

# The Southern California Mega-region

A Case Study of Global Gateway Regions: America's Third Century Strategy

A Collaboration of:

Kern County Council of Governments  
San Diego Association of Governments  
Southern California Association of Governments

A Work in Progress

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## Executive Summary

**S**outhern California – a place of beauty, opportunity, and diversity – is one of the world's most dynamic regions. Indeed, as the second-largest global gateway mega-region in the United States, the urban agglomeration that is present-day Southern California is home to 22 million people and continues to attract tens of thousands every year, all testing the area's historically limitless opportunity. As the mega-region continues its evolution into one of the world's most socially diverse, economically powerful, and unique urban environments, it is faced with both the benefits and challenges that befall any region of its size.

Indeed, Southern California's continued success may be in jeopardy. Rapidly increasing congestion, continued growth away from transportation hubs and economic centers, and poor air quality threaten the region's ability to maintain a competitive edge in the global economy. Recently, a dramatic rise in housing prices, coupled with an ever-widening income and prosperity gap has made first-time home purchase difficult for most residents. Environmental sustainability is also a concern as a growing population leads to greater natural resource demands for land, energy and water.

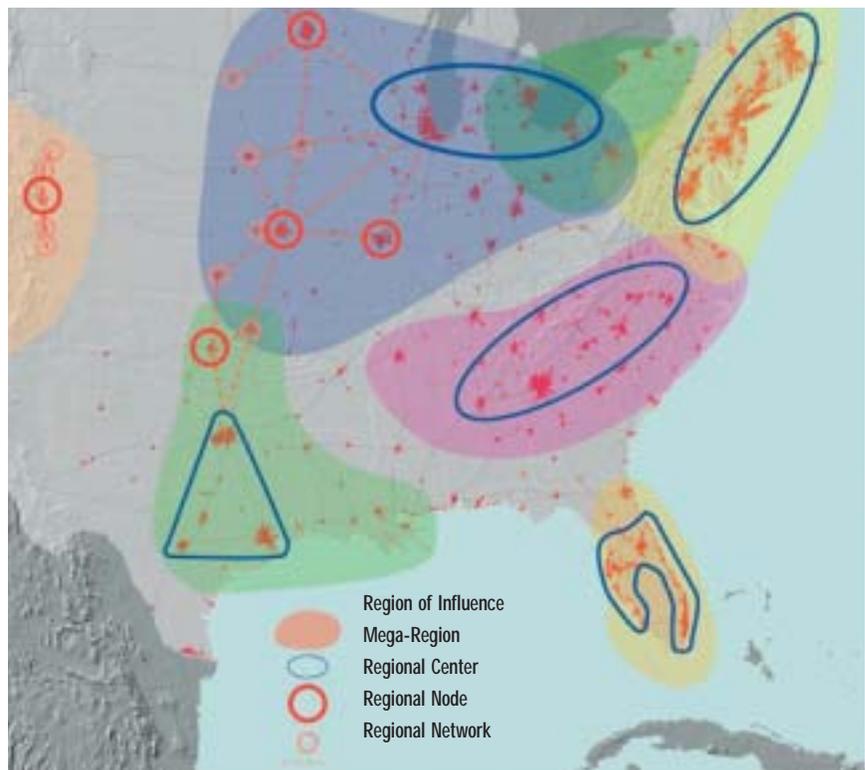
In response, much of the region is changing to address today's problems and tomorrow's demands. Many cities within the mega-region's urbanized core, in Los Angeles, Orange, Riverside and San Diego counties, are relying more frequently on infill and redevelopment to accommodate both the new and existing population, while at the same time recreating the way the metropolis looks and functions. A concerted effort to build and develop around a public transit network is reshaping the region and laying the foundation for a truly global city. And the rapid shift in Southern California's roles as national entertainment, defense, and agricultural providers to a more global-based economy has provided new opportunity for immigrants and residents alike. The integral link with the Pacific Rim is manifested in the continuing growth of traffic into and out of the region's ports and across the international border, quickly bringing the once disconnected areas within the region closer together. The continued economic shift and its associated support needs and jobs spinoff will provide a chance to become a global leader but will undoubtedly place new burdens on an already strained region. Finally, modernizing the region's transportation network through a decentralized commercial and cargo airport strategy, linked by a viable high-speed rail network, will further guarantee more uniform economic and social health throughout this huge region.

Of course any great vision relies ultimately on the willingness to see it come to fruition. Coordination between local and regional governments within the mega-region can ensure that funds and implementation come our way. Commitments in the form of tax restructuring and public-private partnerships can become ways to adequately fund the transportation and economic infrastructure necessary to maintain Southern California's competitiveness as it competes ever more on a global scale.

The United States is currently embarking on its third century of growth and development. Its first two centuries were defined by Thomas Jefferson's call for westward expansion in 1807 and Theodore Roosevelt's 1907 plan for improved energy and natural resource infrastructure to support industrial expansion. While these major strategies related to infrastructure, conservation, and economic development helped power America's growth to date, a renewed commitment to large-scale planning efforts is needed to sustain the nation's global competitiveness and quality of life into the future. The United States population is expected to increase by 140 million people by the year 2050, with over two thirds of this growth occurring within the nation's 9 emerging Global Gateway Regions, or "mega-regions."

Efforts to plan at this scale are already underway in Europe and Pacific Asia. The European Union has been mobilizing public and private resources at the continental scale, with bold plans and investments designed to integrate the economies of, and reduce the disparities between, member states and regions, and to increase the global market competitiveness of regions, and the continent as a whole.

Meanwhile, similar cooperation and infrastructure investment is occurring in Pacific Asia's BESETO (Beijing-Seoul-Tokyo) corridor, particularly given the regional divergence of resource endowments, and use of the complementary economic relationships between cities. These efforts include investing in new infrastructure and modern production and distribution, and expanding and strengthening its network of seaports and airports. Japan's investments along its 1,400 mile long Shinkansen transportation corridor, and China's initiatives in the Pearl River Delta (which is responsible for 1/3 of the country's exports) are two of the most significant programs in that mega-region.

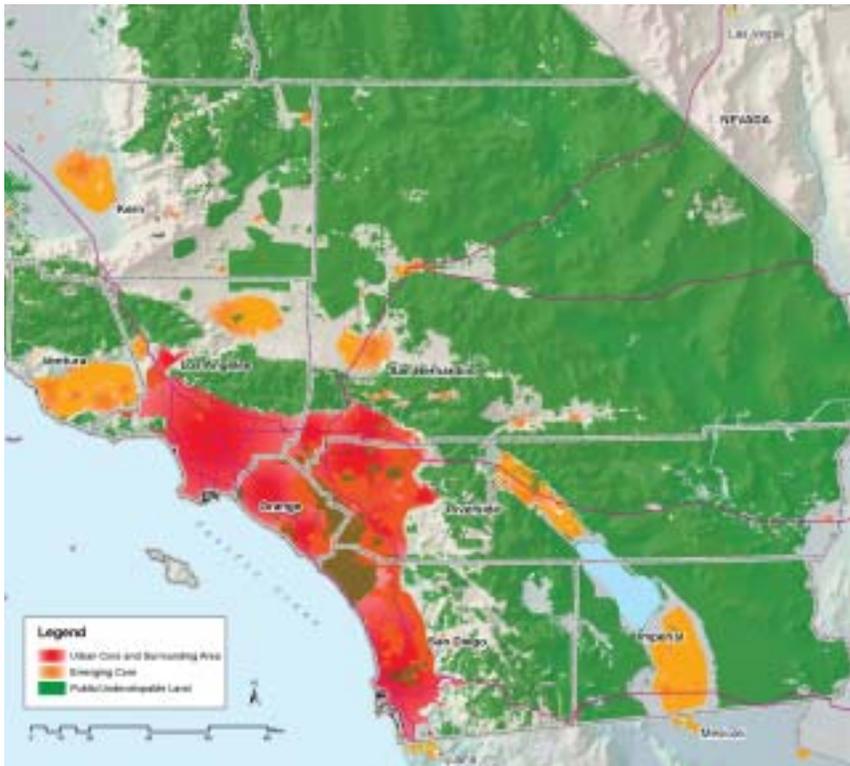


Of late, the United States has delegated most economic development and planning initiatives to municipalities and has no current national plans or strategies at a comparable scale to its international counterparts. While the preeminence of the United States economy in global markets remains steady, increasing competition and rapid population growth require that a new set of policies, focused at the mega-regional scale, are adopted in order to improve the competitiveness and livability of the nation's emerging constellation of global gateway regions, as well as its more bypassed regions.

## Regional Overview

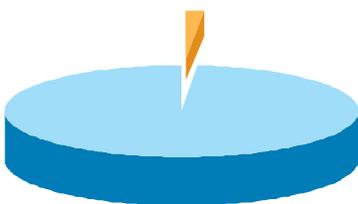
The Southern California mega-region encompasses one of the most economically, socially, and geographically diverse urban regions in the world. From its iconic beaches and coastline to its world-famous entertainment industry to its fragile desert and mountain areas to its cultural and economic ties to Mexico, Southern California is a unique part of the nation and the world. Centered on Los Angeles, Southern California reaches from Ventura to Mexico and includes the inland agricultural communities of Kern and Imperial Counties. The mega-region's western boundary is the Pacific Ocean, stretching for some 250 miles and encompassing dense cities, a national park, military bases, beaches, and environmentally sensitive areas. Arizona and Nevada form the eastern boundary, and the Mohave desert becomes a buffer

between the region's northernmost areas and the Sierra Nevada Mountains to the north.



The Southern California mega-region encompasses over 53,000 square miles - roughly 1.5% of the land area of the United States. Although comparable to the size of the states of Arkansas or Georgia, its effective size, given that nearly 2/3 of the region's lands are government-owned and thus off-limits to development, is much smaller, around the physical size of Massachusetts with three or four times their population. However, the mega-region's more dense development pattern results in a population that represents over seven percent of the US population, demonstrating not only its significance in terms of size, but also its relative impact in so small an area. Likewise, the Gross Domestic Product of

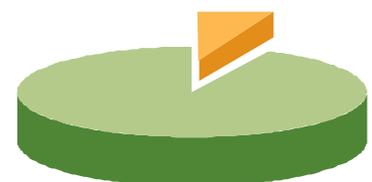
Southern California approaches \$900 billion annually, consisting of nearly 58% of California's total and over 7% of the nation's total GDP. As such, the Southern California region ranks as the world's 10th largest economy.



1.5% of the land area of the U.S.



Over 7% of the U.S. population



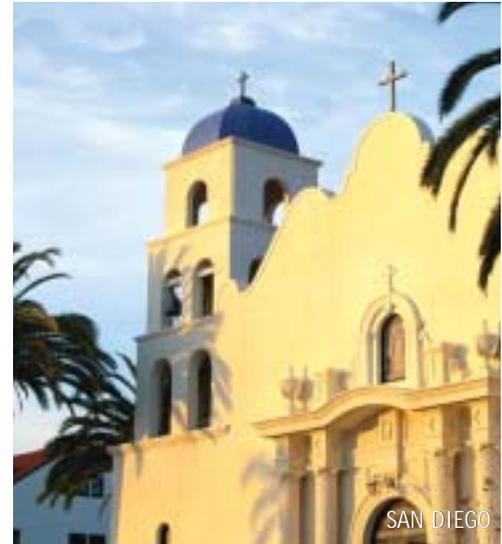
Over 7% of the nation's total GDP

The Southern California mega-region's concurrent roles as tourist destination, entertainment capital, and breadbasket are well known and remain relevant today despite unprecedented growth and change over the last century. From its earliest days as a home to trading posts, agriculture, ranches, and missions, Southern California has created and maintains an image of idyllic climate, striking natural resources and ample opportunity. This perception sets the region apart, luring new residents to a new kind of place, without the traditional mind-set of the East Coast, the harsh winters of the Midwest, and the social and economic struggles of the South.

The desire to create a new place led to the development of the many cities, towns and suburbs that have since grown together to form a poly-centric region. As a group, the centers of Los Angeles, San Diego, and Bakersfield while part of the same mega-region, are distinct in their economic, social, and topographic features.

At the center is Los Angeles, which in actuality is an agglomeration of dozens of communities and cities. Instead of finite boundaries as in many older places, the effective "LA" stretches for 75 miles within the county in nearly every direction from the Los Angeles City Hall. This consistently developed urbanized area functions as a collection of many important regional centers, all linked by economic, transportation, and social networks that cross boundaries.

To the south is San Diego County, which continues to grow rapidly in terms of both population and economic development. The character of the San Diego region is becoming increasingly diverse, and is being influenced greatly by the explosive growth in the Tijuana / Northern Baja California region. To the north, Bakersfield and Imperial Valley, with their agricultural bases, continue the tradition of crop and cattle production, which have provided for the food needs of Californians and Americans for decades. The combination of these distinct identities is what makes up the Southern California mega-region. Maintaining the quality of life characteristic to each area, while developing a collective competitiveness strategy as these areas grow together is at the heart of this challenging endeavor.



# TRENDS

## A Growing and Diverse Population

### Population Growth

The Southern California mega-region is expected to see sustained and rapid population growth in the future. According to population projection by California Department of Finance (DOF), population of the Southern California mega-region will increase to 27.7 million by 2030, a 35% increase from 2000. This growth rate is notable in comparison to the projected national increase of 28.87% in the same period.

The region's population growth is a result of three major factors: natural increase, domestic (interstate) migration and international immigration. Among them, international immigration has played an important role. Approximately 41% of the total population growth in the region in 2003 was estimated to be foreign-born, which is the highest concentration of foreign-born population in the nation. However, after an extraordinary three-decade surge, researchers project that immigration to the region will slow as immigrants settle in other parts of the nation that have developed the networks and resources that once attracted them to Southern California. This trend is likely to have a great impact on the mega-region's economic competitiveness and performance.

### Aging Population

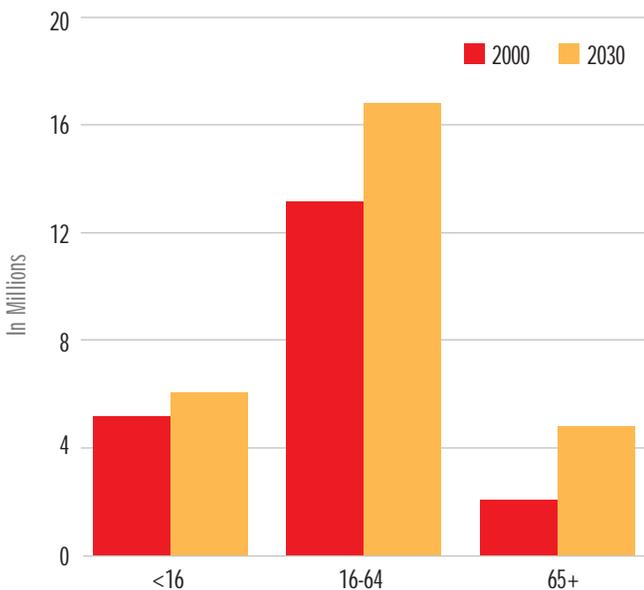
Like many countries in the world, declining fertility rates combined with the retirement of the baby-boom generation will constrain employment growth and pose a threat to economic vitality. The proportion of the elderly population to total population for the mega-region will increase from 10.4% in 2000 to 17% in 2030. In other words, of the 7.2 million population growth between 2000 and 2030, 37 percent will be among the elderly.

### Ethnic Diversity

There is no ethnic majority in the mega-region. In 2000, the Hispanic population represented 39% of total population, a number slightly lower than Non-Hispanic White with 42%, followed by Asians and Pacific Islander with 10% and African Americans who made up 7%.

However, with the projected population growth among Hispanics outpacing all other ethnicities, it is expected this group will be the majority by 2030 with 55% of total population, while non-Hispanic Whites would represent 25% of the population share, Asians and Pacific Islanders, 11%, and African-Americans, 7%.

Population by Age



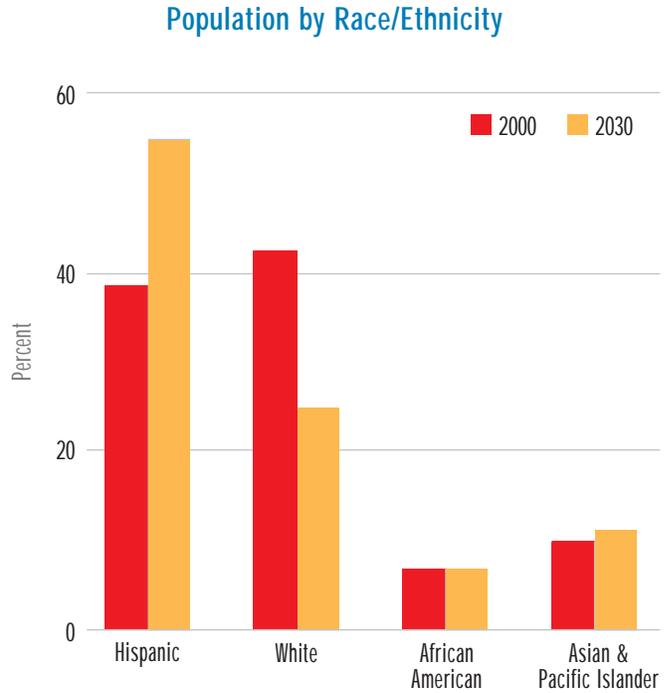
Source: California State Department of Finance (DOF)

Future population growth is projected to come almost exclusively from the Hispanic and Asian population, be it through natural increase or immigration. Thus, an analysis of the Southern California mega-region's demographic future indicates that its future is somewhat dependent on not only the Hispanic population, but more specifically the children of immigrants. The second generation will represent a greater proportion of the future population of the mega-region. Fortunately, the educational attainment, incomes, civic participation and social welfare among second generation residents tend to improve over time.

In addition, the growth pressures of northern Baja California need to be considered. During the 1990's, annual average growth rates in Tijuana and Tecate neared 5%, rivaling the growth rates of metropolitan areas such as Las Vegas and Phoenix. While the growth rate for the northern coastal

A Growing and Diverse Population

urban areas of Baja California is predicted to slow in the future, from a five percent growth rate today to 3.8% in 2010 and 2.8% in 2025, Tijuana's population is expected to reach 2.9 million by 2025 – double its current population of nearly 1.4 million. (Source: Programa de Desarrollo Urbano de Centro de Poblacion Tijuana, B.C. 2002-2025)



Source: California State Department of Finance (DOF)

# TRENDS

## Denser Development Patterns

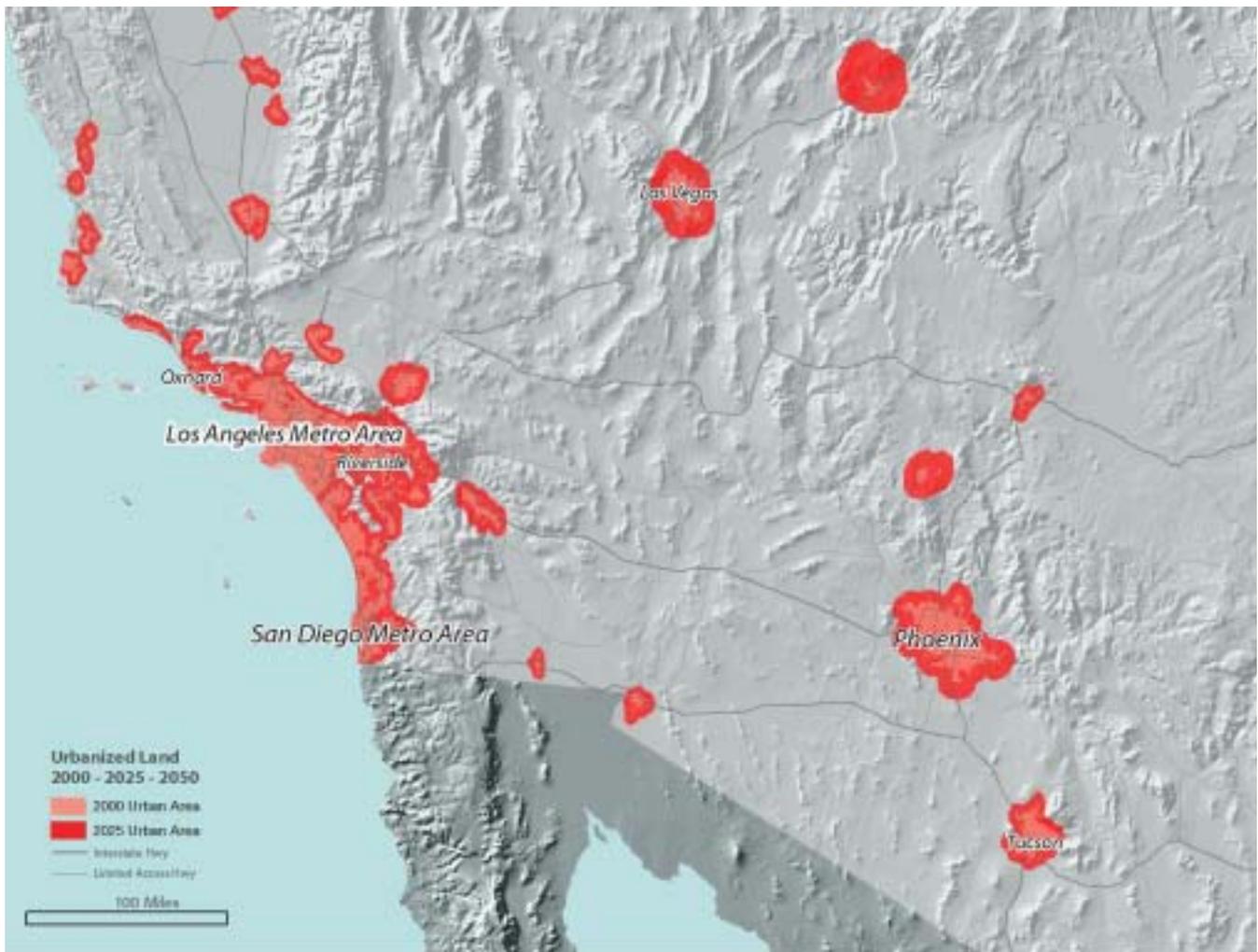
### Land Availability

The Southern California mega-region, despite being one of the nation's largest geographic metropolitan areas, faces unique challenges as it approaches the edges of developable land. While sensitive to its environment through preservation of public lands, the mega-region is developing further out into outskirts and closer to our international border, creating one of the most dense and diverse regions in the nation.

### Development Patterns

The urban core stretching from Los Angeles to San Diego is the densest in the nation, despite its image as a "horizontal metropolis". Densities approaching 15,000 and 20,000 people per square mile are common, especially in older coastal communities. Even newly developing areas, such as the Inland Empire, recognize the value of land and create fairly dense cities with viable transit systems. Whereas many older regions in the nation and world rely on urban rail systems for much of regional transport, Southern California has the

### Southern California Mega-Region



## Denser Development Patterns

nation's largest bus ridership, indicative of its history and continued pattern of dense urbanization. Despite these positive trends, the mega-region's growth pattern will be under pressure to accommodate the growth that is expected in coming decades.

As the Los Angeles Basin, San Fernando and San Gabriel Valleys, and the coastal mountains have built-out, auto-oriented development has shifted to the next ring of geography, including the high and low deserts and other inland valleys. But contrasting the continued pressure to sprawl onto greenfields is the increasing tendency towards infill. Recently, 35% of new housing and jobs in Southern California have occurred as infill or redevelopment in existing communities. Given the region's size, commute times, and increasing global position have led to a demand for reinvestment in the older urban areas. Demand for housing and employment in the coastal communities of Ventura, Santa Monica, Los Angeles, Long Beach, Huntington Beach, and San Diego has never been higher. These communities are currently taking actions to balance their traditionally high qualities of life with the increasing demands of urban areas, other cities and town are likely to follow suit in limiting sprawl in favor of a new regional that is increasingly dynamic and global region.

As Southern California continues to grow in population and consume land further away from existing and planned employment centers, its reputation for long commutes continues to be a serious regional problem.

The region's outmigration consists mostly of families in search of cheaper housing and lower commute times who have fueled population growth in other western cities, such as Phoenix, Las Vegas, Portland, and Denver, and to the south, in places such as Tijuana. But there are plenty of new people moving in or being born that will continue to live in the region and will need housing. Improving the region's jobs-housing balance is the most critical short-term problem to avoid a complete collapse of the transportation, housing, and social networks in place. We have learned that no amount of money can solve congestion when only focused on single occupant vehicles driving many miles each way to work. We have learned that providing only limited housing near existing employment centers drives up prices and drives away thousands who can't afford them. We have learned that a multi-modal transportation system can be embraced, even in Southern California, and that the best way to make it work is to put people living and working near it. We must do more to better integrate our housing and employment to maintain our quality of life, to attract and retain the best and the brightest in the world, and to compete nationally and globally for future investment.

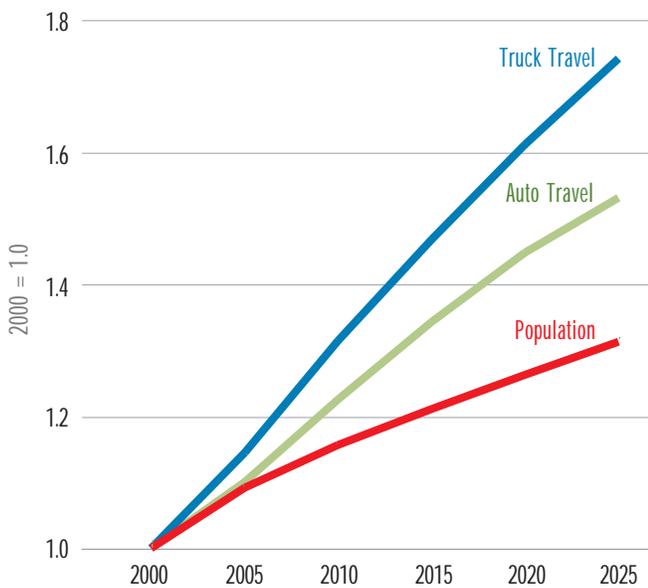
## TRENDS

### Increasing Congestion and Limited Transportation Infrastructure

#### Highway Congestion

According to the Texas Transportation Institute, core urban areas of the Southern California mega-region have consistently ranked worst in congestion in the country since 1982. Annually, Southern California loses \$13.8 billion due to congestion—by spending 768 million hours stuck in traffic and consuming 509 million gallons of excess fuel. Trends indicate that growth in travel, especially truck travel, will continue to outpace population growth, thereby increasing the pressure on an already constrained system.

#### Growth in Travel and Population



Source: California Department of Finance;  
California Department of Transportation

In the two decades following World War II, California led the nation in freeway building. As a result, the mega-region has over 10,500 lane-miles of freeway today. Since then, however, a number of factors make it prohibitively expensive to build any more freeways, including community opposition to negative neighborhood and environmental impacts, and the combined effect of inflation in construction costs with declining revenue sources. The cost to simply preserve and maintain the existing system consumes most available resources.

These limitations have led transportation planners to realize that congestion is a growing problem that will not be mitigated by simply adding capacity to the highway system. Instead, other operational strategies are needed to address congestion. Trends in this area are more encouraging as Southern California continues to lead the nation in innovative strategies to improve the performance and efficiency of its roadway system. The mega-region has one of the highest carpool rates in the country, at 15.8%. In the San Diego region, “managed lanes” which combine electronic tolling, reversible lanes, direct access ramps, and priority use for Bus Rapid Transit service, are being constructed on the I-15 corridor, and are now being planned on other major corridors to address traffic that has tripled over the past ten years.

#### Ports

International trade accounts for one of every 15 jobs in the Southern California region, according to the Los Angeles County Economic Development Corporation. The ports of Long Beach and Los Angeles are the two busiest container ports in the country and, together, the fifth busiest port complex in the world. Keeping freight moving through the Southern California mega-region and to the rest of the nation has always been a difficult challenge. In the year from 2003 to 2004, the Los Angeles and Long Beach ports experienced an 11% combined growth of cargo resulting in over 13 million TEUs (twenty-foot equivalent units). This increase alone represented about 60% of the total annual volume of the port of Oakland. Forecasts indicate that by 2030, the ports will handle some 44 million TEUs, which is in line with their maximum physical capacities.

Meanwhile, intermodal yards throughout the region, used to transfer containers from trucks to rail, are already near capacity, and congestion within the transportation system exacerbates the delays and costs connected to limited capacity.

Again, increasing capacity is neither a simple nor ideal solution. Concurrent with increasing population and demand is a rising tide of community pressure to reduce the traffic congestion and related public health impacts of goods movement. Recent moves to expand the Port of Long Beach were

## Increasing Congestion and Limited Transportation Infrastructure

rejected based on environmental impacts, with studies associating impaired lung growth in children with air pollution arising from mobile sources such as trucks. Yet these public health concerns that resist infrastructure expansion often conflict with the economic needs of the mega-region, the state, and the nation which rely on the job opportunities and goods that move through this global gateway.

### Airport Congestion

The Southern California Mega-Region has 93 public use airports, including thirteen active commercial service airports, including:

**Bakersfield**  
(Meadows Field)

**Burbank Glendale Pasadena**  
(BUR)

**John Wayne**  
(SNA)

**Los Angeles International**  
(LAX)

**Long Beach**  
(LGB)

**March Inland Port**  
(MAR)

**Ontario International**  
(ONT)

**Palm Springs**  
(PSP)

**Palmdale Regional**  
(PMD)

**San Bernardino Int'l**  
(SBD)

**San Diego Int'l**

**Santa Barbara Municipal**

**Southern California Logistics (SCL)**

### Southern California Airports



## TRENDS

### Increasing Congestion and Limited Transportation Infrastructure

In all, some 95 million annual passengers (MAP) were served in the mega-region in 2003. The level of air passenger demand is forecast to double again before 2030. In addition to air passengers, three million tons of air cargo were serviced by Southern California airports in 2003 (expected to triple by 2030), with the majority being served at Los Angeles International and Ontario airports. While none of the individual airports is the largest in the U.S., the mega-region's airports together make Southern California the busiest of all regions in the country.

Los Angeles International Airport (LAX) is the primary international airport for southern California, with over 1,800 operations per day, including commuter flights, short haul (< 500 miles) and long haul (>500 miles) activity. Maintaining this role is challenging given its size at 3,500 acres compared to other airports.

#### Airport Passengers – 2003

Airport	Ranking of passengers served	Annual Passengers	Airport Acreage
Chicago O'Hare	2	65,840,774	7,700
<b>Los Angeles</b>	<b>3</b>	<b>52,479,168</b>	<b>3,500</b>
Dallas Ft. Worth	4	49,953,762	18,000
Denver Int'l	6	35,939,508	34,000
Orlando Int'l	15	26,750,324	14,700

Source: SCAG, FAA

Located along the coast in a built-out urban environment, it is rapidly approaching its estimated maximum annual capacity of 78 million passengers (preliminary 2004 data indicates LAX served just under 61 million passengers). The cost of expanding the airport to meet demand is significantly higher than expanding services at under-utilized airports within the region. Included is the political cost, as community groups around airports organize to oppose airport expansion, often because of noise and environmental impacts. Yet, there is a regional economic cost to not expanding the airport, as a number of industries and businesses are, to varying extents, dependent upon efficient airport usage and access.

Expansion costs would be further increased by the necessary surface transportation upgrades to support increased airport usage. Southern California is infamous for its traffic congestion. Any airport development or expansion, whether at LAX or under-utilized inland airports, will require regional surface transportation solutions.

Burbank, John Wayne, Long Beach, and San Diego airports face similar challenges in that they are located in built-out urban environments. However, much of the traffic at these non-primary commercial airports is short-haul in nature. The morning and afternoon flights between Southern California and Northern California airports place great strains on these airports during "rush hours." The airspace between Los Angeles and San Francisco is considered one of the busiest in the nation. In the San Diego region, a new regional airport authority has been created, and it is currently evaluating options for siting a new regional airport.

<sup>1</sup>[http://www.faa.gov/ats/nar/west\\_pac/west\\_pac\\_bay.htm](http://www.faa.gov/ats/nar/west_pac/west_pac_bay.htm)

## Declining Economic Competitiveness

### Imbalance between Population and Employment Growth

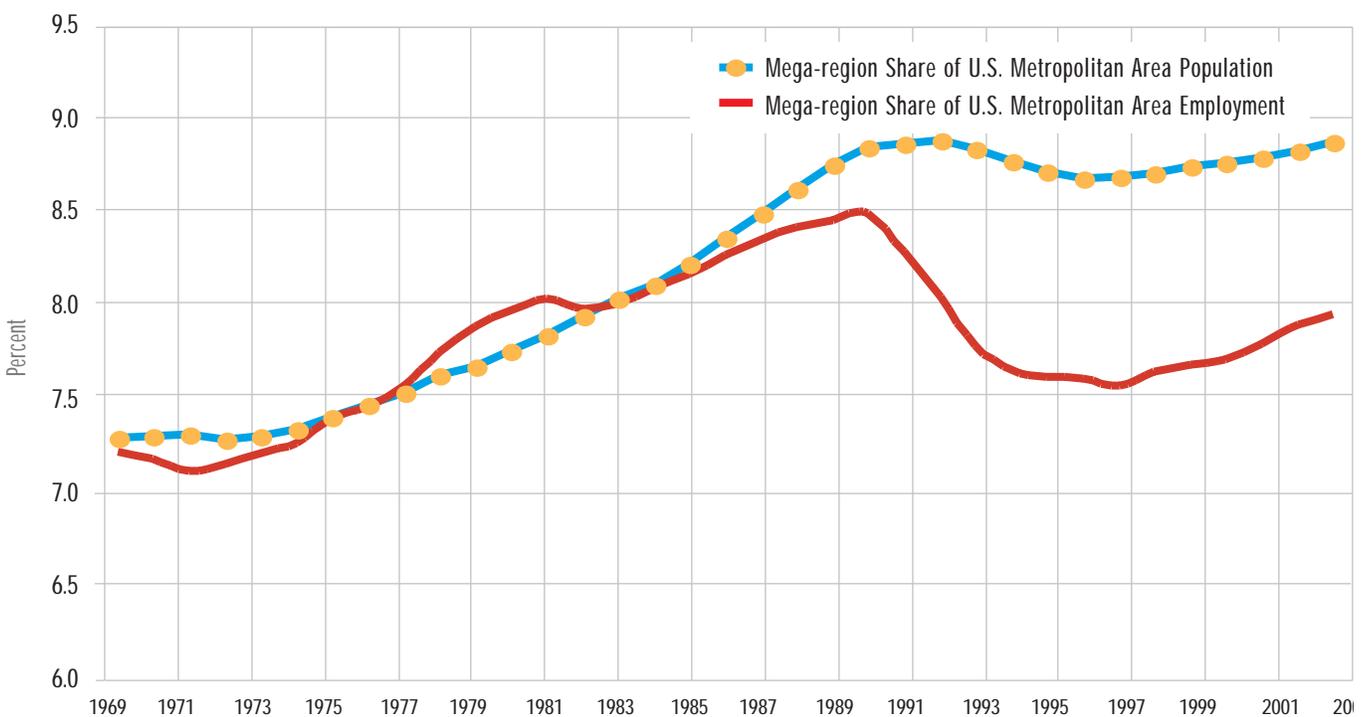
The mega-region's shares of total population and employment located in the U.S. metropolitan area since 1969 are shown in the figure below. During each of the last three recessions (1970-71, 1981-82 and 1990-93) the impacts on the Southern California Mega-region's job markets were more severe than those incurred on the rest of U.S. metropolitan areas. As a result, the region's shares of total U.S. metro area employment declined during these recessions. In addition, the ratio of the employment share from the 1990-1993 recession compared to job share declines during early 1980s was 8 to 1. The region has since added more than 1.5 million wage and salary jobs since 1993, however, it has only recovered less than half of its lost job shares since 1990. The region's share of all U.S. metro area employment was at its peak of 8.5% in 1990, and registered at just under 8% in 2003.

On the population side, Southern California Mega-region has grown faster than other metro areas, and has increased its share of the U.S. metro area population. This trend of increasing population share in the SCAG region paused and declined marginally between 1993 and 1997. This was due to significant domestic out-migration related to the previous recession. Recently, the region's share of all U.S. metro area population has increased again, at the end of 2003, almost matching its previous high of 8.9% registered in 1992.

### Trends in Per Capita Income and Average Payroll per Job Relative to U.S. Metro Areas

This presents two relative ratios, showing the comparison with the averages for all U.S. metro areas: (1) Southern California Mega-region's per capita personal income and (2) average payroll per job. They are both shown as a percent (divided by) of those averages from all U.S. metro areas. It is commonly thought that the mega-region only started to

Mega-region Share of U.S. Metropolitan Area Population and Employment



Source: Bureau of Economic Analysis (BEA) and SCAG Socio-economic data base

## TRENDS

### Declining Economic Competitiveness

lose competitiveness in per capita income in 1990s due to the recession between 1990 and 1993. Actually, the region's per capita income relative to the average of all U.S. metro areas peaked in 1979, and have since declined sharply in the next two decades, except for two very brief pauses in 1986-87 and in 1989-90.

Although the region has started to lose its competitiveness and showed a declining performance in per capita income relative to other U.S. metropolitan areas in 1979, the region was actually beginning at this time to create high-quality, high-paying jobs and to raise its share of metro area employment (previous figure). As indicated, the quality of the mega-region's jobs, as measured by average wages relative to other metro areas, showed a significant decline in earlier years from 1969 to 1974, and remained almost unchanged for the next several years, until 1978. The next 9 years, between 1978 and 1987, marked the only period in the mod-

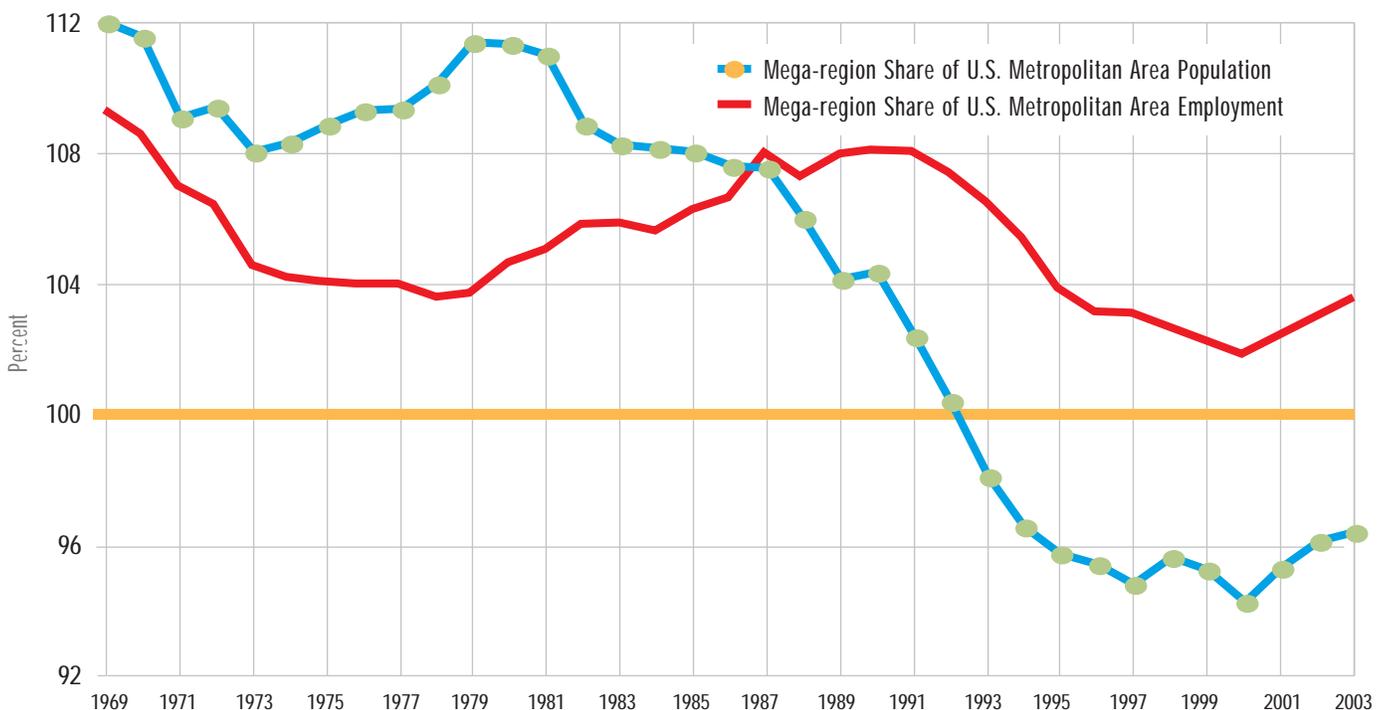
ern mega-region's job market history that high-quality and high-paid jobs were created relative to all other U.S. metro areas.

The mega-region's job wages relative to wages in other U.S. metro areas continued to decline till 2000, and since have recorded three consecutive annual increases. Whether this representing the start of a reversal in long-term trend is unclear, however, it is suspected that this may be related more to the relative poor economic performances in Northern California after the collapse of dot-com market and in the New York area due to the events of September 11, 2001.

#### Poverty

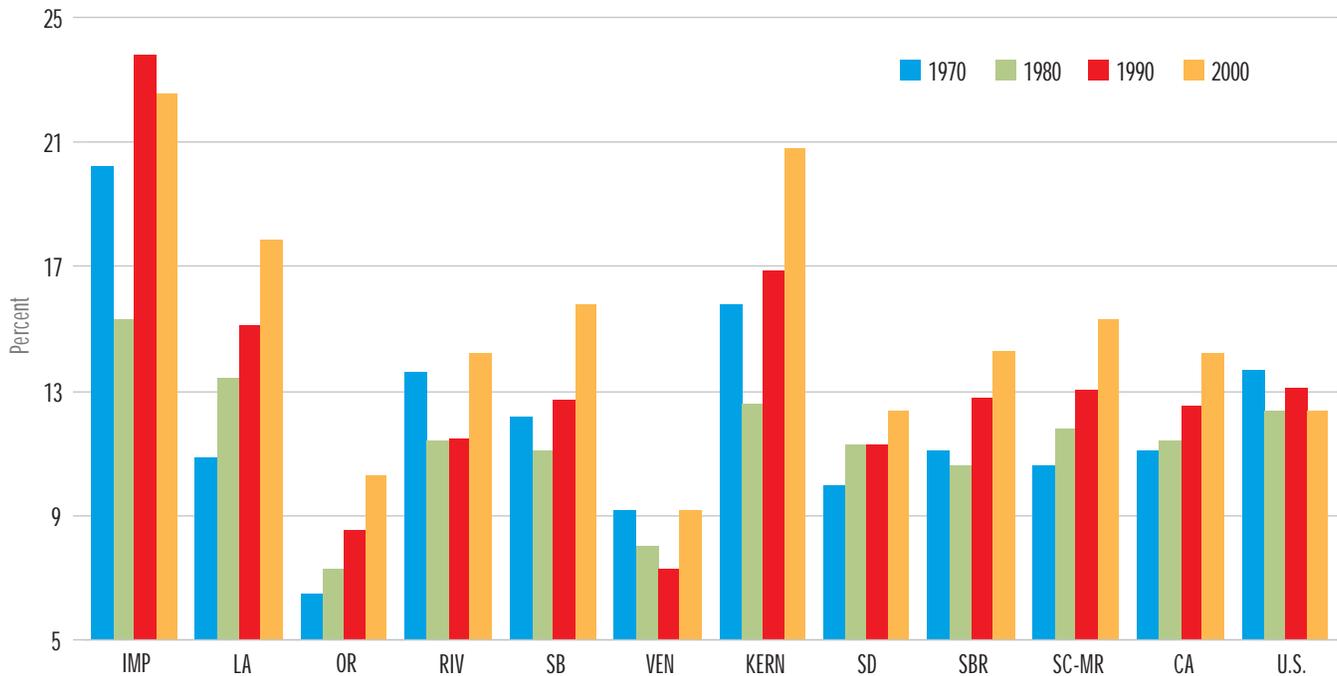
Poverty remains a concern in the mega-region relative to its concentration and the upward trend that has occurred during since 1970. While the nation's poverty rates remained relatively steady and declined overall to about 12% since

**Mega-region Per Capita Personal Income and Average Payroll Per Job as a Percent of U.S. Metropolitan Area**



Source: Bureau of Economic Analysis (BEA) and SCAG Socio-economic data base

Poverty Rates for Southern California  
Mega-region, Counties, California, and U.S.  
(1970-2000)



Source: Bureau of Census, HUD User Data Base and SCAG Socio-economic data base

1970, the same can not be said for counties in the Southern California Mega-region. In the Southern California Mega-region, as the population grew by over 8.4 million in the last 30 years (1970-2000), over 22% of this population (or, almost 1.9 million) was under the federal poverty threshold.

A recently published study by the Center on Urban and Metropolitan Policy at the Brookings Institution (May 2003) reinforces the concerns of SC Mega Region poverty issues as illustrated by poverty changes during the last three decades. The report, "Stunning Progress, Hidden Problems: The Dramatic Decline of Concentrated Poverty in the 1990s," documents the decline in the number of high poverty neighborhoods as well as the population in those neighborhoods in the U.S. as a whole between 1990 and 2000. By contrast, the report found that the concentration of poverty in the SC Mega Region actually increased significantly during this period. For example (see Table Page 17):

- For the nation as a whole, the number of people living in high-poverty neighborhoods—neighborhoods in which the poverty rate is 40 percent or higher--declined by a dramatic 24 percent, or 2.5 million people, in the 1990s.
- However, for the SC Mega Region, where data is available for eight major metropolitan areas, the number of people living in high-poverty neighborhoods more than doubled between 1990 and 2000, jumping by over 430,000.
- The number of high-poverty neighborhoods in the SC Mega Region (as measured by census tracts) also showed a dramatic increase. In 1990 there were 79 census tracts (371,118 people) in the eight metro areas with high concentrations of poverty; by 2000, the number of such tracts had risen to 192 (801,735 people).

# TRENDS

## Declining Economic Competitiveness

- Among the top 15 metro areas in the U.S. where poverty concentration showed the greatest increase between 1990 and 2010, Los Angeles County is at the top of the list, while the Riverside/San Bernardino MSA ranks third (following Fresno, CA). After the fourth ranked Washington, DC-MD-VA-WA, Bakersfield and San Diego rank in the fifth and sixth place, respectively.

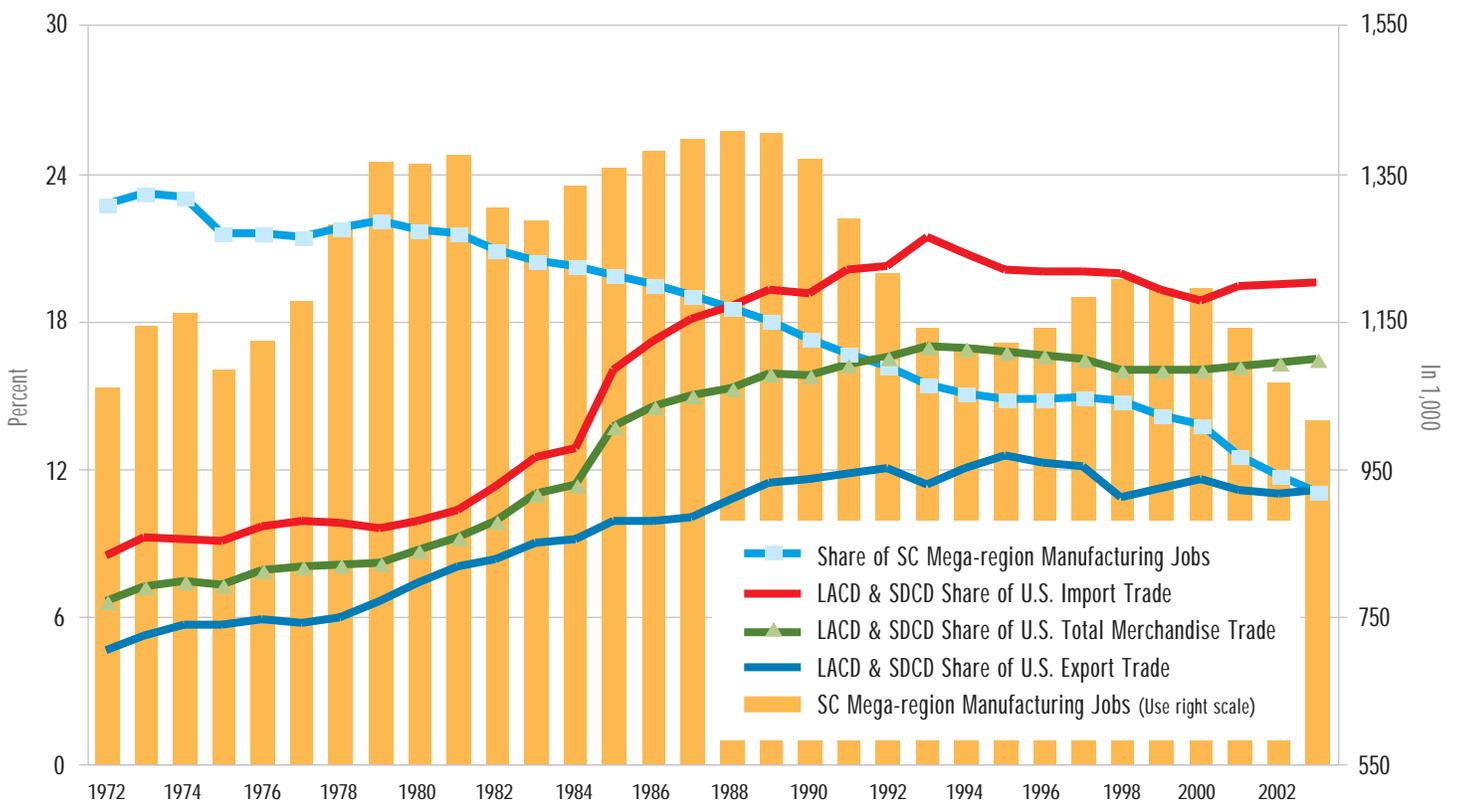
### Globalization, Trade, Structural Change of the Economy and Off-shoring

Globalization, trade, and improvements in inventory control, including just-in-time delivery, have made the transportation and logistics industry increasingly important over time. The following figure illustrates the combining impacts on the mega-region in particular from structure change of the econ-

omy and intensification of globalization and international trade since 1972.

Job losses in the manufacturing sector have been somewhat off-set in the Southern California mega-region by tremendous growth in international trade, through the Los Angeles Customs Districts (LACD) and the San Diego Districts (SDCD). The port facilities within LACD and SDCD include the Port of Los Angeles, the Port of Long Beach, LAX Airport, San Diego airport and seaports in San Diego and across the border in Tijuana. In terms of value, the region accommodates nearly 30% of the nation's waterborne trade, and 16.5% of its total international trade. Although this activity greatly benefits the nation as a whole, the region incurs a disproportionate share of the burden in congestion and air quality costs.

Southern California Mega-region Impacts from Globalization and International Trade (1972-2003)



Source: Bureau of Census and SCAG Socio-economic data base

**Poverty Concentration Changes between 1990 and 2000:  
Southern California Mega-region Compared with the 20 Largest Metropolitan Areas**

	Total Area Population	High-Poverty Census Tracts			Population in High-Poverty Census Tracts			Concentrated Poverty Rate: Total			Concentrated Poverty Rate: Blacks			Concentrated Poverty Rate: Hispanics		
		1990	2000	Change	1990	2000	Change	1990	2000	Change	1990	2000	Change	1990	2000	Change
New York, NY	9,314,235	279	253	-26	960,292	945,255	-15,037	31.3	24.9	-6.4	40.1	32.5	-7.6	40.9	32.2	-8.7
Chicago, IL	8,272,768	187	114	-73	412,853	234,945	-177,908	26.4	13.7	-12.7	45.3	56.4	11.1	12.4	4.7	-7.7
Philadelphia, PA-NJ	5,100,931	70	67	-3	241,863	240,926	-937	23.0	19.6	-3.4	31.0	23.6	-7.4	61.6	49.5	-12.1
Washington, DC-MD-VA-WA	4,923,153	10	24	14	20,609	77,563	56,954	3.3	7.6	4.3	6.3	15.0	8.7	1.0	0.4	-0.6
Detroit, MI	4,441,551	150	53	-97	420,739	107,522	-313,217	36.0	10.4	-25.6	53.9	16.4	-37.5	36.1	6.9	-29.2
Atlanta, GA	4,112,198	36	31	-5	92,053	92,039	-14	15.3	11.1	-4.2	26.6	20.5	-6.1	6.8	2.5	-4.3
Houston, TX	4,177,646	51	24	-27	162,487	84,825	-77,662	15.1	6.2	-8.9	28.0	17.1	-10.9	13.1	2.8	-10.3
Boston, MA-NH	3,406,829	15	13	-2	31,757	32,643	886	5.0	4.2	-0.8	12.5	6.2	-6.3	10.7	8.1	-2.6
Dallas, TX	3,519,176	36	17	-19	92,275	50,470	-41,805	13.8	5.4	-8.4	25.4	13.8	-11.6	12.8	3.5	-9.3
Phoenix-Mesa, AZ	3,251,876	27	30	3	92,673	91,844	-829	15.2	10.5	-4.7	25.7	15.4	-10.3	21.3	12.2	-9.1
Minneapolis-St. Paul, MN	2,968,806	33	15	-18	79,048	47,043	-32,005	17.3	8.6	-8.7	33.3	13.0	-20.3	18.2	5.9	-12.3
Nassau-Suffolk, NY	2,753,913	2	1	-1	8,814	184	-8,630	0.5	0.0	-0.5	0.5	0.0	-0.5	0.0	0.0	0.0
St. Louis, Mo	2,603,607	39	26	-13	109,516	70,650	-38,866	20.5	13.0	-7.5	39.1	23.8	-15.3	12.8	5.2	-7.6
Baltimore, MD	2,552,994	38	33	-5	106,648	75,643	-31,005	22.5	13.5	-9.0	34.7	21.5	-13.2	9.7	3.5	-6.2
Seattle-Belevue-Everett, WA	2,414,616	9	4	-5	24,775	14,646	-10,129	5.0	2.4	-2.6	6.8	3.4	-3.4	8.1	1.3	-6.8
Tampa-St. Petersburg-Clearwater, FL	2,395,997	16	11	-5	40,956	9,465	-31,491	9.1	5.5	-3.6	29.1	17.8	-11.3	7.3	4.7	-2.6
Oakland, CA	2,392,557	9	12	3	29,610	33,725	4,115	6.0	6.4	0.4	10.2	9.1	-1.1	6.4	2.6	-3.8
Pittsburgh, PA	2,358,695	42	26	-16	74,898	48,076	-26,822	13.3	8.5	-4.8	45.3	24.6	-20.7	12.0	9.3	-2.7
Miami, FL	2,253,362	33	31	-2	148,083	122,274	-25,809	20.7	14.2	-6.5	40.7	30.6	-10.1	11.4	7.0	-4.4
Cleveland-Lorain-Elyria, OH	2,250,871	71	52	-19	102,494	76,146	-26,348	21.7	15.3	-6.4	38.2	26.5	-11.7	23.7	15.7	-8.0
Los Angeles, CA	9,519,338	56	137	81	267,666	560,025	292,359	9.0	14.9	5.9	17.3	21.3	4.0	9.1	16.9	7.8
Orange County, CA	2,846,289	1	2	1	95	2,974	2,879	0.0	0.7	0.7	0.0	0.0	0.0	0.1	0.1	0.1
Riverside-San Bernardino, CA	3,254,821	6	18	12	22,523	81,192	58,669	3.2	7.7	4.5	5.7	12.3	6.6	4.4	8.9	4.5
Ventura County, CA	753,197	0	0	0	0	0	0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Bakersfield, CA	661,645	4	13	9	22,333	64,955	42,622	11.5	22.0	10.5	29.7	36.3	6.6	15.1	28.5	13.4
San Diego, CA	2,813,833	8	18	10	38,644	71,918	33,274	6.3	9.1	2.8	15.4	13.0	-2.4	10.2	12.5	2.3
Santa Barbara, CA	399,347	4	4	0	19,857	20,671	814	18.7	17.2	-1.5	11.8	10.7	-1.0	5.1	5.6	0.5
SC Mega-region, Total	20,248,470	79	192	113	371,118	801,735	430,617	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
U.S. Total	281,421,906	3,417	2,510	-907	10,393,954	7,946,291	-2,447,663	15.1	10.3	-4.8	30.4	18.6	-11.8	21.2	13.8	-7.4

Source: Jargowsky, Paul A., "Stunning Progress, Hidden Problems: The Dramatic Decline of Concentrated Poverty in the 1990s," May 2003. Center on Urban and Metropolitan Policy, The Living Cities Series, The Brookings Institution, Washington, D.C.

## TRENDS

### Strains on Public Facilities and Services

#### Energy

The Southern California mega-region faces considerable challenges with regard to energy supply, distribution and use. Recently, Southern California saw the emergence of regional reliability problems associated with increasing congestion on the transmission system. Although the market initially appeared to function well after the state's restructuring of the electricity market in 1996, demand caught up with supply partially resulting in price spikes and rolling blackouts.

Despite various reforms, current electricity reserves will be insufficient to meet an abnormal hot summer (considered once every ten years). The growth in population, households, and jobs projected for the next decades will certainly place new demands on energy generation and distribution in the Southern California mega-region, which consumed over half of the electricity in the state in 2001. Given that high temperatures have the greatest impact on electricity demand, projected increases in population and jobs in the quickly growing and hot areas of the Inland Empire and other future growth areas such as Imperial Valley indicates that demands on the capacity and distribution of energy will remain a major challenge. The mega-region is further impacted by external factors such availability and supply, both domestic and foreign, and regulation from the federal and state governments.

#### Water

##### Water Demand

The Southern California mega-region depends on both imported and local water sources to meet its demand. This includes imported water from the Colorado River, the State Water Project via the California Aqueduct, and eastern Sierra Nevada via the Los Angeles Aqueduct. Depending on the rainfall level, imported water generally accounts for about 70 to 75 percent of the mega-region's water supply. The remaining 25 to 30 percent of supply comes from local surface and ground water sources, as well as reclaimed water sources. Future imports may be reduced due to the rapid population growth that is projected, not only in the

Southern California mega-region, but in the three importer regions as well.

Although single-family homes account for about 55 percent of the total occupied housing stock, they account for about 70 percent of total residential water demand. Within the non-residential category, the top commercial and institutional water users include schools, hospitals, hotels, amusement parks, colleges, laundries, and restaurants. In the Southern California mega-region, the major industrial users include electronics, aircraft, petroleum refining, beverages, food processing, and others.

##### Water Consumption

Water consumption per capita is important relative to a city or county's growth projections, in order to maintain a safe yield per person and sustain community well-being. Per capita water consumption for urban uses has generally been declining. Specifically, per capita water consumption per day within the Metropolitan Water District (MWD) service area decreased from 211 gallons in 1990 to 187 gallons in 2001. This decline in per capita urban water consumption is largely due to the development of various conservation programs and practices, including retrofitting with water efficient technology for showerheads and toilets and changes in landscaping practices toward drought tolerant plants. Also, implementation of water pricing has also suppressed the growth in per capita water demand.

Yet, as Inland Empire areas grow at faster rates than coastal counties, their higher per capita urban water consumption rates may offset potential savings through conservation and pricing strategies within the MWD service area. The MWD forecasts that per capita urban water demand in its service area will remain relatively constant over the next 25 years.

Similar trends are occurring in the San Diego region, and are being addressed by the San Diego County Water Authority and SANDAG. In addition, the growth in the Tijuana / Northern Baja region is placing an even greater strain on water resources on both sides of the International Border, requiring a greater degree of binational collaboration at all levels of government.

## Strains on Public Facilities and Services

**Solid Waste Management**

The 1989 California Integrated Waste Management Act set the stage for a series of statewide reforms in waste management including the mandate to divert 50 percent of each city's and county's waste from landfill disposal by the year 2000, through waste prevention, re-use, recycling and composting. At the statewide level, the diversion rate increased from 10 percent in 1989 to 48 percent in 2002. Among the 72 million tons of total waste generated in California in 2002, 34 million tons were diverted, with over half of that being from the Southern California mega-region. This is especially significant given an ever increasing population.

In 2000, less than half of all the local governments in Southern California met the 50 percent goal of diversion. Challenges for those local jurisdictions not able to meet the goal included lack of a ready market for diverted materials and the additional cost and time required to develop needed infrastructure. Recyclable materials, such as paper, still comprise about 30 percent of the waste stream. An expanded market for recovered recyclables is essential to make further progress in the mega-region's waste diversion efforts.

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<sup>2</sup> California Energy Commission, Integrated Energy Policy Report 2004, November 3, 2004.

<sup>3</sup> California Energy Commission, Summer 2005 Supply-Demand Update, Joint Agency Meeting, March 23, 2005, [http://www.energy.ca.gov/energy\\_action\\_plan/meetings/2005-03-23\\_meeting/2005-03-23\\_ASHUCKIAN.PDF](http://www.energy.ca.gov/energy_action_plan/meetings/2005-03-23_meeting/2005-03-23_ASHUCKIAN.PDF) (last accessed June 13, 2005).

<sup>4</sup> California Energy Commission, Summer 2005 Electricity Supply and Demand Outlook, March 2005.

# TRENDS

## Threats to the Natural Environment

### Loss of Habitat and Open Space

The Southern California mega-region is an ecologically rich and diverse terrain, with a variety of Mediterranean, oak savannah, chaparral and coastal sage scrub landscapes spread over an area that transitions from mountains to coastal plains. Many of its plant and animal species are listed as endangered or threatened.

The most critical ecological pressure on the land derives from urbanization. Suburban-style sprawling development results in the conversion of agricultural and open lands, extending the human-wildland interface, and increasing the extent to which human demands on the land come into conflict with ecosystem processes-particularly fire and hydrology. Human habitation is increasingly brought into contact with landscapes that are critically driven by a fire ecology; impervious surfaces limit the potential for groundwater recharge; and human landscaping replaces native vegetation as cultural norms press for artificially maintained lawns and parks, in

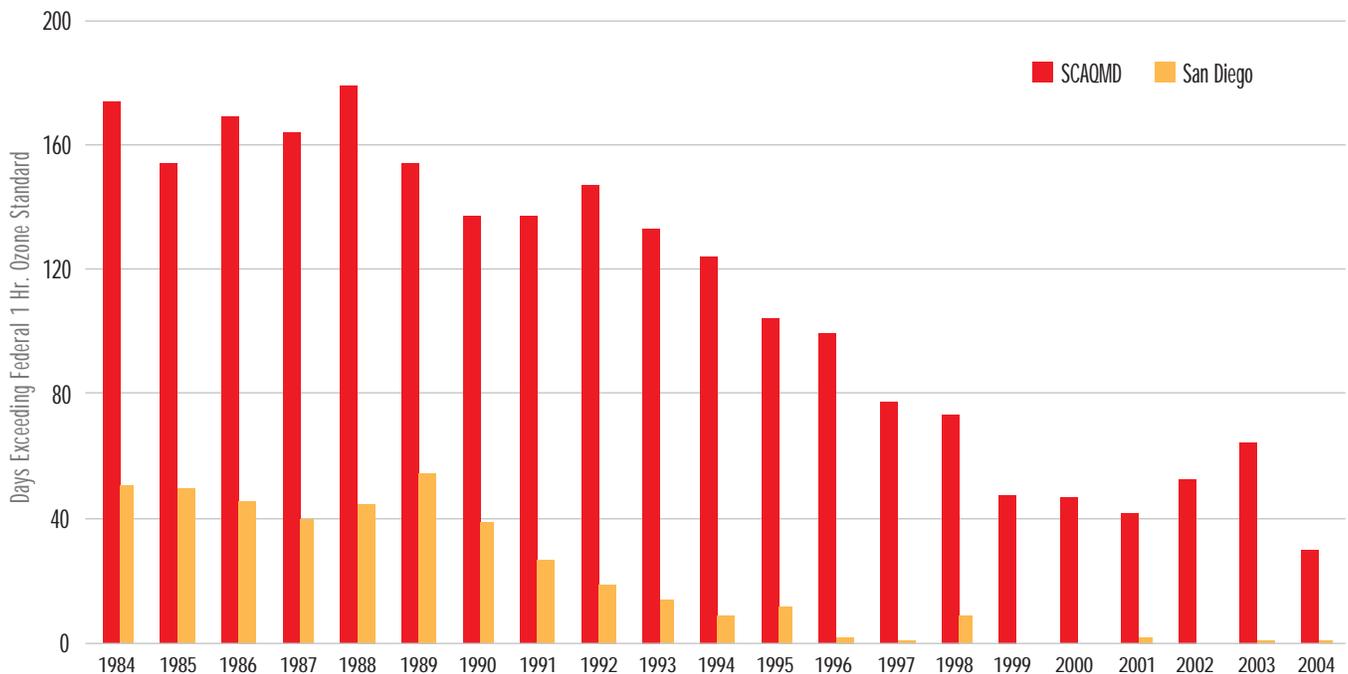
turn consuming native habitat, increasing the use of chemical fertilizers and herbicides, and consuming scarce water resources

### Air Pollution

Considerable progress has been made in Southern California to clear the skies over the past 30 years, with a decrease in annual number of days exceeding federal standards from 130 days in 1990 to 40 in 2000. The region achieved these consistent improvements in the face of rapid growth in population, housing, employment, and vehicle miles traveled.

Yet, this progress in ambient air quality trends appears to be stalling, and diesel emissions from ships, locomotives, and the port complex are currently projected to increase. In 2002, the number of days exceeding federal one-hour standard for ozone increased to 49 days from 36 days in 2001, in the South Coast Air District, and the number of days for health advisory also increased from 15 to 18 days between

### Southern California Mega-region Air Quality



Source: SCAQMD and San Diego Association of Governments

# EMERGING MEGA-REGIONAL STRATEGIES

## Develop a Mega-regional Airport System Connected by a High-Speed Rail Network

2001 and 2002. Yet, the San Diego region has made great strides, lowering its number of days exceeding federal standards from 39 in 1990 to 0 in 2000, and its number of days with a health advisory was also 0 in 2001 and 2002.

Emerging evidence from the health community suggests health impacts, especially from exposure to fine and ultra-fine diesel particulate pollution, may be more severe and localized than previously understood. Occurring primarily in areas with close proximity to high-traffic roadways (especially with high numbers of diesel trucks), localized health effects include increased mortality of people who live, work or go to school near these high-traffic roadways.

Effective federal, state, and regional requirements and successful regional air quality plans have jointly reduced hundreds of tons of air pollution each day from mobile, area, and stationary sources in Southern California. However, the remaining air emissions and the unique meteorology and topography of Southern California, with little rainfall, abundant sunshine, limited dispersion, and tall mountains, result in Southern California continuing to have the worst air quality in the United States. Furthermore, recent trends indicate that much more work will be needed to achieve healthful air for all Southern Californians.

### Deteriorating Water Quality

Water bodies within the mega-region, including groundwater, lakes, reservoirs, rivers, streams, lagoons, estuaries, vernal pools, bays, and the ocean, are among our most valuable resources. They provide a wide range of “beneficial uses,” or the uses of water necessary for the survival or well being of humans, plants, and animals. Beneficial uses of water serve

to promote both tangible and intangible economic, social, and environmental goals. For example, the beaches and coastline provide places to relax and play, and they attract tourism, which stimulates the regional economy. Regional reservoirs provide a valued water supply and emergency storage function. Water bodies also provide habitat for many of the region’s rare, threatened, and endangered species, while serving as an important part of an overall healthy environment.

A key indicator of our region’s water quality is how often our beaches and bays are closed due to pollution. Beach closures, when they happen, are a matter of significant concern. Beach closures within the region are largely attributed to pollution in urban runoff that is transported to rivers, bays, and the ocean via the stormwater conveyance system.

In 2002, a dry year, the San Diego region received only 33 percent of its normal rainfall and there were about 1,300 beach closures and advisories. An advisory is issued when ocean or bay water quality does not meet state standards due to high bacterial levels, or during the excavation of a coastal outlet (river or lagoon) when potentially contaminated water is released into the ocean. In addition, there were 35 days when all coastal waters were under a General Advisory due to stormwater and other urban runoff affecting beaches after rainfall. Residents are increasingly concerned about pollution and possible health risks associated with swimming, surfing, and recreating in these waters.

Urban runoff can adversely impact the quality of our local drinking water. The significance of urban runoff with respect to drinking water quality has only recently come to be recognized in the region. The deterioration of water quality also

<sup>5</sup> Urban runoff is primarily caused by non-point source pollutants, such as urbanization and agriculture, which now contribute a larger portion of many kinds of pollutants into our waters. More information on urban runoff can be found under the “Existing Plans and Programs” section of this chapter.

<sup>6</sup> San Diego County Water Authority, Annual Rainfall amounts at Lindbergh Field, San Diego County, <http://www.sdcwa.org/manage/rainfall-lindbergh.phtml>.

<sup>7</sup> A General Advisory is issued after 0.2” or more rainfall to alert the public of ocean and bay water contamination by urban runoff.

<sup>8</sup> County of San Diego Department of Environmental Health, Beach and Bay Status Report, San Diego County Beach Closures and Advisories in 2002, <http://www.co.san-diego.ca.us/deh/lwq/beachbay/#closures>.

## TRENDS

### Threats to the Natural Environment

can result in a reduced water supply and increased water treatment costs.

The region's water bodies, such as lakes, streams, and estuaries, are also affected by pollution. Currently, in the San Diego region there are 52 water segments, such as streams, water bodies, and shoreline that are considered impaired and do not meet water quality standards set forth in the Water Quality Control Plan for the San Diego Basin (Basin Plan).

## Growing Economic and Social Disparity

### Income Distribution

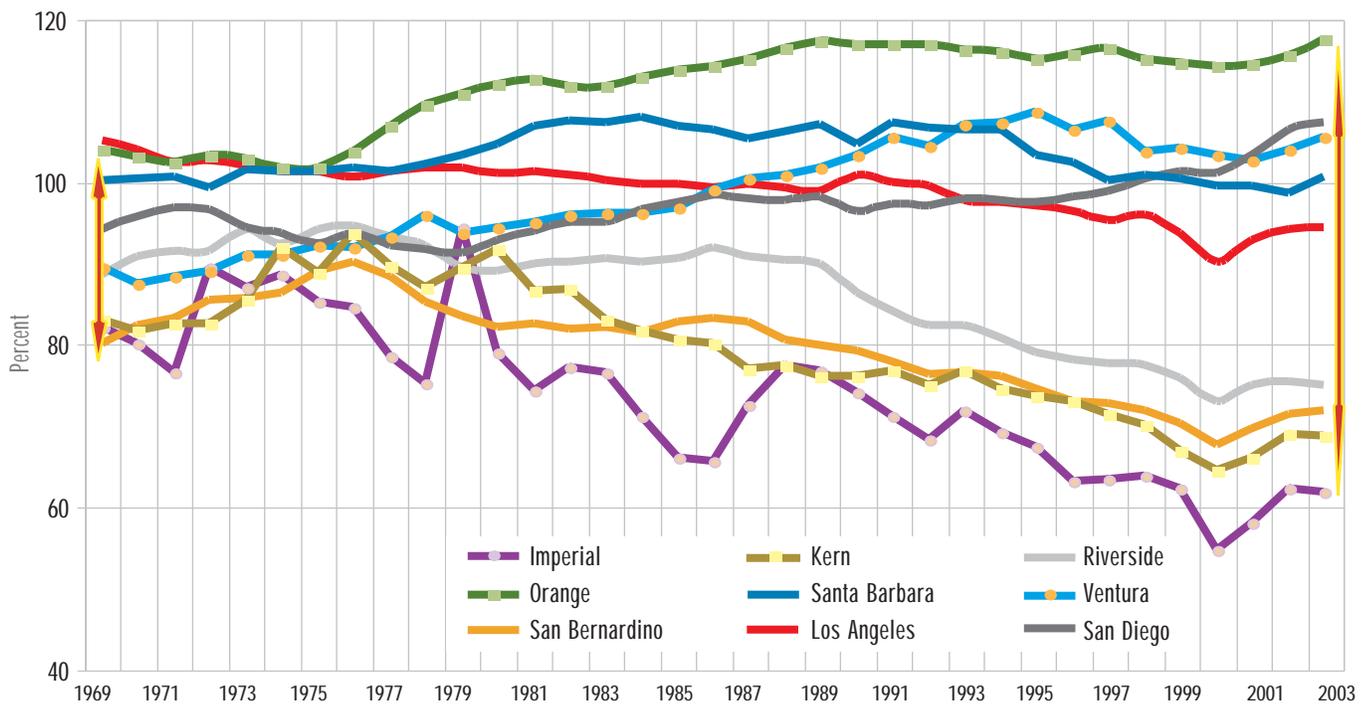
Between 1990 and 2000, Riverside and San Bernardino had the Southern California Mega-region's fastest growing economy, accounting for over 43% of the over 1 million job gains in Southern California Mega-region's overall employment. This represented a 60% expansion of the combined Riverside and San Bernardino job markets, compared to 13.1% increase for the mega-region as a whole. Yet, as shown, since 1970 per capita personal income of the Inland Empire has dropped significantly compared to the regional average. This disparity threatens to undermine the benefits of achieving a numerical balance between jobs and housing in the Inland Empire.

In addition, the mega-region continued to have significant social and economic disparities among different racial and

ethnic groups, most exacerbated during the most recent economic decline. Social and economic disparities have persisted in Southern California in education, income, poverty and homeownership.

Income distribution studies indicate that immigration or the influx of younger workers and immigrants into California's labor force has been a leading contributor to the state's (region's) high level of income inequality (Daly, Reed, and Royer 2001). In addition, the rising earnings value of education and experience, which most immigrants also lack, has widened the income gap in Southern California. These two factors together account for 44 percent of the rising income inequality in the State; discrimination in the labor market towards immigrants and minorities will further exacerbate this inequity in the future.

Per Capita Income (PCI) for SC Mega-Region Counties  
Show as Percent of California PCI



Source: Bureau of Economic Analysis (BEA) and SCAG Socio-economic data base

## TRENDS

### Growing Economic and Social Disparity

#### Educational Attainment

As recent as 2002, there were no noticeable improvements in educational attainment in the region. Among the nine largest metropolitan regions, the SCAG region in particular remained in last place in the percentage of adults with at least a high school diploma, and second to last for at least a Bachelor's degree. Among the different racial and ethnic groups, there are significant disparities related to educational attainment, in that more than 43 percent of Asian adults in the region achieved at least a Bachelor's degree compared to 18 percent for African American and seven percent for Hispanic adults. Conversely, about 35 percent of the Hispanic adults achieved less than 9th grade education level compared with only three percent for African American and two percent for White adults. These numbers are likely to improve as second generation Hispanics make up a larger proportion of the Hispanic population.

#### Housing Affordability

In 2002, the region had lower housing affordability than the national average and the gaps have continued to widen since 1997. While more than half of the nation's households could afford a median-priced house in 2002, less than a third of the region's households could achieve the same. When comparing homeownership in the nine largest metropolitan regions in the nation, the region's homeownership rate of 55 percent in 2000 ranked 8th, above only the New York Region. Among the largest metropolitan regions, Southern California had the highest percentage of owner and renter households with housing cost greater than 30 percent of the household income. Contrary to the decreasing trend at the national level, the percentage of housing considered crowded increased in the region from 1990 to 2000. Almost 20 percent of the households lived in crowded housing in 2000, compared to only 6 percent for the nation.

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<sup>9</sup> San Diego Regional Water Quality Control Board, Section 303 (d) Impaired Water Bodies List, <http://www.swrcb.ca.gov/rwqcb9/programs/303dlist.html>.

# EMERGING MEGA-REGIONAL STRATEGIES

The trends that are shaping the Southern California mega-region will require that we look at many of our traditional planning processes differently than we have over the past fifty to sixty years. In the following discussion, we outline some of the emerging planning strategies in the mega-region that can allow us to shape our future proactively rather than reactively, and that can lead to better outcomes in the future than we have been experiencing in the recent past.

These strategies are focused on sustainability, prosperity, equity and financing.



Sustainability



Prosperity



Equity



Financing

# EMERGING MEGA-REGIONAL STRATEGIES

## SUSTAINABILITY: Focus Growth Towards Urban Centers and Corridors

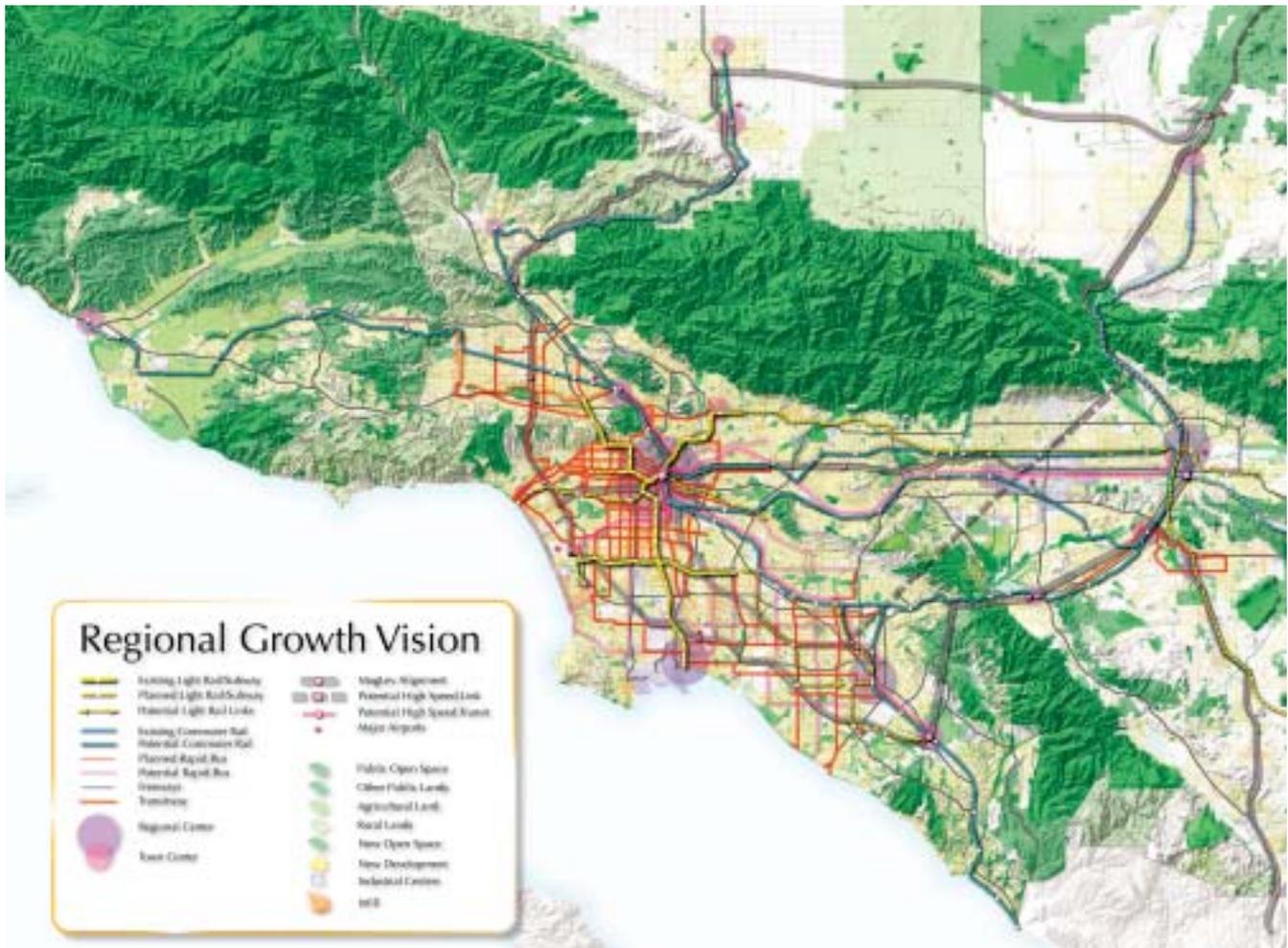


Accommodating existing and projected population is a great challenge. Questioning the possibility and desirability of continued eastward and northward expansion has led the region to re-imagine itself and how it grows. Market demand has already generated a healthy percentage of development in our urban centers. Now, public policy must now follow suit before the perceived barrier to development forces growth outside of the region.

The work by SANDAG in its Regional Comprehensive Plan and SCAG in its Compass 2% Strategy has created a vision for the mega-region based on substantial reinvestment and redevelopment in existing urban centers, existing suburban communities that can accommodate additional development, and transit corridors. But just as importantly, to maintain the

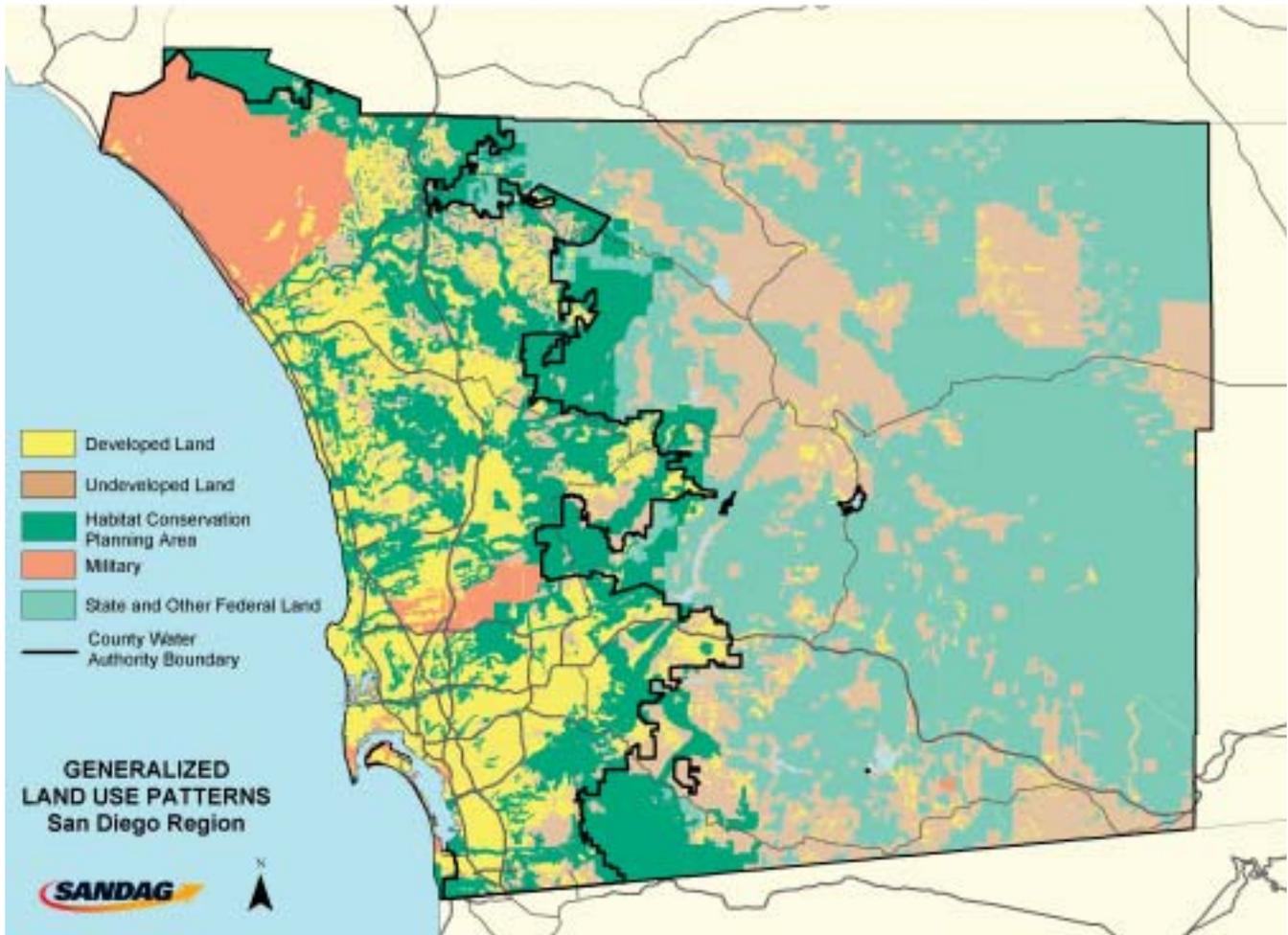
region's unique urban form, new mixed-use centers will continue to emerge, guided by principles that will ensure better access to housing and jobs. The long commute will be the exception in the Southern California of the future – its centers will be home to more and more of their respective employees.

The many boulevards throughout the region, once the “main streets” of suburban communities, will become the focus of intense residential and mixed-use linear cities. Focusing a large portion of new investment into these areas will not only change their appearance and function by creating more livable environments for tens of thousands of residents, but will also provide a necessary base to create a real urban transport system that will benefit all Southern Californians.



# EMERGING MEGA-REGIONAL STRATEGIES

## SUSTAINABILITY: Focus Growth Towards Urban Centers and Corridors



The resulting urban form will be a unique balance between global city connectivity and diversity and the historic California ideal of healthy climate and ever-expanding opportunity.

Implementing strategies that focus growth in this way will provide benefits that all residents will experience. Not only does such a growth strategy, already regional policy in both the SANDAG and SCAG regions, improve regional air quality, but its principles encourage a development pattern that

saves resources, improves mobility, and provides opportunity. Walking, biking, and transit boardings will increase, easing road and freeway congestion. The number of miles that the average person travels in an automobile will decrease, helping reduce travel time and energy usage. It is estimated that the SCAG region will reduce its fuel consumption by over 1.6 million gallons per day. Regional performance analyses indicated that 53% of this reduction in VMT is attributable to land use directed at more compact, transit-oriented, and mixed use development patterns.

# EMERGING MEGA-REGIONAL STRATEGIES

## SUSTAINABILITY: Maintain a Healthy Environment

### Habitat Protection and Open Space Preservation

To reconcile conflicts between urbanization and rare, threatened, and endangered species, the State of California enacted the Natural Community Conservation Planning (NCCP) Act of 1991. The NCCP facilitates the creation of a landmark regional preservation system based on the characteristics of habitat areas rather than individual species. In the San Diego region, most remaining natural habitats are included in subregional habitat conservation plans, as defined by the NCCP Act. Subregional plans cover more than one jurisdiction providing the overall policy framework for the subregion. Subarea plans are single-jurisdiction plans that specify how local land use authority will be used to conserve habitat and build the preserve.

To date, in the San Diego region two subregional plans have been approved: the Multiple Species Conservation Program (MSCP) and the Multiple Habitat Conservation Program (MHCP). The largest subregional plan, the Multiple Species Conservation Program (MSCP), spans eleven cities and a portion of unincorporated San Diego County in southwestern San Diego County. Approved in 1997 the plan targets more than 172,000 acres for conservation and protects 85 sensitive plants and animal species. The Multiple Habitat Conservation Program (MHCP) includes seven incorporated cities in northern San Diego County. This subregional plan, approved by the SANDAG Board of Directors in March 2003, provides the guidelines for the preservation of a 20,000-acre preserve system and the protection of 61 plant and animal species. In addition, the County of San Diego is preparing sub-regional plans for unincorporated north and east county areas.

While this comprehensive approach to habitat conservation planning makes sense from a variety of perspectives, the costs to implement such an approach represent a major challenge to the region. The Regional Comprehensive Plan estimates that the costs of fully implementing the HCP's in the region would exceed \$1.3 billion. SANDAG began to address this challenge in its recently approved extension of the half-cent sales tax for transportation, TransNet, which included an Environmental Mitigation Program for regional habitat

acquisition and management totaling \$850 million, a portion of which will address regional HCP needs.

The SCAG region is also well on its way to balancing preservation and habitat protection through efforts such as extensive environmental review, growth management ballot initiatives, and the historical recognition of unique and sensitive areas by federal and state governments. Coupled with the other lands in American Indian reservations or other federal protection, the region can count on a future filled with vast open spaces and beautiful, natural settings.

What the region must do now, however, is provide a balance between development pressure and the values and qualities that make the area unique. A growth strategy focused on multiple, intense centers and transit corridors will ensure that fewer of the remaining developable acres are covered with streets, rooftops, and parking lots. In order to preserve the very qualities that attract people to our beautiful mountains, deserts, and coasts, we will need a commitment to use our land wisely so future generations can continue to enjoy it – and to see, feel, and know what it means to live in Southern California.

### Air Quality

Considering the dramatic increase in diesel emissions that could occur over the next 25 years from projected increase in emissions from international trade, more effective, health-based strategies must be implemented as soon as feasible. If the region does not attain healthful air by the federally required schedules, our quality of life and our federal transportation funding will be jeopardized.

The political leadership in Southern California must ensure that the necessary resources are committed to overcome this challenge. Integrated, innovative, and aggressive actions are needed to remove hundreds of tons of air pollutants emitted each day in Southern California. Incentives or requirements for Southern California to implement cleaner fuels and to modernize, replace or retrofit dirty diesel engines and gross polluters will help alleviate the regional, localized, and in-vehicle particulate pollution concentrations

# EMERGING MEGA-REGIONAL STRATEGIES

## SUSTAINABILITY: Maintain a Healthy Environment

and associated health impacts. Furthermore, Southern California must support a more sustainable urban form that more efficiently uses our public transit system, including accommodating projected housing and employment growth in strategic, transit-oriented, walkable, mixed-use developments, such as the 2% Strategy areas described in SCAG's plans and the Smart Growth Opportunities Areas described in SANDAG's Regional Comprehensive Plan. Ultimately, Southern California can overcome our regional and localized air pollution challenges if we work together to fund cleaner technologies and support more sustainable activities and urban form.

### Water Quality and Shoreline Protection

In addition to addressing air quality and natural habitat protection, SANDAG's Regional Comprehensive Plan also addressed water quality and shoreline protection as regional environmental issues. As a mega-region, these issues should be considered when developing comprehensive planning strategies, and should also be considered in developing financing strategies for regional quality of life issues.

# EMERGING MEGA-REGIONAL STRATEGIES

## SUSTAINABILITY: Provide Public Facilities and Services to Support Our Vision

Most of us give little thought to the origins of the water that flows from our faucets, the electricity that powers our appliances, or to the final destination of the trash that disappears from our curbsides. Similarly, many of us are not very familiar with how our schools, parks, libraries, hospitals, and police stations are provided; yet, we consider these public facilities essential to the quality of our daily lives.

A sometimes complicated mix of public agencies and funding sources are responsible for our public facilities and services. Residents require reliable supplies of water and energy, opportunities to reuse and recycle materials, and sufficient disposal options for waste. Therefore, it is imperative that these agencies coordinate efforts, achieve greater efficiencies, and have the resources necessary to provide public facilities that meet our current and future needs. While the discussion below focuses on energy, many of the same principles and strategies can be applied to planning for water, solid waste management, and other public services.

### Energy

There are several strategies that the Southern California mega-region could pursue to ensure a reliable and cost-effective energy supply in the future. The potential exists for the mega-region to reduce its greenhouse gas emissions, moderate its increasing dependence on natural gas, and mitigate the associated risks of electricity price volatility by aggressively developing renewable energy resources to meet the Renewable Portfolio Standard (RPS) requirements, according to the California Energy Commission. As originally established, the State RPS requires 20 percent of electricity sales to come from renewable sources by 2017. Governor Schwarznegger recently set a higher goal of 33 percent of electricity sales by 2020.

According to the U.S. Department of Energy, there is potential for additional solar, geothermal and wind power devel-

opment in the mega-region. Specifically, large portions of San Bernardino, Riverside and Imperial Counties have high potential for geothermal power (80 + milli-Watts/m<sup>2</sup>) and solar power (6-9 kWh/m<sup>2</sup>/day). Wind potential, above a class 4 or greater occurs in the eastern portions of Kern and Los Angeles Counties and the western portions of Riverside and San Bernardino Counties. Renewable resources generation sites are located far from major load centers, however, and will require transmission infrastructure investments to ensure their energy delivery.

### Energy Efficiency

New projects may be voluntarily designed to implement energy efficiency features such as the use of energy efficient lighting, landscape treatments that reduce energy consumption, passive daylight and heating, solar energy, lighter colored building and roofing materials and coatings.

### Energy Transmission Planning

According to the California Energy Commission, a coordinated and comprehensive transmission infrastructure is needed to meet the energy needs of the state. Regional and local governments could take a more active role in the statewide energy planning process to ensure a reliable supply of energy for the region. A coordinated planning effort would allow the State and mega-region to take full advantage of the complementary utility systems in California and the Pacific Northwest.

### Renewable Energy

Given the potential for wind technology development, municipalities in the mega-region could explore wind power opportunities by purchasing wind energy for city or county operations, where feasible and economical. In addition, developing wind power resources could benefit the local economy through jobs, lower electricity costs, and leasing revenues, while enhancing energy independence.

<sup>10</sup> California Energy Commission and California Public Utilities Commission, Draft Energy Action Plan, Implementation Roadmap for Energy Policies, July 27, 2005.

<sup>11</sup> U.S. Department of Energy, Energy Information Administration, Renewable Potential Map for California, October 2002, online at [http://www.eia.doe.gov/emeu/reps/rpmap/rp\\_ca.html](http://www.eia.doe.gov/emeu/reps/rpmap/rp_ca.html) (last accessed July 29, 2005).

# EMERGING MEGA-REGIONAL STRATEGIES

## SUSTAINABILITY: Provide Public Facilities and Services to Support Our Vision

### Energy Efficient Land Use

The location and siting of new development affects energy use. More compact land use patterns, especially those involving mixed uses, would assist in promoting the efficient use of existing energy infrastructure, including transmission lines. Land use could also encourage the use of solar energy. New streets could be aligned to best utilize the energy provided by the sun. In turn, the position of new buildings on the street and the position of windows on a building could be aligned to maximize natural lighting. Furthermore, locating housing near transit centers with a mix of uses could decrease auto dependence, thereby reducing the need for oil.

### Regional Energy Planning Process

In the San Diego region, SANDAG has been directly involved in regional energy planning for several years. Over the past two years, SANDAG has moved forward to develop a Regional Energy Planning Program, in collaboration with State energy agencies, regional stakeholders, and the region's investor owned utility, San Diego Gas and Electric. SANDAG has established a Regional Energy Working Group, which reports through its Regional Planning Committee to its Board of Directors, and has adopted a Regional Energy Strategy, which is currently being updated. SANDAG's Regional Energy Planning Program has already provided a mechanism for collaboration on a number of important regional energy planning issues, and is leading toward better integration of energy planning with other regional planning efforts, such as the Regional Transportation Plan and the Economic Prosperity Strategy. In addition, the Regional Energy Planning Program is now beginning to provide a framework for collaboration between the San Diego region and Northern Baja California on important binational energy planning issues.

### Water Supply and Solid Waste Management

In addition to addressing energy needs, SANDAG's Regional Comprehensive Plan focuses on a number of key issues that relate to improving public facilities infrastructure: meeting regional water demand; diversifying our water sources; and dealing with dwindling landfill space. The RCP calls for new policies and programs that, among many things, maximize water resources through diversification strategies such as transfer agreements, water recycling and reclamation, sea-water desalination, and sustainable groundwater development; and encourage incentives for composting, recycling, and household hazardous waste collection.

The overall focus of the mega-region in the future should be to ensure that we provide public facilities that meet our current and future needs in a timely, efficient, and sustainable manner. Although the discussion here focuses on water supply, energy, and waste management, we should also be looking at the enhancement of other important assets such as parks, libraries, police, fire, hospitals, and schools.



The southern California mega-region is a study in contrasts. At once a global economic powerhouse, with a regional product equivalent to that of the tenth largest country in the world, the region is simultaneously beset with monumental growth in poverty, joblessness, and congestion which threaten to throttle prosperity at some point in the future. In terms of an appropriate competitiveness strategy, the biggest challenge to the mega-region's policy makers is not the size or growth of the economy, but how to identify growing industry sectors that can provide relatively good-paying jobs accessible to a large, less-educated labor force.

The region is designing a set of strategies that will address as many urban challenges and issues as possible while simultaneously achieving its stated growth visioning principles of sustainability, prosperity, and equity. An important part of the strategy set is to continue supporting those **traditional industry clusters** with the greatest potential to raise incomes, augment the region's technology base, and employ large numbers of workers who do not necessarily have a higher education.

Southern California is the entertainment and fashion capital of the world, led by the region's motion picture, video game, apparel and fashion design industries. Nationally, one out of every five jobs related to motion picture and TV production is located in Southern California, while the region's apparel industry accounts for over 10 percent of apparel and textile jobs in the U.S. Business services, direct international trade services, tourism, health services, motion pictures/television production, apparel and textile industries together grew by more than 500,000 jobs during the 1990-2000 period. Small and medium-size companies created the majority of these jobs.

Likewise, in the San Diego region, the economy continues to be driven by several economic clusters. Sixteen export-oriented or traded, industrial clusters drive the San Diego regional economy. In 2000, the latest year for which information was available, our region's traded clusters employed

over 427,613 people, accounting for 32 percent of the region's total employment (1,351,800 jobs). Due to security concerns, this total excludes the Uniformed Military cluster's employment figures. Employment in the cluster industries grew 23 percent between 1990 and 2000, at the same time total employment in the region grew 16 percent.. The Business Services and Visitor Industry clusters employ the most people, while the Recreational Goods, Software and Computer Services, and Biotechnology and Pharmaceuticals were the fastest-growing clusters in the last decade.

At the same time, the rationale for a growing service sector as a barometer of the economy's success is that as wealth increases more is spent on non-manufactured items such as travel, entertainment, dining out, insurance, banking, and business services. Our figures indicate that around 1950, approximately one-third of personal consumption expenditures were on services, while in 1996, almost 60 percent of all expenditures were on services. This trend is expected to continue in the future—i.e., the share of total expenditures going to tangible goods will continue to decline.

**International trade and logistics** industry employment will supplement the construction industry boost to competitiveness and income. The decline in southern California's manufacturing sector and its employment have been offset to some extent by tremendous growth in international trade through the Los Angeles Customs District (LACD), which includes the Ports of Los Angeles and Long Beach and the Los Angeles International Airport (LAX). Growth in LACD's share of U.S. imports, exports, and total trade all virtually tripled in the last three decades. Globalization, trade, improvements in inventory control, and just-in-time delivery practices have increasingly made the goods movement and logistics industry key to the region's economic picture.

The most effective strategy to fight urban ills and poverty is to empower people by providing them living-wage job opportunities. The large number of less-educated workers in this region requires access to good-paying jobs with defined skill

<sup>12</sup> Source: Employment figures from California Employment Development Department, Labor Market Information Division, Cluster calculations from SANDAG.

ladders in which workers can move up to prosperity. Both construction and logistics jobs meet these criteria. Wage statistics indicate that entry-level positions in the construction and logistics industries both pay higher salaries than the average pay for all industries. Relatively strong pay scales are possible in the logistics sector because it has become one of the most capital and information intensive parts of the U.S. economy.

The logistics industry, comprising the transportation, warehousing and wholesale trade sectors, involves the movement, storage and handling of goods and materials across the entire spectrum from producer to consumer, from point of origin to final disposal. The economy relies on the industry to facilitate trade, and in doing so, logistics makes an important contribution to economic well being all over the world. Efficient and effective logistics are accepted as essential to a firm's competitive position, and all levels of government now also recognize the importance of logistics policy in improving national, state and regional competitive advantage.

Fortunately, a variety of strategies exist that can allow the logistics group of sectors to increase the productivity of Southern California's economy while simultaneously helping to raise the living standards of Southern California's marginally educated workers and ameliorating the worst of its side effects. Should these strategies be brought to fruition, Southern California would benefit in several ways.

During the construction phases, a very large number of blue-collar jobs would be created. These jobs plus the strong multiplier impacts of construction spending would buoy the region's economy. Once the projects are completed, the efficiency and competitiveness of the Southland's economy would be enhanced while the most negative aspects of congestion and idling vehicles would be mitigated. More importantly, this expanded infrastructure backbone would unleash the potential strength of the logistics sectors, offering Southern California's marginally educated workers a growing path towards on-the-job learning and higher standards of living. Ultimately, these strategies thus offer the region a

solution to start addressing the recent declines in its relative prosperity.

In the San Diego region, there are a number of specific initiatives underway to bolster the region's economic competitiveness. SANDAG's recently launched "TransNet Early Action Program" has focused on jump-starting the construction of major transportation infrastructure projects during the next ten years, which will not only improve passenger and goods movement within and outside the region, but will also provide a significant economic stimulus to the region. At the same time, SANDAG is launching a major binational corridor planning program, in collaboration with Caltrans and State and municipal planning agencies in Northern Baja California, that will lay out specific strategies for building transportation infrastructure to serve the rapidly growing Otay Mesa / Eastern Tijuana corridor during the next ten years.

SANDAG also has launched interregional planning partnerships with Southwest Riverside County and Imperial County that will lead to coordinated planning and financing of major transportation infrastructure projects, along with companion strategies regarding housing and economic development, and SANDAG is also exploring a similar planning partnership with the Orange County Transportation Agency. Finally, SANDAG and SCAG are launching major initiatives to collaborate with the seventeen tribal reservations in the San Diego region, and the eighteen tribal reservations in the SCAG region, to cooperatively plan transportation infrastructure projects, and to identify housing and economic strategies that can bolster the economic well-being and quality of life in the region.

## EMERGING MEGA-REGIONAL STRATEGIES

### PROSPERITY: Make Strategic Investments in Transportation Infrastructure

As discussed above, substantial investments are needed in the Southern California mega-region's transportation infrastructure to accommodate future growth. Much of the focus of SCAG, SANDAG and Kern County in their Regional Transportation Plans has been on the efficient movement of people. As discussed earlier, there is growing recognition that we can no longer build ourselves out of congestion by building more highways; more and more, we will be focusing our investments on public transit.

For example, SANDAG is currently updating its Regional Transportation Plan, and as a key component of this update is conducting an independent review of its long-range transit plan. The purpose of this review, which is being prepared by a major transportation planning consulting firm under the direction of an independent peer review panel, is to ensure that the San Diego region has a long-range transit plan that incorporates the best available service concepts and technologies, including heavy rail, light rail, Bus Rapid Transit, and conventional bus service. Once the plan is updated, the financing strategies for developing public transit systems and services to serve the San Diego region will also be reviewed and updated.

At the same time, nowhere is the need for strategic mega-regional investment strategies more critical than for goods movement infrastructure through the highways, rail lines, and intermodal facilities that handle growing international trade. Globalization has meant that more and more goods are manufactured overseas, especially in Asia, and brought to these shores. In 2004 the region's two major ports handled about forty percent of the national total of containerized ocean cargo.

The last great revolution in goods transportation occurred fifty years ago with the advent of standard shipping containers. These intermodal "boxes" can be stacked tall on ever-growing container vessels, then offloaded directly onto rail or onto truck chassis for ready shipment to final destinations. Today's ships, capable of holding as many as 5,000 TEUs, are giving way to 8,000-TEU and even 10- and 12,000-TEU ships in the coming years. These vessels are too large to fit through the Panama Canal and their West Coast port

destinations are limited to Seattle, Vancouver, and the San Pedro Bay ports of the Southern California mega-region.

#### Technological Revolution

The next great revolution in goods movement must be a technological one. Even though the region might meet the challenge of funding the needed infrastructure, greater efficiency will be an essential element of success. Information technology can help keep track of containers and expedite their flow through the region. Already containers are tracked using GPS (global positioning systems), and the use of radio frequency identification (RFID) is coming on the scene. These and new technologies can make possible the "agile port" scenarios proposed by some researchers that optimize traffic flow through container terminals and minimize transit inefficiencies. In the future, containers can be tracked throughout their journey, with contents deconsolidated and efficiently repackaged with a minimum of delay, supporting retail and manufacturing needs.

Technology can also help minimize the travel of empty containers. Ports are already taking the first steps to create "virtual container yards" that will match needs for containers with available empties – a kind of matching service for containers. This kind of effort can eliminate numerous truck trips from the region's freeways.

The goods movement system of the future must take advantage of all these and more technologies, many yet unimagined. But infrastructure investments will always form the backbone of the region's system. In twenty-five years, containers will move on newly consolidated rail lines – building on the success of the Alameda Corridor – through separated grade crossings so that highway traffic and emergency responders are unhindered and vehicles do not produce needless emissions from idling. Locomotives will be designed to operate with far lower emissions than today. Some containers will move on dedicated truck lanes, drawn by new low- or even zero-emission cabs, greatly increasing safety for other motorists. Others will move on new types of conveyances that use a dedicated guideway at lower cost than new rail or highway infrastructure. Shuttle trains will

## EMERGING MEGA-REGIONAL STRATEGIES

### PROSPERITY: Make Strategic Investments in Transportation Infrastructure

move goods between the coastal ports and new inland ports: intermodal facilities combining the functions of airports, rail yards, and truck depots.

With these investments and efficiency improvements, the region will enjoy both the economic benefits of trade – as many as a million new jobs, including logistics industry and construction jobs – and the environmental benefits of a far cleaner transportation system. Moreover, wise siting of logistics facilities, in concert with local governments and their land use plans, will reduce the need for long-distance commutes and all their associated social impacts.

Other proposals include a system of truck-only lanes, financed by user fees, that would facilitate the movement of goods to and from the Ports of Los Angeles and Long Beach through the mega-region and on to the rest of the country.



#### Alameda Corridor

The rail network serving the major ports in the Southern California mega-region is not sufficient to accommodate rapidly increasing cargo volumes. With this imperative, substantial infrastructure investments were made in the construction of the Alameda Corridor.

Designed to consolidate four low-speed branch rail lines, eliminating conflicts at more than 200 at-grade crossings, providing a high-speed freight expressway, and minimizing the impact on communities, the Alameda Corridor is an essentially a 20-mile-long rail cargo expressway linking the ports

#### GOODS MOVEMENT IN KERN COUNTY

The Mojave freeway is one of several projects planned for State Route 58 through Kern County over the next 20 years, which has garnered attention recently as an important trade route throughout the Southern California mega-region, since it is open all times of the year and serves as a lifeline from goods movement. Over the next 10 to 20 years, Kern County plans to fund improvements to the 58 freeway that will alleviate traffic congestion and safety hazards caused by trucks. The strategies that the region is exploring include passing lanes, truckclimbing lanes, and lane widening, as well as new freeways and interchanges.

Improvements to 58 through Kern County focus on safety in the outlying areas and congestion management in Bakersfield. Of particular importance is the number of trucks traveling from eastern states and making their way to Interstate 5. Several projects are under way, or have already opened, including:

- Mojave Freeway in Eastern Kern – Constructed in 2003, this new segment separated the SR 14/58 junction through Mojave. It begins east of 14 and continues around the Mojave Airport, making a connection north of the Mojave Community near existing 58 and 14.
- Westside Parkway – The Westside Parkway, set for construction in the next three to five years, will serve as a local highway on the same alignment as the Kern River, moving the future 58 along the SR 204 corridor, with a possible connection to Seventh Standard Road.
- Seventh Standard Road – The segment from SR 99 to Santa Fe Way (west of 99) is funded for construction in the next three to four years. The widening project will add a second lane in each direction including median work for the ever-increasing traffic volumes. This highway may be considered for a future SR 58 state highway designation.

## EMERGING MEGA-REGIONAL STRATEGIES

### PROSPERITY: Make Strategic Investments in Transportation Infrastructure

of Long Beach and Los Angeles to the transcontinental rail network near downtown Los Angeles. Through a series of bridges, underpasses, overpasses and street improvements that separate freight trains from street traffic and passenger trains, the corridor facilitates a more efficient transportation network. At its heart is the Mid-Corridor Trench that will carry freight trains in an open trench that is 10 miles long, 33 feet deep and 50 feet wide.

Since operations began in 2002, the Alameda Corridor has provided several benefits at the local and mega-regional levels, including:

- More efficient freight rail movements
- Reduced traffic congestion by eliminating at-grade crossings
- Cut train emissions
- Reduced delays at railroad crossings
- Cut noise pollution from trains
- Reduced emissions from idling automobiles and trucks
- Multiple community beautification projects

The \$2.4 billion Alameda Corridor was funded through a blend of public and private sources. Revenues from user fees paid by the railroads are to be used to retire debts. Railroads will pay a fee for each loaded 20-foot equivalent unit (TEU) container, empty container, and other types of loaded rail cars such as tankers and coal carriers.

#### Goods Movement in San Diego County

The existing and future needs for infrastructure to support goods movement in the San Diego region are similarly challenging, and SANDAG is working with a number of agencies to develop an overall “goods movement plan” to be included in its 2007 Regional Transportation Plan update. Some of the ideas being considered in this plan are:

- Improvements to existing port and ground transportation facilities of the Port of San Diego;
- The possibility of port expansion and new port development in Northern Baja California;
- Increased capacity for east / west goods movement through improvements to the San Diego Arizona and Eastern Railroad facilities which run from San Ysidro east to Imperial County;
- Construction of a third border crossing in East Otay Mesa, along with connecting road facilities on both sides of the International Border, to increase long-term capacity for both goods movement and passenger movement along this rapidly growing binational corridor;
- Improvements to the existing Otay Mesa International Border commercial inspection facilities and connecting roads to improve goods movement across the border in the shorter term;
- Use of managed lane facilities being planned on major highway corridors in the San Diego region to accommodate truck traffic during non-peak commute hours, and other capacity management strategies to utilize highway capacity more effectively.

## EMERGING MEGA-REGIONAL STRATEGIES

### PROSPERITY: Develop a Mega-regional Airport System Connected by a High-Speed Rail Network

By 2030, urbanized commercial airports in the mega-region will have reached their physical or legal capacity and expansion will be fiscally and politically cost prohibitive, while under-utilized airports in suburban areas will require surface transportation access to support increased market demand. The solution is a re-thinking of the modal concept of airports.

Airports in the mega-region would be connected to each other and to major employment/activity centers through a multi-modal system that includes high speed rail complemented by local transit services, providing alternatives to automobiles, and "commuter" and short-haul flights. Airports in the mega-region will no longer be considered airports in the traditional sense, but rather multi-modal nodes in the mega-region's transportation network.

The concept is to make regional airports operate as a single airport system, rather than individual airports that cater only to local demand. The key to accomplishing this is to develop multi-modal ground transportation linkages anchored by a high-speed rail system, such as Maglev, that would connect the airports in a seamless manner. With these linkages, the airports would essentially behave as "Multi-Ports."

Dedicated air cargo facilities, utilizing the high-speed rail system during non peak periods for "next-day" service, would reduce truck traffic to and from multi-ports (and dedicated air cargo airports). In addition, mega-regional residents would have alternatives to the automobile in traveling to their business or recreation destination. Air travelers would have the same opportunities.

The multi-ports and high-speed rail network would be operated by a consortium, or joint powers authority, eliminating airport competition. Airlines would no longer be required to concentrate at one primary airport for competitive advantage against other airlines. An air passenger can travel via a remote terminal and high speed rail as easy (and as timely) to one airport as another, postponing the need to expand regional aviation capacity.

#### MAGLEV

The Southern California Mega-region is currently developing plans for an Intra-Regional High Speed Rail system using magnetic levitation (Maglev) technology to connect its regional airports to other transportation centers, in Los Angeles, Riverside, San Bernardino and Orange Counties. While increasing capacity, comfort and reliability, the system will cover over 275 miles of Maglev corridors and move up to 500,000 riders a day.

Through public-private partnerships, the Maglev deployment program will create 4 major corridors in the region and expand opportunities for an inter-modal transportation system that will be critical to improving surface transportation, enhancing goods movement, reducing congestion and revitalizing the region's economy.

In 2002, the first 56-mile segment of the Maglev system was approved by the Southern California Association of Government's Regional Council. The program anticipates that deployment of this Initial Operating Segment will create approximately 92,000 jobs and inject over \$26 billion in the region.

At the same time, SANDAG is currently evaluating the feasibility of using Maglev technology to connect a possible future regional airport site in Imperial County to the San Diego metropolitan area. The results of this study will be considered in the final evaluation of alternative regional airport sites being conducted by the San Diego Regional Airport Authority which will be completed next year. SANDAG is also pursuing financial resources to evaluate the feasibility of using Maglev technology to make connections between the San Diego metropolitan area and other existing and future regional airports to the north.



## EMERGING MEGA-REGIONAL STRATEGIES

### PROSPERITY: Develop a Mega-regional Airport System Connected by a High-Speed Rail Network

#### State High Speed Rail

In 1996, the California High-Speed Rail Authority (CHSRA) was charged with the planning, designing, constructing and operating a state of the art high-speed train system. The proposed system stretches from San Francisco, Oakland and Sacramento in the north -- with service to Bakersfield in Kern County -- to Los Angeles and San Diego in the south.

Several alignments proposed by the CHSRA are similar to proposed alignments of SCAG's Inter-Regional Maglev system. The similarities in these two systems necessitate a high level of coordination and partnership during any further planning

and/or implementation. Issues such as alignments, station locations, environmental costs/benefits, community impacts, regional needs, commuter services and interaction with existing modes of transit must be thoroughly analyzed before implementation of a regional rail system to ensure the greatest degree of efficiency and service in the Southern California mega-region. Nevertheless, a high speed system, regardless of the ultimate technology, will provide redundancy and inter-modal opportunities to travelers, decentralize the airport system and strengthen the connections in the mega-region's air, rail and highways systems.

#### Decentralize Airport System with High-Speed Rail System





## EMERGING MEGA-REGIONAL STRATEGIES

### EQUITY: Create a Balanced and Sustainable Housing Supply

Southern California, once the bastion of the suburban single-family home ideal, is now at a critical juncture with respect to housing its current and future residents. As this and other reports show, the limited supply of land near urban centers is becoming increasingly valuable as it attempts to accommodate needed housing. Whereas the single-family home will remain a vital and desirable product for millions of Southern Californians, millions more (especially singles and aging baby-boomers) will need housing alternatives beyond the cul-de-sac subdivision that are more appropriate for a dense urban region. Our supply of housing must increase and it must continue to become more diverse, just as our population has.

A changing region will at first demand more efficient use of land for housing, as coastal communities throughout Southern California are already seeing. Condominiums, townhouses, lofts, and apartments have begun to fill demand for living in these already-expensive areas. The modest increase in supply, however, is meeting only a fraction of the demand regionally. The best gains will come from providing housing within and adjacent to employment centers and along transit routes. Here, new and revitalized neighborhoods will become walkable activity centers, providing housing, employment, services, recreation, and transportation without sole reliance on the automobile. Focusing our housing production into these strategic areas will not only provide new options for homeownership opportunities to thousands, but will help preserve our more historic or stable neighborhoods that also provide rental housing within these core areas of the mega-region.

In the San Diego region, the Regional Comprehensive Plan seeks to provide incentives for this type of housing development, particularly in locations where “smart growth” (compact urban development in locations that can be well served by public transit) makes sense. The principles for developing these programs link transportation funding to the provision of a wide range of housing choices within designated smart growth areas. This has already started to happen through a pilot smart growth incentive program, a concept map identifying target areas, and through the incorporation of smart

growth priorities into the next update of the Regional Transportation Plan.

In addition, increasing the region's housing capacity in smart growth locations within the more urbanized areas will help reduce the projected increases in interregional commuting, and lessen the pressure to develop the more rural areas. For example, SANDAG's Final 2030 Forecast estimates the construction of 314,000 new homes based on current plans and policies, and the “export” of about 93,000 units out of the region primarily to Riverside and Imperial Counties and northern Baja California, Mexico. The “exporting” of these households can be reduced through smart growth strategies.

A significant constraint on smart growth strategies at the local government level is the current fiscal structure. Because of the way the State currently allocates tax dollars, local governments now receive approximately 11 times more revenue from a retail development than a residential development on the same lot size. This encourages localities to seek land uses and development projects that will pay (or generate) more taxes than they will require in government services. Under this system, sales-tax generating commercial uses consistently win out over housing, resulting in a serious imbalance between commercial and residential development. There is a need for the regional governments in the mega-region to pursue fiscal reform legislation that would move the State toward a tax system that supports smart growth strategies.

Balancing growth and extending opportunity are essential to the region's future. An expanded and broadened housing stock with a variety of ownership and price options is critical for a region with shifting demographics with a demand for different housing opportunities.

# EMERGING MEGA-REGIONAL STRATEGIES

## EQUITY: Ensure Social Equity in Our Plans and Actions

All communities should thrive as the mega-region grows. Many communities have traditionally been left behind or excluded from the planning and development process, including low income and minority communities, persons with disabilities, and seniors. Ensuring social equity does not necessarily guarantee equality — but it does mean giving every community an equal voice and opportunity. Social equity is providing all residents with access to affordable and safe housing, quality jobs, adequate infrastructure, and quality education. It means providing the opportunity for children and families of all races, abilities, and income levels to live in the best possible environment.

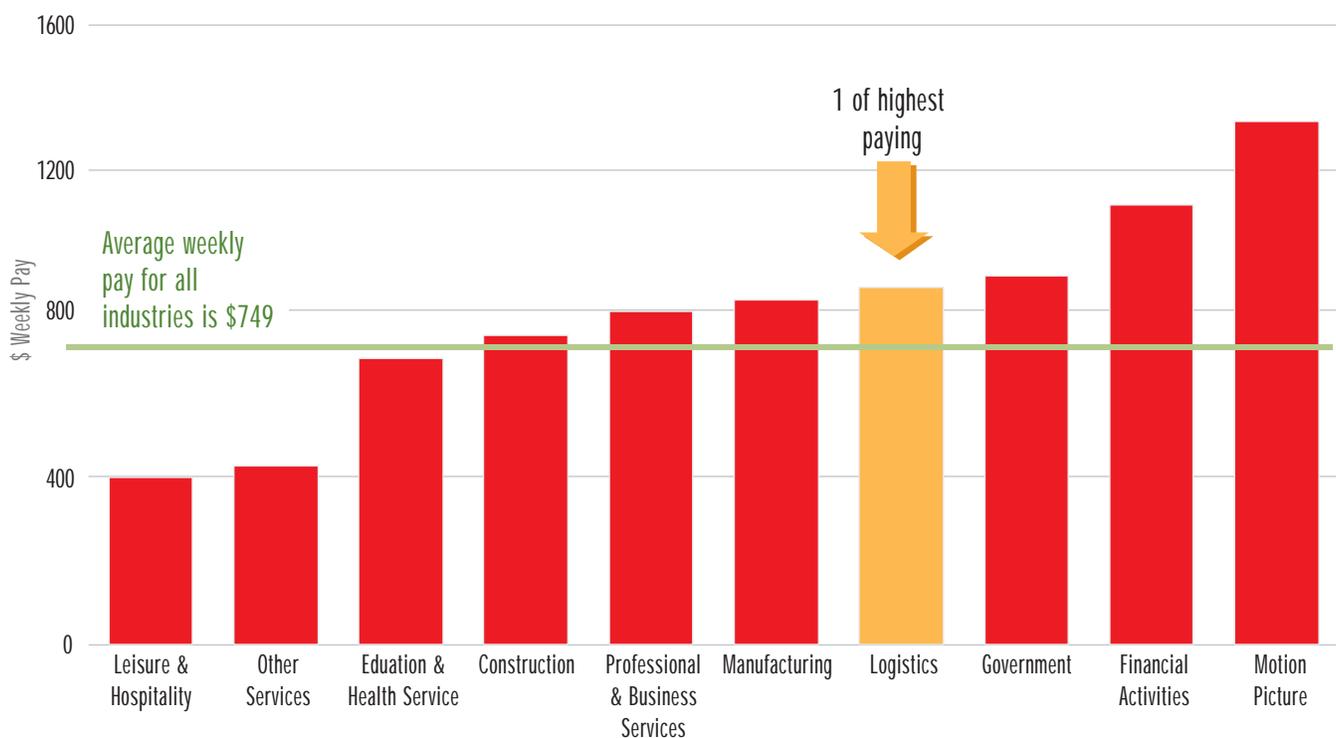
### Upward Mobility

Social equity involves establishing and investing in opportunities that reach all members of society. Investing in the high-technology sector is only part of the solution to developing competitive economic sectors in the United States.

Investment in human capital that goes beyond the high technology sector will be an important outcome in developing a strategy that provides the necessary infrastructure for competitiveness, while also enhancing the equity of less educated workers. The logistics sector introduces a wage/labor structure and job growth opportunities that do not require a college education, yet yield higher pay than the restructured manufacturing sector, as well as the service sector.

Through value-added assembly and distribution, highly specialized sectors while integral to innovation are not the only source for an economic region's health. A focus on value-added assembly and distribution works to incorporate all levels of the workforce that may not otherwise have the skill set needed to be a part of the global economy. Regional strategies to enhance these skills would include investments in major higher education and research institutions needed to

### Logistics Sector



Source: California State EDD and SCAG Socio-economic data base

## EQUITY: Ensure Social Equity in Our Plans and Actions

maintain the nation's competitive advantages in technology and create a life-long learning system to help skilled workers adapt to economic change. Workforce education at community colleges and through on-the-job training in logistics and just-in-time manufacturing processes would also provide less skilled workers with opportunities for jobs and advancement that complement innovative growth industries.

### Environmental Justice

Environmental justice is an important component of social equity, and means that everyone, regardless of race, culture, or income, enjoys the same degree of protection from environmental and health hazards, and equal access to the decision-making process.

Equity considerations are especially important when discussing urban form (where and how our region grows). In the discussions of where the region should grow, the focus is often on the environmental consequences of development patterns, such as increased traffic, air pollution, loss of open space, and energy consumption. However, development patterns also have social and economic consequences. They can accelerate the decline of urban infrastructure, concentrate poverty in urban areas, create a spatial mismatch between urban workers and suburban job centers, and negatively affect public health.

Both the SCAG region and the San Diego region have identified key steps in their Regional Transportation Plan and Regional Comprehensive Plan, respectively, that must be taken to promote social equity and environmental justice, in order to eliminate, minimize and mitigate disproportionate adverse impacts, including:

- Encourage public involvement;
- Expand current analysis efforts to assess existing social equity and environmental justice conditions in the region;
- Evaluate future plans, programs, and projects;

The San Diego region has also adopted a program to monitor the performance of their RCP with regard to these issues. Monitoring performance on a regional basis, identifying shortfalls, making improvements, and increasing access to the region's resources and decision-making processes will result in a better quality of life for all residents.

## EMERGING MEGA-REGIONAL STRATEGIES

### FINANCING: Update Our Approaches to Regional Planning and Governance



The emergence of mega-regions requires a governance framework that provides for cohesion, cooperation and productive relationships among the federal government, the regions and the states and local governments encompassed by the regions. The governance system must place importance on the structure and tools needed by the regions to serve as the building blocks for the creation of a national strategy.

One strategy is to pattern the governance framework of the mega-regions on the existing regional governance structure as defined in federal and state legislation for Metropolitan Planning Organizations (MPOs) and Regional Councils. Under this model, metropolitan areas would use the existing MPOs to expand and enhance partnerships with neighbor MPOs and other government entities to create mechanisms for financing needed infrastructure and to enhance the economic vitality, competitiveness, cohesion and livability in the regions. This strategy of voluntary participation is likely to encourage more effective participation and reduce resistance to mandatory involvement.

MPOs in the Southern California mega-region have already initiated a voluntary participation process by meeting to discuss issues of common interest. Quarterly meetings of elected officials and staff are now held between the Kern County Council of Governments, the Southern California Association of Governments and the San Diego Association of Governments. In fact, these meetings were used to develop this report.

In the case of the Southwest region as a whole, a bi-national arrangement would be required to include the contiguous regions and states in the Southwest corridor along the border between the United States and Mexico.

#### SANDAG's Borders Planning Program

In the San Diego region, SANDAG has developed a "Borders Planning Program" to address both interregional and binational collaboration needs. The overall goal of this program, as described in the Borders Chapter of the Regional Comprehensive Plan, is to create a regional community

where San Diego County, our 18 local cities, three neighboring counties, 17 tribal governments, and northern Baja California, Mexico mutually benefit from our varied resources and international location. To achieve that goal, the RCP calls for the coordination of shared infrastructure, efficient transportation systems, integrated environmental planning, and economic development with all of our regional neighbors. It recognizes that our region is a unique and dynamic place to live — one that embraces cultural diversity, promotes interregional understanding, and benefits from our varied history and experience.

One of SANDAG's most active programs is the state-funded I-15 Interregional Partnership, a voluntary partnership between elected officials representing communities along Interstate 15. Three regional government agencies, including SANDAG, the Southern California Association of Governments, and the Western Riverside Council of Governments, are working together to address the inaccessibility between jobs and housing that has caused increasing traffic congestion between San Diego and Riverside Counties. It has been a successful, ongoing collaborative effort. SANDAG is now considering a similar effort with Imperial County.

Along our international border, although struggling to meet its own demand for housing units, Tijuana is beginning to see San Diegans buying homes and crossing daily to work in San Diego. We must address both the issues of San Diegans migrating southward for affordable housing and the northward migration of Mexicans in search of work along the border. Similar to the partnership created with southwestern Riverside County, the RCP calls for developing a partnership with authorities in Mexico to address the issues surrounding jobs/housing accessibility in the binational region.

As growth continues in this region and the surrounding areas, maintaining major transportation systems will be an even greater challenge. Agencies must work together to provide reliable and efficient transportation systems associated with interregional commuting corridors, key trade corridors, tribal reservations, and ports of entry. The Borders chapter

# EMERGING MEGA-REGIONAL STRATEGIES

## FINANCING: Update Our Approaches to Regional Planning and Governance

recognizes that the San Diego region needs support from its northern and eastern neighbors to acquire funding for trade corridor infrastructure in the international border zone.

Water, energy, and the environment are other key areas that span our regional, international, and intergovernmental borders. Policies and infrastructure are needed to meet binational, tribal reservation, and interregional long-term energy and water needs in a fiscally and environmentally sound manner. Maintaining habitat corridors, and improving air and water quality will contribute to a healthy binational and interregional environment.

Specifically, the Borders chapter calls for increasing the use of renewable energy resources throughout the binational and interregional region; coordinating long-term water planning with surrounding counties, Mexico, and tribal governments; and establishing a cross-border cooperative effort to protect border communities from potentially harmful environmental impacts of projects on either side of the U.S.-Mexico border

It is also recognized that interregional partnerships can contribute significantly to the success of the Regional Economic Prosperity Strategy and position the greater binational and interregional area as a strong competitor in the global marketplace. Specific actions called for in the Borders chapter include supporting the I-15 Interregional Partnership's economic development strategies; enacting policies and measures that promote economic development along the border in Mexico, such as the Maquiladora Program; and establishing a forum for increased communication with tribal governments regarding economic development.

Finally, in the aftermath of the terrorist attacks of September 11, 2001, homeland security presents an increased challenge for our international border region. Local, state, and federal officials from both countries have been charged with keeping the nation secure while protecting the quality of life in the greater border region. European countries provide helpful models for maintaining security and fluidity in border areas. The Borders chapter outlines how improvements can be made to binational ports of entry through the application of new technologies and increased involvement of local agencies

From a mega-regional perspective, SANDAG's Borders Planning Program illustrates the importance of addressing many of our issues on an interregional basis, and is providing lessons as to how interregional strategic planning can be done in an effective manner. SCAG, SANDAG, and other agencies should pursue the use of interregional planning approaches in addressing many of the issues outlined in this report.

# EMERGING MEGA-REGIONAL STRATEGIES

## FINANCING: Develop New Strategies for Financing Transportation Infrastructure

The Southern California mega-region continues to experience serious infrastructure funding shortfalls, jeopardizing the development and maintenance of critical projects throughout the region. Recent evidence of erratic state funding support for transportation infrastructure demonstrates the need for more predictable funding streams. Population growth in the mega-region has outpaced capital expansion/improvements in transportation facilities as public funds continue to dwindle. Moreover, maintenance expenditures have failed to keep pace with increases in VMT. This trend is likely to worsen over time if financial restructuring strategies are not in place to accommodate projected population growth and associated demands on an already aging transportation system.

### State and Federal Reforms

Metropolitan Planning Organizations (MPOs) in the Southern California mega-region have advocated for more stable state and federal funding sources to support transportation infrastructure in their respective long range financial plans. Despite general political resistance to taxes, these metropolitan regions recognize the critical need for adequate adjustments/increases in state and federal gas tax rates. The precipitous decline in state gas taxes since the 1970s, in real terms—adjusted for inflation. VMT continues to outpace the expansion/maintenance of transportation facilities mostly due to the weakening purchasing power of the gas tax. In order to maintain historical proportions and to better reflect current transportation costs, there is a critical need to raise and/or index state and federal gas tax rates.

Further, as the use of vehicles powered by alternative fuels or more fuel-efficient engines increases, the long-term viability of the gas tax is in jeopardy. It has been suggested that the collection of user fees for vehicle miles traveled on the roadways could be used as possible supplements to or replacements for gas taxes. Financing transportation with user fees other than gas taxes needs to be evaluated in greater detail—perhaps demonstrated with current technologies on a regional scale—or even further integrated on a more mega-regional scale.

In addition, SANDAG's policies encourage cooperation in efforts to reduce the state's voter requirement for bond approval to 55%. This approval would be consistent with the level currently required for education bond measures, and would enhance the ability of regions to secure additional funding for needed infrastructure improvements in a number of areas beyond education.

Finally, the mega-region should reach consensus on, and pursue, a state-local fiscal reform proposal that would provide financial incentives to local jurisdictions to increase the supply of housing and help achieve smarter growth and more compact development patterns.

### Local / Regional Initiatives

Infrequent gas tax rate increases along with greater vehicle fuel efficiency and rapidly escalating construction costs led to a major departure from the state and federally imposed revenue models for financing transportation infrastructure. Beginning in the early 1980s, the state of California authorized several counties to impose local sales taxes to supplement funding for transportation infrastructure. In the Southern California mega-region, these local measures constitute the largest revenue source for transportation. Since the breakthrough with local sales taxes, other experiments with delegating revenue raising authority to local/regional entities have followed. Accordingly, a comprehensive funding strategy for infrastructure development must involve critical roles for local/regional governing entities to identify/raise revenues for transportation infrastructure. More localized strategies include regional gas taxes/road user fees, mitigation/impact fees, the use of new technologies (ITS) along specific corridors to generate revenues and more extensive use of land use strategies involving value capture such as tax increment financing (TIFs).

Additionally, metropolitan regions are recognizing the importance of supplementing traditional tax revenues with project based user-fee structures—often involving congestion/value pricing strategies to mitigate traffic and generate cash flow. These user-fee structures are discussed in more detail below in the context of public-private partnerships.

# EMERGING MEGA-REGIONAL STRATEGIES

## FINANCING: Develop New Strategies for Financing Transportation Infrastructure

### Public-Private Partnerships:

The shortage of available public funding for surface transportation programs has led the Southern California mega-region to seek various ways to leverage scarce resources. One strategy involves the use of public-private partnerships to expedite the development of needed infrastructure and promote cost-effective operation and preservation. Traditional tax-based financing structures can not, by themselves, solve the region's transportation crisis. The Southern California mega-region must take a proactive approach to developing a framework for establishing public-private partnerships in the investment of transportation infrastructure. Efforts are already underway throughout the mega-region to develop these partnerships. Each must enunciate a clear policy of targeting transportation infrastructure improvements that result in substantial return on investment—capable of generating creditworthy revenue streams and providing benefits in the form of productivity gains and network efficiencies.

Although private sector participation in the development of transportation infrastructure (specifically, in the form of equity investment) is prevalent in many countries around the world, numerous legal, policy and financial constraints make it difficult to make PPP projects work here in the United States. Accordingly, state and federal government efforts should focus on advancing financing tools such as credit enhancement programs (expanding TIFIA type credit programs), tax incentives (private activity bonds/tax credits), and more efficient procurement arrangements/project delivery systems to stimulate public-private partnerships.

Within this context, mega-regions can play a critical role in bridging the often diverse interests and concerns of the numerous players involved in such PPP transactions—potentially integrating the development of an institutional framework for financing and implementing projects that cross both county and metropolitan regional boundaries.

# Credits

This document builds upon “Global Gateway Regions: The United States of America’s 3rd Century Strategy”, a report drawn out of the research and findings of a graduate planning studio at the University of Pennsylvania in the spring of 2004.

The Southern California Mega-region Case Study has been the collaborative work of:

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<sup>i</sup> <http://www.census.gov/ipc/www/usinterimproj/natprojtab01a.xls>

<sup>ii</sup> State of Region, 2004, 18

<sup>iii</sup> <http://www.acta.org> – Alameda Corridor Transportation Authority