Transportation

The State of the Region - Transportation

Genevieve Giuliano

The benefits of an expanding economy _ more jobs, rising incomes, higher property values _ comes with a price: rising demand for trans portation services. All parts of the region have now emerged from the early 1990s recession. Los Angeles county lags behind the suburban counties in job growth, but the population is growing everywhere. Greater percentage increases in person-trips and vehicle miles traveled, as well as in air passenger and freight are the result. The region is once again on a path of staggering growth.

The Region in Context: Major Trends

How are we doing? It is important to consider the region's performance in context. First, the US continues its longest expansion of the century. The potential of telecommunications and information technology investment made over the past few decades is now being realized through large productivity gains. For the region, this means more growth and rising real incomes. Second, globalization of the economy continues, leading to increased competition. Regional economies are increasingly dependent upon the world marketplace.

What does this mean for transportation in the SCAG region? First, rising incomes will only increase demand for automobile travel. Car ownership and use are largely a function of household income. As income rises, households own more cars and drive them more miles. This is a relationship we observe all over the world. The "good news" for the region is that car ownership levels are reaching saturation, as 84 percent of the region's adults have a driver's license, and 98 percent of those employed have access to a privately owned vehicle. Therefore travel per capita will not increase much more. The "bad news" is that the region is expected to gain an addition 6 million people and 3 million jobs within the next 20 years. Despite the continued increase in automobile ownership, however, about 8% of the region's households will not have access to a car, because of poverty, disability, or age.

Second, the new "information economy" makes both households and firms more mobile than ever. Efficient telecommunications makes locations in large activity centers less attractive for firms. A fluid job market and increasingly flexible job arrangements give households more choice about where to live and work. As congestion increases, these "footloose" locators will seek less developed (and therefore less congested) areas at the edges of the region, or will leave the region altogether for places with lower costs and better quality of life.

Third, the global economy is critically dependent upon efficient long distance telecommunications and transportation. The remarkable increases in air traffic (both passenger and

freight) in the past few years are symbolic. Regions must be well connected to global networks to maintain a competitive position in the new economy.

Finally, the region will continue to be a magnet for immigrants, particularly from Mexico and the rest of Central and South America. Most will have limited education and skills, and most will locate in the central parts of the region. Many of these new immigrants will be among the region's transit dependent households.

The implications of these four major trends are clear:

- Private vehicle travel will continue to dominate all passenger transport
- Traffic congestion will increase
- The transportation disadvantaged will continue to rely on public transit
- Air transport demand will continue to increase

Transportation in the Region

The stated goal of SCAG's Regional Transportation Plan is to maintain the 1990 level of mobility. Trends of the past few years suggest that this goal will be difficult to achieve. History was made in 1998 when the real price of gasoline hit an all-time low. Rock bottom fuel prices and a booming economy led to a predictable outcome; congestion problems were once again in the news.

Highways

Expansion of highway facilities continues to lag behind demand for highway travel. Part of this lag is due to funding constraints. Even with the passage of TEA-21, the region's share of federal and state funding will continue to be woefully inadequate to accommodate the kind of growth that is anticipated. All but one county (Ventura) has an earmarked sales tax in place; additional local taxes are not likely to be politically feasible. Significant fuel tax increases are also unlikely. Constraints on increasing the capacity of highway facilities also include conformity requirements (air quality), local opposition based on quality of life concerns, the prohibitive cost and environmental consequences of building new highways in densely developed areas, and a growing belief that more capacity simply leads to more trips and ultimately more congestion.

As congestion increases, demand for more highway capacity will also increase. It is no accident that this region has pioneered innovative financing schemes. Orange County's toll roads and the SR 91 private toll road were responses to enormous demand and limited funds. These experiments have shown that public/private partnerships work, and that the traveler is willing to pay to save time. In addition to generating the needed revenue, tolls make travel more expensive, and hence manage demand. Tolls also promote the use of other modes. It is only with road pricing that adding capacity will not simply lead to more auto trips. Pricing strategies such as HOT lanes and peak tolls might well be required in order to achieve the region's mobility goals.

Transit

Transit ridership increased again in 1997. However, the relevant measure is trips per capita, or transit's share of all trips in the region. Given a rapidly expanding population, we expect more transit trips, especially in areas which serve as arrival points for immigrants, such as central Los Angeles. Transit trips per thousand population were 34 in 1990 and 32 in 1997. We find that transit's market share has not improved, despite the large investments made in rail transit in Los Angeles County.

It is time to re-evaluate transit policy in the region. The current policy is based on the expectation that people will be drawn from their cars if better transit service is provided. Unfortunately, better service became synonymous with rail service, rather than with more frequent and convenient service. People choose their mode based on cost and convenience, hence quality of the service (travel time relative to the car) should be the paramount consideration in transit planning. Even the expansive rail system envisioned in previous transportation plans would offer convenient service only to a tiny proportion of the region's travelers. The enormous capital costs of building rail transit and the large subsidies required to operate the system have not generated the anticipated results in terms of attracting significant numbers of travelers out of their cars. The unintended consequences of the current policy are voter backlash (passage of Proposition 1A), the Bus Riders Union lawsuit against the MTA, and a fiscal squeeze that affects all transit operators.

Transit will continue to play a small but critical role in the region's transportation system. Its primary market will be the region's low income and minority households, and it will also serve a significant number of commuters to downtown Los Angeles and other major centers. The challenge is to develop cost-effective strategies for serving these markets, such as taking advantage of the region's extensive HOV lane system, emphasizing small vehicle systems that are better suited to dispersed travel patterns (smart shuttles), and containing transit operating costs.

Air Transport

Air travel is increasing even more rapidly than auto travel. In just five years (1992 to 1997), air passenger traffic increased 24%, and air cargo traffic increased 52%. The region's three largest airports are nearing capacity (John Wayne due to legal constraints rather than physical capacity). The region's planners and policy makers are acutely aware of this approaching problem. Major expansion plans for LAX and Burbank are under discussion, and a new international facility is anticipated for the El Toro Marine Base facility. However, strong local opposition to all of these plans makes their outcome uncertain.

Understanding why local residents are opposed to airport expansion is not difficult. Airports are known growth generators. In strong markets their growth inducing effects are so powerful that attempts to limit growth through zoning or other restrictions are ineffective. Intensive growth around airports is beneficial for commercial interests, but the

increased traffic, noise, and localized pollution generated by this growth make airports unpleasant places for nearby residents. Local residents suffer most of the negative impacts of the airport, but enjoy few of the benefits. Metropolitan areas around the world have been and continue to be faced with the same problem. The solution has been to locate airports far from population concentrations (e.g. Washington DC, Denver, Paris, Hong Kong). Indeed, not one international airport has been constructed within a heavily populated area in the past 30 years.

Airport policy in the region also needs some re-evaluation. The innovative thinking that has been displayed in expanding highway capacity and managing highway demand should be applied to airports. If the current expansion plans are to go forward, some way of compensating local residents will have to be found. Those who will benefit may have to pay more (less convenient access, higher fees) so that adequate mitigation can be provided. The stakes are high. Absent some significant change in policy, we can expect to see the region's airport expansion efforts mired in political controversy and stalled in litigation for years to come.

Conclusions

Our overall performance on transportation goals is positive. We have managed to accommodate spectacular growth while continuing progress towards air quality goals. Some things are working very well. We have the largest high-occupancy-vehicle (HOV) system in the US and the nation's first private, variable toll road. Some inner city bus routes are so heavily used that they actually pay for themselves. Carpooling remains important, and, contrary to the rest of the US, the region's carpool rate is stable. Nonetheless, great challenges lie ahead. Further progress will require re-evaluating some aspects of our current plans and more innovative policy-making.

Genevieve Giuliano
Professor, School of Policy, Planning, and Development
University of Southern California

Transportation

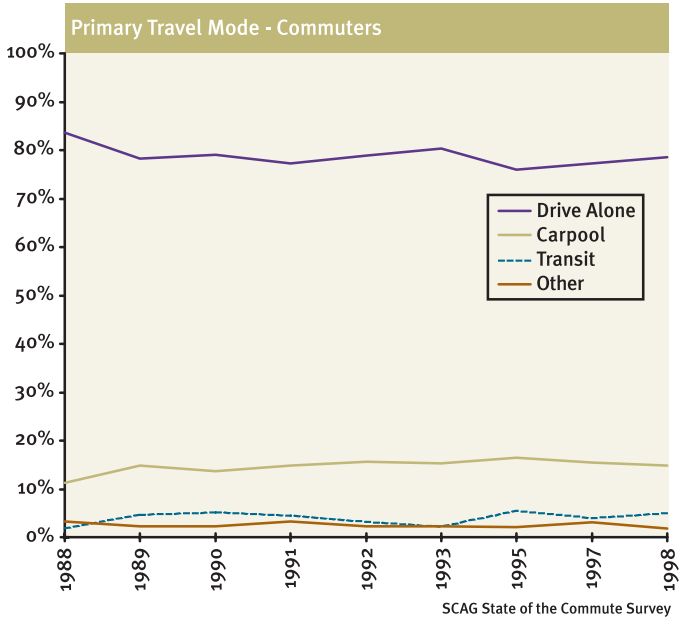
The Southern California transportation network is a complex intermodal system consisting of roads, highways, public transit, railroads, airports, seaports, and intermodal terminals. The public transit system includes local shuttles, public bus operations, rail rapid transit, commuter rail services, and interregional passenger rail service. The railroad network includes an extensive system of private railroads and several publicly-owned freight lines. The airport system consists of commercial and general aviation airport facilities serving passenger, freight, business, and recreational needs. The region's ports support significant international and interregional freight movement and tourist travel.

In the field of advanced transportation technologies, the region is concentrating on intelligent transportation systems, smart shuttles, alternative fuel vehicles: electric and natural gas, and telecommunications. There is over $1 billion worth of electronics deployed within the region's transportation infrastructure. The advanced transportation management centers are using information collected to increase average vehicle speeds and to provide swifter incident detection and clearance and decrease incident duration, travel time, and emissions. The system wide implementation of smart traffic signals in Los Angeles County has reduced by 41 percent the number of vehicle stops and reduced by 14 percent emissions caused by starts and stops. In Orange County, the use of satellite vehicle tracking is expected to cut police response by 25 percent. In Riverside County, advanced public transit system technologies and applications are being deployed to improve transit system performance, reliability, and use. Ventura County has a countywide smart bus service that links existing city-run services and can be paid with a "smart passport."

Commuters

A travel characteristic of particular interest is how commuters get to and from work.

Figure 20



According to annual surveys conducted for the past ten years, the commute patterns have remained relatively constant. Approximately 80 percent of survey respondents indicate they drive alone to work, while 5 percent use transit. The percent of commuters who carpool to work has remained at approximately 15 to 16 percent since 1991. (The 1999 results are preliminary.)

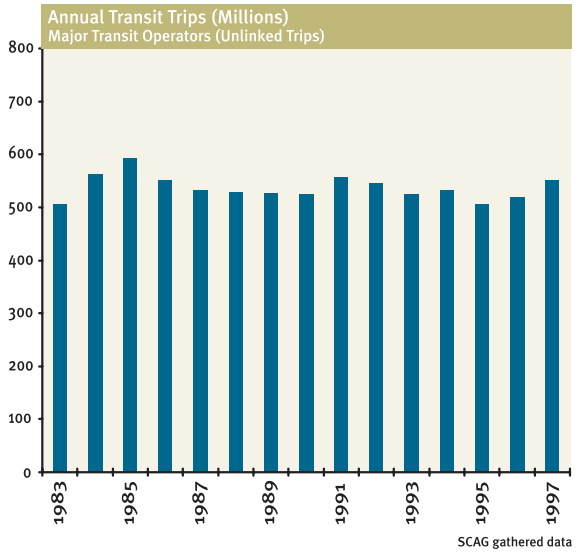
The 1998 survey indicates that the average travel distance to work is 16.1 miles (one way), and the average travel time to work is 32 minutes, while the average travel time home is 37 minutes. Bus riders commute an average distance of 13.6 miles. Men are more likely than women to drive alone to work on a regular basis (79 percent vs. 76 percent), while younger commuters are more likely to use alternatives to driving alone than older commuters (32 percent of respondents under 30 years of age compared to only 14 percent of those 50 years of age or older).

Comparing the commute across county lines, the 1998 survey shows Los Angeles County has the lowest drive-alone rate and Orange County has the highest. Residents in San Bernardino and Riverside counties spend the most time commuting and travel the farthest. (At the time this report was prepared, the final results of the 1998 State of the Commute had not been released.)

Transit

A reliable and safe transit service is essential for many residents to be able to participate in the economic, cultural, and social life of Southern California. Use of public transit decreases traffic congestion and air pollution.

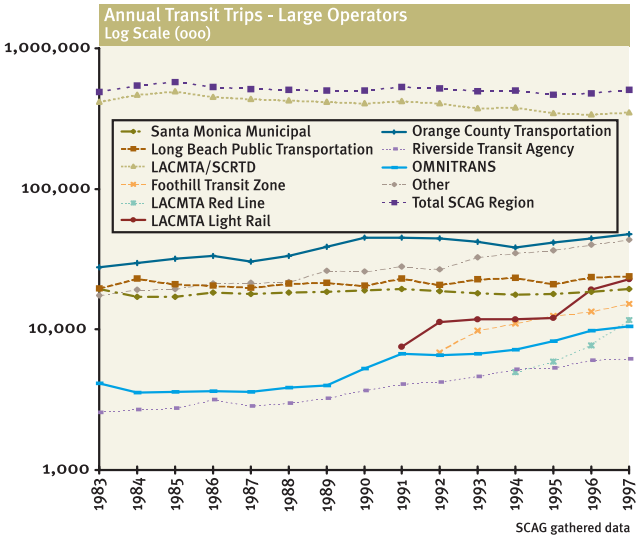
Figure 21



Most of the transit operators in the region have experienced an increase in ridership in recent years. The total passenger trips for large transit operators in the region increased by over 6 percent between 1996 and 1997, to 552 million.

However, the 1997 ridership remains over 40 million below the 1985 total, the year the Southern California Rapid Transit District (the predecessor of the Los Angeles County Metropolitan Transit Authority) discontinued the 50 cents

Figure 22



fare. In Los Angeles County, the urban rail line registered a ridership in excess of 34 million passengers in 1997. However, any further expansion of heavy rail in Los Angeles County is doubtful because of the financing constraints as a result of Proposition A approved in November 1998.

Metrolink, the commuter express train system which connects commuters living and working in Southern California, including San Diego County, has seen a steady increase in

ridership since it became operational in 1992. The daily ridership totaled 2,300 in 1992 and had grown to 27,000 by 1998.

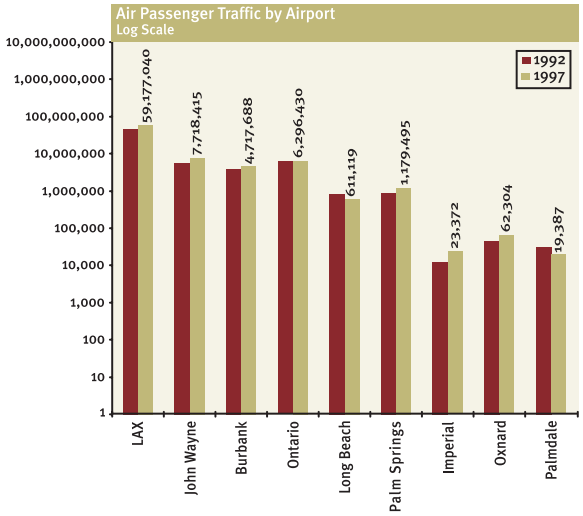
Airports

There are 67 commercial and general aviation airports serving the region, making this system one of the largest and most heavily utilized in the nation and in the world. Los Angeles International Airport (LAX) is the region's largest facility for passengers and cargo. Three of the newest regional airport facilities are recently converted military air facilities. Norton Air Force Base is now San Bernardino International Airport, March Air Force Base is now March Airport, and George Air Force Base is now Southern California International Airport.

The ability to serve national and international interests is important to the region's economy.

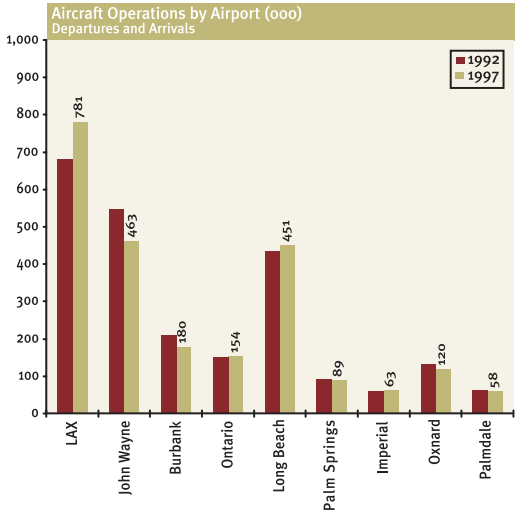
Air passenger traffic in the region's six largest airports doubled between 1977 and 1994. The current rate of growth is slower - there was a 2.3 percent increase between 1996 and 1997 - but the number of passengers is expected to reach 170 million by the year 2020. It is anticipated that the region will reach its 100 million capacity around the year 2000.

Figure 23



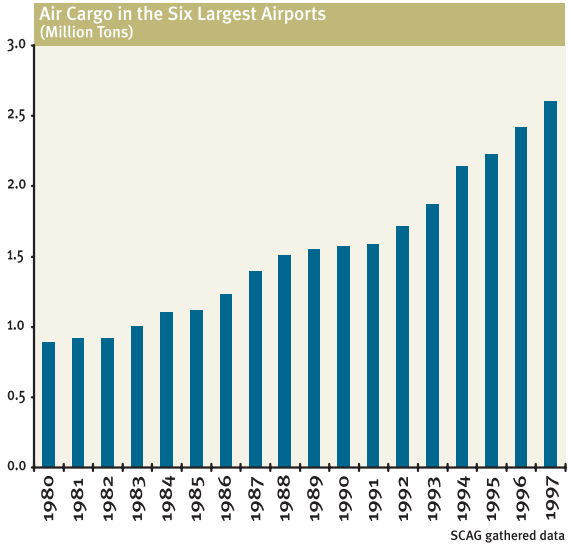
SCAG gathered data

Figure 24



SCAG gathered data

Figure 25



Air cargo in the six largest airports in the region reached 1 million tons per year in 1983. By 1994, there were more than 2 million tons of cargo handled by these airports. That number jumped to over 2.6 million tons in 1997. Increased airport capacity is essential for continued economic growth. (Please see map 20 for air cargo volumes in the major airports.)

There has been strong opposition to expansion efforts at two airports in Los Angeles County, LAX and Burbank. John Wayne Airport in Orange County is limited by a court settlement to 8.4 million annual passengers. Transportation planners have looked to the conversion of the El Toro Marine Corps Air Station to commercial use to handle the growth in Orange County. However, the El Toro conversion, like the LAX and Burbank expansions, has faced strong opposition. Ontario International Airport which serves San Bernardino and Riverside counties in the Inland Empire, two of the fastest growing counties in the nation, opened a new $269 million terminal complex in September, 1998. The expanded airport is expected to handle some of the growing air travel demand in Southern California. However, no single airport can absorb the region's growing number of travelers.

Ports

The region is served by three major deep water port facilities: The Port of Los Angeles and The Port of Long Beach in Los Angeles County, and the Port of Hueneme in Ventura County. The Port of Long Beach, the largest in the United States, handled 3.07 million twenty-foot-container equivalent units (TEUs) of freight in 1996. The Port of Los Angeles, the second largest in the United States, handled 2.6million TEUs of freight in 1996. Port Hueneme handles significant traffic in agricultural exports and automobile imports.

(Please see Transportation under Metropolitan Regions for congestion cost and roadway congestion by metropolitan region and waterborne commerce by top 10 states. See Travel and Tourism under Metropolitan Regions for visits by overseas travelers and top 10 airports by city.)

Air Cargo
1990 and 1997

Map 20