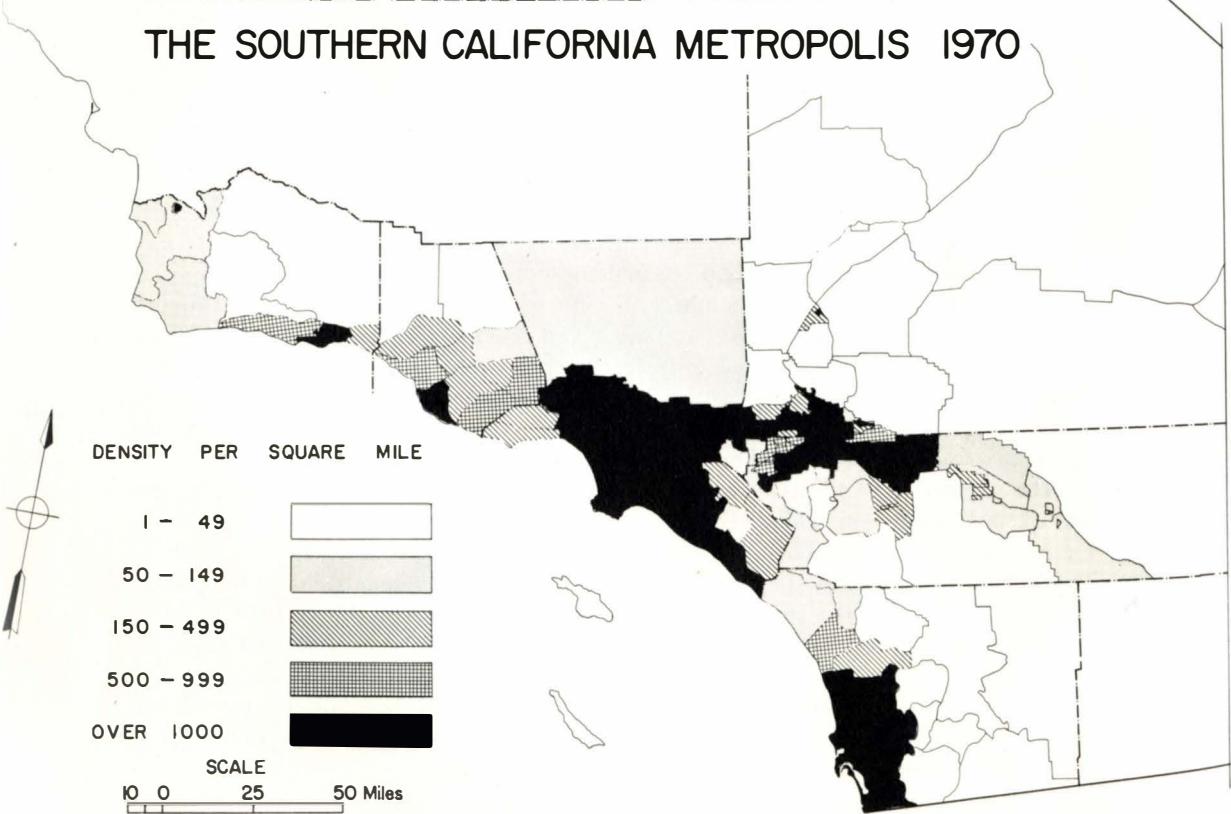


Figure 4

Immigration has been especially important in the region's growth; however, its contribution relative to natural increase has declined over the last half of the 1960's. Between 1940 and 1950, immigration contributed 73 percent of total population increase. The peak year for net immigration was 1942, when over 300,000 persons arrived in the Metropolis and accounted for nearly 90 percent of total population gain in that year. Between 1950 and 1960, migration as a percentage of total population growth was 67 percent, but between 1960 and 1969 the percentage dropped to 55. The role of immigration is expected to continue to decline in the immediate future.⁵

Los Angeles and Orange Counties have played a special part in the immigration picture, a role elucidated by a view of the situation between 1955 and 1960.⁶ During that period, about 1,000 migrants arrived in the Metropolis each day. Of this group, around 700 located first in Los Angeles and Orange Counties, a fact emphasizing the importance of these counties—and especially of the city of Los Angeles—as the port of entry for migrants. The remaining 300 settled elsewhere in Southern California. As time passed, about 300 of the original 1,000 left the state, and about 300 of the 700 who first settled in Los Angeles and Orange Counties moved to other parts of California, leaving approximately 400 of the original 1,000 migrants as residents of Los Angeles and Orange Counties. Although not providing anything like a detailed discussion of migration, the above figures do emphasize its significance in the region's growth, and the related roles of Los Angeles and Orange Counties.

Changes in Areal Arrangements

Changes in the areal arrangement of population within the Metropolis have been remarkable, and are revealed by a series of population density maps (Figs. 2, 3, and 4).⁷ The overall pattern of change since 1940 has been one of concentric expansion resulting primarily from increases in population and an associated demand for new housing. Peripherally located and exhibiting both the ills and benefits of "scatteration," this growth has featured massive tract construction of free-standing single-family dwellings outward from the major cores, as well as around numerous lesser cities.⁸ Urban expansion around each center is typified by a succession of activities, each stage of which results in more intensive use of the land. Agricultural areas have given way to single-family homes, and homes and open spaces located near points of relatively high accessibility or on land zoned for industry have yielded to industrial and commercial land use. Finally, some of the seemingly secure tracts of single-family homes have been overrun by low-density apartments and varied activities dependent on increased population densities.¹⁰ The expanding circles of low density urban development have gradually coalesced, rendering physical but not political distinctions between communities fiction in many cases. Because peripheral expansion has taken place not only at the outer edge of the major centers but also outward from sub-nuclei, numerous "named" communities have developed, and many exhibit considerable economic and social sophistication. The proliferation of such communities contributes directly to the area's highly developed polynuclear form.

By 1965, the pattern of growth outlined above had transformed the Southern California Metropolis into a continuous geographical phenomenon with population densities of over 50 persons per square mile in every county planning area throughout its 300-mile length.¹¹ The gaps existing in 1960 between the San Bernardino-Riverside-Ontario complex and Palm Springs, and between Palm Springs and the urbanized portions of the Coachella Valley were closed as well, thus extending the Metropolis approximately 160 miles across the desert to the northern boundary of Imperial County. It is not intended to imply that the Metropolis is devoid of open spaces; many such areas exist both within and at the fringes of the megalopolitan pattern. However, although such areas are ostensibly rural, they often are (or shortly will be) functionally urban.¹²

Concrete evidence that an urban landscape was developing along megalopolitan lines was provided in the 1960's when the Census Bureau created Standard Metropolitan Statistical Areas (SMSAs) in Orange and Ventura Counties, and designated Oxnard-Ventura and Anaheim-Santa Ana-Garden Grove as their respective central cities. Creation of a SMSA in

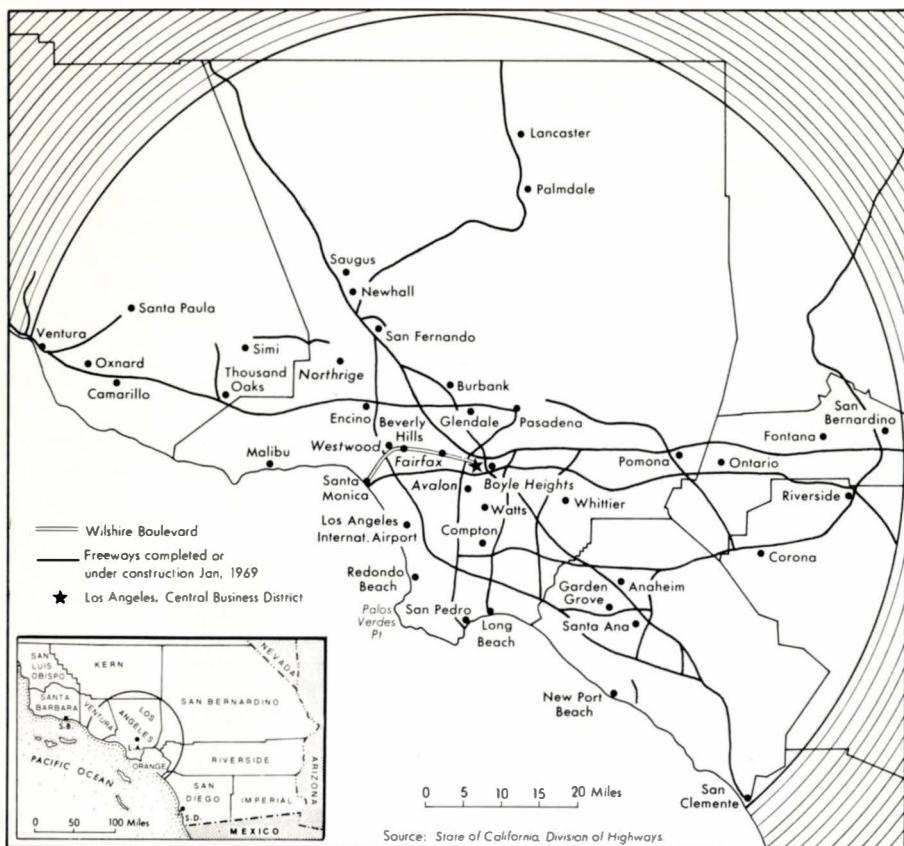


Figure 5
Freeways and place names in the 60-mile circle

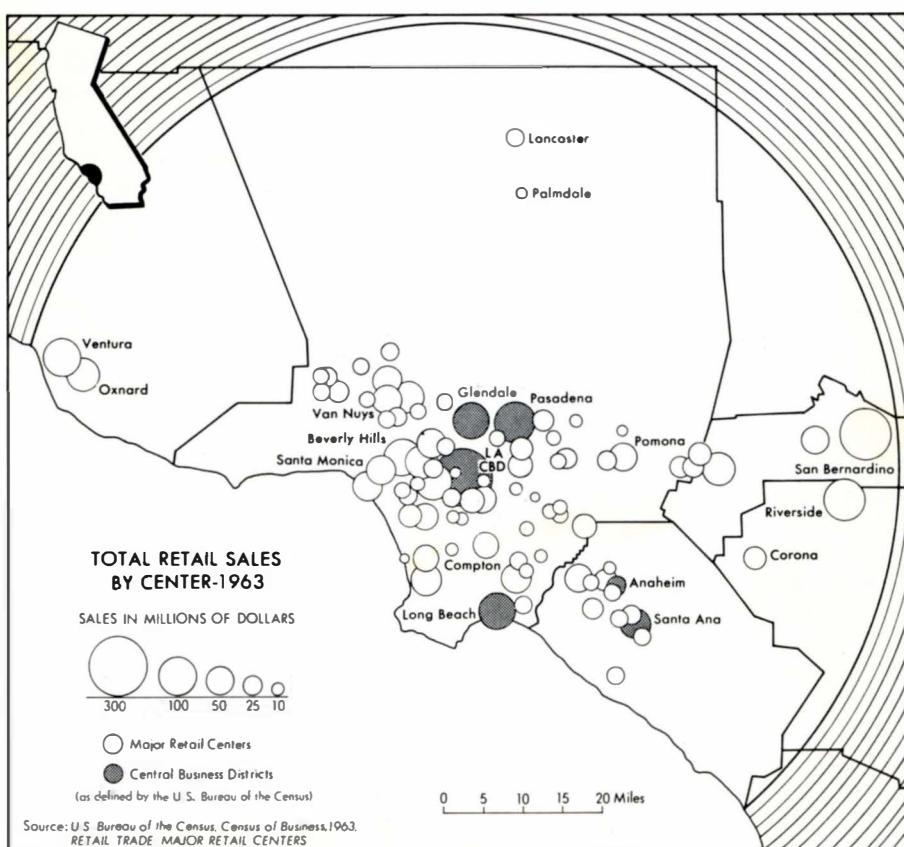


Figure 6

Orange County caused the division of the Los Angeles-Long Beach SMSA, which in 1950 and 1960 included both Los Angeles and Orange Counties. The entire reach from San Luis Obispo County to the Mexican Border was thus composed of six contiguous SMSAs. Moreover, by the middle 1960's nine metropolitan nuclei were recognized by the Census within the Los Angeles agglomeration alone, and when the relatively free-standing central cities of San Diego, Santa Barbara, and Oxnard-Ventura are added, it is clear that a megalopolitan, rather than metropolitan, pattern has emerged.¹³

Several areas deviate from the pattern of areal expansion outlined above. For example, the City of Los Angeles has recently experienced increases both in population density and functional complexity at its center as well as greater spread. This trend toward centralization stems from a continued growth of commercial, financial, office, and industrial facilities in the downtown and along several corridors leading outward from the CBD. Contributing also is an expansion of high-rise facilities in general around downtown Los Angeles, and the fact that the whole built-up area is undergoing an expansion of low-density apartments. Other centers experiencing strong centripetal forces are Santa Monica, Pasadena, and Long Beach within Greater Los Angeles, and downtown San Diego.

FORCES STIMULATING REGIONAL URBAN GROWTH

Urban development in Southern California has been stimulated by the immigration of numerous persons. Thus, it is in order to seek the forces underlying the areas' growth. It is not presumed to answer the question of why such phenomenal growth took place in this region rather than elsewhere. Attention is set on the questions, "Why do people continue to flow into the Metropolis?" and "Why has the Metropolis developed so rapidly since 1940?"

It appears that people come to the region initially because of its climate and reputation for prosperity, features that have benefited from publicity in communication media of all types. Most of those who stay, however, find work and have at once a high standard of living and an opportunity to enjoy climate and other amenities. The main reason for permanent immigration to the Metropolis, therefore, is that the job market is generally expanding and attractive, especially for the skilled.¹⁴

To some non-measurable extent, it can also be argued that the Metropolis has operated since the latter part of the 19th century almost continuously in a state of boom psychology. In short, "nothing succeeds like success." A crowd attracts a bigger crowd. There need not be a reason that is apparent at all; the fact that others are doing it is sufficient motivation for many. This is not to imply that all find success and stay, but simply that opportunities elsewhere look better than at home, so people come to the Metropolis because they have heard that chances for success are good there. Little doubt exists regarding the significance of this condition in the growth of Southern California.

The Regional Economy¹⁵

The Southern California economy is now the second largest regional economy in the nation, trailing only that of the New York area. At the end of 1969 there were 4,652,500 persons gainfully employed in the regional labor force, an increase of 1,275,300 over 1960. The largest employment categories in 1969 were manufacturing, services, and retail trade, in that order. Unemployment in 1969 was 4.1 percent, well below the decade high of 6.8 percent of 1961.

Manufacturing has been the most important employment category throughout the decade; in fact, much of the phenomenal economic growth since 1940 can be traced directly to expansion of manufacturing employment. Its importance as prime mover of the regional economy is supported by the fact that one out of every four jobs in the Metropolis was in manufacturing during the 1960's. The primacy of greater Los Angeles in manufacturing is pronounced. Los Angeles County firms paid three out of every four manufacturing payroll dollars in the Metropolis in 1968.

The significance of aerospace and defense-related spending to the regional economy should not be understated.¹⁶ These activities presently account for one out of every ten civilian jobs and four out of every ten manufacturing jobs (Table 1). Aerospace and defense-related industries also account for well over 40 percent of total regional manufacturing payrolls. Announced federal budget reductions in NASA and Department of

TABLE 1 – MANUFACTURING, DEFENSE ORIENTED,¹ AND TOTAL EMPLOYMENT IN THE SEVEN-COUNTY STUDY AREA²

Employment, Year 1969	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Total civilian employment	3,377,200	3,433,700	3,586,100	3,707,700	3,822,000	3,934,200	4,154,400	4,321,500	4,476,800	4,652,500
Wage and salary workers in manufacturing	903,000	902,900	951,100	959,400	951,100	971,300	1,064,100	1,116,200	1,146,700	1,154,400
Manufacturing as a % of total employment	26.7	26.3	26.5	25.9	24.9	24.7	25.6	25.8	25.6	24.8
Wage and salary workers in defense-oriented industries	384,900	386,100	412,700	411,300	389,900	394,800	449,300	485,500	484,900	457,900
Defense-oriented employment as a % of total employment	11.4	11.2	11.5	11.1	10.2	10.0	10.8	11.2	10.8	9.8
Defense-oriented employment as a % of manufacturing employment	42.6	42.8	43.4	42.9	41.0	40.6	42.3	43.5	42.3	39.7

¹ Defense-oriented industries are defined here as: (1) aircraft and parts; (2) electrical machinery, equipment and supplies (largely electronics); (3) ordnance and accessories (largely missiles and related equipment); and (4) instruments and related product.

² Los Angeles, Ventura, Santa Barbara, San Bernardino, Riverside, Orange, and San Diego Counties.

Source: Security Pacific National Bank, *The Southern California Report* (Los Angeles: 1970), p. 102.

TABLE 2 – ALLOCATION OF EMPLOYMENT CREATED BY SALES OF INDUSTRY GROUPS: LOS ANGELES-LONG BEACH SMSA, 1960; EMPLOYMENT CHANGE BY INDUSTRY GROUPS: LOS ANGELES AND ORANGE COUNTIES, 1960-1970

Industry Group	Employment, 1960			Employment, 1969	
	Total (in thousands)	Distribution of Employment		Total (in thousands)	Change: 1960-1969 (in thousands)
Durable manufacturers	579.7	65.6	34.4	728.8	149.1
Primary and fabricated metals	91.4	40.9	59.1	116.7	25.3
Non-electrical machinery	61.0	75.0	25.0	96.4	35.4
Electrical machinery	113.0	72.9	27.1	165.6	52.6
Transportation, equipment, instruments, and ordnance	242.1	73.6	26.4	245.5	3.4
Stone, clay, and glass	22.0	70.0	30.0	25.2	3.2
Lumber, furniture products	34.4	42.0	58.0	30.6	-3.8
Other durable manufacturers	15.8	50.1	49.0	49.9	34.1
Non-durable manufacturers	233.4	44.8	55.2	293.9	60.5
Apparel, textile, and leather products	57.7	68.0	32.0	56.3	-1.4
Paper products and printing	52.1	35.0	65.0	55.0	2.9
Chemicals and petroleum	42.1	46.5	53.5	35.1	7.0
Rubber	23.7	57.4	42.6	33.1	9.4
Food and beverages	57.8	22.9	77.1	66.3	8.5
Total manufacturing	813.1	59.7	40.3	1,022.7	209.6
Agriculture, forestry, fisheries, and mining	47.3	11.2	88.2	32.6	-14.7
Contract construction	163.9	.3	99.7	154.0	-9.9
Transportation, communication, and public utilities	147.6	35.5	64.5	197.4	49.8
Wholesale trade	161.7	15.0	85.0	216.1	54.4
Retail trade	429.9	9.4	90.6	583.8	153.9
Finance, insurance, and real estate	131.5	16.8	83.2	203.5	72.0
Services	476.2	13.3	86.7	772.2	296.0
Government	277.8	7.6	92.4	452.0	174.2
Total: All Industries	2,649.0	27.0	73.0	3,643.3	985.3

Sources: C.M. Tiebout, *The Community Economic Base Study* (New York: Committee for Economic Development, 1962), p. 33; State of California, Department of Employment, *Los Angeles-Long Beach Labor Market Bulletin* for July, 1969, and *Orange County Labor Market Bulletin* for July, 1969.

Defense contracts were felt in the employment picture by 1969, and further decline in employment in these areas is expected in the immediate future. The challenge to diversify presently faces numerous firms that have depended on federal funds for aerospace and defense work. Should they fail to meet this challenge, the effect on the regional economy could be considerable.¹⁷ The importance of manufacturing and its defense-oriented component is shown in an "Economic Base Theory" context in Table 2, and the role of these activities as sources of exports generating regional economic growth since 1950 is quite clear.¹⁸

Only one more of the region's numerous sources of basic income will be treated here. The tourist industry capitalizes on both the area's natural and man-made amenities, and has long-standing importance in the economy.¹⁹ The Southern California Visitors Council estimates that in 1950 over 2,500,000 tourists visited the Metropolis and spent over \$424 million; by 1960, the number of tourists rose to 4,700,000 who spent \$715 million. During the 1968-69 fiscal year, over 8,000,000 tourists came to the Metropolis and spent a record \$1.25 billion. Such spending is felt in every facet of the regional economy, and it is anticipated that with rising incomes and increased leisure time, this source of basic income will increase.

Service industries are the second leading employment category in the Metropolis, accounting for 21 percent of all jobs in 1969.²⁰ Growth of the governmental and service sectors, increased production for regional consumption, and the export of a wide variety of services to neighboring cities and regions are all traits of an established metropolitan economy and Southern California—with greater Los Angeles as its focus—is today, in every sense, such an economy.

Since the region's growth is closely associated with expanding employment opportunities, it can be asked, "Why are firms attracted?" This also can be related to climate, the reputation for prosperity, personal choice, and to the aura of attractive living. Such reasons may occasionally apply today, but they are largely of historical and secondary importance. Businessmen migrate to the Metropolis because of an optimism generated by the region's post-depression pattern of economic growth, the size of the domestic and overseas market commanded by the Metropolis, the skill of the labor pool, and the transportation costs of bringing manufactured goods to the region from the eastern United States.²¹

An Expanding Market²²

In addition to the national market, the market for goods and services in Southern California is one of the largest and fastest-growing in the country. According to the 1967 Census of Business, total retail trade in the ten southernmost counties of California was \$19.8 billion, a figure when compared to retail trade by states is exceeded by only New York and the State of California as a whole. Wholesale trade accounted for another \$25.6 billion in 1967, or over one-half of the state total. Moreover, the domestic market area for Southern California goods and services is readily divisible from other regional markets by mountains and deserts to the east and north, the Mexican Border to the south, and the ocean to the west. As such, the Metropolis commands a continuous market area important enough in its own right to attract new industries and new employment, thus perpetuating its own growth and diversifying its employment structure.

In addition to expanding local and national markets, the overseas market served by the Metropolis is growing. In 1968, for example, more than \$3.7 billion in goods passed through its two customs districts (Los Angeles and San Diego), about \$1.7 billion in exports and \$2 billion in imports. This represents an enormous increase over the approximately \$250 million in goods that passed through the same customs districts in 1940.

A Skilled Labor Pool²³

Businessmen also migrate to the Metropolis because of its large and skilled labor supply, a human resource able to cope with the complexities of space age projects. The skills of the labor force have grown in large part because of the development of the airframe industry and, later, the aerospace, research and development, and electronics industries. Thus, the flexibility of the basic labor force, plus the constant inflow of highly trained scientific and technical people, has become an industrial location factor of substantial importance.

Research and development (R&D) expenditures totaled \$24 billion in 1967 and play an important part in the regional economy.²⁴ In 1965, approximately 15 percent of the nation's R&D firms or divisions of large firms were located in California. Sixty percent of the 752 organizations represented in the state and 76 percent of the 120,936 scientists and technicians were located in Southern California, mostly in Los Angeles and Orange Counties. The technologically and scientifically advanced economic structure of the Metropolis benefits from this concentration of talent, and the concentration itself serves as a magnet for both related firms and immigrants with similar training and interests.

GREATER LOS ANGELES

Dominating the Southern California Metropolis is the heavily developed, urbanized area that focuses on Los Angeles and sprawls outward in all directions from that hub. An agglomeration including portions of five counties—Los Angeles, Ventura, San Bernardino, Riverside, and Orange—it can be accurately described as a territory lying within 60 miles of downtown Los Angeles (Fig. 5).²⁵ On January 1, 1970, population within this 60-mile circle was estimated at 9,600,000, or 96.5 percent of the total five-county population.

The urban pattern of Greater Los Angeles is typified by low-density spread, dominance of single-family homes, weak centers, dispersed activities, individual mobility, political fragmentation, and by an increasingly complex cultural geography. The product is a prototype of the decentralized, polynuclear city. Until recently, this urban form and structure were unique. Over the past three decades, however, it has become clear that formerly distinctive traits and problems of Greater Los Angeles have become widespread development trends and problems elsewhere.

Regarding such convergence, it is fundamental to consider that Greater Los Angeles has been shaped by the very forces that are presently tearing older compact cities apart. It was built up almost entirely during an era of automobiles, horizontal assembly lines, ubiquitous electricity, freeways and think-factories, and large inputs of people from parts of the nation where apartment living and mass transportation were unimportant. Additionally, its intensive growth coincided with a time of affluence and favorable governmental attitude to home ownership. These same forces are presently breaking down traditional central business districts and spreading the nation's cities across countless acres in a low-density pattern, more like than unlike that of Greater Los Angeles. Thus, it would appear that dynamic forces of greater similarity than at any time in recent history are presently shaping both Los Angeles and other emerging regional cities.

Regardless of its emotional appeal, the urban pattern that has evolved within the 60-mile circle has allowed for mass satisfaction of the drive for "private space," a centrifugal force of profound importance among rank-and-file American families. Thus, if it is inevitable—as most urban experts presently agree—that the spatial pattern of the American city is going to be considerably more dispersed, varied, and space-consuming than in the past, regardless of what metropolitan planners or anyone else may try to do about it, then it is possible that Greater Los Angeles may continue to reveal development trends of considerable generality.

Forces Shaping the Urban Pattern of Greater Los Angeles

The salient feature about Greater Los Angeles in recent years has been new growth. It is the leading urban growth area of the country by almost any measure. According to recent Census estimates, the five-county area has added more people since 1960 than the New York-Northeastern New Jersey Standard Consolidated Area (SCA), and the net increase has been three times that of the Chicago-Northwestern Indiana SCA. Moreover, the Los Angeles five-county area has shown nearly as much population increase as the New York and Chicago SCAs combined.²⁶ Within the circle, population growth averaged about 250,000 per year since the 1960 Census to total 2,200,000 new residents by January, 1970. This is equivalent to adding to the circle a city larger than Philadelphia or Detroit. The territorial expression of this growth is revealed in Figures 3 and 4 by the expansion outward from Los Angeles of the territory with 500 or more persons per square mile. Such growth is driven by the expanding economy described above, an economy that during the 1960-69 interval generated 118,000 new jobs each year within the 60-mile circle.²⁷

The dynamic forces shaping the urban form and structure within the 60-mile circle are

numerous and complicated; however, some of the more important ones will be touched upon below.

The Pattern of Settlement

Of profound significance in the evolution of Greater Los Angeles has been its early pattern of settlement, the spatial organization of which was influenced by dispersed centers over a vast area.²⁸ By the end of the 19th century, the settlement pattern consisted of a series of interconnected agricultural towns and villages arranged in a loose framework, with productive agricultural areas separating the clusters. The centers were connected by rail and formed a complex of farms and ranches whose city needs were adequately met by towns located at exchange points along a skeletal transportation network. Particular cities or towns did not dominate the entire area; rather, each center was sustained by its own urban field, so the central cities grew only by minor accretions while acting as exchange points for the outer towns which were also expanding and intensifying their local activities. Many outlying centers are virtually as old as the present central cities, and many of these early towns have persisted and are today major cities in their own right. Since the establishment of the basic polynuclear pattern around the turn of the century, land has been a hot commodity. And when automobiles freed subdividers from locations along rail lines, the marketing of this commodity took a simple form—one of filling in open spaces between towns. Nelson has concluded that for many decades after the boom of the 1880's, an expanding population filled in the far-flung framework laid down during the expansive period between 1884 and 1900.

Millions of new residents have entered the 60-mile circle in recent decades, and the City of Los Angeles and its immediate suburbs were able to accommodate only a small fraction of the new arrivals. Dozens of new suburbs were created, continuing the process whereby new cities rose at the periphery and interstitial areas were filled in with low-density development. Moreover, it is only recently that the filling-in process reached a point where the agglomeration as a whole is expanding outward from an entirely built-up interior, but one that is polynuclear as opposed to the compact, single-centered metropolitan model. Reflecting the atypical conditions under which it developed, certain aspects of the 60-mile circle set it apart from other urban complexes.

Areal Extent and Population Density

The areal extent of Greater Los Angeles is immense, a situation illustrated by the fact that the corporate cities of Denver, Chicago, St. Louis, Detroit, Philadelphia, and Pittsburgh would all fit easily into the southern half of Los Angeles County. The 60-mile circle contains both absolutely and proportionally more single family homes than other urbanized regions, and its overall population density is lower.²⁹ Its population densities are comparatively very low on a corporate-city basis.³⁰ Prime causes are the vast area covered by the early settlement network, a growth process based on polynuclear expansion, and public contributions to private transportation and housing costs. These factors have rendered land a less-scarce resource than under conditions inherent in the single-centered metropolitan model, and they have enabled a widespread satisfaction of the drive for private space and outdoor living. Influential, as well, are space-consuming regulations related to law and practice in the construction industry; for example, minimum lot size and setback or front-lawn regulations and local building codes and zoning ordinances that prohibited high-rise construction until 1957.³¹ Also, Greater Los Angeles' physical plant is new by comparison with most American cities. According to the 1960 Census, only 37 percent of its housing stock was built before 1940 compared to 57 percent nationally, and housing units constructed between 1950 and 1960 accounted for 43 percent of the total housing inventory compared to 28 percent nationally. The coincidence of a rapidly growing single-family housing inventory with a time of affluence and widespread automobile ownership is clear.

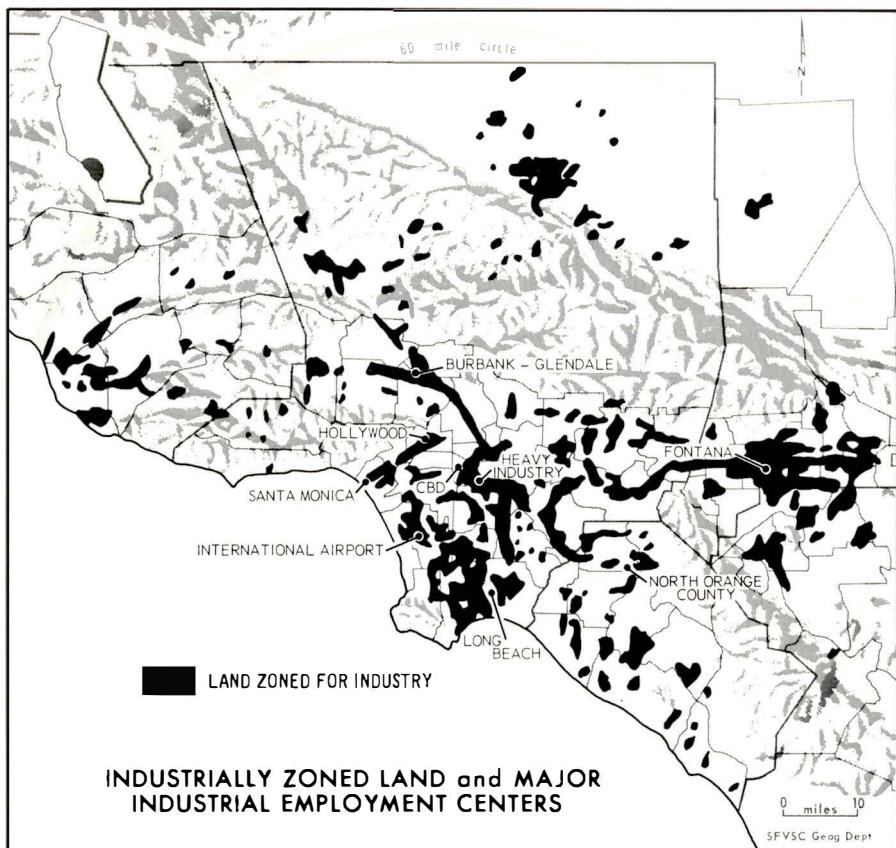


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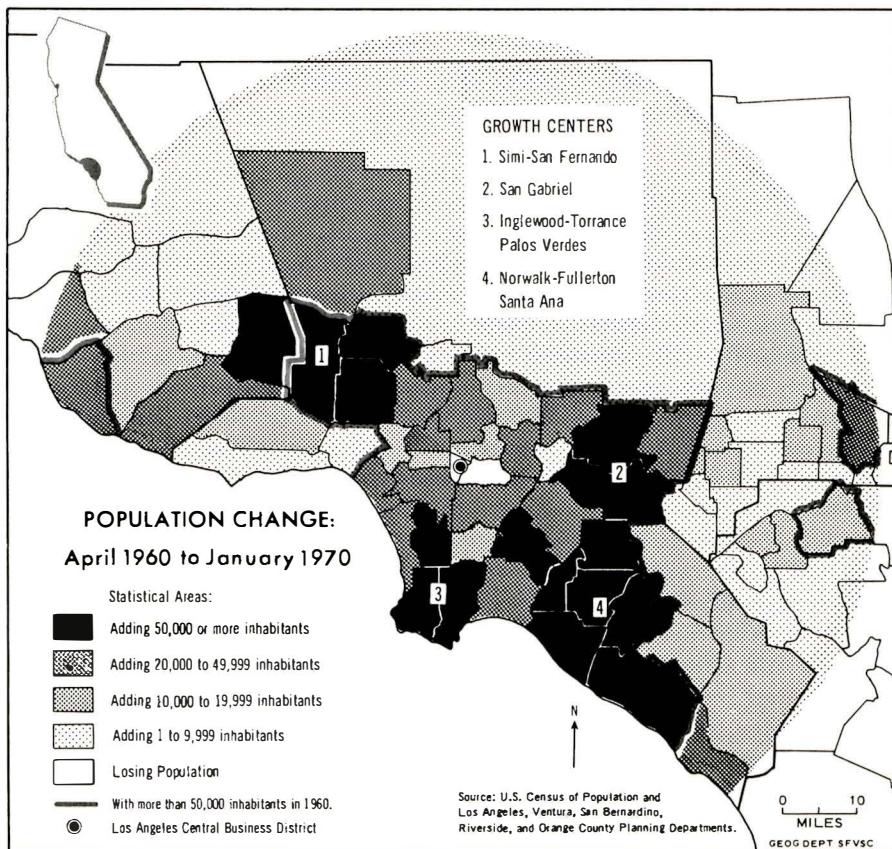


Figure 8

Dispersed Retail and Service Activities³²

Retail and service centers are scattered, a pattern in keeping with both the historical geography of the area and the tendency of tertiary activities to pursue middle-class buying power into the suburbs. Numerous commercial districts developed early in the dispersed towns, and many were able to compete effectively for trade areas. This pattern of spatial competition, plus the distance between many of the centers, hindered the development of a single dominant downtown along traditional lines. Subsequently engulfed by urban sprawl, the established business districts persisted, but after World War II the older centers were unable to supply the retail goods and shopping convenience demanded by mobile, affluent suburbanites, so numerous planned shopping centers geared to serve suburbanites were built. The dispersion of retail and service trade is shown by the pattern of "Major Retail Centers in 1963" (Fig. 6). Major retail centers embrace two kinds of trading concentrations: established central business districts and larger shopping centers, the latter normally focusing on a department store. Added to these in Figure 6 are the main business districts of Ventura, Oxnard, San Bernardino, Ontario, and Riverside. One index of retail spread is afforded by the change in number of major retail centers in Los Angeles and Orange Counties between 1958 and 1967. During that time, the number of centers rose from 43 to 121, and most were near the urban periphery in areas of rapid development.

Industrial Dispersal³³

Industrial dispersal in metropolitan regions is a nationwide trend, but within the 60-mile circle it is not just a by-product of recent events. Like the polynuclear commercial pattern, it is a product of the area's historical geography. Manufacturing has found no overriding locational features in any part of the agglomeration, and although older industrial districts in proximity to railway lines and freight terminals form the largest nodes, industry is located in every direction from the urban cores (Fig. 7), especially along major rail lines and adjacent to airports or harbor areas. Significant also is the fact that practically all of the area's industry came relatively late, and most of the desirable close-in sites were already occupied. In addition, three of the region's leading industries have unusually large land requirements. Aircraft and motion picture production occupy large buildings adjoined by large plots of land for airfields and outdoor scenes and sets, and perhaps no industry has greater land-employee ratio than oil refining. The widespread nature of industrial development in the 60-mile circle contributes to urban sprawl and the need for individualized transportation for both people and goods.

Today, numerous industries are tied to neither railways nor the waterfront but need large tracts of land, and land is available at the best price on the urban periphery. Land zoned for industry and land costs are presently the main factors in industrial site selection, and this condition, plus the suburban location of large areas zoned for industry, the proliferation of planned industrial parks and freeways at the periphery, and the suburban location of most of the educated technical people so necessary to many modern growth industries, have stimulated industrial dispersion. An analysis of industrially zoned land in Los Angeles, Orange, San Bernardino, and Riverside Counties demonstrates this point.³⁴ The median price per acre in 1963-64 varied from a low of \$6,000 in San Bernardino-Ontario to a high of \$157,500 in Santa Monica. Moderately low-priced areas were Riverside, \$7,500; Industry, \$17,500; and Santa Ana, \$21,000. Relatively high-cost locations were Culver City, \$145,000; Central Los Angeles, \$80,000; and Glendale, \$75,000. Such data indicate that, with few exceptions, land costs decrease with the distance of an industrial zone from the Santa Monica area.

Another factor contributing to industrial scattering is the increasing number of industrial parks. In combination with the already widespread pattern of industrially zoned land in the area, and in addition to numerous industrial parks that are fully occupied, ninety-two parks were seeking occupants in 1969.³⁵ Moreover, in many cases these parks combine with planned shopping centers to provide nuclei stimulating residential scatter in fringe areas.

Freeways

Because of the low density urban pattern and distances separating homes, jobs, and other destinations, mobility is a way of life in Greater Los Angeles. The attempt to handle such mobility has thus far rested on freeways (Fig. 5). Within the 60-mile circle are over 500 miles of freeway. Besides accommodating individualized travel needs—both for people and goods—by handling the nearly five million cars and 60,000 trucks registered in the five-county area, the location of freeways appears to determine to a great extent the geographical pattern of urban expansion. Such development tends to anticipate and follow freeways into less-crowded peripheral areas. For example, Orange County growth mushroomed as the Santa Ana Freeway moved southeastward from Los Angeles, and the same thing is happening along the Ventura Freeway to the north. Freeway construction is accompanied by a surge of single-family construction and the entry of suburban shopping centers and low-rise apartments. Financial and trade facilities are not far behind, and soon industry moves into the area. The value of property increases and new cities are incorporated to supply local government services and educational facilities. This is the prototype of most of Greater Los Angeles' peripheral growth in recent years. It rests to a large degree on the first phase of freeway construction.³⁶

The collection and distribution system within the 60-mile circle is increasingly dependent upon trucks and for those activities relying on trucks, freeways are more than just a convenience, they are a necessity. In 1964 there were over 8,100 "for hire" truckers in the fourteen southernmost counties of California, an area that used a total of over 61,000 trucks. Los Angeles alone has more trucks than New York, Cleveland, and Detroit combined.³⁷

Automobile Culture

It is too simple to dismiss the pattern of urban growth as only a product of the automobile era. For instance, population growth has been largely from immigration, and it can be inferred from the states from which the immigrants came that only a small percentage had previous experience with apartment living or mass transportation. Rather, they were from areas where single-family homes were part of the accepted mode of living, and movement was highly individualized and thus dependent on the automobile. The cultural background of the inhabitants, therefore, shows through as a strong force shaping the pattern of Greater Los Angeles. Their predilections were not seriously blocked but were encouraged by the overall set of circumstances operative in the region at the time of their arrival.³⁸

Nevertheless, inhabitants of the 60-mile circle are dependent on the automobile to a degree greater than in any large urban area in the nation.³⁹ Several reasons have been offered for this, in addition to the cultural one considered above. Mass transit throughout Greater Los Angeles has been—and is—inefficient, especially in relation to the journey to work. The car has been used in the area for a long time; in fact, it was effective early, even before the advent of enclosed glass-and-steel bodies and reliable heaters. Cars can still be used all year around with less inconvenience than in eastern and midwestern cities. The agglomeration lacks a dominating commercial-industrial core, a condition further accentuated by a dispersed pattern of non-residential development which contributes to a tangle of origins and destinations, individualized travel habits, and the failure of mass transit on economic grounds.⁴⁰ It should also be noted that the space devoted to streets and freeways, plus the vast areas needed to store cars, contribute significantly to low density spread.

Affluence and the Availability of Housing Loans

Inhabitants of the 60-mile circle are not only numerous, most are prosperous and enjoy a comparatively high level of personal income. Total personal income for the five counties in 1968 was higher than for the states of Ohio, Texas, or Michigan, and was exceeded only by the states of Pennsylvania, Illinois, New York, and California as a whole. Per-capita income

exceeds the average for most parts of the country as well. Residents of the 60-mile circle averaged \$4,000 in 1968, well above the national average of \$3,421, and Los Angeles County inhabitants averaged still higher at \$4,295. Significant points here are that the bulk of the area's inhabitants can afford to purchase "private space" in the form of single-family homes in outlying areas, and can afford to purchase and drive automobiles to work.⁴¹

A substantial portion of the homes in Greater Los Angeles have been constructed in a period when the federal government's philosophy was to encourage and aid home ownership. The Federal Housing Administration and Federal and California Veterans Administrations insured and guaranteed loans with little or no down payment, low interest rates, and monthly payments spreading over periods up to thirty years. These conditions encouraged hundreds of thousands of families to buy homes in suburban areas.

Some Recent Areal Manifestations

Some of the development trends suggested above are exemplified by the areal pattern of population growth over the past decade (Fig. 8). The four population growth centers occupy level terrain near the periphery where abundant developable land is accessible by freeway, land prices are low, and basic urban needs are available.⁴² Such growth areas are stimulated in their early stages by a common urge—the search for cheap land. This search scatters urban development and feeds upon itself. The developer's primary objective is land that is close enough to sources of employment for the prospective owners, but at the same time far enough away from more intensively developed centers where land costs are high. In finding and establishing his development on cheaper land, he creates another center of high-priced land which, in turn, encourages more forays into other cheap areas.⁴³ Living needs necessary to set off peripheral growth areas—like basic gas, electricity, shopping, health, and city services—are usually numerous at the fringe because of accessibilities

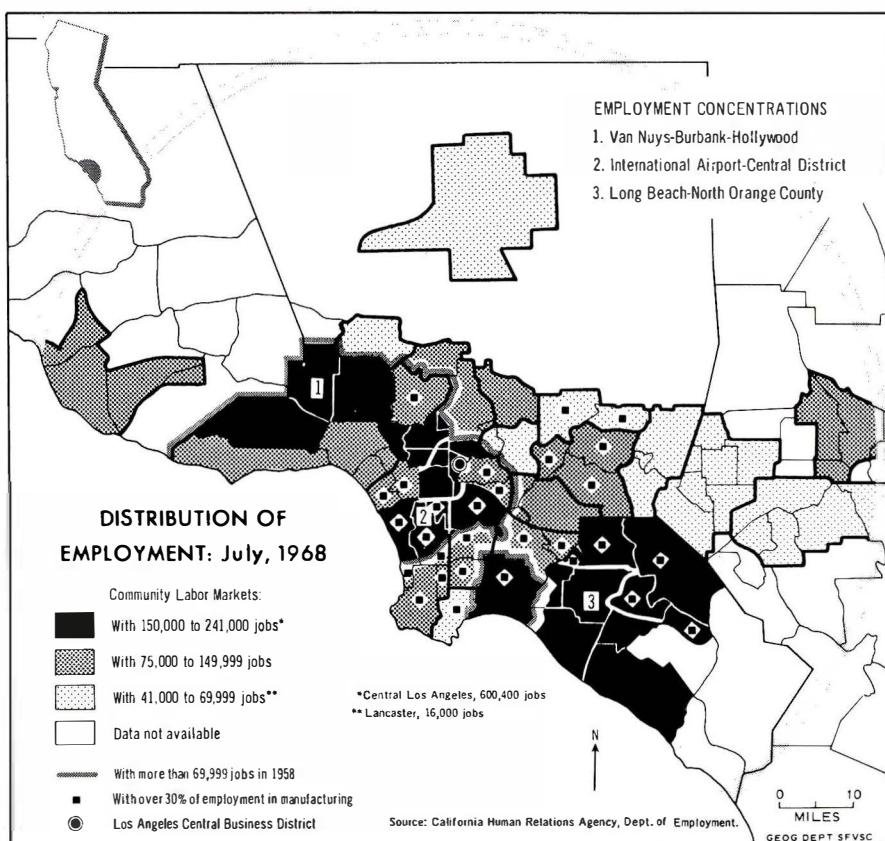


Figure 9

resulting from scatteration, while access to metropolitan jobs and higher level goods (Fig. 6) are obtained by freeway connections with a variety of nodes rather than from any single center. The widespread nature of employment in the 60-mile circle, as well as the pattern of manufacturing employment, is shown in Figure 9.

Summary

From the points made thus far, it would appear that recent development trends in Greater Los Angeles call for a still more dispersed urban pattern. Such is the case because private movement costs associated with gaining access to major urban nuclei have increased, public investment in transportation facilities have sharply reduced private transportation costs at the periphery, and the drive for private space remains a paramount motivation for families able to afford it. Moreover, the growing accumulation of capital in transportation facilities, coupled with the increasing substitutions of information flows, have gradually dissipated many of the advantages of economic proximity that traditional business centers had to offer. When the space requirements of modern industry and the location of the bulk of middle-class buying power are considered, it is not surprising that the lion's share of employment opportunities are found away from older centers as well. Accordingly, it appears that the number of middle-class families actually minimizing their spatial contingencies by locating in the suburbs is increasing every day. On a broad scale, therefore, it would seem that the current strategy of constructing high-volume, high-speed, radial freeways articulated by circumferentials should amplify the growth trends considered above in all expanding regional cities.

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¹ As used here, the terms urban form and urban structure follow the interpretation of Catherine Bauer Wurster, who defines them as follows: " 'Form' means the physical pattern of land use, population distribution, and service networks, while 'structure' signifies the spatial organization of human activities and interrelationships." C. Bauer Wurster, "Form and Structure of the Future Urban Complex" in L. Wingo Jr. (ed.) *Cities and Space* (Baltimore: Johns Hopkins Press, 1963), p. 75. Both terms are subsumed in the term "pattern" as it is used in this report.

² The term "Southern California Metropolis" is not original to this report. It was used at least as early as 1959 in Southern California Research Council (publisher), *The Southern California Metropolis—1980*, Report No. 7 (Los Angeles: 1959).

³ California State Department of Finance, *Special Report: Provisional Total Population Projections for the State of California* (Sacramento: January 15, 1970).

⁴ California State Department of Finance, *Special Report: Preliminary Projections of California Areas and Counties to 1985* (Sacramento: April 20, 1967).

⁵ Economic Research Department, Security Pacific National Bank (Publisher) *The Southern California Report: A Study of Growth and Economic Stature* (Los Angeles: 1970), pp. 12-14, and same author, *Monthly Summary of Business Conditions in Southern California*, Vol. 49, No. 2 (1970).

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⁷ The outstanding precedent set thus far for describing a megalopolitan development is that by Gottmann. So, to facilitate easy comparison between areal aspects of urban growth in the Southern California Metropolis and that observed along the northeastern seaboard of the United States, the same indices of population density were used here as were used by Gottmann. See, J. Gottmann, *Megalopolis: The Urbanized Northeastern Seaboard of the United States* (New York: Twentieth Century Fund, 1961), especially the maps on pp. 6, 386 and 387. In the present study, population figures and area measurements for judicial townships were used for 1940; density figures for the county census areas used in 1960 were extracted from U.S. Bureau of Census, *Area Measurement Reports*, "Areas of California: 1960," Report GE-20, No. 6 (Washington, U.S. Government Printing Office, 1965), sources of data for local county planning areas were: Santa Barbara County Planning Department, Ventura County Planning Department, Los Angeles County Regional Planning Commission, Orange County Population Research Committee, Riverside County Planning Department, San Bernardino County Planning Commission, and the San Diego County Planning Department. For a full utilization of this approach, see, R. E. Preston, "Urban Development in Southern California Between 1940 and 1965," *Tijdschrift Voor Economische en Sociale Geografie*, Vol. 58 (1967), pp. 237-254.

⁸ Sources for these maps are given in footnote 7.

⁹ For excellent descriptions and analyses of urban sprawl in Southern California, see the sections dealing with that area in D. L. Foley, R. L. Drake, D. W. Lyon, and B. A. Ynzenga, *Characteristics of Metropolitan Growth in California* (Berkeley: Center for Planning and Development Research, 1965), Volume I; and in H. D. Ruth and A. Krushkov, *Urban Land Requirements in California, 1965-1975* (Berkeley: Center for Planning and Development Research, 1966). For an excellent analysis of the process of "Scatteration" see J. Lessenger, "The Case for Scatteration," *Journal of the American Institute of Planners*, Vol. 28 (1962), pp. 159-69.

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¹¹ Preston, "Urban Development in Southern California Between 1940 and 1965" *op. cit.*, pp. 240-247.

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