

“Partly due to the steep increases in gasoline prices, freeway congestion appeared to stabilize in 2005 particularly in Los Angeles and Orange counties.”



TRANSPORTATION

Journey to Work: Mode Choices

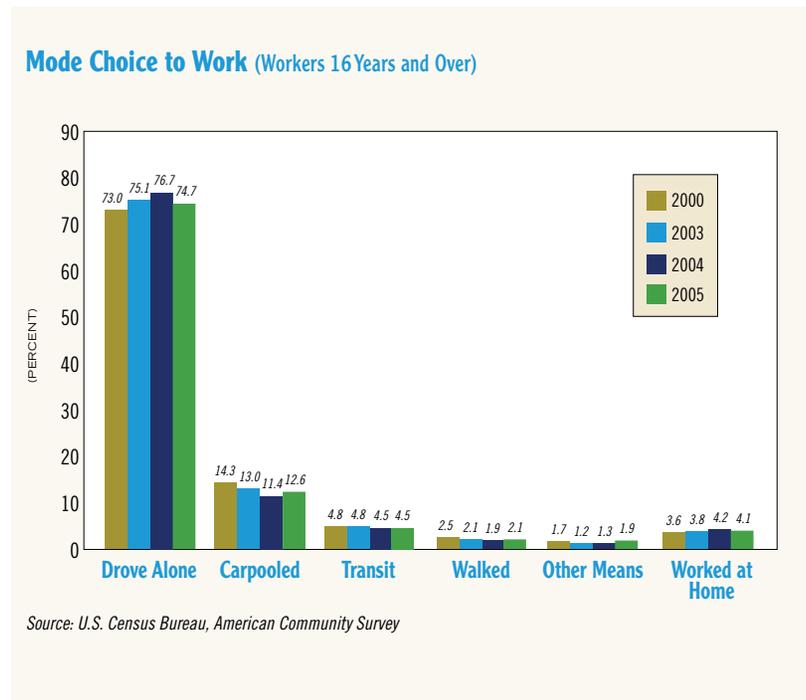
Why is this important?

Single-occupant vehicle use accounts for the highest level of land consumption among all transportation modes. It also generates the highest level of environmental, economic and social impacts. Increasing the use of alternative modes to work (e.g., carpool, transit, etc.) is critical to accommodate future growth with less environmental, economic and social impacts.

How are we doing?

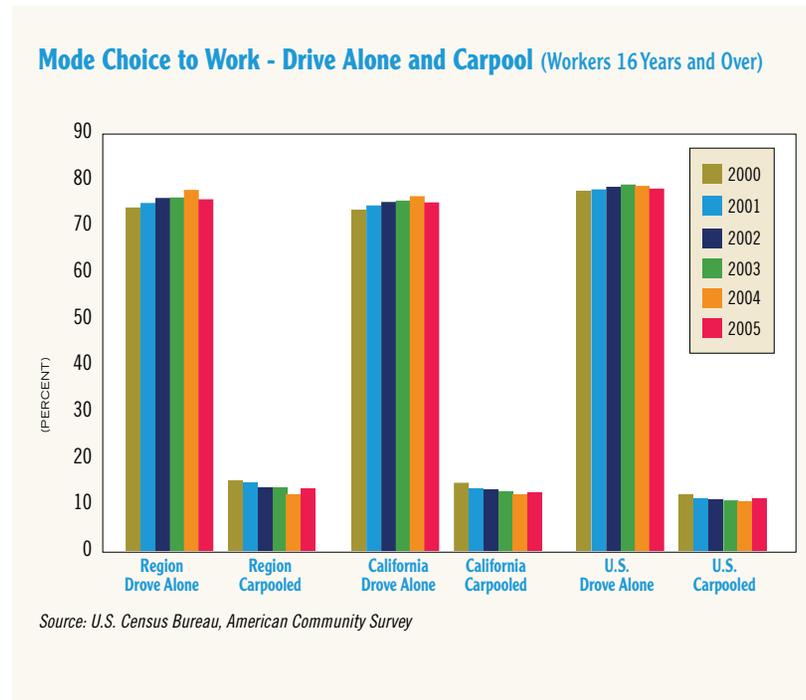
From 2004 to 2005, the share of drive-alone commuting decreased from 76.7 percent to 74.7 percent, reversing the trend of a steady increase since 2000. During the same period, there was an increase in the region's carpool share of work trips from 11.4 percent to 12.6 percent, reversing the trend of a steady decline since 2000 (Figure 37). This was similar to the trend at the national level though the magnitude of increase in carpool share was larger in the SCAG region (Figure 38). The sharp rise of gasoline prices seemed to contribute to these reversals in the region and the rest of the nation (as further discussed in the Highway Use and Congestion Section below).

Figure 37



It should be noted that the region’s carpool share of commuting in 2005, though increased from 2004, was still well below the 2000 level at 14.3 percent. Nevertheless, among the nine largest metropolitan regions, the SCAG region continued to have the highest rate (12.6 percent) in 2005 of workers who carpooled to work followed by the Dallas region (11.8 percent). Among those who carpooled, most (close to 80 percent) were in a 2-person carpool, and the remaining 20 percent were in 3-or-more-person carpools.

Figure 38



Within the region, carpool share of commuting increased in every county between 2004 and 2005. The Inland Empire led the region in carpool share in 2005 with Riverside County achieving the highest at 16 percent (almost a 2 percent increase from 2004) and San Bernardino at 14.6 percent.¹

Since 1980, carpool shares of commuting have generally been declining across the nine largest metropolitan regions in the nation except between 2004

and 2005 (see Figure 92 page 157). The SCAG region has had the highest carpool share since 1990. In 2005, the SCAG region maintained the most extensive High-Occupancy Vehicle Lane (HOV) system, accounting for more than 20 percent of the total HOV lane miles in the nation. Between 1980 and 2005, the SCAG region experienced the smallest losses (4.5 percentage points) in carpool share of commuting while the other eight largest regions experienced an average loss of almost 9 percentage points.

In 2005, transit share of commuting in the region was 4.5 percent, the same as in 2004. In addition, about 4.1 percent of workers in the region worked at home instead of commuting to a workplace, changing little from the previous year.

Journey to Work: Travel Time

Why is this important?

Though the share of work trips among total trips has been declining, work trips continue to generate disproportionately higher impacts on the regional transportation system. Work trips tend to take longer than other daily trips. In addition, commute hours are generally the period with the most traffic congestion. Accordingly, transportation investments are still influenced significantly by the nature of work trips. Finally, the choice of residential location is partly determined by the location of work and the associated journey to work.



How are we doing?

Between 2004 and 2005, average travel time to work remained essentially unchanged at 28.9 minutes in the region after increasing 0.7 minutes during the previous period. This continued to be higher than the state (27 minutes) and national (25 minutes) averages.² Within the region, average travel time decreased very slightly in Los Angeles and Orange counties while it continued increasing in the Inland Empire. For example, from 2004 to 2005, while the average travel time in Orange County decreased slightly from 27 to 26.5 minutes, it increased from 28.8 to 30.7 minutes in San Bernardino County. In 2005, workers in Riverside County continued to have the highest average travel time to work in the region, almost 32 minutes, while Imperial had the lowest at 19 minutes.

Highway Use and Congestion

Why is this important?

Highway congestion causes delays affecting personal mobility and goods movement and results in increased economic and social costs. In addition, congestion impacts the region's air quality. The number of vehicle miles traveled (VMT) indicates the overall level of highway and automobile usage, and is directly related to mobile source emissions.

How are we doing?

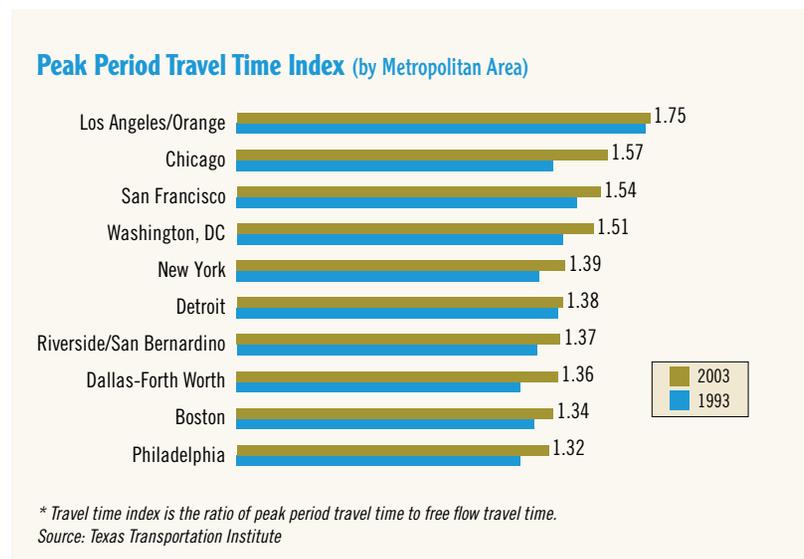
For the past two decades, Southern California has been consistently experiencing very high levels of congestion. Contributing factors include large population and physical extent of the region, rapid population growth, high automobile dependence, low levels of transit usage, and a maturing regional highway system with limited options for expansion. Larger metropolitan regions generally have higher levels of congestion than smaller metropolitan regions. Among the nine largest metropolitan regions, Southern California had one of the highest dependence on automobiles despite of having the lowest per capita income. Currently, the region has about 14 million vehicles and close to 11 million licensed drivers. The region's highway system is a maturing system with limited options for expansion. This is particularly true for southern Los Angeles County and Orange County. For example, 95 percent of Orange County's planned arterial network has already been built.³

As a major gateway for international trade, the region's highways carry some of the highest truck volumes and share some the most congested bottlenecks for trucks in the nation.⁴ For example, I-710, which feeds trucks directly to and from the ports, and the I-605 and SR 91, carry as much as 40,000 trucks on an average weekday.

The SCAG region (particularly Los Angeles and Orange counties) regularly ranks as the most congested metropolitan region in the nation. Congestion level is measured by indicators such as travel time index or annual delay per traveler. For example, in 2003, a traveler in Los Angeles/Orange counties during the peak period spent 75 percent more time than if traveling at free-flow speed (Figure 39). At

1.75 in 2003, Los Angeles/Orange counties have the highest travel time index among the nation's major metropolitan areas based on the most current data available.⁵ The Chicago region had the second highest at 1.57. Riverside/San Bernardino counties, with an index of 1.36 in 2003, ranked 7th highest. Nationally, congestion has grown in every metropolitan area regardless of size but has been most severe within the largest metropolitan areas.

Figure 39



Though Los Angeles/Orange counties had the nation's highest congestion level, their travel time index increased little between 1993 and 2003, while other metropolitan areas experienced much larger increases in congestion



levels. During this period, the travel time index in Los Angeles/Orange counties rose very slightly from 1.73 to 1.75, while it increased from 1.34 to 1.57 in Chicago and from 1.44 to 1.54 in San Francisco. Significant investment in transit (e.g. the Red Line and light rails) and HOV system since 1990 contributed to the slower increase in congestion level in Los Angeles and Orange counties. The travel time index in Riverside/San Bernardino counties increased from 1.27 to 1.37 during the 10-year period.

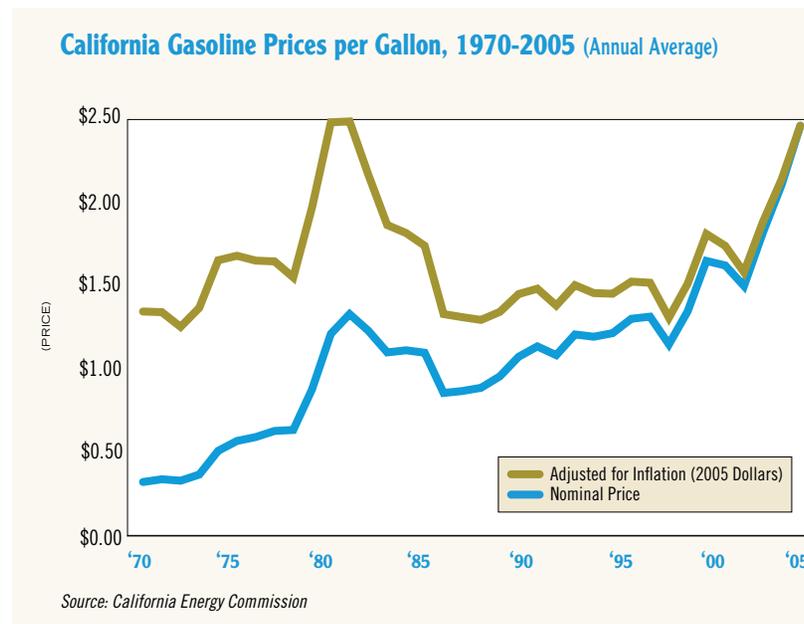
In 2003, a traveler in Los Angeles/Orange counties during the peak period experienced a total of 93 hours of delay, the highest among major metropolitan areas (see Figure 93 page 158). A traveler in Riverside/San Bernardino counties experienced a total of 55 hours of delay, the 9th highest. Close to half of the delay resulted from incidents. Total cost incurred due to congestion was

almost \$12 billion in 2003, significantly higher than any other metropolitan region (see Figure 94 page 158).

Gasoline price is an important factor influencing the amount of vehicle travel and the associated fuel consumption. Between 1970 and 2005, annual average gasoline (nominal) prices increased from 35 cents to almost \$2.50 per gallon. With inflation adjustment based on 2005 dollars, gasoline prices increased from \$1.36 to \$2.50, an 84-percent increase (Figure 40). During the 35-year period, gasoline prices with inflation adjustment generally stayed below \$2 per gallon (and mostly fluctuated around \$1.50) with the exception of two periods: the last energy crisis in the late 1970s and early 1980s and the recent price run-up since 2002. Gasoline prices (based on 2005 dollars) were below \$1.6 per gallon in 2002 but have been increasing about 15 percent per year reaching \$2.50 in 2005. This surge continued into 2006 reaching a new high of \$3 (2006 dollars) per gallon in mid 2006 before declining since September 2006. Gasoline price changes are correlated with the world prices of crude oil, because crude oil represents a large percentage of the final price of gasoline.



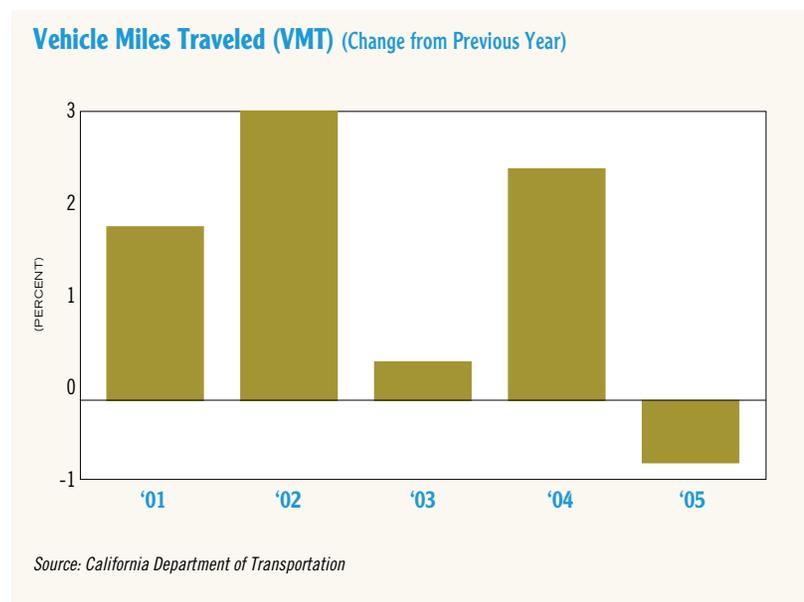
Figure 40



Gasoline price at \$2.50 in 2005 was the highest between 1970 and 2005 and began to have some impacts on the commuters' mode choices and total vehicle miles traveled. From 2004 to 2005, there was an increase in the region's carpool share of work trips from 11.4 percent to 12.6 percent reversing the trend of a steady decline since 2000 (as further discussed in the Journey to Work Section). During the same period, the share of drive-alone commuting decreased from 76.7 percent to 74.7 percent, reversing the trend of a steady increase since 2000. In addition, the total VMT in the region appeared to

stabilized in 2005. Specifically, between 2004 and 2005, total VMT declined by 0.8 percent based on preliminary data, the first decline since 2000 (Figure 41).

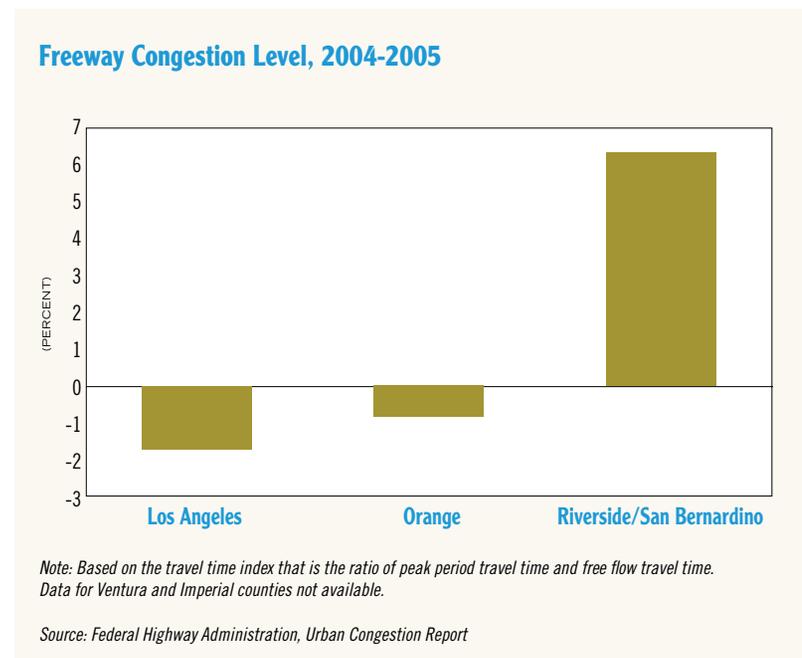
Figure 41



The slight shift away from drive-alone commuting along with the stabilization of the total VMT in 2005 contributed to the stabilization of the overall congestion level, particularly in Los Angeles/Orange counties. Measured by the travel time index (the ratio of peak period travel time to free flow travel time for the same trip), both Los Angeles and Orange counties seemed to maintain their freeway congestion levels in 2005 from 2004 since the percentage drop was not significant (Figure 42). However, freeway congestion continued to increase in

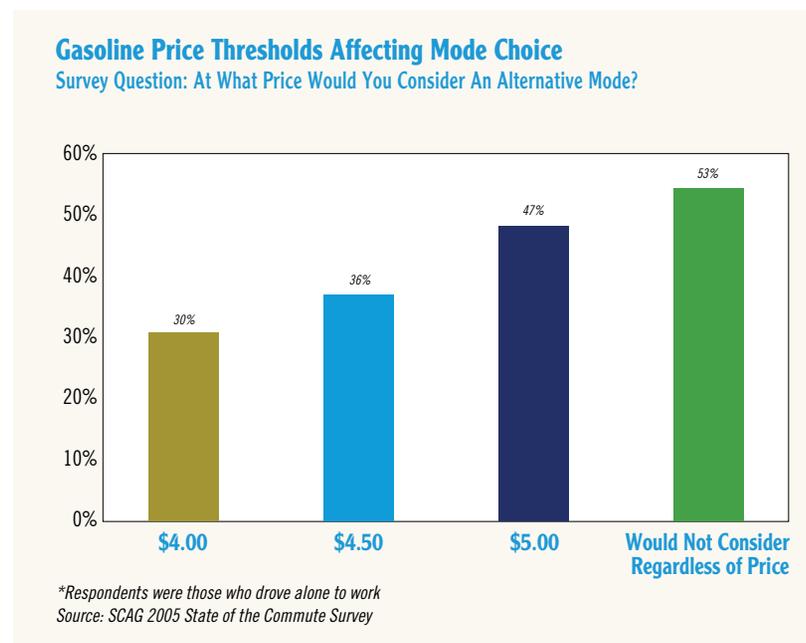
Riverside and San Bernardino counties because of their significantly higher rates of growth in population and employment than in the coastal counties. This is also generally consistent with the slight decrease in the average travel time between 2004 and 2005 in Los Angeles and Orange counties and the continuing increase in the Inland Empire (as further discussed in the Journey to Work Section). The trend of stabilization of the freeway congestion level in Los Angeles/Orange counties but with increased congestion level in the Inland Empire continued through at least the first half of 2006.⁶

Figure 42



In late 2005, when commuters in Southern California were asked about the question “at what price would you consider an alternative mode?”, about 30 percent who drove alone indicated that they would consider an alternative mode if gasoline price reached four dollars per gallon. At five dollars per gallon, about 47 percent of the drive-alone commuters would consider alternative modes. Nevertheless, 53 percent of the survey respondents indicated that they would not consider switching to an alternative mode regardless of the price of gasoline primarily due to the lack of choices (Figure 43).

Figure 43



Highway Fatalities

Why is this important?

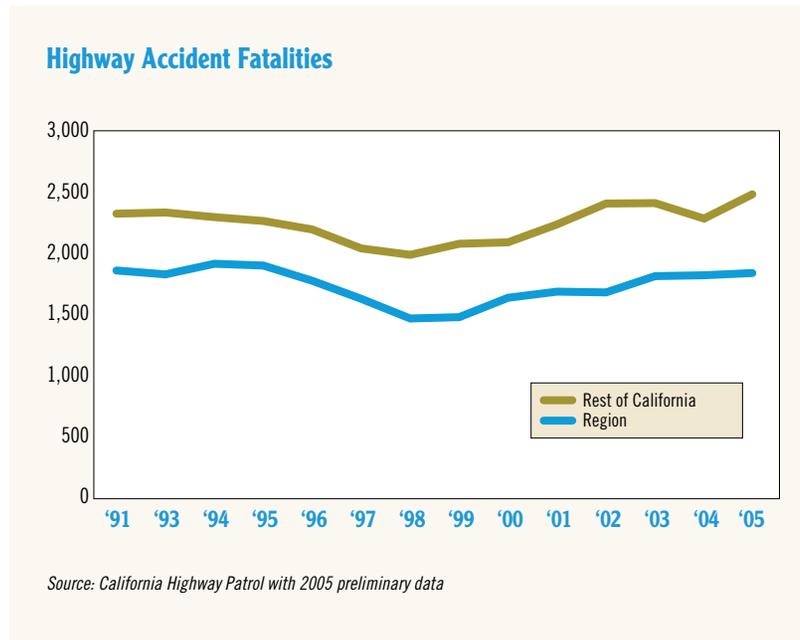
Highway accidents are the leading cause of death for people between the ages of 4 and 33.⁷ Highway fatalities, about 43,200 deaths in 2005, accounted for about 95 percent of transportation-related deaths. Highway accidents and other incidents also accounted for more than 40 percent of the total annual delay of the region’s highway system.

How are we doing?

In 2005, motor vehicle crashes in the region resulted in 1,824 fatalities (about 5 deaths per day), almost the same as that in the past two years (Figure 44). For the rest of California, total number of highway fatalities of 2,476 in 2005 was about the same as in 2003, though increasing by almost 9 percent from 2004. At the national level, total number of highway fatalities increased slightly from 42,636 deaths in 2004 to 43,200 deaths in 2005, about a 1.3 percent increase, after gradual declines in the previous two years.⁸

Young drivers who are between 16 and 24 years old have consistently had the highest fatality rate among different age groups, more than double the fatality rate of the general population. Older drivers who are 74 years or older have the second highest fatality rate among different age groups, about 50 percent higher than that of the general population.

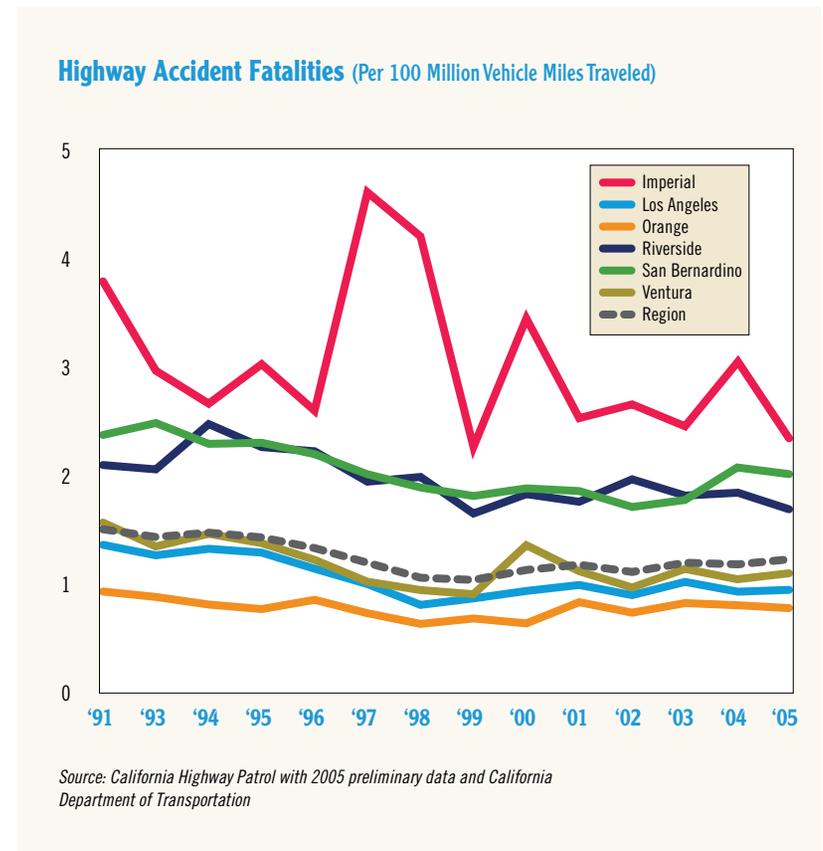
Figure 44



Between 2004 and 2005, highway fatality rates declined noticeably in Imperial County and slightly in the Inland Empire while remaining almost the same for the other counties in the region (Figure 45). In 2005, the region's highway accident fatality rate at 1.18 persons per 100 million vehicle miles traveled was significantly higher than the national average for urban areas (0.94 persons per 100 million vehicle miles traveled).⁹ The highway fatality rate in the region in 2005, though about the same as in 2004, continued to be the highest since reaching

its lowest level in 1998. However, the fatality rate in 2005 was about 30 percent below the 1991 level.

Figure 45



Transit Use and Performance

Why is this important?

Use of public transit helps to improve congestion and air quality and decrease energy consumption. Reliable and safe transit services are essential for many residents to participate in economic, social and cultural life in Southern California. Annual transit boardings measures transit use at the system level, while transit trips per capita provides a measure of transit use at the individual level.

How are we doing?

Total transit boardings in the region in FY 2005 (from July 2004 to June 2005) increased by 16 percent, from 617 million to a record high of 672 million (Figure 46). This was primarily due to the recovery of the MTA transit system from the labor strikes during the previous two fiscal years. It was also facilitated by the surge in gasoline prices that resulted in some shift from private auto to transit use. The MTA system accounts for about two-thirds of the regional total in transit boardings. During FY 2005 the MTA transit system achieved an increase of 57 million (15 percent) to reach total boardings of 439 million, more than recovering the loss in the previous two years.

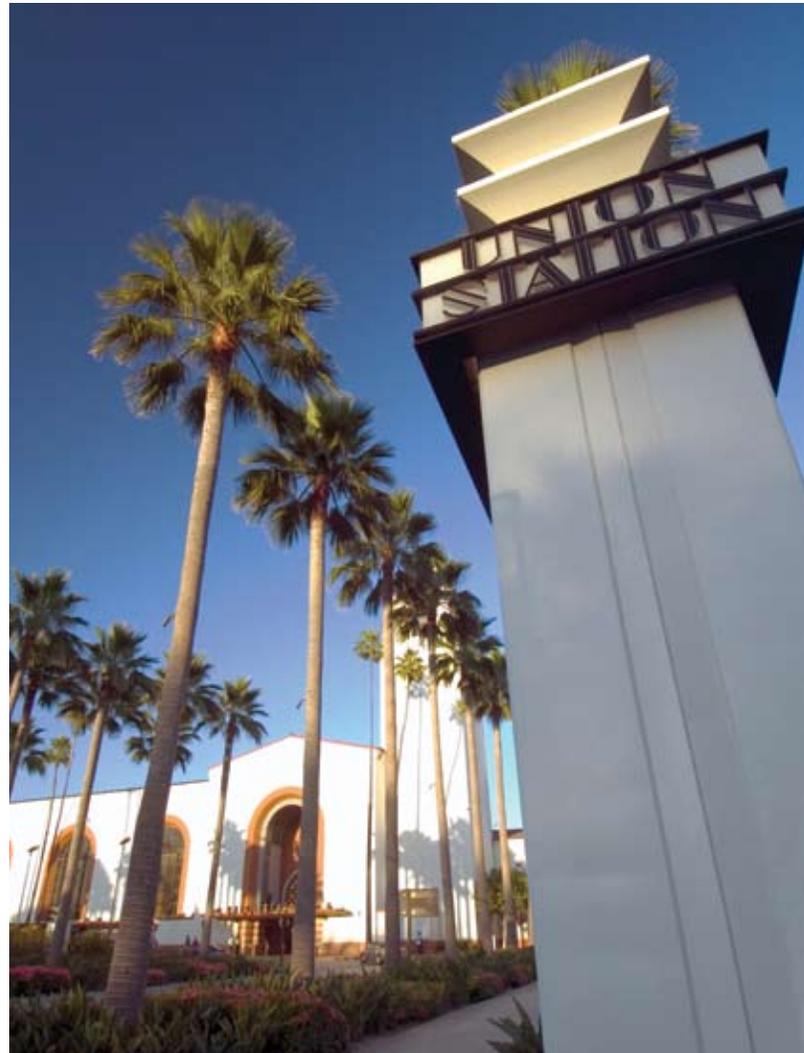
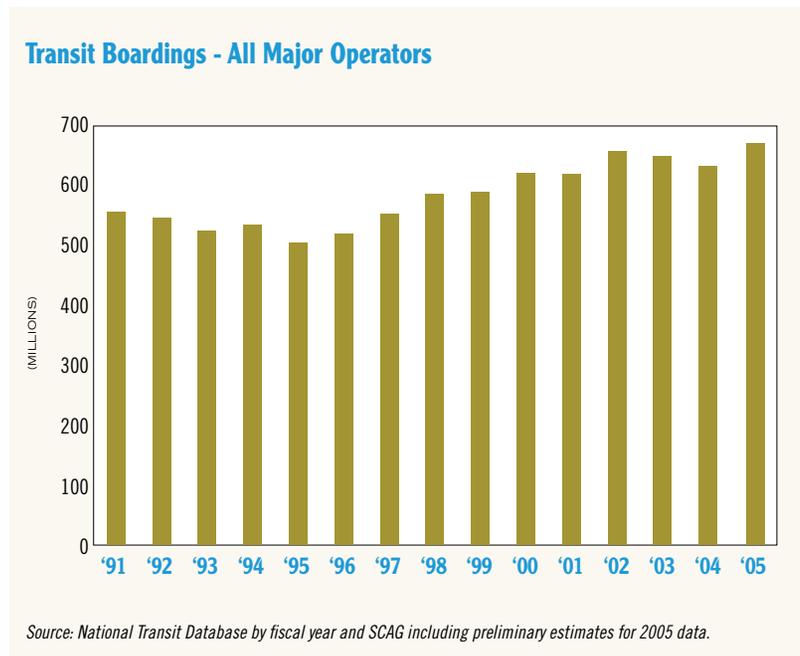


Figure 46



In addition to the MTA system, a few other transit systems also experienced significant increase. For example, total boardings of the Riverside Transit Agency increased from 6.4 to 7.4 million (15 percent) between FY 2004 and FY 2005. In addition, Metrolink also saw its annual boardings increase by 9 percent, exceeding 10 million for the first time.

Nationally, transit boardings also increased at a faster rate than the population (less than 1 percent). Within the different transit modes, light rail achieved

the highest increase in 2005 of 6 percent followed by commuter rail (2.8 percent) and heavy rail (2.3 percent). Total highway travel in 2005 was estimated to remain about the same as in 2004.

Between 2004 and 2005, since transit boardings in the region increased at a much faster rate than the population, transit trips per capita increased from 35 in FY 2004 to 37 in FY 2005, which was just above the 1990 level of 36. Nevertheless, transit use accounted for only about 2 percent of all trips in the region. Major barriers to further transit system development and higher transit use include an auto-oriented urban structure, inadequate level of service and a lack of geographic coverage (or insufficient destinations).¹⁰

Southern Californians use more energy for transportation (about 40 percent) than for any other activity. Levels of energy consumed and air pollutants emitted by transit are only a fraction of those by the automobiles. Greater use of public transit therefore offers an effective strategy for achieving significant energy savings and improving air quality.

Airports

Why is this important?

Air transportation is vitally important to the regional economy of Southern California. Because of its geographical location, Southern California relies heavily on air transportation services to access and interconnect with domestic and foreign markets. For example, airborne exports accounted for



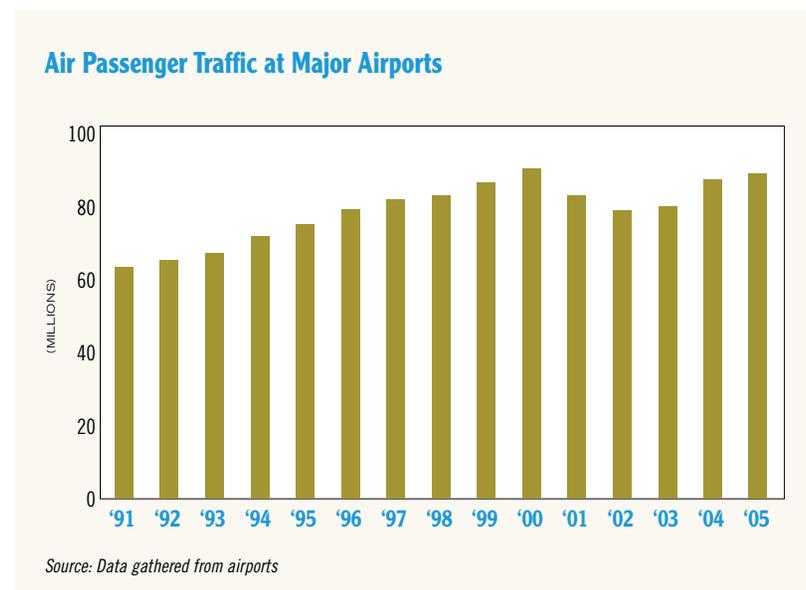
almost 50 percent of the total value of commodity exports out of the Los Angeles Customs District (LACD) in 2005.¹¹ Adequate aviation capacity and quality services are essential to the tourism, business, and trade sectors of the regional economy.

How are we doing?

In 2005, total air passengers in the region experienced a modest increase of 2.2 million (2.5 percent) reaching 88.3 million, just below the 2000 (pre-September 11) record level of 89 million (Figure 47). The 2.5 percent increase was significantly less than the 9 percent increase during the previous period. Among the 88.3 million passengers, about 70.6 million (or 80 percent) were domestic while 17.6 million (or 20 percent) were international. At Los Angeles

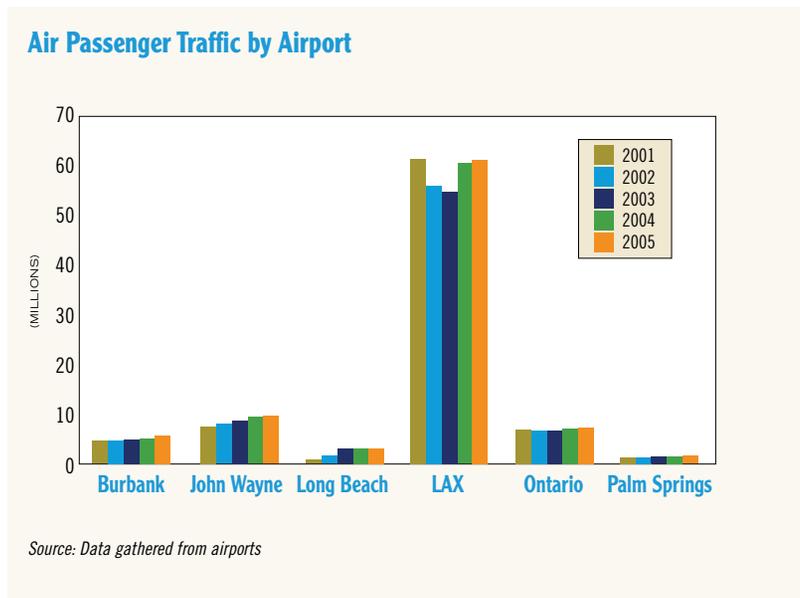
International (LAX), the share of international passenger traffic increased steadily from 25.8 percent in 2000 to 28.4 percent in 2005.

Figure 47



Among the airports in the region, LAX achieved the largest increase of 0.8 million (1.3 percent) to reach 61.5 million, still significantly below its 2000 (pre-September 11) record level of 67 million (Figure 48). Burbank Airport, however, achieved the highest rate of growth of 12 percent between 2004 and 2005. In addition, John Wayne Airport increased by more than 0.3 million to reach 9.6 million. Between 2000 and 2005, the share of LAX in total air passengers in the region decreased from 76 percent to just below 70 percent.

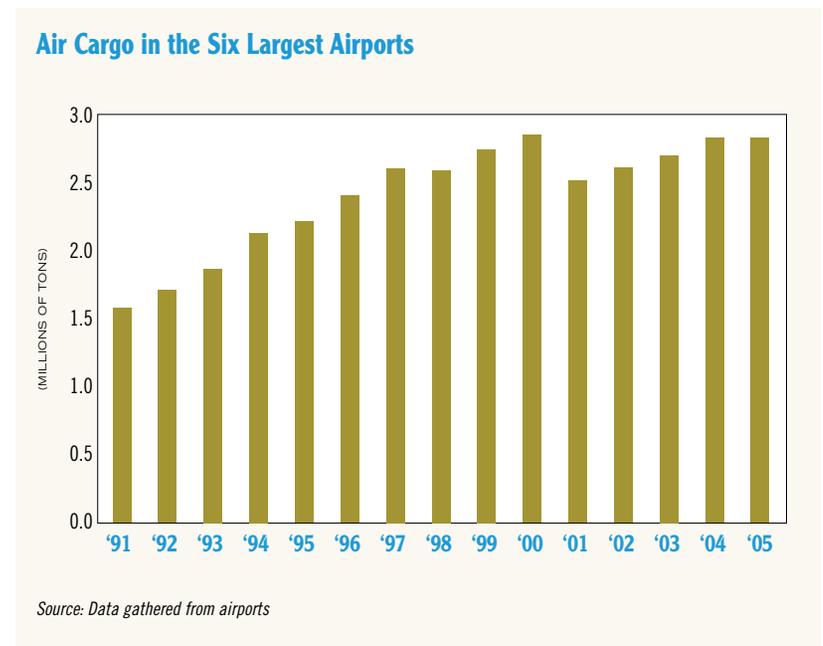
Figure 48



Total air cargo in the region’s airports reached over 2.8 million tons in 2005, the same level as in 2004 and just below the pre-September 11 level. This was significantly below the 5.4 percent average annual growth rate between 1970 and 2000 (Figure 49). Just over three-quarters of the region’s air cargo traffic went through LAX while another 21 percent went through Ontario Airport. By 2030, total air cargo in the region is projected to reach 8.7 million tons, more than triple its 2005 level.¹² Among the total air cargo in 2005, about 63 percent (1.75 million tons) are international cargo and 37 percent (1.05

million tons) are domestic cargo. LAX is one of only three major freight gateways in the nation that handles more exports than imports in value terms.

Figure 49



In 2005, among the ten largest airports in the world, LAX ranked 5th in passenger traffic, behind Atlanta, Chicago, London and Tokyo (see Figure 95 page 159). LAX also ranked 7th in total cargo volumes in 2005 (see Figure 96 page 159).



Ports

Why is this important?

Almost 85 percent of the imports coming through the Los Angeles Customs District (LACD) arrive at the region's ports.¹³ Continuing to provide a world-class port infrastructure is critical to sustaining a growing and prosperous regional economy.

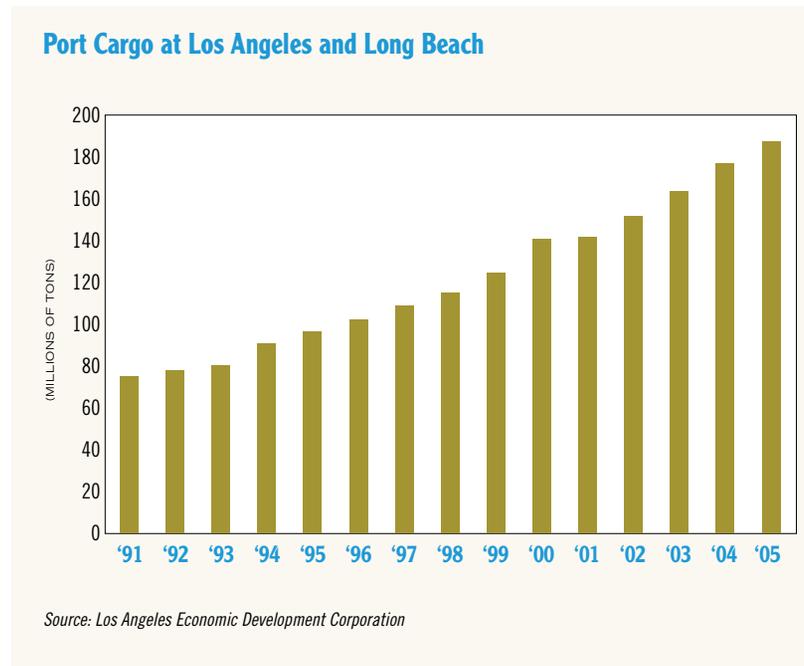
How are we doing?

Total traffic at the Ports of Los Angeles and Long Beach increased from 178 million tons in 2004 to 187 million tons in 2005, a 5.2 percent increase but less than the 8.3 percent increase during the previous period (Figure 50). Between 2004 and 2005, traffic at Port Hueneme increased by 14 percent, from 4 to 4.6 million tons, following an 18 percent increase during the previous period. Only about 8 percent of the cargo shipments at Port Hueneme were through containers.

In 2005, the Los Angeles/Long Beach port complex ranked fifth in the world in container traffic (14.2 million TEUs – twenty-foot equivalent units) following Singapore (23.1 million), Hong Kong (22.4 million), Shanghai (18.1 million) and Shenzhen, China (16.2 million).¹⁴ Total container traffic at the Los Angeles/Long Beach port complex was about one third of all U.S. waterborne container traffic, and 6 times as much as the Bay Area Port. Three quarters of the trade through the San Pedro port complex is produced or consumed elsewhere.¹⁵ By 2020, total container traffic at the twin-ports is

projected to more than double their 2005 level, reaching 36 million TEUs.¹⁶ In 2005, the twin-ports also maintained their dominant role among West Coast ports, attracting almost 56 percent of the total traffic.

Figure 50



Activities at the ports have been identified as the largest source of air pollution in the region, a condition that will increase over time as port traffic increases. For instances, a substantial contributor to air pollution is the low-grade diesel

fuel used by ships. In December 2005, the California Air Resources Board (ARB) instituted a requirement for the use of higher-grade, less polluting diesel fuel within 24 miles of the California coast.

