

TOPIC: A Development Comparative Analysis Of Los Angeles and San Francisco.

GIS TERM PROJECT

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Table of Contents:

1 Introduction

2 Objective of the study

3 Study Area

3.1 Los Angeles

3.2 San Francisco

4 Methodology

5 Sources of data

6 Tools of study

7 Review of Literature

7.1 Urban definitions

7.2 General trends in the growth of US cities

7.3 General trends in the growth of California state

8 Analysis and Evaluation

8.1 Trends in the Growth of Los Angeles and San Francisco

8.1.1 Population

- *Population Trends in Los Angeles Area*
- *Population Trends in San Francisco Area*
- *Impacts of Population Growth in the two areas – An Analysis*

8.1.2 Economy

- *Economic Trends of Los Angeles Area*
- *Economic Trends of San Francisco Area*

- *Analysis of the various economic factors of the two areas*

8.1.3 Transportation

- *Transportation scenario of Los Angeles*
- *Transportation scenario of San Francisco*
- *Traffic Congestion Problem*
- *Traffic Congestion- Causes and Remedies*

8.1.4 Housing

- *Housing scenario of Los Angeles*
- *Housing scenario of San Francisco*
- *Housing related problems facing the two urban areas– An Analysis*

8.1.5 Urban Sprawl

- *Urban Sprawl scenario in the two urban areas– An Analysis*

9 SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

9.1 Population

9.2 Economy

9.3 Transportation

9.4 Housing

9.5 Urban Sprawl

References

Appendix

1. Introduction :

The two largest urban areas of California State, Los Angeles and San Francisco have witnessed phenomenal growth ever since the post industrialization era. This period witnessed an economical boom in the US, during which these two areas were the focus of attention. Los Angeles developed into one of the nation's major industrial, commercial, and financial centers. The city's phenomenal growth was brought about by its equable climate, which attracted people and industry from all parts of the nation. San Francisco was once the major pacific coast seaport of the United States. Today the city is an important center for finance, technology, tourism, and culture.

The two urban areas with their robust economy, diverse mix of communities, numerous parks, vast areas of open space and a moderate climate also distinguish the region. The region's allure and exuberant growth have created an economy that ranks higher than that of many countries and includes a number of cutting edge industries. It has long served as an incubator for the high technology industry, research and product development. Equally important is their role as a major tourist destination attracting visitors world-wide. However, the region's growth and popularity contribute to several adverse impacts which affect the various necessary infrastructure to sustain economic growth the region thrives upon.

Hereunder is a development comparative analysis of Los Angeles and San Francisco. The focus of attention will be on, '**The Growth And Development Of Urban Areas -In Terms Of Cities'**, The analysis is based on the five most important indicators relative to the development of a modern city, namely, population, economy, transportation, housing and urban sprawl. In this regard the analytical tools of Arc-View GIS software have been used. As a case study the data samples of *Two Largest Urban Areas of California State*, namely, Los Angeles and San Francisco, has been taken as the basis for the study.

2. Objective Of The Study :

The research achieve the following objectives:

- Carry out a comparative analysis on the growth and development of the two largest and most complex urban areas of California State, namely, Los Angeles and San Francisco. California has been chosen as a subject of the study as it provides one of the world's most vibrant and complex scenarios, both historically and with respect to present times, pertaining to the dynamics concerned with the development of a state.

- Whether the overall growth of a particular urban area has been uniform and homogeneous and see how a particular area dealt with the various pressures normally encountered by contemporary big cities, like the increase in population by the influx of people etc; and then consequently try to identify the sectors of imbalanced and impartial growth.
- Come-up with few comprehensive and balanced set of approaches for a sustainable future approach, aimed at solving the current problems.

3. Study Area :

The location of the study are two largest urban areas of California State, namely; Los Angeles and San Francisco. But, the study will focus on studying the characteristics of these urban areas in terms of it's major cities. Some of main features of these urban areas are:

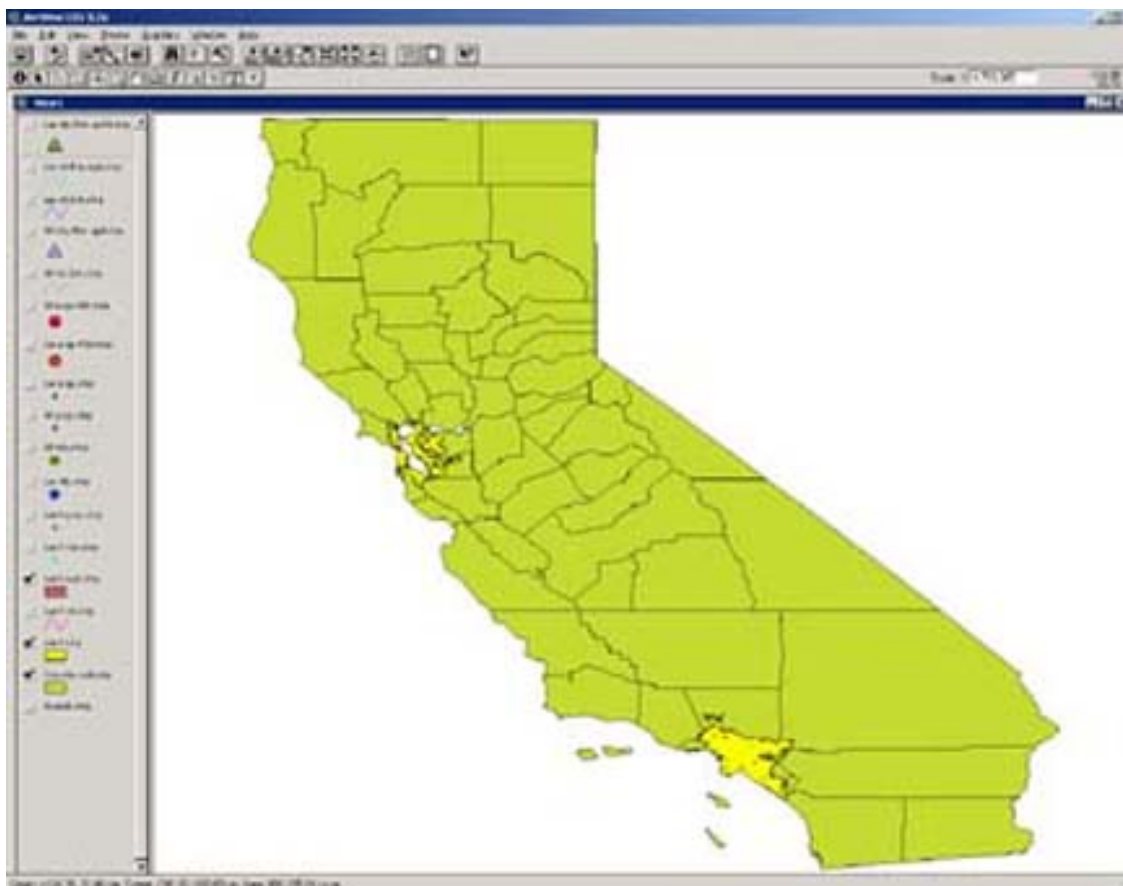


FIGURE 1: Study area location map

3.1 Los Angeles:

Los Angeles is the largest city in California and the second-largest urban area in the nation. It is located in the southern part of the state on the Pacific Ocean. The city of Los Angeles covers a land area of 1,214.2 sq km (468.8 sq mi) and is situated on a low, hilly coastal plain.¹ Geographically, it extends more than 40 miles from the mountains to the sea. Santa Monica Bay forms its western edge and San Pedro Bay is to the south. The city limits extend from the ocean on the west to the San Gabriel Mountains on the east and from San Fernando Valley on the north to San Pedro Bay on the south. However, the boundary is irregular. A narrow southward extension, called the Shoestring Strip, links the harbor to the rest of the city.

Historically, Los Angeles grew from a farming settlement established by the Spanish in 1781. It was the last place to surrender to the United States during the war with Mexico, at the time of the American occupation in 1847. Los Angeles was incorporated as a city in 1850. Throughout the next century it remained a somewhat sleepy agricultural town. But in the 20th century Los Angeles began to embody a style of living desired by the people of the nation. Its warm climate and economic opportunities drew newcomers from across the country and much of the world, making the city a vibrant and constantly changing place.²

Los Angeles is noted for its balmy climate, lush scenery, motion-picture and television industries and freeways. The development of modern day Los Angeles started with its citrus-fruit industry, the discovery of oil in the area during the early 1890s and the development of its man-made harbor. Its port is one of the busiest in the United States. Los Angeles is a major hub of shipping, manufacturing, industry, and finance, and is world-renowned in the entertainment and communications fields. Los Angeles County is the nation's largest manufacturing center, and the ports of Los Angeles and Long Beach are second only to New York as the largest customs district in the United States. Major employers in the Los Angeles Five-County area are in the business and management sector. Growth in the key wholesale industries—apparel and textiles, furniture, jewelry, and toys—and the boom in industrial trade were the trend for the region in the 1990s. Other important sectors are health services and international trade and investment.³

The rapid growth also created problems. Los Angeles is beset by air pollution and traffic congestion, divided by racial and economic inequities, and lacking in a sense of permanence found in slower-growing communities. Still, the rich mix of people from many different cultures and the role the city plays in providing much of the country's entertainment makes Los Angeles a fountain of trends and ideas for the nation.

¹ Encarta Deluxe 2002 Encyclopedia

² <http://www.infoplease.com/>

³ Ibid

3.2 San Francisco:

San Francisco, the fourth-largest city in California, is coextensive with San Francisco County. It is located in the northern part of the state between the Pacific Ocean and San Francisco Bay on a narrow arm of land that embraces San Francisco Bay, the largest land-locked harbor in the world. The city of San Francisco is bordered on the west by the Pacific Ocean, on the north by the strait known as the Golden Gate, on the east by San Francisco Bay, and on the south by San Bruno Mountain. With the construction of the Bay and Golden Gate bridges and other links from the city to its suburbs, the San Francisco Bay area has become one large metropolitan region. San Francisco itself is only 122 sq km (47 sq mi) of land area, but the city's Primary Metropolitan Statistical Area (defined by the Census Bureau as San Francisco, San Mateo, and Marin counties) has a total area of 4,665 sq km (1,801 sq m).⁴

Historically, San Francisco initially developed as a port city, and its early growth was centered on its waterfront. In 1846, during the Mexican War, San Francisco was taken over by the United States. It was renamed San Francisco in 1847 and became incorporated as a city in 1850. In 1906, San Francisco experienced the nation's most destructive earthquake, which, together with the fire that followed, practically destroyed the city. The city was quickly rebuilt and grew rapidly as a leading transportation, industrial, and cultural center. San Francisco initially developed as a port city, and its early growth was centered on its waterfront.⁵

Until the mid-1930's traveling by land from San Francisco to the eastern side of San Francisco Bay entailed a long journey down the peninsula and up the other side. Construction of two large suspension bridges in the 1930s tied San Francisco to the mainland, enabling many more people to live outside the city and commute to work. The San Francisco-Oakland Bay Bridge, which opened in 1936, connects San Francisco to the East Bay area. The Golden Gate Bridge, probably the most widely recognized symbol of the city, opened in 1937. It connects San Francisco to Marin County to the north.⁶

A vital part of the economic and cultural fabric of northern California, the port of San Francisco covers 7¹/₂ mi of waterfront.⁷ The port is home to a broad range of commercial, maritime, and public activities. Its major shipping terminals serve shipping lines from around the world. The electronics and biotechnology industries are well represented throughout the Bay Area. With nearly 30% of the worldwide bio-technology labor force and 360 biotech firms. Tourism is one of San Francisco's largest industries and the largest employer of city residents. San Francisco is also the banking and financial center of the

⁴ Encarta Deluxe 2002 Encyclopedia

⁵ <http://www.infoplease.com/>

⁶ Encarta Deluxe 2002 Encyclopedia

⁷ <http://www.infoplease.com/>

West and is home to a Federal Reserve Bank and a United States Mint. More than 60 foreign banks maintain offices there.

4. Methodology :

The comparative analysis will be done in terms of five most important indicators relative to the development of a modern city, namely, population, economy, transportation, housing and urban sprawl. This analysis will be done using the analytical tools of Arc-View GIS software.

5. Sources Of Data :

The basis of data collection will be primary based on the following sources:

- ESRI Data & Maps CD set for United States of America.
- Literature and map surveys.
- References and assumptions, based on the information available through Internet.

6. Tools Of Study :

The main tool used for doing the analysis is the Arc-View GIS 3.2a Software package. Geographic Information Systems (GIS) are a type of computer software that allows data to be located and represented on a map. Using GIS, planners can aggregate data points that have not previously been viewed together to discover patterns or correlations across data sets or types. Most countries, cities, and state governments already use GIS programs in their planning departments. GIS is used for environmental planning and tracking, voter redistricting, land use planning, and, in some areas, for crime prevention and other kinds of community planning. Infact, today GIS is being used in a much broader spectrum than ever before.

7. Review Of Literature :

7.1 *Urban Definitions :*

Delineating an urban boundary first requires selecting a definition of urban land. Urban land can be broadly divided into functional and physical definitions. "Urban" in functional terms relates to activities such as industrial, residential, agricultural, etc. However, there are often problems determining which activities should be adopted as urban. Similarly, "urban" can be defined in physical terms, relating either to population density or to land cover, where any developed land is considered urban regardless of its function. There are also variations in the intensity of land uses that influence the definition of urban area, such as high or low housing density. For example, the US Bureau of the Census primarily bases its definition on population size and density.

An urbanized area comprises a place and the adjacent densely settled surrounding territory that together have a minimum population of 50,000 people. The "densely settled surrounding territory" adjacent to the place may consist of one or more contiguous blocks having a population density of at least 1000 people per square mile. This area is called an 'Urban Land'.⁸ Depending on the specific purpose and the sources used for a study, there can be more than one definition of urban land.

7.2 General Trends in the Growth of US Cities :

U.S. population has mushroomed from 150 million in 1950 to 290 million today. Between 1990 and 2000, the nation's population grew 13 percent to a record 281.4 million. This population growth, although experienced in every state, was not uniform. The nation's population became somewhat more concentrated in urbanized areas with populations of more than 200,000, where the average growth was 24 percent over the decade. Small-urbanized areas grew by 11 percent in population, and the nation's non-urbanized population decreased nearly 3 percent during this time.⁹

Overall, cities expanded rapidly during the 1990s, growing nearly twice as fast as in the 1980s. Western and southern cities grew the fastest, while urban industrial centers in the Midwest and Northeast declined in population. New York remained the country's largest city, however, passing the 8 million mark.¹⁰

In 2000, 80.3% of Americans (226 million people) lived in metropolitan areas, up slightly from 79.8% (198.4 million people) in 1990. (A metropolitan area is a city plus the adjacent communities to which it is linked economically.) All of the metropolitan areas with populations of at least 5 million grew over the period, ranging from 29% for the Dallas metropolitan area to 5% for Philadelphia. The total population within metropolitan areas

⁸ <http://landcover.usgs.gov/urban/>

⁹ <http://www.ctaa.org/>

¹⁰ <http://www.infoplease.com/>

increased by 14%, while the non-metropolitan population grew by 10%.¹¹ The overall economic growth rate of USA as a nation was 13.2%. In California growth rate in the 1990's was only slightly higher than the nation's at 13.8%.¹²

7.3 General Trends in the Growth of California State :

California encompasses the dreams of millions of migrants from other states and nations, despite its congestion, higher living costs, strained water supplies, crowded schools, polluted air and threat of earthquakes. Everybody wants to come and live in California.

Due to this reason, California has historically, always been growing at a phenomenal rate. For California, the 1990s were an off decade compared with its customary rate of post-war growth: 48.5% in the 1950s, 27.1% in the 1960s and 25.7% in the 1980s. Even during the Baby Bust of the 1970s, the state registered 18.5% growth.¹³

Amid a deep recession in the early 1990s, an estimated 1.26 million more people left California than arrived from other states, the state Department of Finance estimates. They fled mostly for jobs in Oregon, Nevada, Arizona and other Western states. By the late '90s, recession had given way to a booming technology-driven economy. From 1996 on, California attracted an annual average of 15,000 more people from other states than it lost. The state's two other growth engines, foreign immigration and births, remained high.¹⁴

Because of their sheer size, California's coastal centers grew the most but not the fastest. In Southern California, the ring of counties around Los Angeles posted hefty growth rates. Riverside grew 32% to 1,545,387; San Bernardino 20.5.% to 1,709,434; and Orange 18.1% to 2,846,289. All out stepped growth rates in Los Angeles County — up 7.4% to 9,519,338 — and San Diego County — up 12.6% to 2,813,833. But even modest growth in Los Angeles County is significant: If it were a state, it would now rank ninth behind. Counties in the heart of the Central Valley all surpassed the state's overall growth rate. Fresno grew 19.8% to 799,407; Kern 21.7% to 661,645, San Joaquin 17.3% to 563,598 and Sacramento 17.5% to 1,223,499.¹⁵

But experts say that with California's population expected to hit 58 million by 2040, and the Central Valley more than doubling to 11.5 million, the challenge there is to handle growth without changing the region's fundamental character¹⁶.

¹¹ Ibid

¹² <http://www.usatoday.com/>

¹³ Ibid

¹⁴ Ibid

¹⁵ Ibid

¹⁶ Ibid

8. ANALYSIS AND EVALUATION :

8.1 Trends in the Growth of Los Angeles and San Francisco:

8.1.1 POPULATION :

At 34.3 million people, California is the most populous state in the U.S. In the past ten years, California grew by 17 percent; in the last 50 years, it more than tripled.¹⁷ Two-thirds of the population live in the eight counties with populations of greater than one million. Five of those eight counties are in Southern California. Just under 30 percent of all Californians live in Los Angeles County alone. A total of 6.7 million people, about one in five live in the nine county San Francisco Bay Area.¹⁸ During the last decade, California state added the most people: 4.1 million for a total of 33,871,648. About 60% of the growth was foreign immigrants. That's about a quarter of the U.S. total, future Census data is expected to show. California's population is expected to hit 58 million by 2040.¹⁹



- Just under 30 percent of all Californians live in Los Angeles County alone.
- A total of 6.7 million people--about one in five—live in the nine-county San Francisco Bay Area.

FIGURE 2: California's Population Growth

¹⁷ <http://www.npg.org/states/ca.htm>

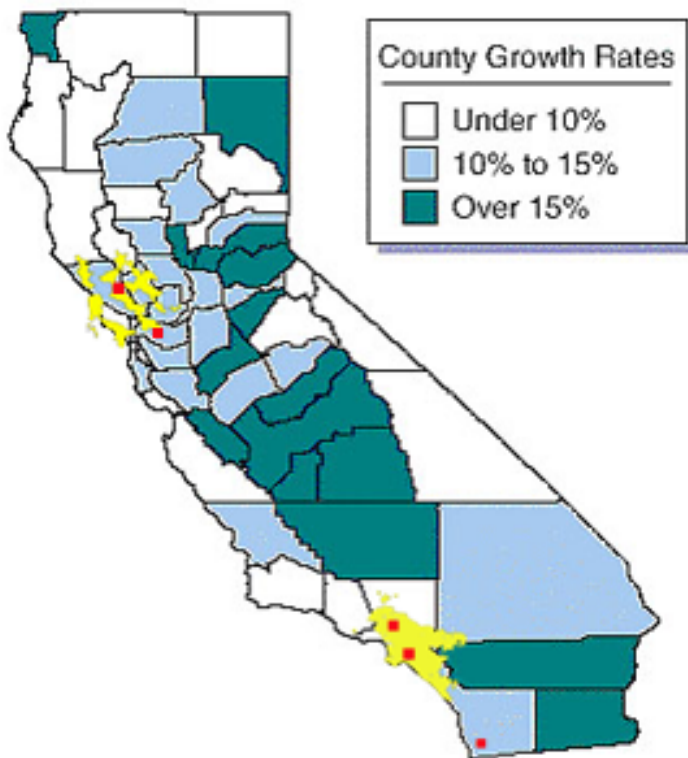
¹⁸ http://www.lao.ca.gov/1998_calfacts/

¹⁹ <http://www.usatoday.com/>

Population Rank	City	Population as of January 1, 2000
1	Los Angeles	3,823,500
2	San Diego	1,277,800
3	San Jose	923,600
4	San Francisco	801,400
5	Long Beach	457,600

Source: California Dept. of Finance, (www.calcsea.org/president/csea_voice/)²⁰

FIGURE 3: California's Five Most Populated Cities



- During the last decade, Los Angeles, the nation's second most populous city at 3,823,500, added 209,422. That's a 6% increase.
- San Francisco's population increased 52,774, or 7.3%, to 801,400.

FIGURE 4: Total Growth, 1990 Through 2000 And Five Most Populated Cities

²⁰ California Dept. of Finance, (www.calcsea.org/president/csea_voice/)

Population Trends in Los Angeles Area :

Los Angeles's population expanded rapidly during the 1980s as immigration from Asia and Latin America, especially Mexico, boomed and the city continued to draw people from other parts of the country. The population increased from 2,966,850 in 1980 to 3,485,398 in 1990. The growth continued in the 1990s, although at a slower pace. The population was 3,823,500 in 2000. The Los Angeles-Long Beach metropolitan area reached a population of 9,519,338 in 2000. The larger five-county consolidated metropolitan area reached 16,373,645 people.²¹

According to the 2000 census, whites are 46.9 percent of the population, blacks 11.2 percent, Asians 10 percent, Native Americans 0.8 percent, Native Hawaiians and other Pacific Islanders 0.2 percent, and people of mixed heritage or not reporting ethnicity 30.9 percent. Hispanics, who may be of any race, are 46.5 percent of the people, totaling 1.7 million.²²

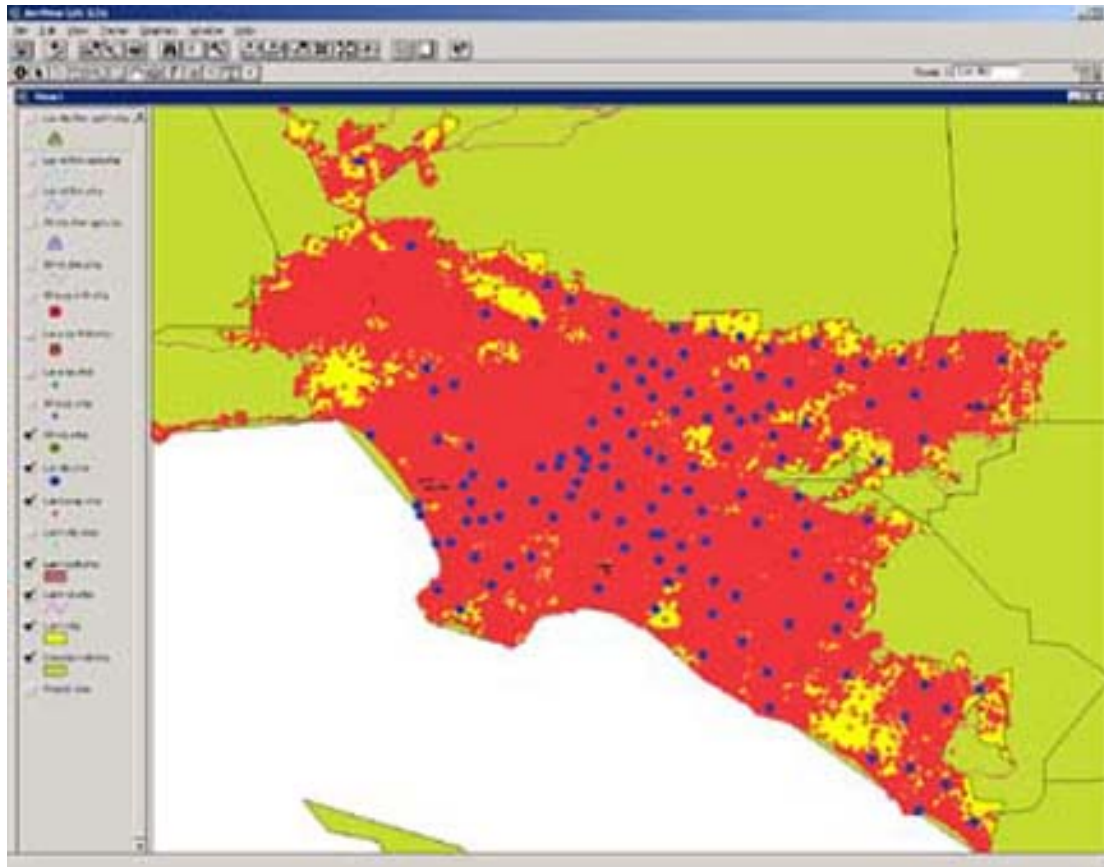


FIGURE 5: Population Density of Los Angeles

²¹ Encarta Deluxe 2002 Encyclopedia

²² Ibid

Hispanics of Mexican heritage formed the largest ethnic group in Los Angeles in the 1990s. The next largest Hispanic group were Salvadorans, many of whom moved to the city to escape political turmoil in El Salvador. Blacks, at 415,000 in 2000, are the second largest minority in Los Angeles. Blacks began to migrate to Los Angeles in large numbers during the economic boom of World War II (1939-1945), lured to the city by good jobs available in war-production plants. Asians have been immigrating to California since the middle of the 19th century, and many of them have made homes in Los Angeles. In the 1990s the largest groups among those of Asian heritage were Filipino, Korean, Chinese, and Japanese. According to the 1990 census, 38 percent of the city's residents were born outside the United States. Los Angeles has become the nation's most grid locked and *densely populated* urban region - that is, had the most people per square mile.²³

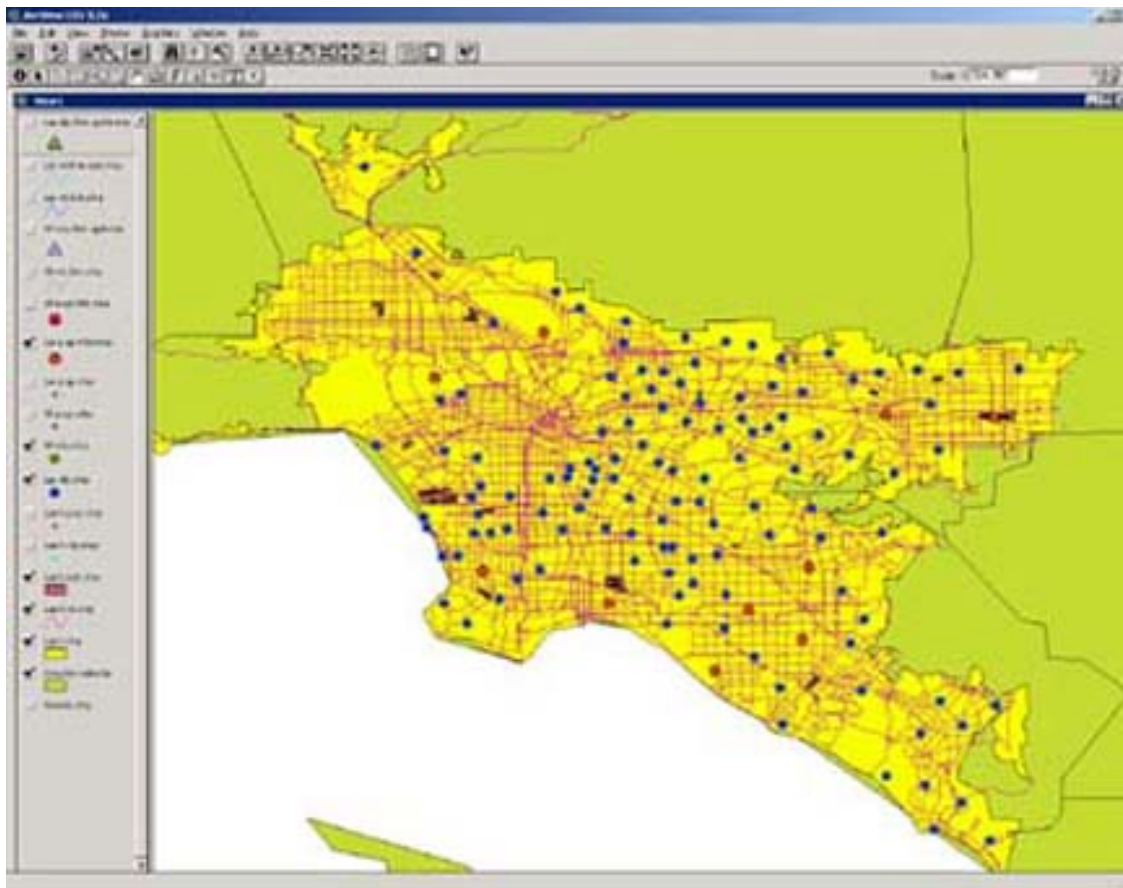


FIGURE 6: Ten Most Populated Cities of Los Angeles

²³ Encarta Deluxe 2002 Encyclopedia

Population Trends in San Francisco Area :

San Francisco grew rapidly throughout the 19th and early 20th centuries, increasing in population from 57,000 in 1860 to 417,000 in 1910. Although the population leveled off during the 1930s, rapid growth resumed in the following decade, fed by the huge demand for labor by war industries during World War II. By 1950 the population had reached 775,000. After 1950 the city's population slowly declined as the surrounding suburbs grew. In 2000 the population of San Francisco was 801,400. Some 1.7 million people lived in the three-county San Francisco metropolitan area, and 7 million lived in the Consolidated Metropolitan Statistical Area defined by the Census Bureau as centered on San Francisco, Oakland, and San Jose.²⁴

Throughout most of San Francisco's history, the city's population was largely white. Among the residents were large numbers of European immigrants and their children. In the late 19th century the largest groups in the city were Irish, German, and British. In the early 20th century Italian and Scandinavian

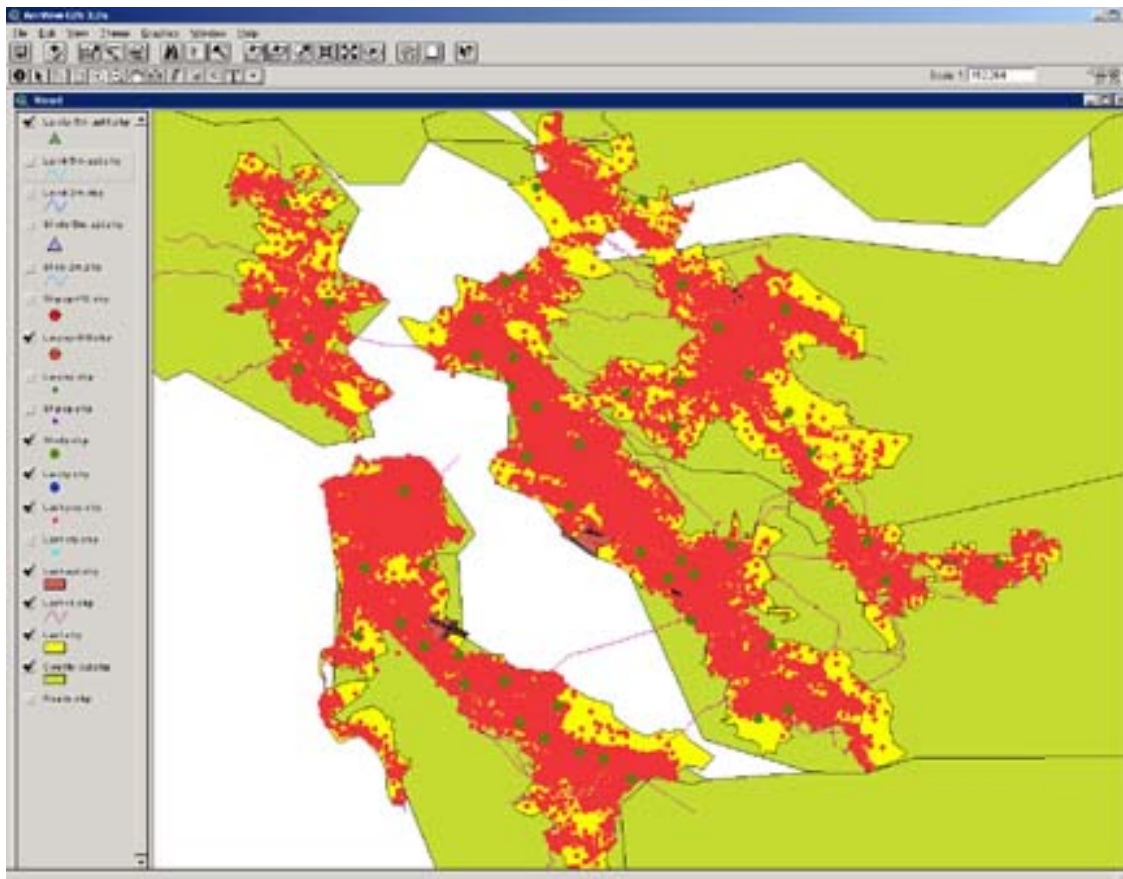


FIGURE 7: Population Density of San Francisco

²⁴ Encarta Deluxe 2002 Encyclopedia

groups also became prominent. The population remained more than 90 percent white until World War II, when significant numbers of African Americans moved to the Bay Area to take jobs in shipbuilding and other wartime industries.²⁵

The city has long been home to immigrants from Asia and people of Hispanic descent. Some of the ancestors of these residents moved to California in the late 18th and early 19th centuries, when it was a Spanish or Mexican province. Others arrived during the Gold Rush of 1849 or in the early 20th century. With changes in federal immigration law in the 1960s, immigration from Asia, Latin America, and the Pacific Islands began to increase, and many newcomers from those regions settled in San Francisco. Other recent immigrants have come from the Middle East and the former Union of Soviet Socialist Republics, producing significant Arab and Russian communities within the city. By the 1990s San Francisco's population was both racially and ethnically diverse.²⁶

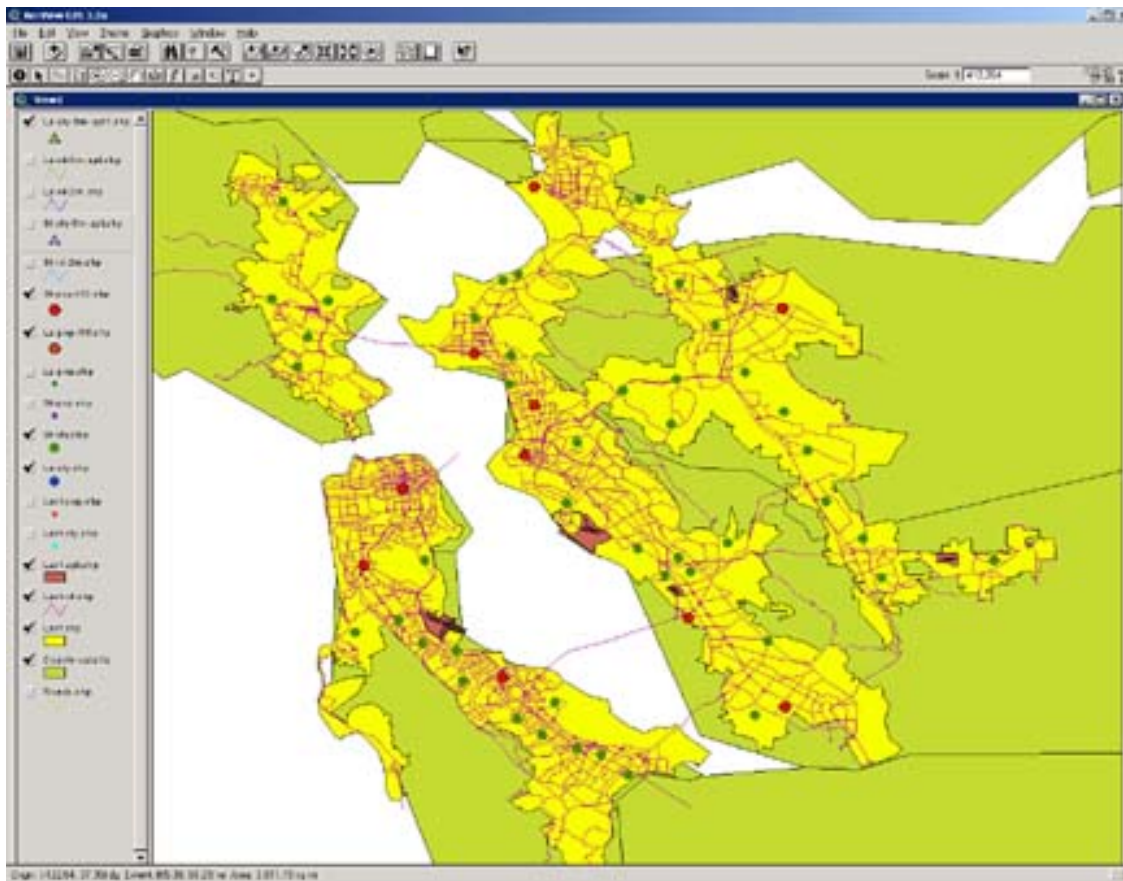


FIGURE 8: Ten Most Populated Cities of San Francisco

According to the 2000 census, whites are 49.7 percent of the people; Asians, 30.8 percent; blacks, 7.8 percent; Native Hawaiians and other Pacific Islanders,

²⁵ Encarta Deluxe 2002 Encyclopedia

²⁶ Ibid

0.5 percent; Native Americans, 0.4 percent; and people of mixed heritage or not reporting ethnicity, 10.8 percent. Hispanics, who may be of any race, are 14.1 percent of the population.²⁷

Impacts of Population Growth in the two areas – An Analysis :

Los Angeles and San Francisco's staggering population growth is diminishing quality of life in the area. Analyst's warns that continued growth will produce additional strains on the state's physical and environmental infrastructure, including demands on the energy sector, housing, transportation system, natural habitat and open spaces, farmland, air quality, and water-delivery system.

Water: Experts project that by 2020, demand will exceed supply by 2.4 million acre-feet in good rainfall years and double that in drought years. (One acre-foot of water supplies about two three-person households for one year.) Analysts warn that even if all practical conservation measures are carried out, rising demand in the coming decades will exceed supply by the amount of water needed to irrigate a million acres of crops or sustain a city of 800,000 people.²⁸

Habitat Destruction: As population increases, habitats of other species are destroyed to create room for more housing and roads. Although California was once home to five million acres of wetlands, today only 454,000 acres survive—a loss of over 90 percent. One hundred and ten (110) animal species and 179 plant species in the state are endangered or threatened.²⁹

Farmland and open space: The two urban areas are losing most of their farmland to urban sprawl. To meet the needs of its expanding population, Los Angeles and San Francisco will need more than 125,000 new housing units every year for the next 20 years, guaranteeing that open space will continue to diminish at a very fast and uncontrollable pace.³⁰

Education: Los Angeles and San Francisco's schools are already the most crowded in the nation, with classes that often exceed 35 students per teacher. Some students attend class on school stages or in the gym because of lack of space in regular classrooms. Los Angeles schools are so crowded that some have lengthened the time between classes to give students time to make their way through packed halls.³¹

In order to accommodate the growing student population, the state Department of Education estimates that 16 new classrooms will need to be built every day, seven days a week, for the next five years. The number of teachers will need to be doubled within ten years, meaning that 300,000 new educators must be

²⁷ Encarta Deluxe 2002 Encyclopedia

²⁸ <http://www.npg.org/states/ca.htm>

²⁹ Ibid

³⁰ Ibid

³¹ Ibid

hired.³²

Traffic: California has three of the nation's five most congested metropolitan areas—Los Angeles, San Francisco, and Oakland — and the situation is only getting worse. The annual number of vehicles miles traveled in Los Angeles and San Francisco is projected to nearly double by 2020. Within 20 years, the motorists of the two urban areas will spend half of their driving time sitting in traffic, according to the Southern California Association of Governments.³³

Housing: San Francisco has an average density of 16,526 people per square mile, with some areas as crowded as 55,000 people per square mile, as compared to 217 people per square mile in the California state, and compared to 79.6 nationwide. As a result of this crowding, high housing prices and chronic apartment shortages have driven some residents out of their longtime neighborhoods and forced others to live hours from their workplaces. Yet the shortages are not stopping population growth. Los Angeles has already developed almost all of its available land, yet the city is expected to add another six million people in the next 20 years.³⁴

8.1.2 **ECONOMY :**

Economic Trends of Los Angeles Area :

Established as the financial, commercial, and industrial capital of southern California, the sprawling Los Angeles metropolitan area is among the nation's leading urban-industrial complexes. The size of its population alone makes the Los Angeles metropolitan area California's biggest economic center, employing 30 percent of the state's workforce. It generates nearly one-third of the value of goods manufactured in the state and accounts for more than one-quarter of all retail and wholesale sales. The city also is a financial center for the western United States and a principal importer and exporter of international trade goods.³⁵

Although it directly employs only a small portion of the labor force, the motion-picture, television, and musical entertainment industry is one of Los Angeles's most famous activities. The region is also home to many of the country's recorded-music businesses. Because of its association with the entertainment industry, the Los Angeles area in the 1990s grew in importance as a center for multimedia production.

Leading manufactures are transportation equipment, food products, instruments (many of them associated with the aerospace industry), printed materials, clothing (particularly women's apparel), fabricated metal goods, and

³² <http://www.npg.org/states/ca.htm>

³³ Ibid

³⁴ Ibid

³⁵ Encarta Deluxe 2002 Encyclopedia

chemicals. The Los Angeles metropolitan area is a hub of the transportation industry, including automobile, aircraft, and aerospace production. However, in the early 1990s aerospace manufacturing suffered a sharp downturn as federal expenditures for military aircraft decreased, diminishing the industry's relative importance. The city is also a major supplier of fresh-cut flowers and contains the headquarters of many large corporations, research and development facilities, and financial institutions. The city has also become the financial gateway between Asia and the United States. Tourism is an important part of the city's economy.³⁶

Economic Trends of San Francisco Area :

San Francisco emerged as an important shipping and manufacturing center during the mid-19th century, when the Gold Rush of 1849 brought wealth to the area and caused the city's population to skyrocket. For more than 100 years, the city's economy was centered on its waterfront. The city became an important center of manufacturing, producing sugar, canned fruits and vegetables, flour, beer, printed goods, clothing, and furniture. San Francisco's foundries and machine shops made a variety of metal products, including locomotives, large-scale farm equipment, ships, and some of the world's most advanced mining equipment.³⁷

The importance of the port in San Francisco's economy has declined, especially since the advent of containerized shipping in the 1960s and 1970s. Around that time most traffic moved to other ports because San Francisco did not have sufficient space for the large open areas required for a container port. Oakland is now the major port in the Bay Area. A similar transformation occurred after World War II in San Francisco's manufacturing sector, as many companies moved their operations to less expensive locations. As a result, manufacturing is of limited importance in the city today. The remaining major industries include food processing, clothing manufacturing, and printing and publishing.³⁸

Though its importance as a shipping and manufacturing center has declined, San Francisco has remained a leading financial and business center. Corporate headquarters for a variety of companies, including some of the world's leaders in their fields, are also located here. Commerce and tourism are other important economic activities. By the 1990s the largest proportion of the city's workforce was classified as service sector, accounting for 88.5 percent of the total and embracing a wide variety of occupations, from bank presidents to janitors. Among those in the service sector, finance insurance, and real estate accounted for about one-eighth of the workforce, and roughly two workers in five were employed in either the hotel and restaurant industry or in business services.³⁹

³⁶ Encarta Deluxe 2002 Encyclopedia

³⁷ Ibid

³⁸ Ibid

³⁹ Encarta Deluxe 2002 Encyclopedia

In the second half of the 20th century the region south from San Francisco to San Jose acquired the name Silicon Valley as a tribute to its key role in the emergence of the personal computer, software, biotechnology, and other high-technology industries. Important hardware and software innovators developed there, including *Apple Computer, Inc.*, *Cisco Systems Inc.*, *Hewlett-Packard Company*, *Netscape Communications Corporation*, and *3Com Corporation*, along with biotechnology leaders such as *Genentech, Inc.* These developments just down the peninsula had a major impact on San Francisco as well. During the 1990s, one part of the South-of-Market area became home to so many multimedia companies that it acquired the nickname, '*Multimedia Gulch*'. In addition, venture capital firms specializing in high-technology start-up companies have located in San Francisco as well as in Silicon Valley.⁴⁰

Analysis of the various economic factors of the two areas :

The following section provides a brief description of the region's demographic shifts, household and employment patterns as well as household income, all of which provides the context for the region's economic growth.

Local Economy:

Most of the region's economic activity is concentrated in its heavily populated urban core areas. As a result, the region's economy is fragmenting as never before between slow-growth, politically powerful population centers and pro-growth, politically marginal counties that surround urban cores. The economy features a very large finance sector (banking, brokerage, insurance), a big transportation sector, and a large services sector with a big business services component. With a large number of jobs in finance and business services, this market is highly vulnerable to national economic slowdowns. The bulk of new jobs in recent years have been created in services. The current economic situation is rapidly deteriorating, with large job losses in most sectors. After several years of solid expansion, Los Angeles area, home to about 25% of the state's employment, has lost about 55,000 jobs. More than 200,000 jobs have vanished from the San Francisco and Los Angeles metro areas since 2001, nearly two-thirds of the state's total employment loss in the first 20 months of the 1990s recession.⁴¹

Job Growth and Employment Patterns:

Job growth and employment patterns in the area are undergoing significant changes both in types of jobs available and their location. Between 1990-2000, every county in the region had double-digit employment growth, except for Los Angeles County, which has not recovered all the jobs lost during the 1991-1993 recession. The region had a 3% job growth in 2000 compared to 1999, with an

⁴⁰ Ibid

⁴¹ National Review of Real Estate Markets, (www.localmarketmonitor.com)

almost 8% growth in the construction sector. Although Los Angeles region has been the leading manufacturing center in the nation, the manufacturing sector continues to decline in comparison to other major sectors. The region's unemployment rate in 2000 was almost half the unemployment rate of the early 1990s.⁴²

San Francisco's regional economy is diversifying, even as growth in the information and high technology sector remains significant. The San Francisco Bay Area is added more than a half a million jobs between 1990 and 2000. About 39 percent of these jobs were in the services sector (business and professional, health and recreation, social and personal), the manufacturing and wholesale sectors comprised 21 percent and the remaining 40 percent included a variety of professional related jobs ranging from communications, insurance and real estate to construction and transportation.⁴³

Household Income:

The Los Angeles region experienced an increase in per capita income in 1999 compared to the previous year, the region's real per capita income (\$28,000) remains below the nation's (\$28,550). In the 1970s and 1980s the region's income was consistently above the nation's. The Los Angeles region continues to rank at the bottom compared to other major metropolitan regions. The San Francisco area's median household income is among the highest in California.⁴⁴

Recent studies indicate increasing income inequalities throughout California, and more so in the two urban areas. The income disparities between the wealthiest and the least affluent, a phenomenon in part, to changes in the labor market—are wide in the two areas and growing. Disparities between cities are high and will continue to spread.⁴⁵

Housing:

A continuing disparity between the number of jobs created and home building activity in the region is of major concern to economists. Increasing jobs/housing imbalance and affordability issues are forcing some homebuyers to choose either to live in overcrowded housing to stay within a reasonable commute to their jobs or move to more affordable areas and endure long commutes. There is a widening gap between property values on the high end and the typical home. Most of the households cannot afford to purchase the median-priced home.⁴⁶

⁴² ABAG Projection 2000 (California Department Of Finance)

⁴³ Ibid

⁴⁴ STATE OF THE REGION 2001, Measuring Progress in the 21st Century (Southern California Association of Governments)

⁴⁵ ABAG Projection 2000 (California Department Of Finance)

⁴⁶ ABAG Projection 2000 (California Department Of Finance)

8.1.3 TRANSPORTATION :

Transportation scenario of Los Angeles:

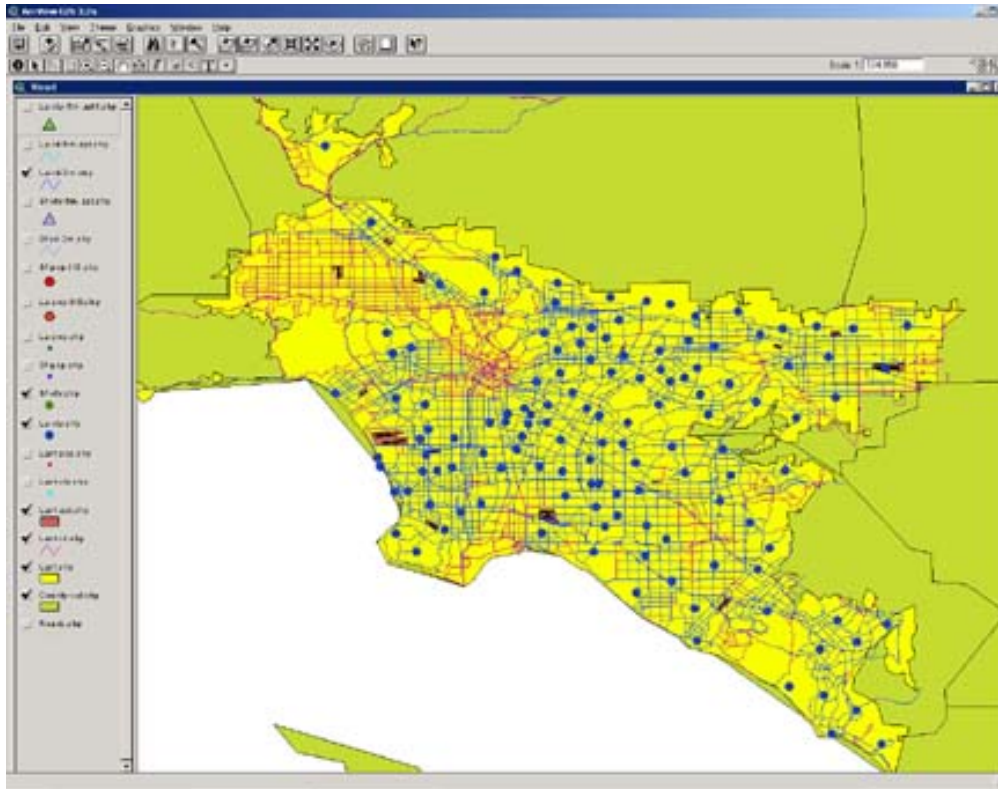


FIGURE 9: Road networks within two miles from the cities of Los Angeles urban area

Los Angeles is dependent upon its extensive freeway system for transportation, and the roadways themselves have become closely identified with the city. Major routes connect all corners of the metropolitan region. With one automobile for every two, city residents, the freeway system is often clogged with traffic. Smog from automobile exhaust and other sources is an intermittent pollution problem.⁴⁷

⁴⁷ Encarta Deluxe 2002 Encyclopedia

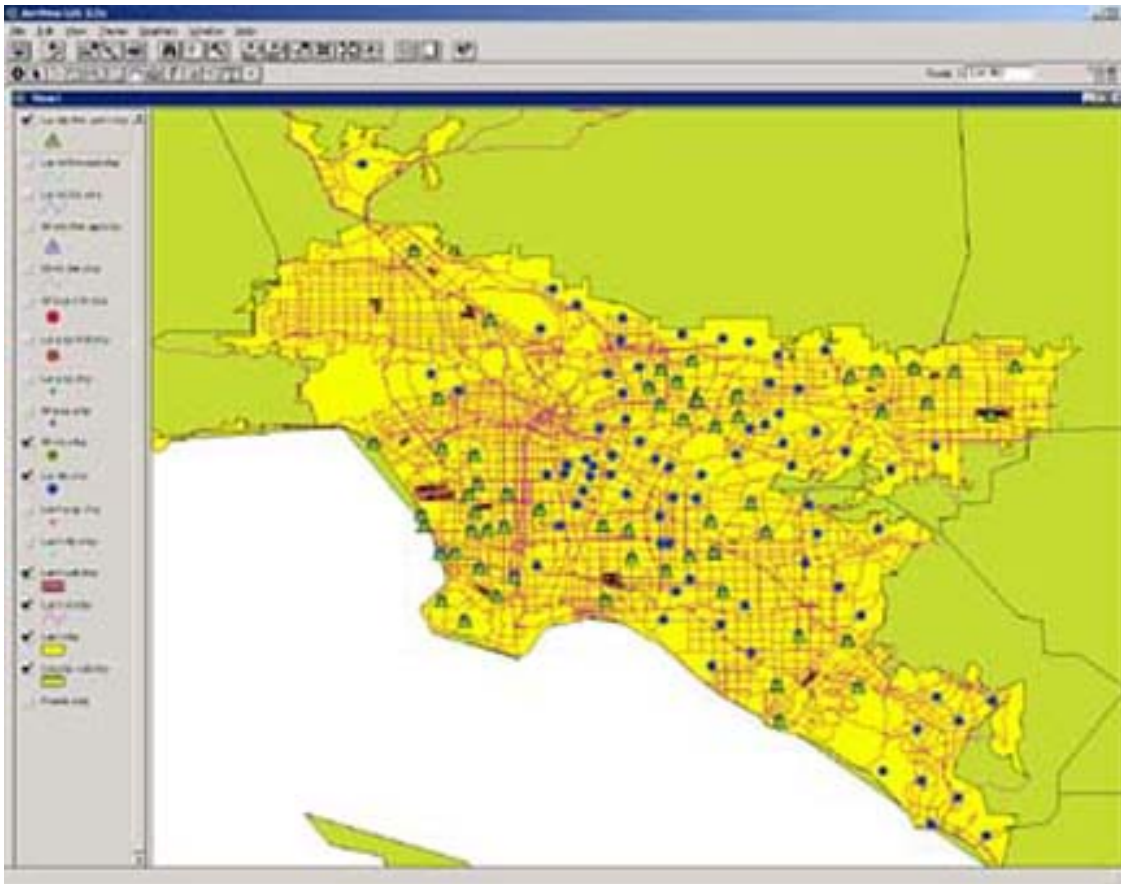


FIGURE 10: Cities within five miles from the Airports of Los Angeles urban area

The city is taking measures to lessen its dependence on freeway travel. The Metropolitan Transportation Authority opened the first segment of a light-rail line in 1990, connecting downtown Los Angeles to Long Beach; two other lines have opened since. Metrolink, a commuter rail line, operates six lines connecting the region's cities. Los Angeles is also served by major trans-continental and regional railroad lines, and one of the busiest airports in the United States, the Los Angeles International Airport.⁴⁸

⁴⁸ Ibid

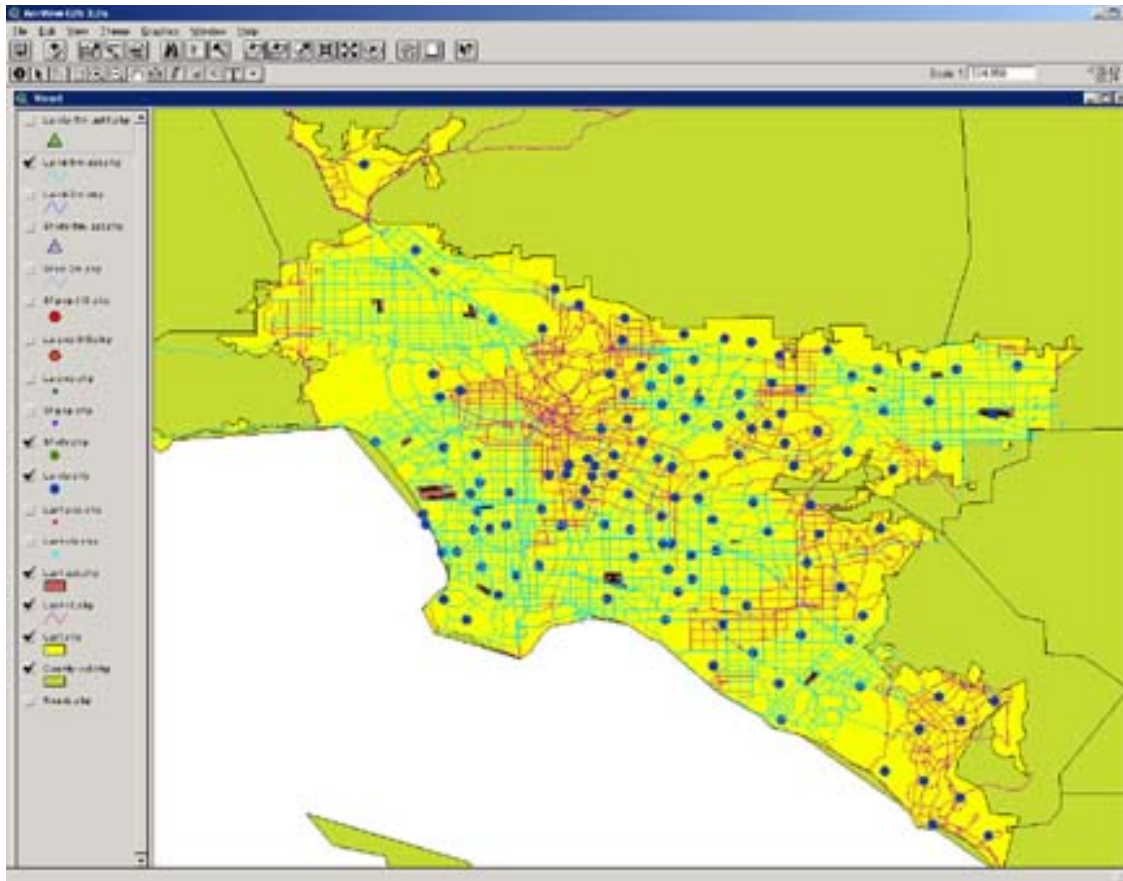


FIGURE 11: Road networks within five miles from the Airports of Los Angeles urban area

Transportation scenario of San Francisco:

The city of San Francisco has had a highly developed system of public transit since its early years. The cable car was invented in San Francisco in 1873 as a way to provide efficient transportation on the city's steep hills. Cable cars are pulled along by cables that run underneath the streets. In the early 20th century, privately owned streetcar lines served nearly every neighborhood in the city. In 1912 the city launched its first municipally owned streetcar line—also the first in any major city—marking the beginning of the Municipal Railway, known as the *Muni*. Eventually the *Muni* bought out the privately owned lines and merged them into its system. The *Muni* now operates a variety of electric streetcars (both modern light-rail vehicles and vintage streetcars from the 1930s), cable cars, electric trolley buses, and diesel buses. With some 216 million riders each year, the *Muni* is one of the largest transit systems in the

nation. More than a third of San Francisco's workforce commutes using public transit.⁴⁹

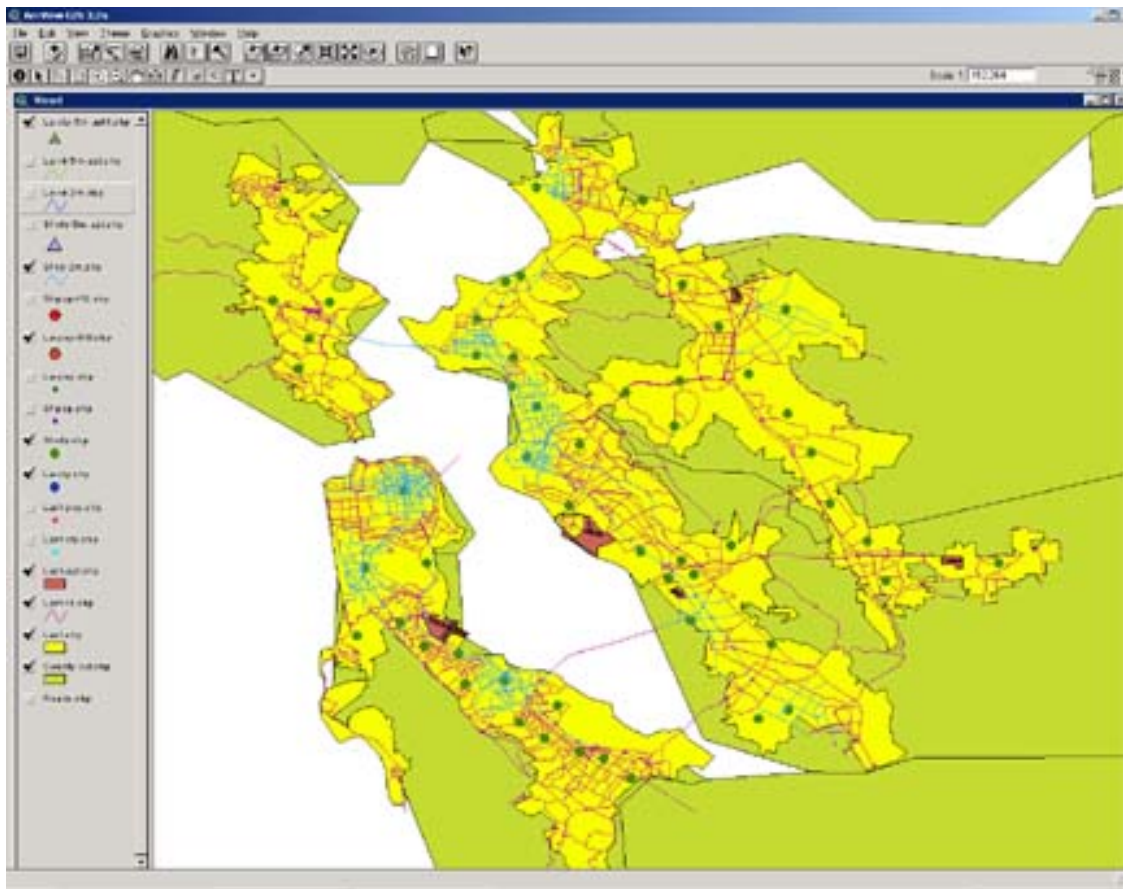


FIGURE 12: Road networks within two miles from the cities of San Francisco urban area

The city of San Francisco has had a highly developed system of public transit since its early years. The cable car was invented in San Francisco in 1873 as a way to provide efficient transportation on the city's steep hills. Cable cars are pulled along by cables that run underneath the streets. In the early 20th century, privately owned streetcar lines served nearly every neighborhood in the city. In 1912 the city launched its first municipally owned streetcar line—also the first in any major city—marking the beginning of the Municipal Railway, known as the *Muni*. Eventually the *Muni* bought out the privately owned lines and merged them into its system. The *Muni* now operates a variety of electric streetcars (both modern light-rail vehicles and vintage streetcars from the 1930s), cable cars, electric trolley buses, and diesel buses. With some 216 million riders each year, the *Muni* is one of the largest transit systems in the

⁴⁹ Encarta Deluxe 2002 Encyclopedia

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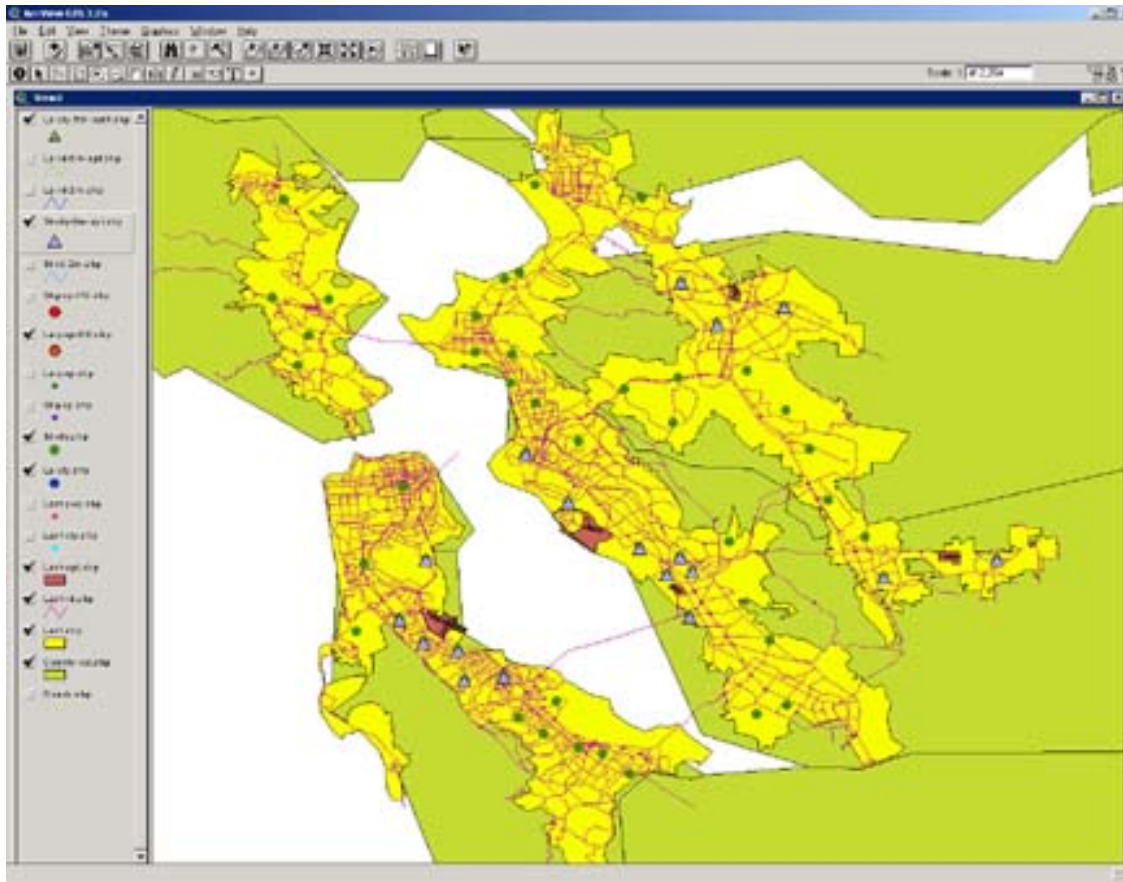


FIGURE 13: Cities within five miles from the Airports of San Francisco urban area

In 1972 the Bay Area Rapid Transit system (BART), a light-rail system that ties the East Bay to San Francisco via a tunnel underneath San Francisco Bay, opened. BART now carries more than 75 million passengers annually. *CalTrain*, a rail line that connects San Francisco and the suburbs to its south, carries some 8 million passengers each year. The bay area is also served by San Francisco International Airport, one of the busiest in the nation.⁵¹

⁵⁰ Encarta Deluxe 2002 Encyclopedia

⁵¹ Ibid

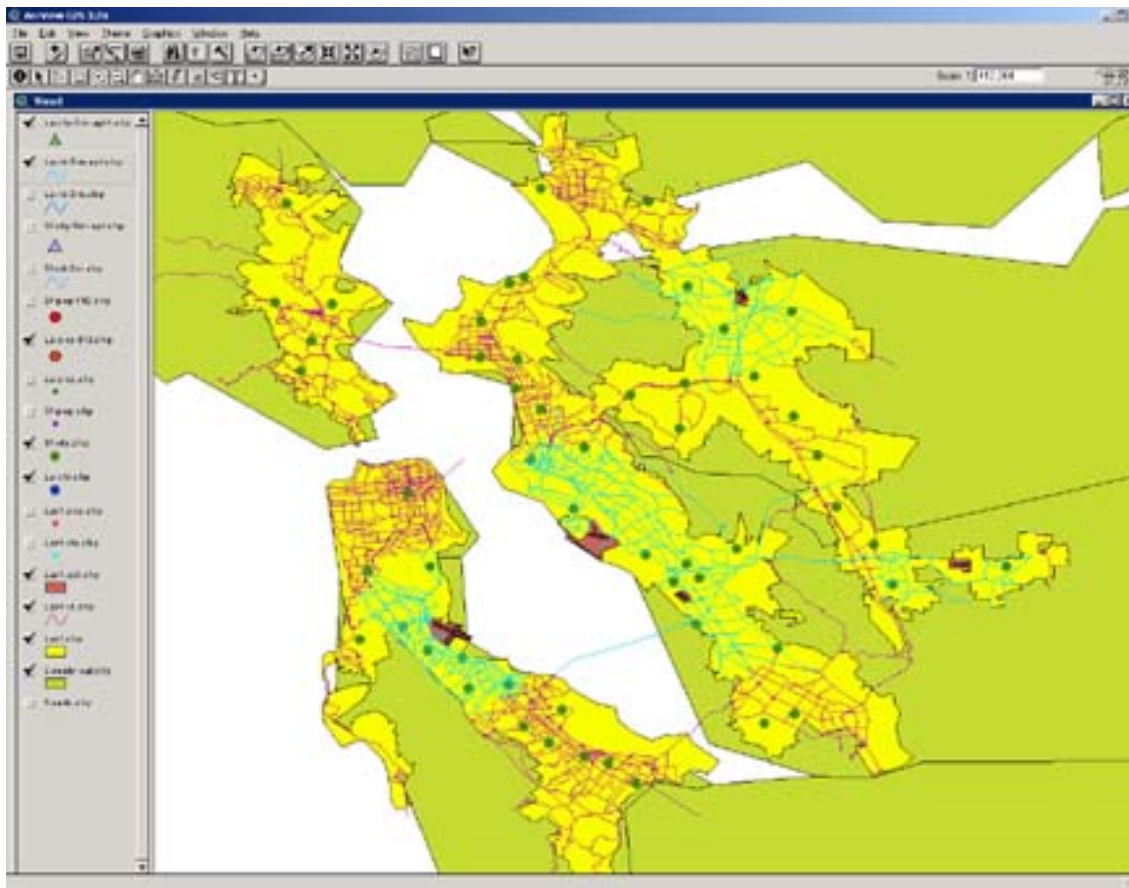


FIGURE 14: Road networks within five miles from the Airports of San Francisco area

Traffic Congestion Problem:

Acute traffic congestion, continues to spread and increase throughout California's cities and suburbs. Three California cities continue to rank in the top ten on the *Texas Transportation Institute's* list of most congested cities in the United States. Out of these three, Los Angeles and San Francisco are the top two.

The longest delays remain in the Los Angeles area - 136 hours per year, on average per driver, in peak hours. San-Francisco-Oakland drivers put up with 92 hours of delays. This worsening of traffic congestion leads to even more intense wear and tear on the road and highway system, and in costs to drivers. The cost of congestion to the average peak-time driver now exceeds \$2,500 annually for Los Angeles area motorists. It is \$1,770 in San Francisco area. In Los Angeles, one important reason for this is lack of use of public transit systems only 2% of commuters use public transit, while as 20% of commuters use public transit in San Francisco.⁵²

⁵² <http://www.transportationca.com/>

The traffic congestion trends of the two areas are as under:

Los Angeles

	1980	1990	2000
Population	9,900,000	11,420,000	12,680,000
Metro Area - Square Miles	1,830	2,185	2,265
Freeway Lane Miles	4,085	4,730	5,400
Principal Arterial Lane Miles	7,400	9,800	10,950
Travel Time Index	1.34	1.91	1.90
Annual Delay Per Person	22 hours	63 hours	62 hours
Total Cost of Delay	\$2,435 million	\$9,760 million	\$14,635 million

Source: The Road Information Program compilation of data from T.T.I. (Texas Transportation Institute)

FIGURE 15: Traffic congestion trends of Los Angeles area

San Francisco

	1980	1990	2000
Population	3,290,000	3,675,000	4,030,000
Metro Area - Square Miles	800	1,100	1,255
Freeway Lane Miles	2,055	2,180	2,335
Principal Arterial Lane Miles	1,400	1,750	2,150
Travel Time Index	1.21	1.50	1.59
Annual Delay Per Person	12 hours	37 hours	41 hours
Total Cost of Delay	\$455 million	\$1,895 million	\$3,210 million

Source: The Road Information Program compilation of data from T.T.I. (Texas Transportation Institute)

FIGURE 16: Traffic congestion trends of San Francisco area

Metropolitan area (UZA) – Urban Zonal Area	Forecast annual growth rate in VMT (on freeways & arterials), assuming current growth trends	Forecast annual growth rate in VMT (on freeways & arterials), with no growth in roadway capacity	Percent of total VMT growth attributable to "induced traffic"
Bakersfield	9.0%	6.8%	24.6%
Fresno	5.8%	5.1%	12.4%
Los Angeles	-0.01%	-0.8%	100.0%
Sacramento	3.3%	1.5%	54.6%
San Diego	1.3%	0.4%	72.6%
San Francisco	0.6%	-0.4%	100.0%
San Jose	1.3%	0.3%	73.6%
AVERAGE	3.0%	1.6%	45.2%

Note: VMT = vehicle miles traveled or overall mileage driven; Los Angeles and San Francisco have negative growth in VMT when no lane miles are constructed, thus 100% of growth is attributed to the induced travel effect. **Source:** Robert Noland, 2000. (<http://www.transact.org/ca/congestion.htm>)

FIGURE 17: Regional Impacts From 'Induced Traffic'

Traffic Congestion- Causes and Remedies:

A growing body of research has shown that widening highways is only a temporary solution at best to the complex problem of traffic congestion. Indeed, research has pointed to a phenomenon known as "induced traffic" that suggests new and wider highways actually create additional traffic, above and beyond what can be attributed to rapid population increases and economic growth. In larger metropolitan areas, drivers will often abandon carpools and public transit when additional roadway space is made available through highway widening or new road construction, thus creating additional trips and more traffic. In the longer term, the promise of more convenient transportation access allows commuters to live further from work, increasing development pressures and thus fueling even more traffic demand. It should be noted that any form of transportation can produce this effect; whether it was "streetcar suburbs" at the turn of the 20th century or new commuter trains attracting

workers to live in the distant areas from work, with the promise of a more convenient commute.⁵³

A detailed recent study has also concluded that traffic in the San Francisco and Los Angeles would actually decrease if no new highway expansion took place. It also determined that two-thirds of the growth in traffic in the coming decades will be attributable to induced demand. The study concluded that 90 percent of all new highway capacity added to California's metropolitan areas is filled within four years, and 60 percent-70 percent of all new county-level highway capacity is filled within two years. This means an additional highway lane-mile constructed in the San Francisco Bay Area or Los Angeles regions would increase traffic by 10,000-12,000 vehicle-miles traveled per day.⁵⁴

Results suggest that the urban state highway lane miles added since 1970 have, on the whole, yielded little in the way of level of service improvements. Consistent with previous work, we find that increasing highway supply results in higher vehicle miles traveled (VMT). An induced traffic impact of such magnitude must be considered when assessing road capacity enhancements, whether in a broad policy context or on a project specific basis.⁵⁵

New road capacity will typically lead to new traffic, especially in urban areas, because people and businesses benefit from the mobility that the transportation system provides and seek to use it to their benefit. Ultimately, road use will increase, leading to congestion of new road capacity. For this reason, expansion of the existing transportation will rarely alleviate congestion permanently; however, by restraining demand this tendency can be offset and existing congested roads, as well as new roads, can be made to operate efficiently.⁵⁶

Therefore, the key to solving the problem is to retool the transportation programs to incorporate a more balanced approach to managing traffic congestion as well as a new emphasis on growth management techniques, more compact development patterns, and other land use strategies as a way of beginning to combat the underlying cause of increasing traffic volumes.

8.1.4 HOUSING:

Housing scenario of Los Angeles:

Los Angeles has the highest population density in the U.S. (according to the U.S. Census), higher than New York, Chicago, and San Francisco. This has led to small lot sizes, a sizeable stock of apartments and high dwelling densities among the large immigrant population.

⁵³ <http://www.transact.org/ca/congestion.htm>

⁵⁴ Ibid

⁵⁵ Ibid

⁵⁶ Ibid

One of the most serious social problems facing the city is homelessness. The dearth of affordable housing has been a fact of life for many people living in Los Angeles, particularly low-income renters. Lack of sufficient income is certainly a major part of the problem. The flip side of that coin is the supply of affordable housing. There is a continuous and alarming trend that the rental housing costs are still rising in the area. Problem of homelessness persists despite the efforts of city agencies and private charities to provide shelter and other basic amenities.

Los Angeles urban area needs to preserve and expand its supply of affordable housing. The need for affordable housing is urgent. In 2000, over half a million rental households (30% of all Los Angeles renters) paid in excess of 30 percent of their income on housing. Not only is housing scarce for poor renters, but it is often unaffordable. Affordable housing is generally measured as housing costing no more than 30% of a household's income. Although this is a generally acknowledged criterion, it is still important to note that this measure glosses over the variation among households. Thus, 30% of income for households with very low income doesn't leave significant resources for other needs, while the same does not hold true for middle and upper middle income households.

Housing scenario of San Francisco:

San Francisco's chronic housing shortage has been an impending problem. The housing crisis of the San Francisco region regularly tops national lists of extreme needs. These chronic and profound housing needs are mainly due to the desirability of the area, the still-thriving job markets, and the pent-up demand for decent affordable housing by those who already live here never let the demand to be stabilize.

Apartments provide a high 39% of local housing and made up a high 59% of new construction since 1997, a reflection of the scarcity of buildable land in this market. Vacancy rates for owner properties have declined in recent years, to *record low levels*. Rental vacancy rates have risen but remain very low. The Housing Construction Balance indicates that new supply has finally caught up with demand, though not enough to ease vacancy rates. Home sales in 2000 were down to 23,000, an indication that the boom is past its peak. *36% of sales were for more than \$500,000*. Home prices are the *highest in the country*, as are apartment rents. With home prices now well over the Equilibrium Price, apartments are favored.

In fact, it has been well documented by the Association of Bay Area Governments (ABAG) that San Francisco must add over 2,500 housing units per year to meet current housing needs. Of these units, 62 percent should be low and moderate income. In the San Francisco Bay Area alone, 70,000 new jobs were created in the late 90s boom economy, but only 28,700 new homes were built, primarily serving moderate to high-income households, according to the

Bay Area Council. The non-profit housing sector has diligently started closing the gap, producing over 25,000 rental homes in the last 10 years.⁵⁷

Housing related problems facing the two urban areas– An Analysis :

Rental Housing	Los Angeles	San Francisco	
% of Households Who Rent	80%	65%	
Vacancy Rate	3%	7%	
Average Rent – Studio	\$1865	\$1,064	<i>Rental rates are averages for April – June 2002</i>
Average Rent – One Bedroom	\$2015	\$1,466	
Average Rent – Two Bedroom	\$3145	\$2,076	
Average Rent – Three Bedroom	\$4230	\$2,748	

Source: U.S. Census 2000, Rent Tech, San Francisco Apartment Association

Home Ownership	Los Angeles	San Francisco
% Households Who Own	29%	35%
Median Home Price – 2002	\$667,000	\$571,000

Source: Dataquick, U.S. Census 2000
http://sfced.org/sf_leading_indicators.htm

FIGURE 18: Regional Impacts From ‘Induced Traffic’

Demographic and Income Trends Impacting Housing:

- Between 1990-2000 the two urban area gained 0.4 million residents (12 % percent increase, despite the out-migration of an estimated 1.2 million residents in the early 1990s. Over 45 percent of this growth was from natural increases (births over deaths), not immigration.⁵⁸
- Over the past 10 years, the service sector has accounted for the highest job growth and this trend is expected to continue. While the service sector includes a broad range of wage levels, it includes a high proportion of low-wage jobs, as does the next highest job growth sector- the wholesale and retail trade.

Continued Lagging Housing Production:

⁵⁷ <http://www.sfaa.org/magazine/index.html>

⁵⁸ <http://www.hcd.ca.gov/hpd/hrc/plan/>

Production has not kept pace with demand. While the two urban areas have a combined annual average need for over 50,000 units during most of the 1990s, permits have averaged just over 25,000 units annually. The greatest shortfall has been in multifamily construction, which constituted only 24 percent of residential permits during 1990-2000.⁵⁹

Residential overcrowding doubled in the area:

Between 1990 and 2000, Residential overcrowding continued to increase significantly in selected metropolitan areas, including Los Angeles and San Francisco, apart from Orange, and Santa Clara counties as well.⁶⁰

Sharp increases in rents have occurred in the two metropolitan areas:

Sharp increases in rents have occurred in the two metropolitan markets. Between 1995-2000, the asking rents in Los Angeles and San counties increased by 20 percent to 35 percent.⁶¹

Housing cost burdens for lower income households skyrocketed:

By 1995, housing cost burdens for lower income households had skyrocketed with over 60 percent of *lower income* renters paying more than 50 percent of their income for housing. For *very-low income* households, the situation is most extreme, with almost 80 percent paying more than 50 percent of their income for housing costs.⁶²

Homeownership rate lags:

Homeownership rate continues to lag behind the national average, with the third lowest rate in the country.

Loss of affordability:

The urban areas face loss of affordability of a large portion of its existing federally subsidized housing stock. Contracts on over 20,000 of these units could be terminated as soon as 2000.⁶³

8.1.5 URBAN SPRAWL:

Sprawl and population growth are inextricably connected. If a region's population keeps growing, then open space, farmland, and wildlife habitat will eventually become urban. Recent studies reveal that most sprawl is tightly linked to rising population. Surrounding farmland and open space are

⁵⁹ <http://www.hcd.ca.gov/hpd/hrc/plan/>

⁶⁰ Ibid

⁶¹ Ibid

⁶² Ibid

⁶³ Ibid

disappearing as the population grows, breaching the urban boundaries. Sprawl is overwhelmingly due to population increase, not poor planning. In regions with little population growth, there's much less sprawl.

Suburban sprawl has tremendous implications for how an area can handle its projected population increases together with housing, jobs, and transportation needs in the decades ahead. Sprawl and population growth are inextricably connected. If a region's population keeps growing, then open space, farmland, and wildlife habitat will eventually become urban.⁶⁴

The amount of land consumed - much of it in the form of productive farmland or valuable open space - as well as the separation over vast distances of shops, homes and businesses that is the norm in current growth patterns has a tremendous impact on our transportation system.

More and more houses, built further and further apart, require a car as a lifestyle, and an expensive lifestyle at that. Housing, jobs, shopping and other activities are scattered across huge areas. Highways are required to connect them. This pattern of urban sprawl development imposes considerable costs on all of us, though the costs are often hidden. 'Quality of life' has become a concrete, economic imperative for regions competing for future investment. The dependence on the car and the long commute and the traditional belief that building more roads alleviates rather than compound the problems of sprawl are increasingly being questioned. Evidence is mounting that the sprawl patterns, with their innate geometric and density inefficiencies have become unaffordable.

The table below lists estimated predictions for land-area change over the next 25 years for the two selected coastal cities:

Urbanized area	Estimated 2000 land area (square miles)	2025 Land-area forecast (square miles)	Percent change (2000 to 2025)
San Francisco-Oakland	973	1,596	64.1%
Los Angeles	2,155	3,587*	?
Total	3,128	5,183	64.1%

*Current limitations to growth make forecasting future urban land area difficult.

Source: <http://www.iisgcp.org/>

FIGURE 19: Projected Land-Area Changes

Urban Sprawl scenario in the two urban areas– An Analysis :

⁶⁴ <http://www.transact.org/ca/>

Loss of coastal Areas:

Population growth equates with land use; and, given current trends, the forecast for the next 25 years suggests continued loss of coastal areas to development. Given the current trends the two metropolitan regions are likely to increase their population by an additional 4 million people by the year 2025, the 'urban footprints' of the region are likely to expand by 46 percent, according to the leading coastal business and environment specialists.⁶⁵

The worst part is that the two urban areas have factors that make their future difficult to predict. San Francisco has a tight urban-growth boundary in order to limit development and Los Angeles has the physical barrier of the mountains, as well as restrictions on land development, which put endangered species at risk.⁶⁶

Living Further from Work:

Increases in real income and advances in the technology of transportation over the past century are major factors contributing to urban sprawl in the region. According to experts, On average since 1950, the two urban areas are 100 percent larger than they would have been if there had been no changes in real wealth and transportation technology that determine urban land area. Put another way, since 1950, nearly half of urban land area growth has been determined by technology factors rather than by population.⁶⁷

This has led to people moving out further, continuing to make the trade-offs between urban amenities and the cheaper land that suburban locations provide because they had the means to do so—both in terms of wealth and of technology. Stated simply: people want to live and work in or near cities; and, because of better, faster transportation options today, people can continue to demand semi-rural residential locations while still maintaining a reasonable commute time to work.⁶⁸

Need of the hour:

In order to help these coastal areas to deal with these pressing problems, the need is to developed study groups focusing on coastal communities and economies, and urban coasts. Initiatives in this regard need to be developed together with a legal program. Experts warn that if an effort to change this trend in urban sprawl does not happen soon, the two metropolitan regions will continue to fight to fix the problems imposed by unbalanced, market-driven urbanization.

⁶⁵ <http://web.aces.uiuc.edu/tabloid/>

⁶⁶ Ibid

⁶⁷ Ibid

⁶⁸ Ibid

IV. SUMMARY, CONCLUSIONS AND RECOMMENDATIONS :

Population:

- Los Angeles and San Francisco's staggering population growth needs to be checked in order to maintain a healthy quality of life in the area. Also to reduce the strains on the state's physical and environmental infrastructure.
- New policies need to be made to regulate the influx of immigrants.

Economy:

- The current complex situation asks for efforts to develop an urban growth policy with a well defined scope and reach of regulation.
- The most urgent need is not the removal of regulatory controls but assuring that controls are predictably and uniformly applied. What most cripples urban development is the possibility that any interest group or bureaucrat can manipulate the regulatory process to upset business planning.
- The regions should eliminate the chronic capriciousness in land use, tax, labor, environmental and similar laws that have restrained its urban economy.

Housing:

- Part of growing smarter in the golden state involves an aggressive move towards providing more housing choices in existing urban and suburban areas, close to public transit and affordable for Californians of all income levels

Transportation:

- Designing for the car in the face of growth is a recipe for increased stress and decreased quality of life. Designing for neighborhoods is the answer. Most people believe the alternative to cars is better transit - in truth, it's better neighborhoods. We hear a lot of rhetoric to that affect, What we don't see is substantive follow-through.

Urban Sprawl:

- Need of the hour is to encourage projects that combine high residential density and mixed use with propinquity to mass transit. Priority should be given to infrastructure funding to cities for proposing rebuilding older

neighborhoods and revitalizing existing downtowns, thereby inhibiting sprawl and the loss of farmland.

- The vision should be to plan for undesired growth rather than arrest growth.

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Appendix:

Figures and Tables:

- FIGURE 1: Study area location map
- FIGURE 2: California's Population Growth
- FIGURE 3: California's Five Most Populated Cities
- FIGURE 4: Total Growth, 1990 Through 2000 And Five Most Populated Cities
- FIGURE 5: Population Density of Los Angeles
- FIGURE 6: Ten Most Populated Cities of Los Angeles
- FIGURE 7: Population Density of San Francisco
- FIGURE 8: Ten Most Populated Cities of San Francisco
- FIGURE 9: Road networks within two miles from the cities of Los Angeles urban area
- FIGURE 10: Cities within five miles from the Airports of Los Angeles urban area
- FIGURE 11: Road networks within five miles from the Airports of Los Angeles urban area
- FIGURE 12: Road networks within two miles from the cities of San Francisco urban area
- FIGURE 13: Cities within five miles from the Airports of San Francisco urban area
- FIGURE 14: Road networks within five miles from the Airports of San Francisco urban area
- FIGURE 15: Traffic congestion trends of Los Angeles area
- FIGURE 16: Traffic congestion trends of San Francisco area
- FIGURE 17: Regional Impacts From 'Induced Traffic.'
- FIGURE 18: Regional Impacts From 'Induced Traffic'
- FIGURE 19: Projected Land-Area Changes

Charts:

- **CHART 1: Distribution chart of ten most populated cities of Los Angeles**
- **CHART 2: Ethnic distribution of the population of Los Angeles**
- **CHART 3: Household and gender distribution of the population of Los Angeles**
- **CHART 4: Distribution chart of ten most populated cities of San Francisco**
- **CHART 5: Household and gender distribution of the population of San Francisco**
- **CHART 6: Ethnic distribution of the population of San Francisco**

