

SOUTHERN CALIFORNIA ASSOCIATION OF GOVERNMENTS

YEAR 2000 POST-CENSUS REGIONAL TRAVEL SURVEY

Final Report of Survey Results

Fall 2003



NuStats

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TABLE OF CONTENTS

Introduction	1
Key Regional Travel Survey Statistics	3
Survey Methodology	15
Introduction	15
Sample Design	16
Survey Design	17
Pilot Test	17
Survey Procedures	18
Database Creation	18
Limitations of the Data	19
Travel and Activity Patterns	21
Mode of Travel	21
Time of Travel	25
Purpose for Travel	31
Trip Duration	35
Travel for Work	37
Household Characteristics and Travel	40
Household Composition and Trip-Making	40
Socio-Economic Status and Trip-Making	42
Person Characteristics and Travel	50
Demographics	50
Employment	52



LIST OF TABLES AND FIGURES

Table 1: Year 2000 Post-Census Regional Travel Survey: Key Demographic Statistics	3
Table 2: Persons Per Household by County Study Area 1976, 1991, and 2000	4
Table 3: Vehicles Per Person, Licensed Driver, and Household by County, 1967, 1976, 1991, 2000	4
Table 4: Licensed Drivers by County, 1976, 1991 and 2000	5
Table 5: Licensed Drivers Per Household, 1976, 1991, and 2000	6
Table 6: Employed Persons Per Household by County, 1976, 1991, and 2000	6
Table 7: Employed Persons by County, 1976, 1991, and 2000	7
Table 8: Number of Households with Full-time Employees by County by Household Vehicle Ownership, 1976, 1991, 2001	8
Table 9: Year 2000 Post-Census Regional Travel Survey Key Trip Statistics	9
Table 10: Travel Mode Distribution for the SCAG Region	10
Table 11: Average Vehicle Occupancy by Trip Purpose, 1976, 1991, and 2000	10
Table 12: Average Vehicle Occupancy by Trip Purpose and County	10
Table 13: Comparison of Average Home-Work Vehicle Driver Trip Travel Times, 1976, 1991, and 2000	11
Table 14: Trip Purpose Trends by County, 1976, 1991, and 2000	12
Table 15: 2000 Summary Characteristics, 1976, 1991, and 2000	13
Table 16: Summary Characteristics by County, 1967, 1976, 1991, and 2000	13
Table 17: 2000 Summary Data by County	14
Table 18: Data Collection Targets by County	16
Table 19: Final Sample Composition by County	19
Table 20: Total Trip Origins and Destinations by County	21
Table 21: Total Number of Trip Type and Travel Mode By County	22
Table 22: Home-Work Trips by Trip Type and Travel Mode by County	23
Table 23: Non-Home-Work Trips by Trip Type and Travel Mode by County	24
Table 24: Distribution of Total Trips by Trip Purpose by county	31
Table 25: Vehicle Driver Trips by Trip Purpose by county	31
Table 26: Vehicle Driver Trips Per Household by Trip Purpose by Vehicle Ownership	32
Table 27: Total Trips per Household by Trip Purpose by Housing Type by Vehicle Ownership by County	32
Table 28: Public Transit Trip Purposes by county	33
Table 29: Total Trips and Vehicle Driver Trips by Trip Purpose by County	34
Table 30: Distribution of Travel Time in Minutes for Total Trips by Travel Mode	35
Table 31: Travel Time in Minutes for Percent of Trips by Travel Mode	35

Table 32: Distribution of Travel Time in Minutes for Vehicle Driver and Public Transit Trips	36
Table 33: Number of Persons Working at Home by County	39
Table 34: Average Home-Work Travel Time in Minutes by Trip Type	39
Table 35: Households and Total Trips by Household Location	40
Table 36: Households and Total Trips by Household Size	40
Table 37: Households and Total Trips by Housing Unit Type	41
Table 38: Total Number of Households by Household Size by Housing Unit type by County	41
Table 39: Households and Total Trips by Number of Workers	42
Table 40: Households and Total Trips by Presence of Children	42
Table 41: Households and Total Trips by Household Income	42
Table 42: Distribution of Household Income By County	43
Table 43: Households and Total Trips by Vehicle Ownership	43
Table 44: Total Trips and Vehicle Driver Trips per Household by Vehicle Ownership by County	44
Table 45: Distribution of Households by Housing Type, Vehicle Ownership, and Household Size by County	44
Table 46: Average Total Trips Per Household by Housing Unit Type by Vehicle Ownership by County	45
Table 47: Average Vehicle Driver Trips Per Household by Housing Unit Type by Vehicle Ownership by County	45
Table 48: Total Trips and Vehicle Driver Trips Per Household by Household Size by Housing Unit Type by Vehicle Ownership by County	46
Table 49: Total Vehicles Owned by Housing Unit Type by County	47
Table 50: Vehicle Ownership by Housing Unit Type by County	47
Table 51: Total Trip Rates Per Household By Income Level and Housing Unit Type by County	48
Table 52: Vehicle Trip Rates Per Household By Income and Housing Unit Type by County	49
Table 53: Persons and Trips by Age	50
Table 54: Persons and Zero Trips by Age	50
Table 55: Persons and Trips by Gender	51
Table 56: Persons and Trips by Race / Ethnicity	51
Table 57: Persons and Trips by Licensed Driver Status	52
Table 58: Persons and Trips by Employment Status	53
Figure 1: Home Locations of 16,939 Households in Final Database	2
Figure 2: Mode of Travel For Total Trips	21
Figure 3: Trip Distribution by Time of Day	25
Figure 4: Trip Distribution by Departure Hour for All Trips	25
Figure 5: Trip Distribution by Time of Day by County of Residence	26

Figure 6: Destinations (Tripends) for 9,057,899 Am Peak Trips (6 a.m. to 9 a.m.)	27
Figure 7: Destinations (Tripends) for 14,192,320 Midday Trips (9 a.m. to 3 p.m.)	28
Figure 8: Destinations (Tripends) for 12,193,444 PM Peak Trips (3 p.m. to 7 p.m.)	29
Figure 9: Destinations (Tripends) for 5,791,720 Evening Trips (7 p.m. to 6 a.m.)	30
Figure 10: Starting Hour For Trips To Work	37
Figure 11: Starting Hour for Trips From Work	37
Figure 12: Geographic Distribution of Work Locations	38
Figure 13: Distribution of Licensed Drivers	51
Figure 14: Number of Jobs among Employed Persons	52



INTRODUCTION

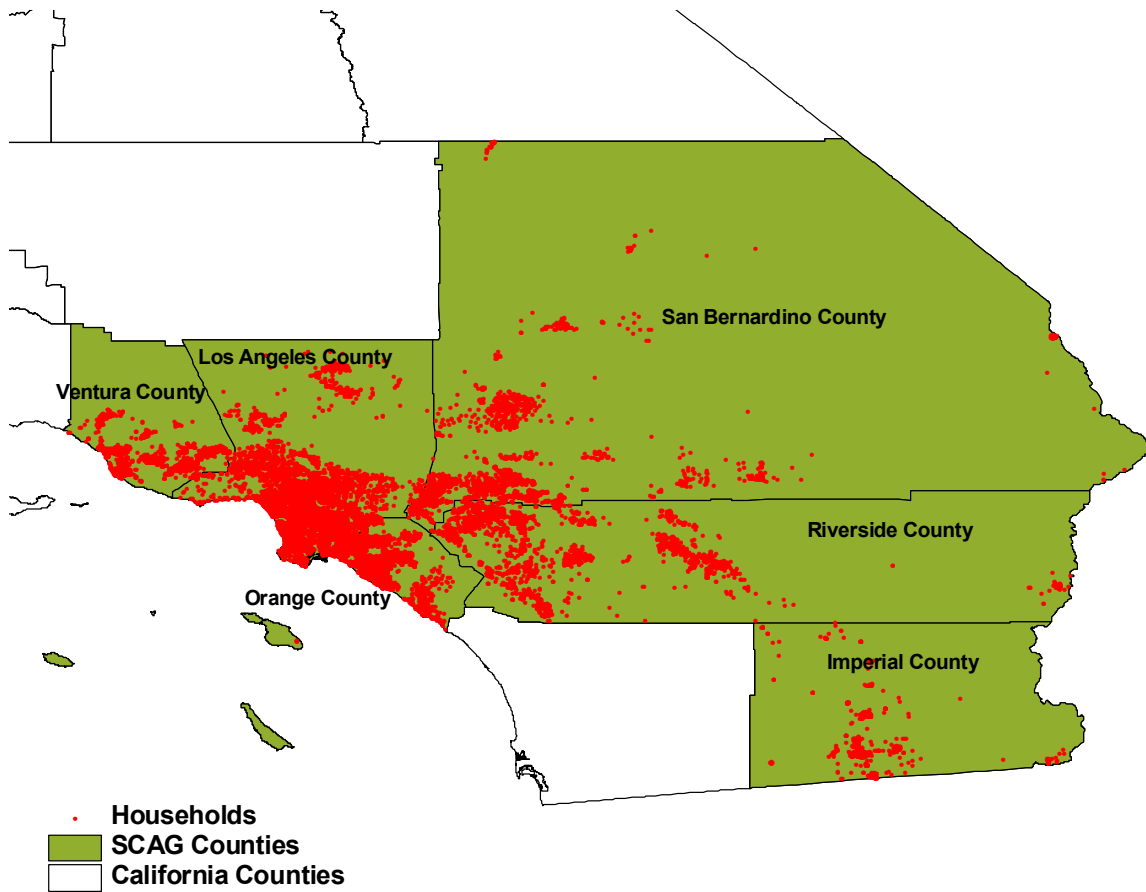
This report presents selected results from the Year 2000 Post-Census Regional Travel Survey for the Southern California Association of Governments (SCAG). The survey targeted households in the six counties comprising the SCAG region: Imperial, Los Angeles, Orange, San Bernardino, Riverside, and Ventura. The purpose of the survey was to update the regional computerized travel-forecasting model to estimate future travel by purpose, time of day, travel mode, and travel route, and to provide a factual basis for decisions about highway and transit improvements. Primary survey methods included both telephone interviews to collect demographic information about persons and households in the region and a travel log designed to capture activity and travel information for household members during a 24-hour or 48-hour timeframe. All data collection activities conformed to standard procedures for conducting regional travel surveys. The sampling, survey design, and reporting methodologies are recognized by major research organizations, including the Transportation Research Board (TRB), the American Association of Public Opinion Research (AAPOR), and the Council of American Survey Research Organizations (CASRO).

SCAG has conducted four previous regional travel surveys in 1960, 1967, 1976, and 1991. The Year 2000 Regional Travel Survey was conducted to coordinate with the demographic data available from the decennial census. The Census “long form” collected data solely about the journey-to-work made by workers residing in the household, while this Regional Travel Survey collected data concerning all trip types by all persons in the household. The survey was designed to coincide with the California Statewide Household Travel Survey, conducted by the California Department of Transportation (Caltrans).

The Regional Travel Survey for Southern California began with sample design, instrument development, and pilot testing in Fall 2000. Data collection was conducted during Spring 2001, Fall 2001, and Spring 2002. Cleaning, geocoding, and data delivery were done on a continuous basis. The survey was conducted among randomly selected households using the telephone recruitment/ diary mailout/ telephone travel retrieval method. In total, 27,476 households were recruited to participate in the regional travel survey. Interviewing was conducted in English and Spanish through a computer-assisted telephone interviewing (CATI) system. Of these 27,476 recruited households, 17,775 households completed travel diaries, and the information was retrieved from all household members. These data were captured using place-based, activity-focused travel logs. In cooperation with SCAG, criteria were established that defined a completed record. The data contained in this report represent only those household records that met the criteria for a completed record. When these criteria were applied, the total number of deliverable households was 16,939 households. The map on the next page plots the locations of these 16,939 confirmed and completed households.

The details of the Regional Travel Survey have been provided in two volumes based on expected interest. This document, the *Final Report of Survey Results*, is focused on the analysis of the data and primarily would be of interest to data users. A separate volume, the *Final Report of Survey Methods*, is focused on the conduct of the survey and primarily would be of interest to those investigating survey methods or planning their own survey.

FIGURE 1: HOME LOCATIONS OF 16,939 HOUSEHOLDS IN FINAL DATABASE



KEY REGIONAL TRAVEL SURVEY STATISTICS

This report presents socioeconomic and travel characteristics from the Year 2000 Post-Census Regional Travel Survey. These data, when weighted and expanded, represent 5,386,491 households and 15,904,849 persons. Tables 1 and 9 present summary demographic statistics and travel statistics, respectively, for this universe. The remaining tables in this executive summary compare results from the current survey with those of previous years. The data for previous years was provided by SCAG, and may represent data that were collected via a different methodology than the current survey. As shown in Table 1, the mean household size for the region was 2.95. The average household in the SCAG region was larger than the average household in the state of California and in the United States as a whole (2.87 and 2.59, respectively).¹ Households in the eastern portion of the region (Imperial, Riverside, San Bernardino Counties) were larger on average than households on the coast (Los Angeles, Ventura, Orange Counties). Workers per household averaged 1.26. The mean number of vehicles available to each household was 1.70. There were slightly more vehicles per household than there were licensed drivers per household (1.68). Ten percent of households reported zero vehicles. The mean number of vehicles per household in the SCAG region was comparable to the State (1.74) and the U.S. (1.69).

**TABLE 1:
YEAR 2000 POST-CENSUS REGIONAL TRAVEL SURVEY: KEY DEMOGRAPHIC STATISTICS**

Total Households	5,386,491
Total Persons	15,904,849
Persons Per Household	2.95
Total Vehicles	9,179,738
Vehicles Per Household	1.70
No Vehicles	10.1%
One Vehicle	34.8%
Two Vehicles	37.2%
Three or More Vehicles	17.9%
Licensed Drivers	9,022,614
Licensed Drivers Per Household	1.68
Workers (full and part-time) 16 years and over	6,801,673
Workers (full and part-time) Per Household	1.26
No Workers	20.2%
One Worker	41.9%
Two Workers	31.0%
Three or More Workers	6.9%

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 households in the six-county SCAG region per Census 2000, STF 2.

¹ State and U.S. statistics are from the Census Transportation Planning Package (CTPP) 2000 Profile sheets.

**TABLE 2:
PERSONS PER HOUSEHOLD BY COUNTY STUDY AREA 1976, 1991, AND 2000**

COUNTY	1976	1991	2000
Imperial	N/A	N/A	3.48
Los Angeles	2.79	3.12	2.87
Orange	2.85	3.02	2.89
Riverside	3.07	3.08	3.31
San Bernardino	3.07	3.22	3.18
Ventura	3.04	3.20	2.88
Study Area	2.84	3.11	2.95

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2.

There were 9,179,738 vehicles available to households in the SCAG region. This estimate represented 0.58 vehicles per person, 1.02 vehicles per licensed driver, and 1.70 vehicles per household. The number of vehicles per person in the SCAG region was slightly less than for the State as whole, 0.69.² Of study area counties, Ventura County had the most vehicles per household (1.97) and per person (0.69), while households in Los Angeles County reported the least vehicles (1.58 per household and 0.55 per person).

**TABLE 3:
VEHICLES PER PERSON, LICENSED DRIVER, AND HOUSEHOLD BY COUNTY, 1967, 1976, 1991, 2000**

COUNTY STUDY AREA	YEAR	VEHICLES PER PERSON*	VEHICLES PER LICENSED DRIVER	VEHICLES PER HOUSEHOLD
Imperial	1967	N/A	N/A	N/A
	1976	N/A	N/A	N/A
	1991	N/A	N/A	N/A
	2000	0.49	0.97	1.72
Los Angeles	1967	0.48	N/A	1.36
	1976	0.57	N/A	1.58
	1991	0.56	1.14	1.74
	2000	0.55	1.00	1.58
Orange	1967	0.50	N/A	1.61
	1976	0.64	N/A	1.82
	1991	0.66	1.07	1.96
	2000	0.63	1.04	1.83
Riverside	1967	N/A	N/A	N/A
	1976	0.54	N/A	1.66
	1991	0.61	1.10	1.88
	2000	0.59	1.01	1.95
San Bernardino	1967	N/A	N/A	N/A
	1976	0.54	N/A	1.66
	1991	0.60	1.10	1.93

² According to data distributed by the California Air Resources Board.

	2000	0.59	1.03	1.87
Ventura	1967	0.47	N/A	1.56
	1976	0.60	N/A	1.83
	1991	0.65	1.10	2.08
	2000	0.69	1.09	1.97

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2. 27,889 licensed drivers expanded to represent 9,022,614 licensed drivers in the SCAG region * Vehicles per person are based on persons of all ages in the household.

Licensed drivers totaled 9,022,614 for the region. As the population expanded in counties other than Los Angeles, the percent of licensed drivers in the region accounted for by Los Angeles County residents continued to decline. In 1976, Los Angeles accounted for 67 percent of licensed drivers. In 2000, the percent decreased to 55 percent (including Imperial County in the base). The percent of licensed drivers in the region accounted for by Riverside County and San Bernardino County households increased significantly from 1976 to 1991, and to a lesser extent, again from 1991 to 2000.

**TABLE 4:
LICENSED DRIVERS BY COUNTY, 1976, 1991 AND 2000**

COUNTY	1976		1991		2000		PERCENT CHANGE 1991 TO 2000
	LICENSED DRIVERS	PERCENT	LICENSED DRIVERS	PERCENT	LICENSED DRIVERS	PERCENT	
Imperial	N/A	N/A	N/A	N/A	69,462	1%	N/A
Los Angeles	4,496,000	67%	4,580,383	57%	4,930,614	55%	-2%
Orange	1,148,500	17%	1,563,142	19%	1,648,008	18%	-1%
Riverside and San Bernardino*	790,400	12%	1,532,388	19%	1,933,817	21%	2%
Ventura	289,200	4%	415,697	5%	440,713	5%	0%
Total	6,724,100	100%	8,091,610	100%	9,022,614	100%	---

Base: 27,889 licensed drivers expanded to represent 9,022,614 licensed drivers in the SCAG region. * Riverside and San Bernardino are combined for comparison purposes with 1976 and 1991.

The mean number of licensed drivers per household has declined since 1976. This decline may represent a demographic change (the aging of the population or more unlicensed, immigrant drivers) or it may be an artifact of differing survey methods. The mean number of licensed drivers per household for the region was 1.68, compared to 1.80 for the state according to the California Statewide Household Travel Survey.

**TABLE 5:
LICENSED DRIVERS PER HOUSEHOLD, 1976, 1991, AND 2000**

COUNTY STUDY AREA	LICENSED DRIVERS PER HOUSEHOLD		
	1976	1991	2000
Imperial	N/A	N/A	1.76
Los Angeles	1.68	1.52	1.57
Orange	1.86	1.87	1.76
Riverside	1.73	1.70	1.92
San Bernardino	1.73	1.76	1.82
Ventura	1.87	1.89	1.81
Total Study Area	1.71	1.63	1.68

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2.

According to the Regional Travel Survey, there were 6,801,673 persons age 16 and older employed either full- or part-time. The number of workers in the 2000 survey represented an increase of nearly 1 million employed persons from 1991 (see Table 7 next page). This change was consistent with trends for the state as a whole, which experienced a 4 percent change in workers from 1990 to 2000, according to the CTPP data. The regional estimate of workers per household did not increase from 1991 to 2000; it remained unchanged at 0.96 workers per household. However, there were significant changes in the average numbers of workers per household for particular counties in the region. For example, the average number of workers per household in Orange and Ventura Counties increased from 0.96 to 1.02 and 1.03, respectively. The average number of workers in Los Angeles County decreased from 1.05 to 0.95, as did the average number of workers in San Bernardino County, from 1.08 to 0.97.

One-fifth of all households (20 percent) reported zero workers, whereas 7 percent of households reported three or more workers (see Table 1). One-worker households covered 42 percent of all households, and two-workers households comprised 31 percent. The total number of workers by county estimated by the 2000 Regional Travel Survey was consistent with totals provided by CTPP. Los Angeles County accounted for 57 percent of full-time workers in the region. This percentage reflected the trend in Los Angeles County's decreasing proportion of regional workers noted since 1976, and the concomitant increasing proportion of regional workers accounted for by Riverside and San Bernardino Counties.

**TABLE 6:
EMPLOYED PERSONS PER HOUSEHOLD BY COUNTY, 1976, 1991, AND 2000**

COUNTY	1976	1991	2000
Imperial	0.93	0.96	0.84
Los Angeles	1.02	1.05	0.95
Orange	0.82	0.96	1.02
Riverside	0.82	0.92	0.94
San Bernardino	0.94	1.08	0.97
Ventura	0.93	0.96	1.03
Study Area	0.93	0.96	0.96

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2. 2000 data represent full-time workers.

**TABLE 7:
EMPLOYED PERSONS BY COUNTY, 1976, 1991, AND 2000**

COUNTY	FULL-TIME						ART-TIME					
	1976	1976 PERCENT	1991	1991 PERCENT	2000	2000 PERCENT	1976	1976 PERCENT	1991	1991 PERCENT	2000	2000 PERCENT
Imperial	N/A	N/A	N/A	N/A	32,963	1%	N/A	N/A	N/A	N/A	5,919	1%
Los Angeles	2,508,100	69%	2,880,683	60%	2,963,131	57%	623,300	67%	637,971	57%	599,472	58%
Orange	630,900	17%	879,438	18%	956,747	18%	173,200	19%	220,067	20%	188,653	18%
Riverside & San Bernardino*	376,000	10%	772,292	16%	985,421	19%	96,100	10%	196,192	18%	199,694	19%
Ventura	145,900	4%	237,923	5%	251,737	5%	35,800	4%	58,820	5%	41,432	4%
Total	3,660,900	100%	4,770,336	100%	5,189,999	100%	928,400	100%	1,113,050	100%	1,035,170	100%

COUNTY	TOTAL EMPLOYED					
	1976	1976 PERCENT	1991	1991 PERCENT	2000	2000 PERCENT
Imperial	N/A	N/A	N/A	N/A	45,081	1%
Los Angeles	3,131,400	68%	3,518,654	60%	3,864,000	57%
Orange	804,100	18%	1,099,505	19%	1,243,663	18%
Riverside & San Bernardino	472,100	10%	968,484	16%	1,339,794	20%
Ventura	181,700	4%	296,743	5%	309,135	5%
Total	4,589,300	100%	5,883,386	100%	6,801,673	100%

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2.

19,555 sampled persons weighted and expanded to represent 6,801,673 employed persons age 16 years and over.

** Riverside and San Bernardino are combined for comparison purposes with 1976 and 1991.*

**TABLE 8:
NUMBER OF HOUSEHOLDS WITH FULL-TIME EMPLOYEES BY COUNTY BY HOUSEHOLD VEHICLE OWNERSHIP, 1976, 1991, 2001**

County	Vehicle Ownership	1976		1991		2001	
Imperial County	0	-	-	-	-	10,222	26%
	1	-	-	-	-	15,784	40%
	2	-	-	-	-	11,518	29%
	3+	-	-	-	-	1,860	5%
	Total	-	-	-	-	39,384	100%
Los Angeles County	0	835,300	31%	647,999	21%	647,999	21%
	1	1,270,500	47%	1,364,137	44%	1,364,137	44%
	2	506,200	19%	915,111	29%	915,111	29%
	3+	70,500	3%	206,528	7%	206,528	7%
	Total	2,682,500	100%	3,133,775	100%	3,133,775	100%
Orange County	0	142,700	23%	172,504	18%	172,504	18%
	1	334,600	54%	372,838	40%	372,838	40%
	2	123,600	20%	320,176	34%	320,176	34%
	3+	15,700	3%	69,770	7%	69,770	7%
	Total	616,600	100%	935,288	100%	935,288	100%
Riverside County and San Bernardino County	0	170,800	37%	328,943	37%	207,943	20%
	1	206,500	45%	370,877	42%	408,618	39%
	2	72,400	16%	161,731	18%	345,082	33%
	3+	8,100	2%	23,090	3%	73,170	7%
	Total	457,800	100%	884,641	100%	1,034,813	100%
Ventura County	0	44,400	29%	50,874	21%	50,874	21%
	1	78,500	51%	97,630	40%	97,630	40%
	2	27,900	18%	76,546	31%	76,546	31%
	3+	3,600	2%	18,183	7%	18,183	7%
	Total	154,400	100%	243,233	100%	243,233	100%

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2.
 19,555 sampled persons weighted and expanded to represent 6,801,673 employed persons age 16 years and over.
 * Riverside and San Bernardino are combined for comparison purposes with 1976 and 1991.

Table 9 summarizes the survey trip characteristics for households in the SCAG region. On an average weekday, persons age 5 and older³ generated over 41 million trips throughout the region. Of these, 36,069,274 (88 percent) were motorized trips, and 25,150,652 (61 percent) were driver trips.⁴ The mean number of total trips per household was 7.66 for persons ages 5 and older and 8.21 for persons of all ages. The average number of motorized trips for persons ages 5 and older was 6.70 trips per household. Unlinked total trips averaged 10.09 trips per household.

**TABLE 9:
YEAR 2000 POST-CENSUS REGIONAL TRAVEL SURVEY KEY TRIP STATISTICS**

TRIP DATA (LINKED TRIPS)	AVERAGE WEEKDAY (ALL AGES)	AVERAGE WEEKDAY (AGES 5+)
Total Trips ⁵	44,248,418	41,235,382
Motorized Trips ⁶	38,586,514	36,069,274
Vehicle Driver Trips ⁷	25,150,652	25,150,652
Mean Total Trips Per Household	8.21	7.66
Motorized Trips Per Household	7.16	6.70
Total Trips Per Person	2.78	2.59
Driver Trips Per Household	4.67	4.67
Driver Trips Per Vehicle Available	2.74	2.74
Vehicle Occupancy (All Trips) ⁸	1.58	1.58
Vehicle Occupancy (Home-Work Trips) ⁸	1.19	1.19
Mean Travel Time (All Trips)	20.72	20.90
Mean Travel Time (Home-Work Trips)	29.79	29.79
Mean Travel time (Home-Work Driver Trips)	29.91	29.91

Base: 114,430 total trips weighted and expanded to represent 41,235,382 total trips for ages 5+ in the region, excluding external to external trips. 120,317 total trips weighted and expanded to represent 44,248,418 total trips for all ages in the region, excluding external to external trips.

Total trips per person averaged 2.78 for all ages and 2.59 trips per person for those age 5 and older. The average vehicle occupancy for all trip types was 1.58 persons. For Home-Work trips, the vehicle occupancy was 1.19 persons per vehicle. The mean travel time for Home-Work trips was nearly 1-1/2 times as long, on average, as the mean travel time for all trips. Just over 4 of 5 trips in the region were made by personal vehicle (driver or passenger), while the public transit mode share for the region was less than 2 percent. Nearly 11 percent of all trips were walk trips.

³ Trip data are provided subsequent to a process of trip linking that is documented in the *Data User's Manual*.

⁴ Driver trips and trip rates, in general, have *not* been adjusted based on the GPS component results because the adjustment of data via GPS is experimental at this time and thought best left to the discretion of the data user. For more information, see separate report on GPS study.

⁵ Total trips include all weekday trips by all modes of travel by persons age 5 and older, excluding external-external trips.

⁶ Motorized trips include all weekday trips by persons ages 5 and older by all modes except walk, bike, other, refused, and external-external trips.

⁷ Vehicle Driver trips include all weekday automobile, pickup, RV, van, and truck driver trips, excluding external-external trips.

⁸ Vehicle occupancy estimate includes only auto driver trips.

**TABLE 10:
TRAVEL MODE DISTRIBUTION FOR THE SCAG REGION**

TRAVEL MODE DISTRIBUTION	TOTAL NUMBER	WEEKDAY PERCENT
Vehicle Driver Trips	25,150,652	61%
Vehicle Passenger Trips	9,428,998	23%
Public Transportation Trips ⁹	732,362	2%
School Bus Trips	656,478	2%
Bicycle Trips	324,867	1%
Walk Trips	4,585,091	11%
All Others	356,934	1%
Total Trips	41,235,382	100%

Base: 114,430 total trips weighted and expanded to represent 41,235,382 total trips, ages 5+, for the region.

Average vehicle occupancy increased slightly from 1991 to 2000. The most notable increase was for the Home-Shop trips (1.46 to 1.76). Vehicle occupancy for Home-Work trips also showed a slight increase from 1991 (1.10 to 1.19).

**TABLE 11:
AVERAGE VEHICLE OCCUPANCY BY TRIP PURPOSE, 1976, 1991, AND 2000**

TRIP PURPOSE	1976	1991	2000
Home-other	1.51	1.70	1.71
Home-work	1.14	1.10	1.19
Other-other	1.40	1.72	1.90
Other-work	1.14	1.25	1.43
Home-shop	1.39	1.46	1.76
Total	1.36	1.46	1.58

Base: 79,107 vehicle driver trips weighted and expanded to represent 25,150,652 trips for the region.

**TABLE 12:
AVERAGE VEHICLE OCCUPANCY BY TRIP PURPOSE AND COUNTY**

VEHICLE OCCUPANCY	TRIP PURPOSE	HOME-OTHER	HOME-WORK	OTHER-OTHER	OTHER-WORK	HOME-SHOP	TOTAL
County	Imperial	1.93	1.92	1.85	1.96	1.94	1.92
	Los Angeles	1.17	1.69	1.73	1.47	1.96	1.57
	Orange	1.26	1.65	1.83	1.56	1.69	1.57
	Riverside	1.16	1.87	1.88	1.27	2.30	1.70
	San Bernardino	1.18	1.77	1.77	1.18	1.82	1.56
	Ventura	1.11	1.63	1.57	1.17	1.55	1.42
	Total		1.19	1.71	1.76	1.43	1.90

Base: 79,107 vehicle driver trips weighted and expanded to represent 25,150,652 trips for the region.

⁹ Public transit trips include trips made by local bus, express bus, Metro Red, Blue, and Green lines, and Metrolink.

The average travel times reported for Home-Work vehicle driver trips increased from 1991 to 2000, with the greatest increase reported in San Bernardino County.

**TABLE 13:
COMPARISON OF AVERAGE HOME-WORK VEHICLE DRIVER TRIP TRAVEL TIMES, 1976, 1991, AND 2000**

COUNTY	1967	1976	1991	2000
Imperial	N/A	N/A	N/A	19.1
Los Angeles	24.0	24.4	29.2	29.9
Orange	21.8	23.2	30.3	28.6
Riverside	N/A	19.1	31.6	33.0
San Bernardino	N/A	19.1	30.6	32.4
Ventura	19.5	22.0	24.9	25.4

Base: 20,494 Home-Work vehicle driver trips weighted and expanded to represent 6,669,065 trips for the region.

Home-Work trips represented approximately one-fifth of all trips and one-fourth of vehicle driver trips – similar to the 1991 proportions. Home-Shop trips represented a slight increase from 1991 proportions, from 9 percent to 13 percent of total trips and 9 percent to 14 percent of vehicle driver trips.

**TABLE 14:
TRIP PURPOSE TRENDS BY COUNTY, 1976, 1991, AND 2000**

TRIPS	COUNTY	HOME-OTHER			HOME-WORK			OTHER-OTHER			OTHER-WORK			HOME-SHOP		
		1976	1991	2000	1976	1991	2000	1976	1991	2000	1976	1991	2000	1976	1991	2000
Total Trips	Imperial	N/A	N/A	49%	N/A	N/A	17%	N/A	N/A	15%	N/A	N/A	7%	N/A	N/A	12%
	Los Angeles	41%	42%	44%	17%	22%	20%	22%	15%	15%	8%	13%	8%	12%	8%	13%
	Orange	38%	41%	41%	20%	20%	20%	21%	16%	16%	9%	14%	9%	13%	9%	13%
	Riverside	41%	46%	46%	16%	17%	18%	22%	17%	16%	7%	11%	7%	13%	9%	13%
	San Bernardino	41%	45%	45%	16%	16%	18%	22%	19%	15%	7%	11%	8%	13%	9%	13%
	Ventura	41%	42%	42%	16%	18%	20%	23%	17%	16%	9%	15%	9%	12%	8%	14%
	Total	40%	43%	44%	18%	20%	20%	22%	16%	15%	8%	13%	8%	12%	9%	13%
Vehicle Driver Trips	Imperial	N/A	N/A	38%	N/A	N/A	25%	N/A	N/A	14%	N/A	N/A	10%	N/A	N/A	13%
	Los Angeles	37%	34%	33%	21%	27%	27%	21%	15%	15%	10%	15%	11%	12%	8%	14%
	Orange	34%	34%	31%	23%	24%	26%	20%	16%	16%	10%	16%	13%	12%	9%	14%
	Riverside	37%	36%	34%	20%	23%	26%	22%	17%	16%	9%	15%	9%	13%	9%	15%
	San Bernardino	37%	35%	34%	20%	22%	26%	22%	19%	15%	9%	14%	11%	13%	10%	14%
	Ventura	37%	33%	32%	19%	23%	26%	23%	17%	16%	10%	18%	11%	11%	9%	15%
	Total	37%	34%	33%	21%	25%	27%	21%	16%	15%	10%	16%	11%	12%	9%	14%

Base: 114,430 total trips weighted and expanded to represent 41,235,382 trips for ages 5+ in the region.

As Table 15 indicates, in 2000 total trips per household and per person increased slightly from 1991, from 7.6 to 7.7 and 2.4 to 2.6, respectively. Driver trips per household decreased from the 1991 estimates, from 5.4 to 4.7 per household. The decrease was largely driven by the Orange County and Los Angeles County estimates. In Orange County, driver trips per household decreased from 6.6 in 1991 to 5.2 in 2000 and in Los Angeles the decrease was from 4.9 in 1991 to 4.3 in 2000 (see Table 16).

**TABLE 15:
2000 SUMMARY CHARACTERISTICS, 1976, 1991, AND 2000**

STATISTIC	1976	1991	2000
Persons per Household (All Ages)	2.8	3.1	3.0
Vehicles per Household	1.6	1.8	1.7
Full-Time Employees per Household	0.9	1.0	1.0
Licensed Drivers per Household	1.7	1.6	1.7
Total Trips per Household	8.1	7.6	7.7
Total Trips per Person	2.9	2.4	2.6
Vehicle Driver Trips per Household	5.7	5.4	4.7
Auto Passenger Trips per Household	2.1	1.8	1.8
Transit Trips per Household	0.2	0.2	0.1

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2

**TABLE 16:
SUMMARY CHARACTERISTICS BY COUNTY, 1967, 1976, 1991, AND 2000**

STATISTIC	YEAR	IMPERIAL	LOS ANGELES	ORANGE	RIVERSIDE	SAN BERNARDINO	VENTURA
Persons per Household (All Ages)	1967	N/A	2.9	3.2	N/A	N/A	3.3
	1976	N/A	2.8	2.8	3.1	3.1	3
	1991	N/A	3.1	3.0	3.1	3.2	3.2
	2000	3.5	2.9	2.9	3.3	3.2	2.9
Vehicles per Household	1967	N/A	1.4	1.6	N/A	N/A	1.5
	1976	N/A	1.6	1.8	1.7	1.7	1.8
	1991	N/A	1.7	2.0	1.9	1.9	2.1
	2000	1.7	1.6	1.8	1.9	1.9	2.0
Trips per Household	1967	N/A	6.4	8.3	N/A	N/A	8.5
	1976	N/A	7.8	8.9	8.4	8.4	9.6
	1991	N/A	7.8	9.7	8.4	9.7	10.9
	2000	8.9	7.3	7.9	8.5	8.3	8.1
Vehicle Driver Trips per Household	1967	N/A	4.6	5.9	N/A	N/A	5.9
	1976	N/A	5.5	6.5	5.8	5.8	6.9
	1991	N/A	4.9	6.6	5.5	6.1	7.2
	2000	5.1	4.3	5.2	5.2	5.1	5.3
Trips per Person (5+)	1967	N/A	N/A	N/A	N/A	N/A	N/A
	1976	N/A	2.8	3.1	2.7	2.7	3.2
	1991	N/A	2.5	3.2	2.7	3.0	3.4
	2000	2.9	2.8	3.0	2.8	2.9	3.1

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2.

As shown in Table 17, Los Angeles County and Orange County comprised well over half (73 percent) of total trip and vehicle driver trips for the region. Households in Los Angeles County, alone, made half (55 percent) of the 41 million total trips in the SCAG region.

**TABLE 17:
2000 SUMMARY DATA BY COUNTY**

SUMMARY DATA	IMPERIAL	LOS ANGELES	ORANGE	RIVERSIDE	SAN BERNARDINO	VENTURA
Households	39,384	3,133,774	935,287	506,218	528,594	243,234
Persons (all ages)	137,221	9,008,943	2,702,536	1,676,803	1,679,656	699,690
Persons (5+)	122,605	8,179,168	2,460,500	1,510,453	1,515,827	642,495
Vehicles	67,644	4,946,259	1,712,106	986,029	988,157	479,543
Total Trips	351,821	22,863,817	7,413,071	4,279,819	4,363,362	1,963,493
Motorized Trips	312,132	19,410,865	6,638,979	3,921,639	4,024,171	1,761,487
Vehicle Driver Trips	199,802	13,455,866	4,868,958	2,649,444	2,685,924	1,290,659

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2. 114,430 total trips weighted and expanded to represent 41,235,382 trips for ages 5+ in the region.



SURVEY METHODOLOGY

INTRODUCTION

This report provides results of the Year 2000 Post-Census Regional Travel Survey (hereafter, the Regional Travel Survey), conducted by NuStats under contract to the Southern California Association of Governments (SCAG). In addition to providing basic information about each household and its members, the survey captured specific characteristics of activities and trips made, including number, purpose, the time of day, travel mode and questions specific to the travel modes used. The Regional Travel Survey objective was to provide socioeconomic and travel behavior data for regional transportation modeling databases. The resulting databases will be used to update and expand regional transportation demand models, including the functions of estimating trip generation and distribution, mode choice, and assignments.

The Regional Travel Survey was designed by SCAG and its partner agencies to include several different sample types. These types included both probability and non-probability samples. This report focuses on the survey results that are based on the probability samples that comprised the largest portion of the regional survey effort. Because these sample surveys were conducted via telephone using Random Digit Dial (RDD) sampling methods, cases from each can be combined to produce a larger base from which to conduct analyses. The probability samples included:

- **Base Sample** of households in the SCAG region across its constituent counties (i.e., Imperial, Los Angeles; Orange; Riverside; San Bernardino; Ventura). This sample was used to collect 24-hour (weekday) diaries.
- **Caltrans Sample**, which comprised the six-county Southern California portion of the California Statewide Household Travel Survey. This sample was drawn from the same sampling frame as the base sample (above) at the same time and was conducted with a field period that overlapped with the Regional Travel Survey.
- **Regional Statistical Area (RSA) Augment** was an oversample of subregional geographic areas (RSAs) in the SCAG region with the intent to increase sample at the subregional level.¹⁰ The RSA sample was drawn independently from the Base, Caltrans, and Weekend samples (but from the same sampling frame) during the latter stages of data collection.
- **Weekend Sample** was designed to measure travel behavior on weekends using a 48-hour diary, whereas the Base, Caltrans, and RSA augment samples of households were designed to measure weekday household travel behavior. The weekend sample was drawn during the same “pull” as the Base and Caltrans samples. All weekend households recorded travel during a 48-hour period that spanned either Friday/Saturday or Sunday/Monday.

A fourth household survey component covered a Mode User Augment. The Mode User Augment entailed the collection of seven independent samples of specific types of mode users using intercept (nonprobability) methods. These data were collected to support mode specific statistical models of travel volume and behavior. The results of this survey are presented as a separate report.

A fifth household survey component entailed the collection of information using global positioning system (GPS) technology from a sub-sample of households who completed the 24-hour travel logs for the purpose of auditing self-reported diary data. The results of this survey component are presented as a separate report.

¹⁰ This effort was curtailed during the fieldwork period due to contractual issues, and thus, resulted in far less oversampling at the subregional level than specified in the original sample design.

NuStats conducted the Regional Travel Survey, in association with DataSource, Batelle, and Resource Systems Group. NuStats designed the survey, managed data collection, analyzed the survey data, and documented the results in a series of reports. DataSource, a NuStats' affiliate, conducted the telephone interviews and mailed the diary packets. Batelle designed a GPS data collection strategy for a subsample of the population, managed the data capture, analyzed the resulting data, and documented the effort as a separate report. Resource Systems Group supported the Base Survey effort by building and managing an Internet data collection option. In addition, Dr. Cheryl Stecher, Franklin Hill Group, was contracted by SCAG to provide ongoing quality assurance assistance.

SAMPLE DESIGN

The population of inference for the survey comprised households and household residents in the six-county SCAG region. Through discussions with SCAG, it was decided to use 2000 Census data to estimate population parameters. Estimates in this report are from Census 2000, Summary File 2. The universe of households in the SCAG region totals 5,386,491 occupied housing units. Because a telephone survey was used to recruit households into the sample, the survey population was households with telephones in the SCAG region. The sampling universe was total household telephone numbers, and the sampling frame was the collection of ten-digit telephone numbers from the listed working banks that comprised the SCAG region. Census 2000 data indicates that 1.6% of occupied housing units in the SCAG region are without telephones, and this percentage is a fair indication of the coverage bias introduced by the choice of survey population and sampling frame.

Data collection targets by county that were identified by SCAG guided the selection of elements from the frame. The samples for the Base, Weekend, and Caltrans studies were drawn at the same time, then divided into partitions based on the data collection targets. The sample was drawn at the county level, as shown in Table 18, and represents disproportionate sampling by county when considering the universe of occupied housing units at the county level.¹¹ Greater detail on the sampling procedures can be found in the *Final Report of Survey Methods*, submitted under separate cover.

**TABLE 18:
DATA COLLECTION TARGETS BY COUNTY**

COUNTY	OCCUPIED HOUSEHOLDS	% OF OCCUPIED HOUSEHOLDS	SAMPLE TARGET	% OF TOTAL
Imperial	39,384	0.7	1,021	5.6
Los Angeles	3,133,774	58.2	7,887	43.6
Orange	935,287	17.4	2,508	13.8
Riverside	506,218	9.4	2,254	12.5
San Bernardino	528,594	9.8	2,294	12.7
Ventura	243,234	4.5	2,137	11.8
Total	5,386,491	100.0	18,100	100.0

¹¹ The original sample design specified a data collection target for the RSA Augment portion of the survey. However, this data collection was curtailed early in its field period due to contractual issues, such that the RSA augment data collection target was eliminated.

SURVEY DESIGN

The objectives of the Regional Travel Survey required comprehensive survey instruments to collect demographic and socioeconomic details about households and persons, vehicle information, details of school and work travel, and detailed data of all trips made on assigned travel days. A list of survey data items can be found in the *Final Report on Survey Methodology*. The survey employed a generally accepted research method for household travel behavior research, in which all household members were asked to record all trips for a specified 24-hour (or 48-hour) period (from 3 a.m. to 2:59 a.m.) using a specially designed travel log. Parents or guardians were asked to complete the travel logs of household members under the age of 12. Households, completing 24-hour logs, were randomly assigned to non-Holiday weekdays for recording their travel (Monday-Friday), while those completing 48-hour logs were randomly assigned to non-Holiday pairs of Friday-Saturday or Sunday-Monday.

Data collection was via a multi-mode method consisting of telephone recruitment of households, the placement of respondent materials through the U.S. Mail, and telephone retrieval of travel data after the assigned travel day. This survey commenced shortly after the start of the California Statewide Household Travel Survey conducted by Caltrans. It was the intention of both SCAG and Caltrans that the regional and statewide surveys use methods and instruments that would permit the later combination of data. As the contractor for the Caltrans survey as well as for the SCAG survey, NuStats fulfilled this intention.

An Internet-based data retrieval program was developed for this survey. However the timing of the implementation of Internet retrieval was interrupted due to contractual issues. Therefore, only 50 households used the Internet option. Those data have not been broken out for analysis in this report or in the *Final Report of Survey Methods*.

PILOT TEST

NuStats conducted two pilot tests to ensure that the survey design and materials would capture the data necessary to meet the survey objectives. First, a full dress rehearsal of survey procedures was conducted. A total of 286 households were recruited to participate in the field test, and of these, 216 households completed travel logs for each member of the household. Based on the field test results, improvements were made in the recruitment interview introductory script, the required number of call attempts was increased to 17, the time allotted for a household to receive the mailed diary was increased from 7 to 10 days, and provisions were made for intensive and ongoing geographic training to interviewers as well as for “respondent” training through improved survey materials and interviewer interactions.

Subsequent to the field test, focus groups were held to examine factors that affect participation in travel behavior surveys or might hinder accurate completion of the travel log portion. Four mini-focus groups were held with respondents who participated in the pilot survey, completed their travel diaries, and went through the retrieval phase. A total of 15 people participated in the groups, with three to five in each. Three groups were conducted in English and one in Spanish. Focus group results were used to further revise survey procedures, interviewer scripts, and other respondent materials.

SURVEY PROCEDURES

Data collection for the Regional Travel Survey was conducted during Spring 2000, Fall 2000, and Spring 2002. The survey followed standard procedures for a regional travel survey. These procedures were:

Pre-Notification Letter. Households for which an address was obtained prior to a telephone contact were mailed a letter that introduced the survey and its objectives, specified the importance of and implications of participation, identified the survey sponsors and provided contact information for persons wanting further information.

Recruitment. Households were recruited to participate by telephone, and participating households were assigned a day (or pair of days) on which to travel and record travel in diaries. During the recruitment call, the demographic characteristics of the household and household members were obtained. The home address information was verified, and work and school addresses were collected and subsequently geocoded. The recruitment interviews averaged 20 minutes. A total of 24,476 households were recruited to participate in the survey.

Diary Package. The day following the recruitment, a package was mailed to participating households containing a cover letter and a travel log for each member of the household.

Reminder. The night before the assigned travel day, each household was telephoned to verify that a package was received, to answer any questions, to remind the household of travel the next day, to clarify address information that could not be geocoded, and to set an appointment for retrieval of travel information.

Retrieval. Travel data were retrieved using CATI. As much as possible, interviewers spoke with individual household members to avoid proxy interviews. The average retrieval interview lasted 26 minutes. In total, 17,775 households completed recruitment and retrieval activities. For most of these households, the information was collected within seven days of the assigned travel day. Trip ends were geocoded subsequent to the retrieval interview.

Cleaning and data delivery were done on a continuous basis. Data were sent to SCAG in batches throughout the course of the project to determine whether or not they would be accepted as “complete” according to the criteria established in association with SCAG. These criteria and other data quality checks performed are identified in the *Final Report of Survey Methods*. The application of these criteria reduced the total number of households from 17,775 to 16,939 confirmed and completed households, representing 40,376 persons.

DATABASE CREATION

Findings presented in this report are based on aggregated data, totaling 16,939 randomly sampled households. These aggregate data have been weighted to reflect a proportionate distribution of households by county and also balanced by household size, vehicle ownership, and county. The data were expanded to 2000 statistics for total households from the U.S. Bureau of the Census. Thus, the 16,939 sampled households were used to represent all 5,386,491 occupied housing units in the study area. (Also see *Final Report of Survey Methodology* for full disclosure of sample weight and expansion factor construction and response rate calculations.) The contents of the final database are documented in the *Data User's Manual*.

**TABLE 19:
FINAL SAMPLE COMPOSITION BY COUNTY**

COUNTY	UNIVERSE: OCCUPIED HOUSING UNITS	PERCENT OF UNIVERSE	COMPLETED HOUSEHOLDS IN SAMPLE UNWEIGHTED	COUNTS FOR EXPANDED SAMPLE	PERCENT OF EXPANDED SAMPLE
Imperial	39,384	0.7	915	39,384	0.7
Los Angeles	3,133,774	58.2	7,262	3,133,774	58.2
Orange	935,287	17.4	2,316	935,287	17.4
Riverside	506,218	9.4	2,341	506,218	9.4
San Bernardino	528,594	9.8	2,172	528,594	9.8
Ventura	243,234	4.5	1,933	243,234	4.5
Total	5,386,491	100.0	16,939	5,386,491	100.0

LIMITATIONS OF THE DATA

This report presents findings from the 2000 Regional Travel Survey and also compares those findings with estimates from previous travel surveys in the region. When interpreting these findings, it is important to do so within the data limitations. Significant issues are addressed below.

Comparisons with Previous Data. While data are presented in comparison tables for 2000, 1991, 1976, and 1967 regional travel surveys, it is important to understand that the 2000 data were collected via a different survey methodology than were the previous surveys. Different surveys using different methods will yield different results, regardless of the extent of efforts to maintain comparability. In addition, with any sample, differences are likely to exist between the characteristics of the sampled units and the entire population from which the sample was chosen. Thus, the estimates of the 2000 survey and previous surveys could well differ because of sampling error. All surveys have sampling error; larger surveys have lower sampling error. The large sample of the 2000 survey (nearly 17,000 households) means that the likely sampling errors of estimates from it are low.

Response Rate and Survey Nonresponse. Some level of nonresponse occurs in every voluntary survey. Low response rates are attributable to a variety of factors, including growing resistance to surveys in general and telephone surveys in particular; the changing patterns of telephone access to American households; and the growing number of households for which English is not a first language – making telephone communication for survey respondents who are not native English speakers difficult.¹² Household travel surveys are particularly susceptible to nonresponse. These surveys are complex, requiring a two-stage interview process plus the completion of a travel diary by household members. Since each interview stage has an accompanying level of nonresponse, the overall response rate – given by the product of the response rates for the two interviews – tends to be lower than that for a survey involving only one interview.

In addition, the present survey was conducted under unique conditions that impacted response rates. Due to contractual issues, dialing was interrupted several times during the course of this project meaning that households that were recruited could not be retrieved due to the lapse in the data freshness window and consistent callback algorithms could not be sustained across multiple interrupted survey periods. For the present survey, the overall response rate was low, 19 percent, as the product of the recruitment interview (29 percent) and the retrieval interview (65 percent). Finally, “noncontacts” were a major challenge during fieldwork, comprising 44 percent of all released and dialed sample.

¹² The survey was designed to include English and Spanish speakers only.

Under-Reporting of Trips. An important determinant of data quality is the accuracy of the reported trips. To enhance reporting accuracy, most household travel surveys rely on diary instruments in which respondents are asked to record each trip for a specific time period (e.g., 24-hours, 48-hours). Yet even with the use of diaries, under-reporting of trips by survey respondents is a well-documented occurrence. Memory decay, failure to understand or to follow survey instructions, unwillingness to report full details of travel, and simple carelessness all contribute to the incomplete collection of travel data. While documented more fully in an accompanying report, *Final Report of GPS Survey Methods and Results*, the results of the GPS survey indicate that there was low or no under-reporting among households participating in the GPS subsample. However, there were some survey participants (representing roughly 10 percent of households) who did report an extreme number of trips. The data from these households impact the estimates of trip rates found in this report.

Coverage Bias. The survey population for the present survey was households with telephones in the SCAG region. This choice of method resulted in the systematic exclusion of non-telephone households from the sample. Because non-telephone households share important characteristics with users of public transportation, like zero auto ownership and lower household incomes, it is likely that the survey does not fully represent the transit market share in the region.

Response Bias. Surveys are prone to non-response errors, covering the fact that certain types of households selected in a sample do not participate in the survey or individual household members fail to answer an item in the interview. The unweighted sample slightly under-represented 5+ person households, zero-vehicle households, and low-income households. The survey data were weighted to compensate for household size and vehicle availability. Weighted, the sample represented the distribution of households by income well, but the data still slightly under-represented households that rented their dwelling unit and more substantially under-represented households residing in multi-family dwellings.



TRAVEL AND ACTIVITY PATTERNS

More than 40 million trips were made within the SCAG region on an average weekday. Los Angeles County accounted for more than half of trip origins and destinations on an average weekday, whereas Orange County represented 18 percent. Riverside and San Bernardino Counties accounted for 10 percent each. Ventura County accounted for 5 percent of trip origins and destinations in the region, while less than 1 percent of trip origins and destinations in the region were in Imperial County.

**TABLE 20:
TOTAL TRIP ORIGINS AND DESTINATIONS BY COUNTY**

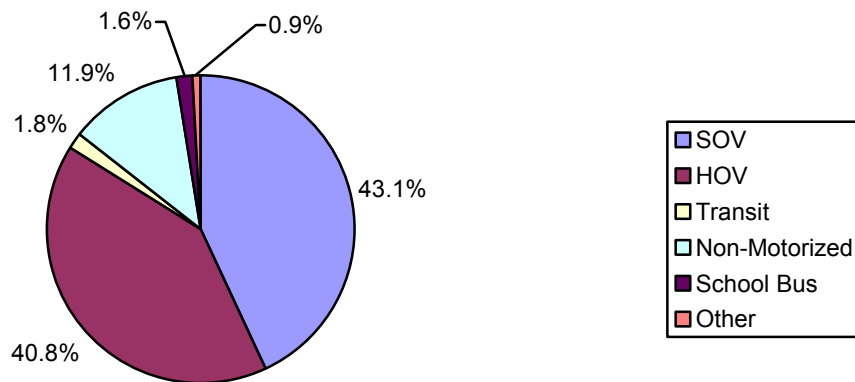
COUNTY	TRIP ORIGINS	PERCENT	TRIP DESTINATIONS	PERCENT
Imperial	405,863	1%	405,009	1%
Los Angeles	22,617,366	56%	22,588,064	56%
Orange	7,190,742	18%	7,191,083	18%
Riverside	3,993,876	10%	4,045,701	10%
San Bernardino	4,167,772	10%	4,161,037	10%
Ventura	1,847,437	5%	1,848,517	5%
Total	40,223,056	100%	40,239,410	100%

Base: 114,430 total trips weighted and expanded to represent 41,235,382 total trips, ages 5+, for the region. Totals do not equal total expanded trips due to missing address information for some trips.

MODE OF TRAVEL

Two out of every five trips (43 percent) were made in single-occupancy vehicles (SOV). This estimate reflects 17 million SOV trips on an average weekday. Rideshare trips (driver trips with one or more passengers) accounted for 41 percent of all trips. Twelve percent of trips were via non-motorized modes (walking or biking), and nearly 2 percent was by public transit.

**FIGURE 2:
MODE OF TRAVEL FOR TOTAL TRIPS**



Base: 114,430 total trips weighted and expanded to represent 41,235,382 total trips, ages 5+, for the region.

Where Figure 2 provides the percentage of trips represented by various modes of transportation, Table 21 identifies the estimated number of vehicle trips, vehicle passengers, transit trips, non-motorized trips, and school bus trips for all trip purposes by county. The 2000 survey estimated 41,235,382 trips for all trip purposes.¹³ Vehicle driver trips totaled 25,150,652 trips. Of these total vehicle driver trips, 17,765,821 were “drive alone” trips, 4,594,068 were two-person trips, and 2,790,762 were trips carrying three or more persons. Public transit trips totaled 732,362 trips, and there were 4,909,958 walk and bike trips reported.

Households did not vary much in their choice of travel mode according to their county of residence. For instance, SOV was the dominant mode for trips made by households in all counties, with slightly higher proportions in Orange, Los Angeles, and Ventura Counties. Non-motorized (mostly walk) trips were reported in greatest proportions among households located in Los Angeles (14 percent of all trips) and Imperial Counties (10 percent of all trips). Public transit trips comprised less than 1 percent of all trips in Imperial, Riverside, and Ventura counties.

**TABLE 21:
TOTAL NUMBER OF TRIP TYPE AND TRAVEL MODE BY COUNTY**

TRIP TYPES		COUNTY											
		IMPERIAL		LOS ANGELES		ORANGE		RIVERSIDE		SAN BERNARDINO		VENTURA	
		TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT
Vehicle Driver Trips ¹⁴	Drive Alone	124,736 ^P	62%	9,638,609 ^P	72%	3,541,032 ^P	73%	1,719,018 ^P	65%	1,812,394 ^P	67%	930,041 ^P	72%
	With 1 Passenger	43,671	21%	2,366,415	18%	854,330	16%	553,169	21%	536,011	20%	240,472	19%
	With 2 or more Passengers	31,396	16%	1,450,850	11%	473,595	10%	377,257	14%	337,519	13%	120,145	9%
	Total	199,803	57%	13,455,865	59%	4,868,957	66%	2,649,444	62%	2,685,924	62%	1,290,658	66%
Vehicle Passenger Trips		99,347	28%	5,018,375	22%	1,605,677	22%	1,119,162	26%	1,155,971	26%	430,466	22%
Public Transit Trips		1,618	N/A	609,274	3%	53,877	1%	18,947	N/A	39,530	1%	9,116	N/A
Other Trips	Walk	35,933	10%	3,120,556	14%	636,937	9%	322,128	8%	298,069	7%	171,468	9%
	Bicycle	2,067	1%	162,334	1%	94,213	1%	18,391	N/A	23,895	1%	23,967	1%
	School Bus	9,815	3%	256,921	1%	96,038	1%	128,111	3%	136,267	3%	29,326	1%
	Motorcycle	26	N/A	9,964	N/A	4,304	N/A	285	N/A	3,524	N/A	263	N/A
	Taxi/Shuttle	1,189	N/A	53,909	N/A	10,126	N/A	5,306	N/A	2,954	N/A	1,657	N/A
	Other	2,025	1%	176,619	1%	42,942	1%	18,045	N/A	17,227	N/A	6,570	N/A
	Total	351,823	100%	22,863,817	100%	7,413,071	100%	4,279,819	100%	4,363,361	100%	1,963,491	100%

Base: 114,430 total trips weighted and expanded to represent 41,235,382 total trips, ages 5+, for the region. N/A represents <1% of trips.

¹³ This estimate of total trips is provided subsequent to a process of trip linking that is documented in the *Data User's Manual*. Prior to linking, total trips were estimated at 44,248,418 trips for all purposes.

¹⁴ Vehicle driver trips, vehicle passenger trips, public transit trips and other trips are mutually exclusive categories. Vehicle driver trips are further broken down via a cross tabulation into those vehicle driver trips with no passengers, those with 1 passengers, and those with 2 or more passengers.

On an average weekday in the SCAG region, there are 8,136,754 trips between home and work. “Drive alone” trips represent a much greater proportion of these trips than was noted in Table 21 above for total trips. Concomitantly, transit trips and walk / bike trips comprise a much smaller proportion of the Home-Work trips. The exception to the preceding statement is in Los Angeles County, where a slightly higher proportion of Home-Work trips are by transit compared to all trips.

**TABLE 22:
HOME-WORK TRIPS BY TRIP TYPE AND TRAVEL MODE BY COUNTY**

TRIP TYPES AND TRAVEL MODES		COUNTY											
		IMPERIAL		OS ANGELES		RANGE		IVERSIDE		AN BERNARDINO		ENTURA	
		TOTAL	ERCENT	OTAL	ERCENT	OTAL	ERCENT	OTAL	ERCENT	OTAL	ERCENT	OTAL	ERCENT
Vehicle Driver Trips	Drive Alone	42,420 ^P	85%	3,307,478 ^P	91%	1,164,924 ^P	92%	605,248 ^P	89%	623,502 ^P	89%	309,988 ^P	92%
	With 1 Passenger	5,482	14%	218,093	6%	80,773	6%	55,953	8%	51,050	7%	21,143	6%
	With 2 or more Passengers	2,065	4%	108,683	3%	21,365	2%	21,788	3%	22,326	3%	6,784	2%
	Total	49,967	85%	3,634,249	79%	1,267,062	85%	682,989	87%	696,878	87%	337,915	87%
Vehicle Passenger Trips		5,276	9%	461,232	10%	138,448	9%	76,167	10%	66,108	8%	28,100	7%
Public Transit Trips		41	0%	172,053	4%	18,051	1%	5,267	1%	11,402	1%	2,842	1%
Other Trips	Walk	2,673	5%	261,111	6%	45,384	3%	15,293	2%	15,012	2%	14,417	4%
	Bicycle	717	1%	39,868	1%	17,509	1%	3,640	0%	2,857	0%	4,314	1%
	School Bus	-	0%	2,964	0%	-	0%	335	0%	-	0%	-	0%
	Motorcycle	-	0%	3,318	0%	729	0%	-	0%	1,188	0%	-	0%
	Taxi/Shuttle	199	0%	8,790	0%	-	0%	613	0%	313	0%	98	0%
	Other	186	0%	28,931	1%	4,472	0%	2,093	0%	4,656	1%	1,024	0%
	Total	59,059	100%	4,612,516	100%	1,491,655	100%	786,397	100%	798,414	100%	388,710	100%

Base: 23,653 Home-Work trips weighted and expanded to represent 8,136,754 trips in the SCAG region.

Multiple occupant vehicle trips and non-motorized trips comprise significantly larger proportion of Non-Home-Work trips than of Home-Work trips.

**TABLE 23:
NON-HOME-WORK TRIPS BY TRIP TYPE AND TRAVEL MODE BY COUNTY**

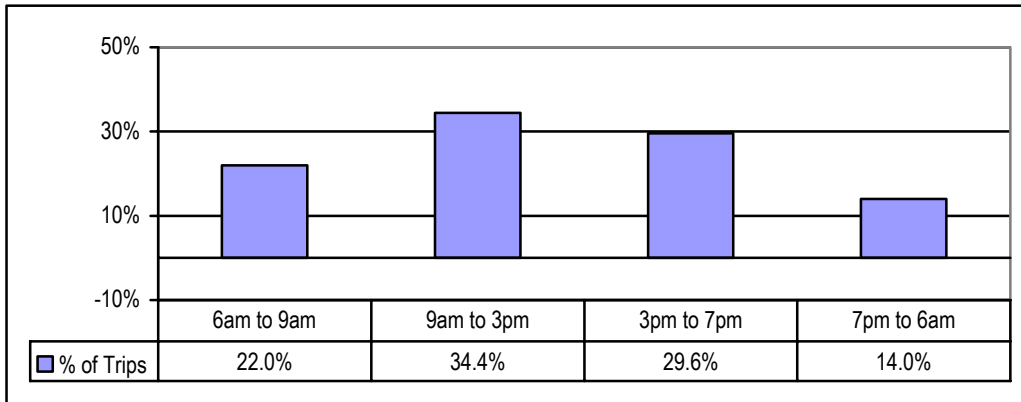
TRIP TYPES AND TRAVEL MODES		COUNTY											
		IMPERIAL		OS ANGELES		RANGE		IVERSIDE		AN BERNARDINO		ENTURA	
		TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT	TOTAL	PERCENT
Vehicle Driver Trips	Drive Alone	82,316	56%	6,331,127	64%	2,375,799	66%	1,113,769	57%	1,188,892	60%	620,053	65%
	With 1 Passenger	38,189	25%	2,148,322	22%	773,557	21%	497,216	25%	484,961	24%	219,329	23%
	With 2 or more Passengers	29,329	20%	1,342,167	14%	452,232	13%	355,468	18%	315,192	16%	113,359	12%
	Total	149,834	51%	9,821,616	54%	3,601,588	61%	1,966,453	56%	1,989,045	56%	952,741	61%
Vehicle Passenger Trips		94,071	32%	4,557,143	25%	1,467,229	25%	1,042,995	30%	1,089,863	31%	402,366	26%
Public Transit Trips		1,577	1%	437,221	2%	35,826	1%	13,681	0%	27,812	1%	6,274	0%
Other Trips	Walk	33,259	11%	2,859,445	16%	591,553	10%	306,835	9%	283,058	8%	157,051	10%
	Bicycle	1,349	0%	122,466	1%	76,704	1%	14,751	0%	21,038	1%	19,653	1%
	School Bus	9,815	3%	253,957	1%	96,038	2%	127,776	4%	136,267	4%	29,326	2%
	Motorcycle	26	0%	6,646	0%	3,575	0%	285	0%	2,336	0%	263	0%
	Taxi/Shuttle	990	0%	45,119	0%	10,126	0%	4,694	0%	2,642	0%	1,559	0%
	Other	1,838	1%	147,688	1%	38,470	1%	15,952	0%	12,571	0%	5,545	0%
	Total	292,759	100%	18,251,301	100%	5,921,109	100%	3,493,422	100%	3,564,632	100%	1,574,778	100%

Base: 90,777 Non-Home-Work trips weighted and expanded to represent 33,098,628 trips in SCAG region.

TIME OF TRAVEL

PM Peak (3 p.m. to 7 p.m.¹⁵) was the time of day with the heaviest concentrated travel (30 percent of trips in a four-hour period). The two peak periods (AM and PM) accounted for 52 percent of all trips. Thirty-four percent of trips occurred in the 6-hour period between 9 a.m. and 3 p.m. About 14 percent of all trips took place during the evening hours (7 p.m. to 6 a.m.).

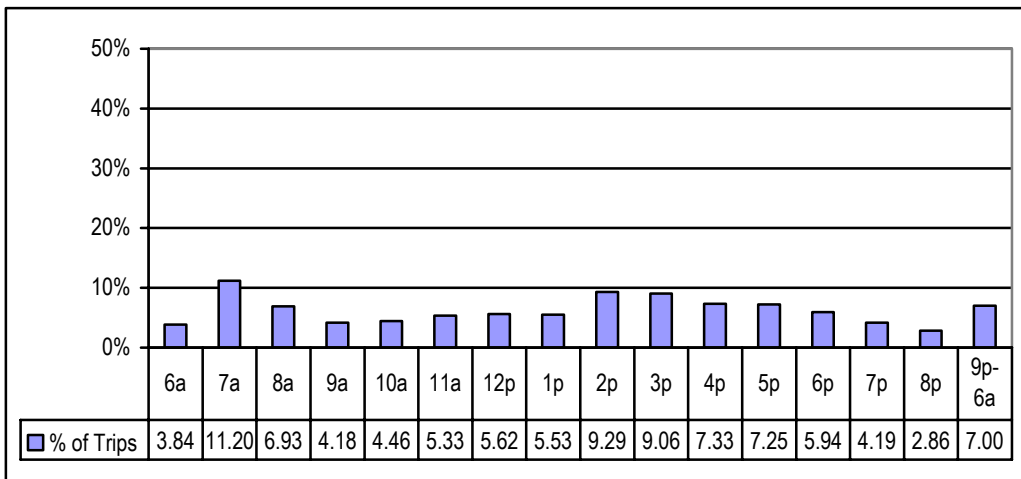
**FIGURE 3:
TRIP DISTRIBUTION BY TIME OF DAY**



Base: 114,430 total trips weighted and expanded to represent 41,235,382 total trips, ages 5+, for the region

On an average weekday, the 60-minute window within which most trips in the region were made was between 7 a.m. and 8 a.m. Also significant were the 2 p.m. to 3 p.m. and 3 p.m. to 4 p.m. time periods.

**FIGURE 4:
TRIP DISTRIBUTION BY DEPARTURE HOUR FOR ALL TRIPS**

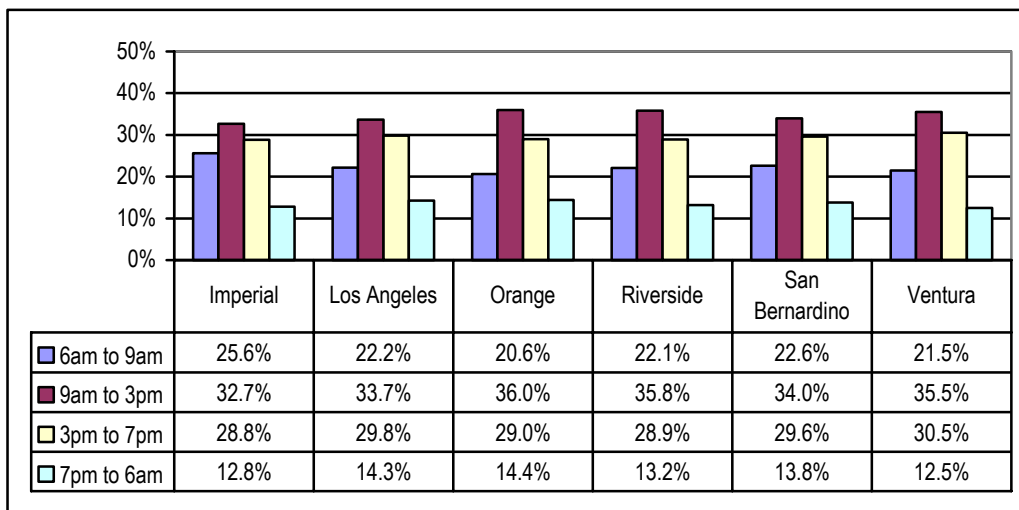


Base: 114,430 total trips weighted and expanded to represent 41,235,382 total trips, ages 5+, for the region.

¹⁵ Definitions for time periods were provided by SCAG.

Time of travel did not vary significantly by county of residence. There were a few slight differences worth noting. For example, households in Imperial appeared to travel more frequently than residents of other counties during the AM peak period, while those in Orange County appeared to travel more frequently during the mid-day. There were no significant differences in travel noted among counties for the PM peak.

**FIGURE 5:
TRIP DISTRIBUTION BY TIME OF DAY BY COUNTY OF RESIDENCE**



Base: 114,430 total trips weighted and expanded to represent 41,235,382 total trips, ages 5+, for the region.

The maps on the following pages present the destinations of trips during the AM peak, mid-day, PM peak, and evening.

**FIGURE 6:
DESTINATIONS (TRIPENDS) FOR 9,057,899 AM PEAK TRIPS (6 A.M. TO 9 A.M.)**

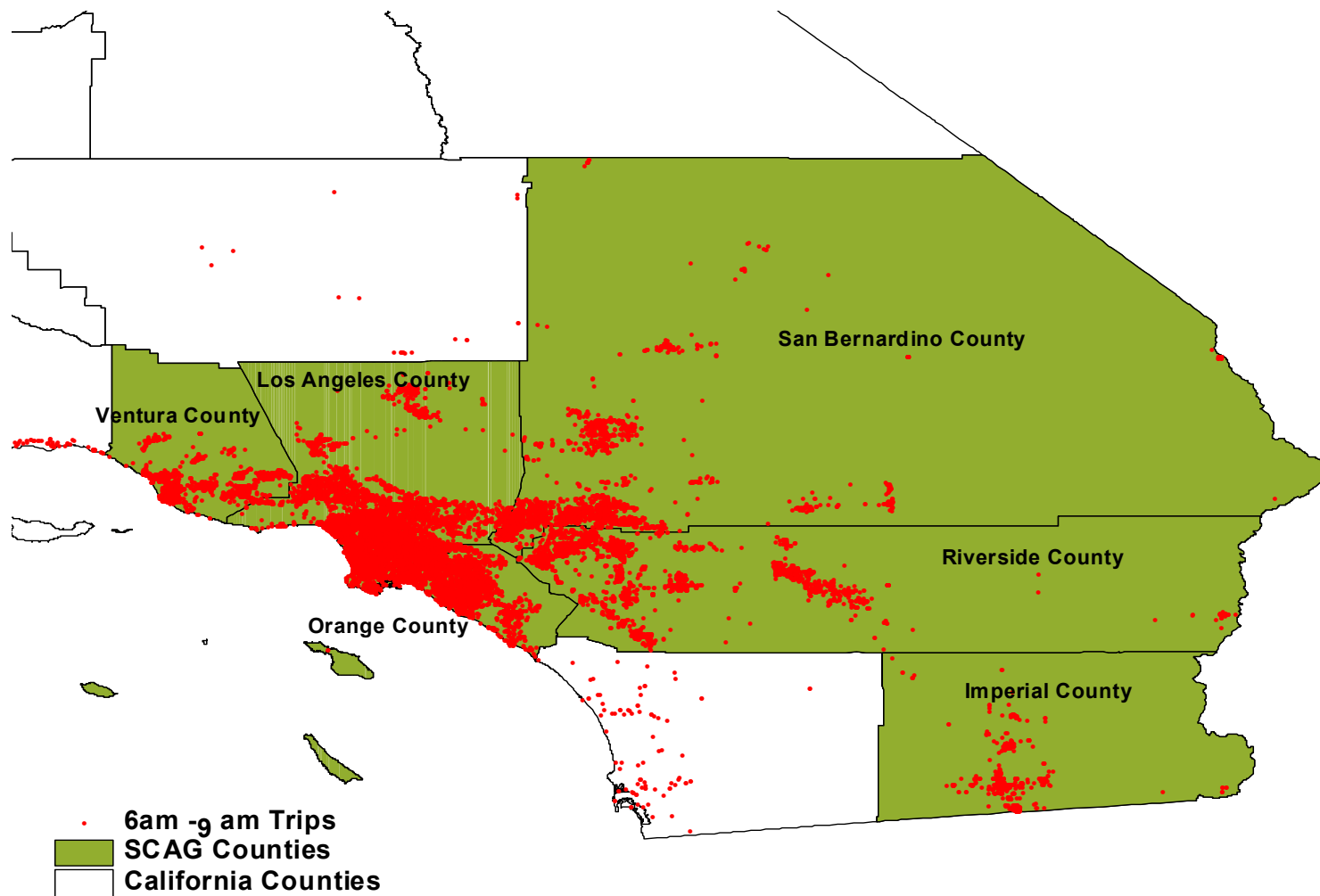
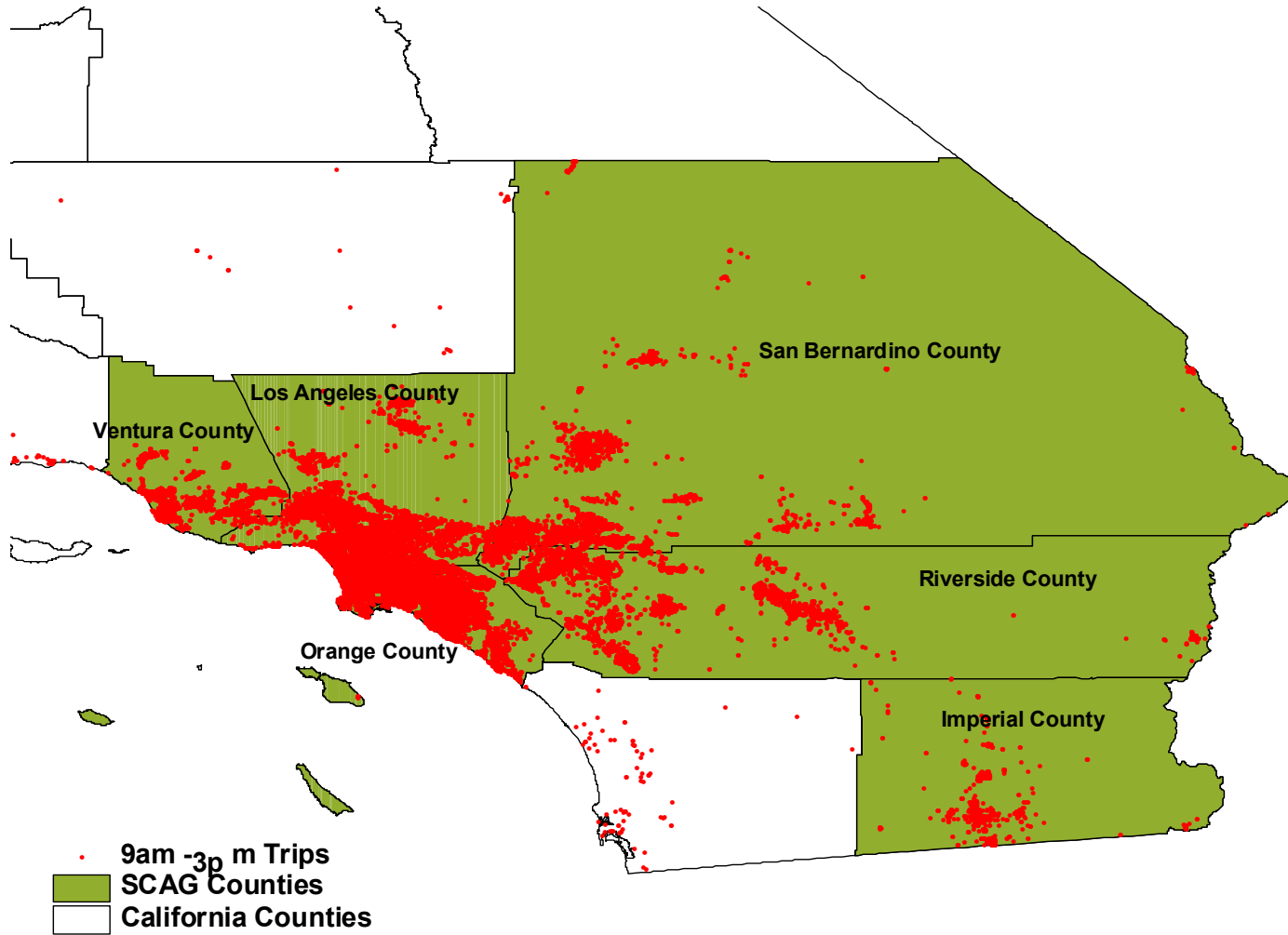


FIGURE 7:
DESTINATIONS (TRIPENDS) FOR 14,192,320 MIDDAY TRIPS (9 A.M. TO 3 P.M.)



**FIGURE 8:
DESTINATIONS (TRIPENDS) FOR 12,193,444 PM PEAK TRIPS (3 P.M. TO 7 P.M.)**

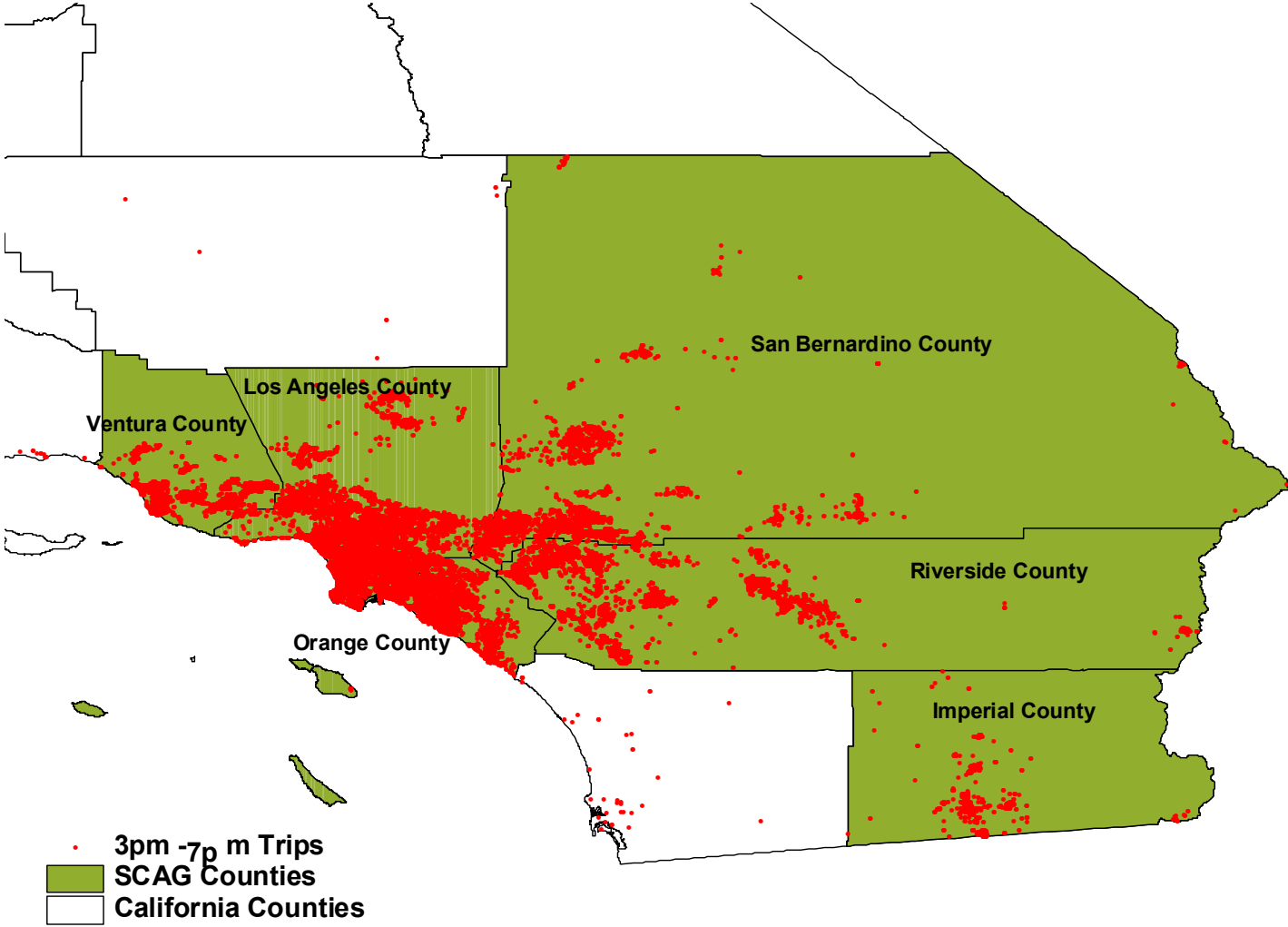
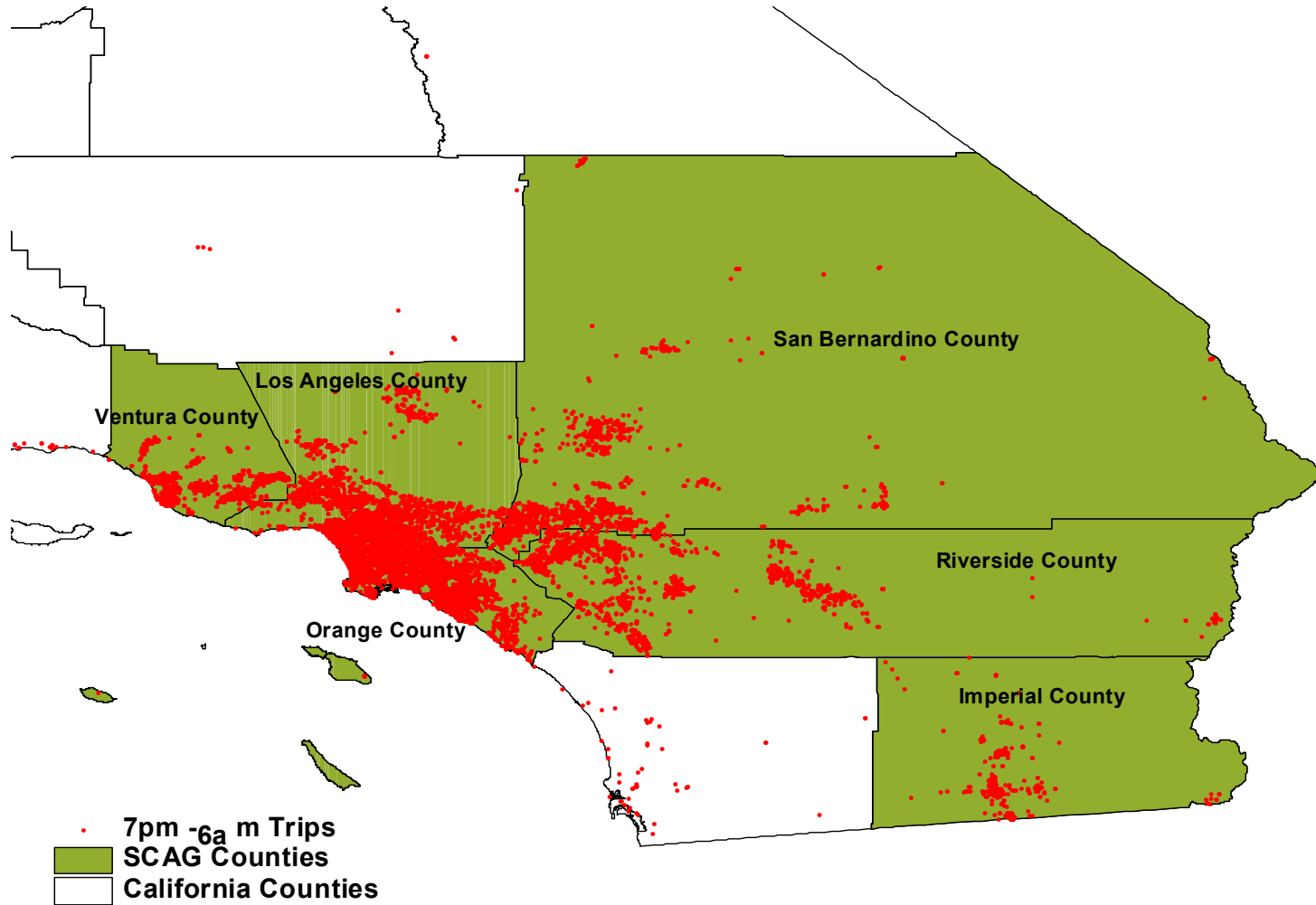


FIGURE 9:
DESTINATIONS (TRIPENDS) FOR 5,791,720 EVENING TRIPS (7 P.M. TO 6 A.M.)



PURPOSE FOR TRAVEL

Trip purpose was a variable derived from the primary activities that respondents reported engaging in at each place recorded in their diaries. In the tables below, trips were categorized according to the following definitions. Home-Work trips are trips between home and work that include an intermediate stop, such as to drop off or pick up a passenger, to drop off or pick up a child at school, or for other reasons as described in the trip linking methodology documented in the *Data User's Manual*. Home-Shop trips include all trips made with a home activity at one end of a trip and a shopping activity at the other end. Home-Other trips include all trips with a home activity at one end of a trip and an activity not accounted for by work or shop at the other end. Other-Other trips are all other trips that do not begin or end at a trip-maker's home or place of work. Of the 41,235,382 million total trips taken in the SCAG Region on an average weekday, most were Home-Other trips (44 percent) and Home-Work trips (20 percent).

**TABLE 24:
DISTRIBUTION OF TOTAL TRIPS BY TRIP PURPOSE BY COUNTY**

COUNTY	HOME-OTHER	PERCENT	HOME-WORK	PERCENT	OTHER-OTHER	PERCENT	OTHER-WORK	PERCENT	HOME-SHOP	PERCENT	TOTAL	PERCENT
Imperial	173,861	49%	59,061	17%	51,954	15%	23,110	7%	43,835	12%	351,821	1%
Los Angeles	10,095,214	44%	4,612,516	20%	3,362,112	15%	1,821,703	8%	2,972,272	13%	22,863,817	55%
Orange	3,056,236	41%	1,491,654	20%	1,168,902	16%	697,845	9%	998,123	13%	7,412,760	18%
Riverside	1,957,816	46%	786,397	18%	687,692	16%	281,924	7%	565,991	13%	4,279,820	10%
San Bernardino	1,979,882	45%	798,413	18%	661,313	15%	350,330	8%	573,109	13%	4,363,047	11%
Ventura	821,753	42%	388,713	20%	306,449	16%	167,487	9%	279,091	14%	1,963,493	5%
Total	18,084,762	44%	8,136,754	20%	6,238,422	15%	3,342,399	8%	5,432,421	13%	41,235,382	100%

Base: 114,430 total trips weighted and expanded to represent 41,235,382 trips for Ages 5+ in the region. Total does not equal total trips due to rounding.

**TABLE 25:
VEHICLE DRIVER TRIPS BY TRIP PURPOSE BY COUNTY**

COUNTY	HOME-OTHER	PERCENT	HOME-WORK	PERCENT	OTHER-OTHER	PERCENT	OTHER-WORK	PERCENT	HOME-SHOP	PERCENT	TOTAL	PERCENT
Imperial	75,442	38%	49,968	25%	27,827	14%	20,800	10%	25,764	13%	199,801	1%
Los Angeles	4,481,010	33%	3,634,249	27%	2,021,951	15%	1,472,597	11%	1,846,058	14%	13,455,865	54%
Orange	1,519,120	31%	1,267,062	26%	764,793	16%	614,581	13%	703,093	14%	4,868,649	19%
Riverside	909,962	34%	682,991	26%	419,913	16%	247,527	9%	389,052	15%	2,649,445	11%
San Bernardino	907,230	34%	696,879	26%	404,046	15%	299,037	11%	378,733	14%	2,685,925	11%
Ventura	409,817	32%	337,916	26%	207,847	16%	146,955	11%	188,123	15%	1,290,658	5%
Total	8,302,581	33%	6,669,065	27%	3,846,377	15%	2,801,497	11%	3,530,823	14%	25,150,652	100%

Base: 79,107 vehicle driver trips weighted and expanded to represent 25,150,652 trips for the region.

Trip-making is positively associated with vehicle ownership. Households with more vehicles available to the occupants make more trips than do households without vehicles available. Vehicle ownership is also associated with the types of trips likely to be taken by household members, with a lesser propensity for Home-Shop trips compared to other trip types among households with zero or one vehicle(s).

**TABLE 26:
VEHICLE DRIVER TRIPS PER HOUSEHOLD BY TRIP PURPOSE BY VEHICLE OWNERSHIP**

VEHICLE OWNERSHIP	TRIP PURPOSE				
	HOME-OTHER	HOME-WORK	OTHER-OTHER	OTHER-WORK	HOME-SHOP
Zero	0.02	0.03	0.02	0.01	0.01
One	1.13	0.82	0.61	0.34	0.49
Two	1.88	1.57	0.82	0.66	0.82
Three +	2.50	2.04	1.09	0.87	0.99

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2.

Multi-family households make more trips across all purposes than do households in single unit dwellings, with the exception of zero-vehicle households. Zero-vehicle households that reside in single unit dwellings make fewer trips on average than those residing in multi-family dwellings. It is likely that these households represent retired or elderly individuals who make fewer trips in general.

**TABLE 27:
TOTAL TRIPS PER HOUSEHOLD BY TRIP PURPOSE BY HOUSING TYPE BY VEHICLE OWNERSHIP BY COUNTY**

COUNTY	HOUSING UNIT	VEHICLE OWNERSHIP	TRIP PURPOSE				
			H-O	H-W	O-O	O-W	H-S
Imperial			2.37		0.25	0.00	0.57
			3.74		1.02	0.45	1.01
			4.96		1.57	0.55	1.25
			4.83		1.90	1.59	1.63
	Multiple	Zero	2.25	0.50	0.95	0.11	0.52
		One	4.51	1.03	1.22	0.23	0.93
		Two	5.20	1.47	1.03	0.32	1.07
		Three +	4.30	2.90	1.19	0.81	0.37
Los Angeles			1.72		0.33	0.13	0.33
			3.05		0.98	0.37	0.75
			3.96		1.38	0.77	1.30
			4.54		1.75	0.97	1.37
	Multiple	Zero	2.12	0.77	0.37	0.10	0.51
		One	2.55	1.22	0.85	0.47	0.73
		Two	3.11	1.87	0.92	0.73	0.95
		Three +	3.44	2.21	1.74	0.89	1.29
Orange			2.17		2.66	0.27	0.25
			3.14		1.40	0.37	1.01
			3.63		1.42	0.89	1.35
			4.48		1.58	1.14	1.40

	Multiple	Zero	3.80	0.97	0.51	0.07	0.54
		One	2.25	1.25	0.84	0.52	0.76
		Two	2.59	1.95	1.09	0.86	0.92
		Three +	2.80	2.43	1.47	1.05	0.65
Riverside	Single		2.54		0.74	0.14	0.78
			3.66		1.03	0.25	0.98
			4.33		1.52	0.70	1.14
			4.78		1.78	0.84	1.44
	Multiple	Zero	1.61	0.39	0.10	0.01	0.52
		One	2.29	1.00	1.18	0.31	0.88
		Two	3.47	1.61	1.14	0.51	1.05
		Three +	4.13	2.22	1.41	0.82	1.45
San Bernardino	Single		2.09		0.51	0.00	0.61
			3.52		1.24	0.52	0.99
			4.06		1.42	0.71	1.21
			4.42		1.40	0.99	1.31
	Multiple	Zero	2.23	0.46	0.15	0.34	0.77
		One	2.72	1.11	1.13	0.42	0.86
		Two	4.04	1.71	1.32	0.67	0.96
		Three +	5.20	1.89	0.88	0.89	0.69
Ventura	Single		2.77		0.34	0.00	0.32
			2.47		0.82	0.36	0.81
			3.74		1.42	0.79	1.28
			4.57		1.95	0.97	1.64
	Multiple	Zero	1.18	0.59	0.29	0.03	0.43
		One	2.31	1.15	0.81	0.47	0.84
		Two	3.20	1.82	1.06	0.73	0.95
		Three +	2.73	2.04	0.56	0.89	0.77

Base: 16,939 sampled households weighted and expanded to represent 5,386,491 occupied housing units in the six-county SCAG region per Census 2000, STF 2

As indicated in Table 26, slightly more than 732,000 trips were taken by public transit on an average weekday. Most of these trips were taken within Los Angeles County going from home to some other place. Within Los Angeles County, Home-Work trips comprised 28 percent of all transit trips. In Orange County, though a much smaller number, 34 percent of all transit trips were from Home-Work.

**TABLE 28:
PUBLIC TRANSIT TRIP PURPOSES BY COUNTY**

TRIP PURPOSE	IMPERIAL	LOS ANGELES	ORANGE	RIVERSIDE	SAN BERNARDINO	VENTURA
Home-other	670	286,908	24,338	10,380	17,714	4,266
	41%	47%	45%	55%	45%	47%
Home-work	41	172,053	18,051	5,267	11,402	2,842
	3%	28%	34%	28%	29%	31%
Other-other	492	65,270	2,933	1202	2868	263
	30%	11%	5%	6%	7%	3%

TRIP PURPOSE	IMPERIAL	LOS ANGELES	ORANGE	RIVERSIDE	SAN BERNARDINO	VENTURA
Other-work	37	24,084	1404	681	315	222
	2%	4%	3%	4%	1%	2%
Home-shop	379	60,959	7,151	1,417	6,915	1523
	23%	10%	13%	7%	18%	17%
Total	1,619	609,274	53,877	18,947	39,214	9,116

Base: 1235 public transit trips weighted and expanded to represent 732,362 trips in the region.

Vehicle driver trips comprise 61 percent of total trips. However, this percentage changes by trip purpose. For example, vehicle driver trips comprise 82 percent of Home-Work trips, 65 percent of Home-Shop trips, and 46 percent of Home-Other trips.

**TABLE 29:
TOTAL TRIPS AND VEHICLE DRIVER TRIPS BY TRIP PURPOSE BY COUNTY**

	COUNTY	TRIP PURPOSE					TOTAL
		H-O	H-W	O-O	O-W	H-S	
Total Trips	Imperial	173,861	59,061	51,954	23,110	43,835	351,821
		49%	17%	15%	7%	12%	100%
	Los Angeles	10,095,214	4,612,516	3,362,112	1,821,703	2,972,272	22,863,817
		44%	20%	15%	8%	13%	100%
	Orange	3,056,236	1,491,654	1,168,902	697,845	998,123	7,412,760
		41%	20%	16%	9%	13%	100%
	Riverside	1,957,816	786,397	687,692	281,924	565,991	4,279,820
		46%	18%	16%	7%	13%	100%
	San Bernardino	1,979,882	798,413	661,313	350,330	573,109	4,363,047
		45%	18%	15%	8%	13%	100%
	Ventura	821,753	388,713	306,449	167,487	279,091	1,963,493
		42%	20%	16%	9%	14%	100%
	Total	18,084,762	8,136,754	6,238,422	3,342,399	5,432,421	41,235,382
	Vehicle Driver Trips	Imperial	75,442	49,968	27,827	20,800	25,764
38%			25%	14%	10%	13%	100%
Los Angeles		4,481,010	3,634,249	2,021,951	1,472,597	1,846,058	13,455,865
		33%	27%	15%	11%	14%	100%
Orange		1,519,120	1,267,062	764,793	614,581	703,093	4,868,649
		31%	26%	16%	13%	14%	100%
Riverside		909,962	682,991	419,913	247,527	389,052	2,649,445
		34%	26%	16%	9%	15%	100%
San Bernardino		907,230	696,879	404,046	299,037	378,733	2,685,925
		34%	26%	15%	11%	14%	100%
Ventura		409,817	337,916	207,847	146,955	188,123	1,290,658
		32%	26%	16%	11%	15%	100%
Total		8,302,581	6,669,065	3,846,377	2,801,497	3,530,823	25,150,652

Bases: 114,430 total trips weighted and expanded to represent 41,235,382 trips, ages 5+, in the region.
79,107 vehicle driver trips weighted and expanded to represent 25,150,652 trips in the region.

TRIP DURATION

The average length of all trips in the SCAG region was 21 minutes; however, the median travel time was 15 minutes for all trips. Travel time for the greatest volume of trips was 20 minutes or less, with the exception of public transit and school bus. This mean travel time did vary by county, 17.8 minutes in Imperial County, 21.3 minutes in Los Angeles County, 20.2 minutes in Orange County, 21.1 minutes in Riverside County, 21.1 minutes in San Bernardino County, and 18.4 minutes in Ventura County.

**TABLE 30:
DISTRIBUTION OF TRAVEL TIME IN MINUTES FOR TOTAL TRIPS BY TRAVEL MODE**

TRAVEL MODE	MINUTES					TOTAL
	1-10	11-20	21-30	31-40	41+	
Vehicle Driver	10,128,848	6,876,001	4,163,756	1,113,903	2,868,145	25,150,654
Auto Passenger	4,232,281	2,737,997	1,313,505	315,821	829,395	9,428,999
Public Transit	105,564	124,441	162,531	62,616	277,210	732,362
Walk	2,557,841	1,219,196	511,995	109,557	186,502	4,585,091
Bicycle	142,662	105,847	47,066	10,388	18,904	324,867
School Bus	73,401	188,181	200,978	51,601	142,317	656,478
Motorcycle/Moped	7,182	4,254	3,198	2,298	1,433	18,365
Taxi/Shuttle	10,718	22,725	26,062	1,050	14,587	75,142
Other	89,348	68,944	41,618	12,282	51,233	263,425

Base: 114,430 total trips weighted and expanded to represent 41,235,382 trips, ages 5+, in the region.

**TABLE 31:
TRAVEL TIME IN MINUTES FOR PERCENT OF TRIPS BY TRAVEL MODE**

TRAVEL MODE	MINUTES					TOTAL
	1-10	11-20	21-30	31-40	41+	
Vehicle Driver	58%	61%	64%	66%	65%	61%
Auto Passenger	24%	24%	20%	19%	19%	23%
Public Transit	1%	1%	3%	4%	6%	2%
Walk	15%	11%	8%	7%	4%	11%
Bicycle	1%	1%	1%	1%	0%	1%
School Bus	0%	2%	3%	3%	3%	2%
Motorcycle/Moped	0%	0%	0%	0%	0%	0%
Taxi/Shuttle	0%	0%	0%	0%	0%	0%
Other	1%	1%	1%	1%	1%	1%
Total	100%	100%	100%	100%	100%	100%

Base: 114,430 total trips weighted and expanded to represent 41,235,382 trips, ages 5+, in the region.

**TABLE 32:
DISTRIBUTION OF TRAVEL TIME IN MINUTES FOR VEHICLE DRIVER AND PUBLIC TRANSIT TRIPS**

COUNTY	MEAN	MEDIAN
Imperial	17.8	10.0
Los Angeles	21.3	15.0
Orange	20.2	15.0
Riverside	21.1	15.0
San Bernardino	21.1	15.0
Ventura	18.4	11.0
Total	20.9	15.0

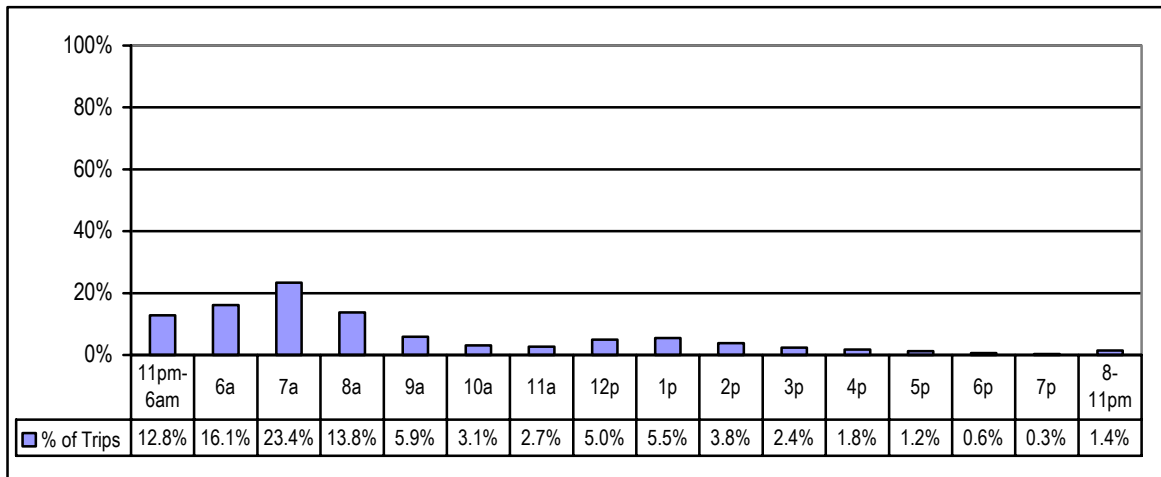
Base: 114,430 total trips weighted and expanded to represent 41,235,382 trips, ages 5+, in the region.



TRAVEL FOR WORK

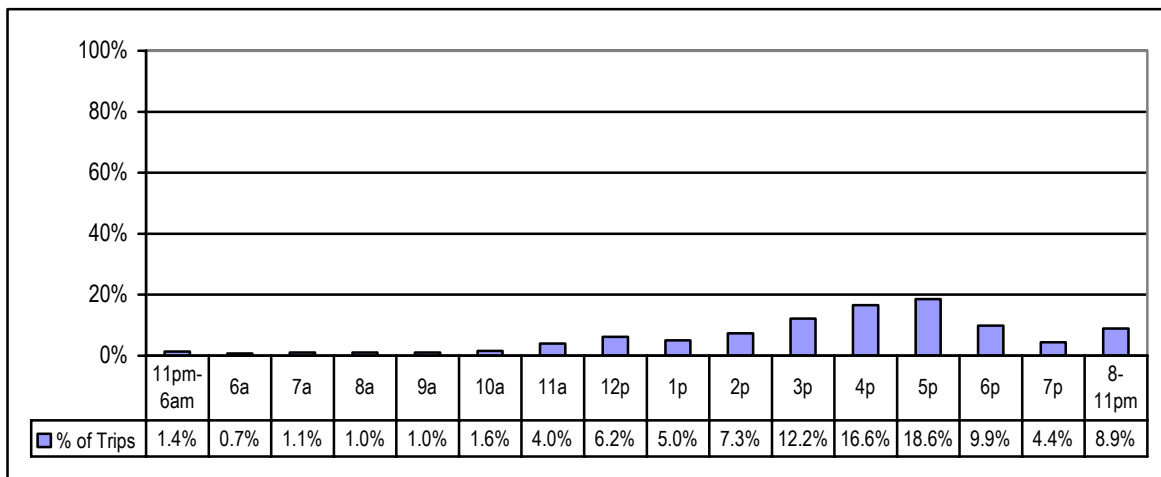
Because of their unique characteristics and significance to transportation planning, specialized analyses were done on Home-Work trips. The Regional Travel Survey data were expanded to represent 6,801,673 employed persons. These employed persons made more than eight million Home-Work trips on an average weekday. Of these, 82 percent were Home-Work vehicle driver trips. More than half of all trips to work started between the hours of 6 a.m. and 8 a.m. The “peak” of the AM peak appears to be between 7 a.m. and 8 a.m. The destinations of these trips to work are shown in Figure 12 on the next page. Trips from work cluster from 3 p.m. to 6 p.m., with most between 3 p.m. and 5 p.m.

**FIGURE 10:
STARTING HOUR FOR TRIPS TO WORK**



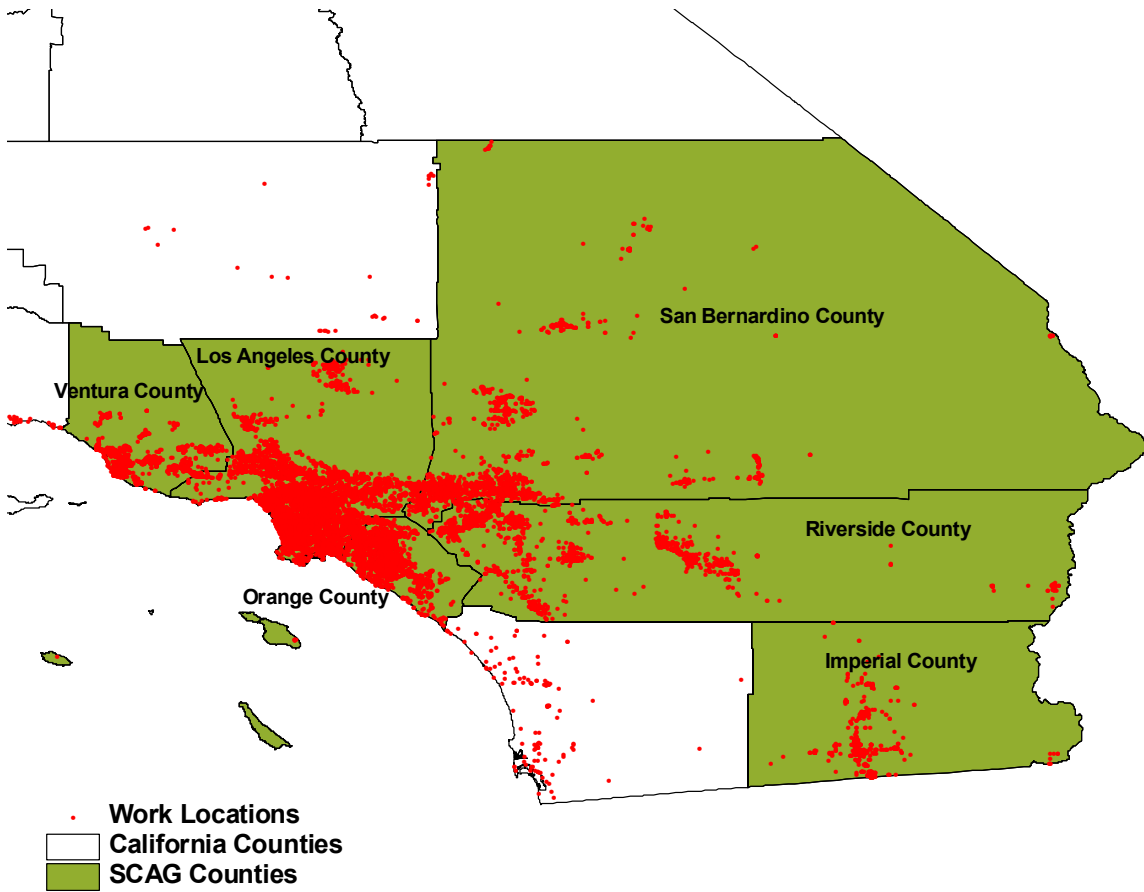
Base: 14,004 trips weighted and expanded to represent 4,691,281 Work Destination Trips in the region.

**FIGURE 11:
STARTING HOUR FOR TRIPS FROM WORK**



Base: 14,060 trips weighted and expanded to represent 4,715,029 Work Origin Trips in the region.

**FIGURE 12:
GEOGRAPHIC DISTRIBUTION OF WORK LOCATIONS**



Seven percent of the 6,801,673 employed persons typically work at home. This estimate represents 466,116 persons in the SCAG region. Work-at-home persons comprised less than 10 percent of the workforce in any given county in the region. The work-at-home percentages ranged from a low of 4 percent of the workforce in Imperial County to 9 percent of the workforce in Ventura County.

**TABLE 33:
NUMBER OF PERSONS WORKING AT HOME BY COUNTY**

COUNTY STUDY AREA	WORK AT HOME COUNT	WORK AT HOME AS PERCENT OF EMPLOYED PERSONS IN COUNTY
Imperial	1,912	4.2%
Los Angeles	275,182	7.1%
Orange	84,488	6.8%
Riverside	39,445	6.1%
San Bernardino	38,181	5.5%
Ventura	26,907	8.7%
Total	466,116	6.9%

Base: 19,555 employed persons weighted and expanded to represent 6,801,673 employed persons in the region.

The average reported Home-Work trip travel times for public transit trips were 40 percent greater than those for vehicle driver trips. The greatest disparity between Home-Work trip travel times by transit and by vehicle was reported in Ventura County and the least was reported in San Bernardino County. Public transit commute times were one-fourth longer than vehicle driver trips in Los Angeles County and two-thirds longer in Orange and Riverside Counties.

**TABLE 34:
AVERAGE HOME-WORK TRAVEL TIME IN MINUTES BY TRIP TYPE**

COUNTY STUDY AREA	VEHICLE DRIVER TRIPS	PUBLIC TRANSIT TRIPS
Imperial	19.1	30.0
Los Angeles	29.9	40.9
Orange	28.6	48.2
Riverside	33.0	51.9
San Bernardino	32.4	42.4
Ventura	25.4	54.9
Study Area Total	29.9	42.1

Base: 20,494 Home-Work vehicle driver trips weighted and expanded to represent 6,669,065 trips in the region. 382 Home-Work public transit trips weighted and expanded to represent 209,656 trips in the region.



HOUSEHOLD CHARACTERISTICS AND TRAVEL

The 16,939 participating households provided important socioeconomic data that will provide insight into population characteristics for a variety of transportation planning and policy applications. Very few of the households (10 percent) that participated in the survey reported making “zero” trips on their travel day.¹⁶ These zero-trip households represent 449,111 households in the region.

Households in certain counties within the SCAG region made more trips than households in other counties. While Los Angeles County generated almost half of all trips in the region, the number of trips per household (7.30 trips per household) was less than for many other counties. Households in Imperial and Riverside Counties reported the highest trip rates.

**TABLE 35:
HOUSEHOLDS AND TOTAL TRIPS BY HOUSEHOLD LOCATION**

COUNTY	# HHS	PERCENT	# TRIPS	PERCENT	TRIPS/HH
Imperial	39,384	1%	351,821	1%	8.93
Los Angeles	3,133,774	58%	22,863,817	55%	7.30
Orange	935,287	17%	7,413,071	18%	7.93
Riverside	506,218	9%	4,279,819	10%	8.45
San Bernardino	528,594	10%	4,363,362	11%	8.25
Ventura	243,235	5%	1,963,493	5%	8.07
Total	5,386,491	100%	41,235,382	100%	7.66

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

HOUSEHOLD COMPOSITION AND TRIP-MAKING

As household size increased, the number of trips per household also increased. The largest volumes of trips were among the 2- and 4-person households.

**TABLE 36:
HOUSEHOLDS AND TOTAL TRIPS BY HOUSEHOLD SIZE**

HOUSEHOLD (HH) SIZE	# HHS	PERCENT	# TRIPS	PERCENT	TRIPS/HH
1	1,224,117	23%	4,169,900	10%	3.41
2	1,475,415	27%	8,940,003	22%	6.06
3	861,556	16%	6,830,995	17%	7.93
4	829,163	15%	8,406,588	20%	10.14
5	484,628	9%	5,654,538	14%	11.67
6	258,497	5%	3,373,413	8%	13.05
7+	253,115	5%	3,859,945	9%	15.25
Total	5,386,491	100%	41,235,382	100%	7.66

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

¹⁶ This percent is within the standard of no more than 8-10 percent of households and is a strong indicator of data quality.

Single-family households reported higher rates of travel than did multi-family households. While single-family households comprised 60 percent of the sample, they reported 68 percent of all trips.

**TABLE 37:
HOUSEHOLDS AND TOTAL TRIPS BY HOUSING UNIT TYPE**

HOUSING UNIT TYPE	# HHS	PERCENT	# TRIPS	PERCENT	TRIPS/HH
Single	3,232,546	60%	27,873,205	68%	8.62
Multiple	2,153,945	40%	13,362,178	32%	6.20
Total	5,386,491	100%	41,235,382	100%	7.66

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

**TABLE 38:
TOTAL NUMBER OF HOUSEHOLDS BY HOUSEHOLD SIZE BY HOUSING UNIT TYPE BY COUNTY**

STUDY AREA COUNTY	HOUSING UNIT TYPE	HOUSEHOLD SIZE				
		ONE	TWO	THREE	FOUR	FIVE +
		2,466	5,707	5,517	5,585	7,179
		2,103	2,431	2,448	2,675	3,272
	All	4,569	8,138	7,965	8,260	10,451
Los Angeles	Single	308,218	475,199	280,988	284,814	378,491
	Multiple	507,195	344,885	201,187	172,288	180,509
	All	815,413	820,084	482,175	457,102	559,000
		77,500	178,407	97,196	102,149	90,828
		112,646	112,500	58,628	43,426	62,007
	All	190,146	290,907	155,824	145,575	152,835
Riverside	Single	42,317	99,133	59,042	77,616	101,125
	Multiple	34,949	39,310	18,182	12,115	22,429
	All	77,266	138,443	77,224	89,731	123,554
		48,667	104,773	74,235	67,419	86,374
		36,481	40,653	25,068	18,231	26,693
	All	85,148	145,426	99,303	85,650	113,067
Ventura	Single	27,067	53,486	27,625	34,091	29,333
	Multiple	24,509	18,931	11,440	8,753	7,998
	All	51,576	72,417	39,065	42,844	37,331

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

There were 6,801,673 workers among the 5,386,491 households in the SCAG region. This estimate represented 1.26 full-or part-time workers per household. One-worker households were most common (42 percent), and 31 percent of households had two workers. About one-fifth (20 percent) had zero workers. Less than one in ten (7 percent) had three or more workers. The trips generated by employed persons were significant in the SCAG region. Not only did employed persons make home to work trips, but also their increased spending power increased the number of non-work trips.

Households with two workers generated 38 percent of the reported trips in the survey. The trip rates of these two-worker households were over twice as high per household as zero-worker households (9.50 trips per household compared to 4.82 trips per household). While households with three or more workers were a small segment of the total population (7 percent), they generated a disproportionately large volume of trips (nearly 12 trips per household).

**TABLE 39:
HOUSEHOLDS AND TOTAL TRIPS BY NUMBER OF WORKERS**

WORKERS	# HHS	PERCENT	# TRIPS	PERCENT	TRIPS/HH
0	1,089,542	20%	5,246,658	13%	4.82
1	2,259,006	42%	15,726,967	38%	6.96
2	1,668,432	31%	15,847,188	38%	9.50
3+	369,511	7%	4,414,569	11%	11.95
Total	5,386,491	100%	41,235,382	100%	7.66

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

By far, the majority of households in the sample (57 percent) did not contain children (defined as persons 17 years of age and younger). Households with one or more school age children comprised 43 percent of all households. The presence of school age children in the household was significantly associated with high trip making. Households with children generated nearly 60 percent of all trips recorded during the travel survey while they represented only 43 percent of all households. Households without children averaged 5.38 trips whereas those with children averaged 10.66 trips per household.

**TABLE 40:
HOUSEHOLDS AND TOTAL TRIPS BY PRESENCE OF CHILDREN**

PRESENCE OF CHILDREN	# HHS	PERCENT	# TRIPS	PERCENT	TRIPS/HH
Children	2,320,390	43%	24,741,710	60%	10.66
No Children	3,066,101	57%	16,493,672	40%	5.38
Total	5,386,491	100%	41,235,382	100%	7.66

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

SOCIO-ECONOMIC STATUS AND TRIP-MAKING

Household income impacted trip making. Households in the highest income category made nearly twice as many trips as households in the lowest category. However, the differences in trips per household among the mid-income categories were insignificant. Households in Orange and Ventura Counties reported the highest annual household incomes, whereas those in Imperial County reported the lowest.

**TABLE 41:
HOUSEHOLDS AND TOTAL TRIPS BY HOUSEHOLD INCOME**

HH INCOME	#HHS	PERCENT	# TRIPS	PERCENT	TRIPS/HH
Less than \$10,000	362,255	7%	1,819,590	4%	5.02
\$10,000 - \$24,999	855,994	16%	5,665,726	14%	6.62
\$25,000 - \$34,999	655,933	12%	4,811,271	12%	7.34
\$35,000 - \$49,999	653,817	12%	5,218,627	13%	7.98

HH INCOME	#HHS	PERCENT	# TRIPS	PERCENT	TRIPS/HH
\$50,000 - \$74,999	998,933	19%	8,302,544	20%	8.31
\$75,000 - \$99,999	563,719	10%	5,035,860	12%	8.93
\$100,000 - \$149,999	405,248	8%	3,671,253	9%	9.06
Over \$150,000	245,849	5%	2,273,181	6%	9.25
Refused	644,739	12%	4,437,330	11%	6.88
Total	5,386,491	100%	41,235,382	100%	7.66

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

**TABLE 42:
DISTRIBUTION OF HOUSEHOLD INCOME BY COUNTY**

INCOME	IMPERIAL	LOS ANGELES	ORANGE	RIVERSIDE	SAN BERNARDINO	VENTURA
Less than \$10,000	12%	8%	4%	5%	6%	3%
\$10,000 - \$24,999	25%	17%	13%	16%	16%	11%
\$25,000 - \$34,999	17%	13%	10%	13%	13%	9%
\$35,000 - \$49,999	11%	12%	11%	15%	15%	14%
\$50,000 - \$74,999	15%	18%	20%	20%	21%	20%
\$75,000 - \$99,999	7%	9%	13%	12%	10%	13%
\$100,000 - \$149,999	4%	7%	10%	7%	7%	10%
Over \$150,000	1%	5%	7%	3%	2%	7%
Refused	8%	12%	12%	10%	11%	13%
Total	100%	100%	100%	100%	100%	100%

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

Vehicle ownership in the SCAG region (1.70 vehicles per household) was comparable to the national average (1.69 vehicles per household). Approximately 10 percent of households in the SCAG region reported owning zero vehicles. About one-third (35 percent) reported owning one vehicle, and 37 percent reported owning two vehicles. The more vehicles per household, the greater the number of trips made, with 3.93 trips recorded by households with zero vehicles and 10.67 trips per household for those with three vehicles. Vehicle ownership varied significantly among the six counties in the region. The highest rates of vehicle ownership per household were in Ventura (1.97), Riverside (1.95), and San Bernardino (1.87) Counties. The lowest rate was found in Los Angeles County (1.58).

**TABLE 43:
HOUSEHOLDS AND TOTAL TRIPS BY VEHICLE OWNERSHIP**

VEHICLES OWNED	#HHS	PERCENT	# TRIPS	PERCENT	TRIPS/HH
Zero	544,060	10%	2,135,592	5%	3.93
1	1,874,515	35%	11,399,865	28%	6.08
2	2,003,758	37%	17,409,126	42%	8.69
3+	964,159	18%	10,290,799	25%	10.67
Total	5,386,491	100%	41,235,382	100%	7.66

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

**TABLE 44:
TOTAL TRIPS AND VEHICLE DRIVER TRIPS PER HOUSEHOLD BY VEHICLE OWNERSHIP BY COUNTY**

TRIP TYPE	COUNTY STUDY AREA	VEHICLE OWNERSHIP			
		ZERO	ONE	TWO	THREE+
Total Trips	Imperial	3.91	7.52	9.86	12.08
	Los Angeles	3.69	5.97	8.61	10.68
	Orange	5.89	5.99	8.47	10.58
	Riverside	3.44	6.36	9.11	11.04
	San Bernardino	3.82	6.87	9.01	10.22
	Ventura	2.97	5.49	8.69	10.93
Vehicle Driver Trips	Imperial	0.11	3.79	5.99	7.94
	Los Angeles	0.05	3.25	5.69	7.36
	Orange	0.26	3.56	5.90	8.01
	Riverside	0.35	3.46	5.81	7.51
	San Bernardino	0.04	4.06	5.67	6.99
	Ventura	0.03	3.34	5.70	7.85

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

The majority of households represented in the sample reside in single-family homes. Households in Los Angeles and Orange Counties were more likely to reside in multi-family dwellings than were households in the other four counties in the region. In general, households residing in single-family homes made more trips than households in multi-family homes, regardless of the number of vehicles owned by the household. The exceptions appear to be Los Angeles and San Bernardino County households, where zero-vehicle households in single-family residences made fewer trips than zero-vehicle households in multi-family residences.

**TABLE 45:
DISTRIBUTION OF HOUSEHOLDS BY HOUSING TYPE, VEHICLE OWNERSHIP, AND HOUSEHOLD SIZE BY COUNTY**

		IMPERIAL	LOS ANGELES	ORANGE	RIVERSIDE	SAN BERNARDINO	VENTURA
Total Households		100%	100%	100%	100%	100%	100%
Housing Type	Single Dwelling Unit	67.2%	55.1%	58.4%	74.9%	72.2%	70.6%
	Multiple Dwelling Unit	32.8%	44.9%	41.6%	25.1%	27.8%	29.4%
Vehicle Ownership	0	7.0%	13.2%	6.5%	4.6%	6.5%	3.6%
	1	39.1%	37.2%	31.8%	30.8%	32.0%	28.9%
	2	35.7%	34.2%	42.2%	41.1%	39.1%	44.6%
	3+	18.2%	15.4%	19.5%	23.6%	22.3%	22.9%
Household Size	1	11.6%	26.0%	20.3%	15.3%	16.1%	21.2%
	2	20.7%	26.2%	31.1%	27.3%	27.5%	29.8%
	3	20.2%	15.4%	16.7%	15.3%	18.8%	16.1%
	4	21.0%	14.6%	15.6%	17.7%	16.2%	17.6%
	5+	26.5%	17.8%	16.3%	24.4%	21.4%	15.3%

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

Tables 46 and 47 provide trips per household by housing unit type and vehicle ownership. Table 46 presents mean trips per households (all trips) and Table 47 presents mean vehicle trips per household. While the absolute estimates for all trips versus vehicle trips is greater, the relative distribution by housing type and vehicle ownership is the same.

**TABLE 46:
AVERAGE TOTAL TRIPS PER HOUSEHOLD BY HOUSING UNIT TYPE BY VEHICLE OWNERSHIP BY COUNTY**

COUNTY STUDY AREA	HOUSING UNIT TYPE	VEHICLE OWNERSHIP			
		ZERO	ONE	TWO	THREE+
Imperial	Single	3.34	7.21	10.13	12.48
	Multiple	4.32	7.91	9.08	9.57
	All	3.91	7.52	9.86	12.08
Los Angeles	Single	3.25	6.17	9.12	10.88
	Multiple	3.88	5.83	7.58	9.57
	All	3.69	5.97	8.61	10.68
Orange	Single	5.93	6.63	8.94	10.96
	Multiple	5.88	5.63	7.41	8.40
	All	5.89	5.99	8.47	10.58
Riverside	Single	4.64	6.87	9.39	11.15
	Multiple	2.63	5.65	7.78	10.03
	All	3.44	6.36	9.11	11.04
San Bernardino	Single	3.43	7.35	9.08	10.27
	Multiple	3.97	6.24	8.71	9.54
	All	3.82	6.87	9.01	10.22
Ventura	Single	3.50	5.40	8.98	11.32
	Multiple	2.51	5.58	7.76	6.98
	All	2.97	5.49	8.69	10.93

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

**TABLE 47:
AVERAGE VEHICLE DRIVER TRIPS PER HOUSEHOLD BY HOUSING UNIT TYPE BY VEHICLE OWNERSHIP BY COUNTY**

COUNTY STUDY AREA	HOUSING UNIT TYPE	VEHICLE OWNERSHIP			
		ZERO	ONE	TWO	THREE+
Imperial	Single	0.00	3.63	6.11	8.08
	Multiple	0.18	4.00	5.65	7.00
	All	0.11	3.79	5.99	7.94
Los Angeles	Single	0.05	3.26	5.97	7.54
	Multiple	0.06	3.24	5.12	6.38
	All	0.05	3.25	5.69	7.36
Orange	Single	1.17	3.90	6.14	8.32
	Multiple	0.07	3.37	5.37	6.25
	All	0.26	3.56	5.90	8.01
Riverside	Single	0.56	3.52	5.97	7.59
	Multiple	0.20	3.38	5.08	6.78
	All	0.35	3.46	5.81	7.51

San Bernardino	Single	0.03	4.29	5.71	7.03
	Multiple	0.04	3.75	5.51	6.49
	All	0.04	4.06	5.67	6.99
Ventura	Single	0.00	3.30	5.91	8.14
	Multiple	0.06	3.38	4.99	5.01
	All	0.03	3.34	5.70	7.85

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

**TABLE 48:
TOTAL TRIPS AND VEHICLE DRIVER TRIPS PER HOUSEHOLD BY HOUSEHOLD SIZE BY HOUSING UNIT TYPE
BY VEHICLE OWNERSHIP BY COUNTY**

STUDY AREA COUNTY	HOUSEHOLD SIZE	TOTAL TRIPS			VEHICLE DRIVER TRIPS		
		HOUSING UNIT TYPE			HOUSING UNIT TYPE		
		SINGLE	MULTI	TOTAL	SINGLE	MULTI	TOTAL
Imperial	One	3.10	2.91	3.01	2.64	2.25	2.46
	Two	5.96	5.11	5.71	4.76	3.32	4.33
	Three	6.78	7.78	7.09	4.38	4.41	4.39
	Four	11.24	10.91	11.14	6.45	5.68	6.20
	Five +	15.00	10.86	13.70	7.17	4.79	6.42
Los Angeles	One	3.43	3.35	3.38	2.78	2.47	2.59
	Two	6.20	5.54	5.93	4.81	3.69	4.34
	Three	8.18	6.94	7.67	5.71	3.60	4.83
	Four	10.80	8.27	9.85	6.28	3.73	5.32
	Five +	13.11	11.59	12.62	6.33	3.49	5.41
Orange	One	3.55	3.73	3.66	3.13	3.23	3.19
	Two	6.81	5.79	6.42	5.54	4.54	5.16
	Three	9.12	7.33	8.44	7.02	4.55	6.09
	Four	11.05	8.73	10.36	7.19	3.56	6.11
	Five +	15.54	9.94	13.27	8.27	2.80	6.05
Riverside	One	3.34	3.02	3.20	2.96	2.41	2.71
	Two	6.05	5.57	5.91	4.74	3.65	4.43
	Three	9.03	7.54	8.68	6.56	4.48	6.07
	Four	10.39	9.48	10.26	6.31	5.38	6.19
	Five +	13.79	10.18	13.14	6.82	5.01	6.49
San Bernardino	One	3.40	3.17	3.30	3.09	2.53	2.85
	Two	6.25	5.28	5.98	4.92	3.83	4.62
	Three	8.31	6.64	7.89	5.77	3.64	5.23
	Four	10.44	11.14	10.59	6.65	5.50	6.41
	Five +	14.28	10.82	13.47	6.83	4.22	6.22
Ventura	One	3.54	3.44	3.49	3.14	2.98	3.06
	Two	6.79	6.11	6.61	5.45	4.62	5.23
	Three	8.30	6.99	7.92	6.32	4.27	5.72
	Four	11.68	8.87	11.11	7.45	4.99	6.95
	Five +	14.62	11.37	13.92	7.15	2.91	6.24

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

**TABLE 49:
TOTAL VEHICLES OWNED BY HOUSING UNIT TYPE BY COUNTY**

STUDY AREA COUNTY	HOUSING UNIT TYPE			
	SINGLE	MULTIPLE	TOTAL	PERCENT OF TOTAL
Imperial	50,513	17,131	67,644	0.7%
Los Angeles	3,314,233	1,632,026	4,946,259	53.9%
Orange	1,190,174	521,932	1,712,106	18.7%
Riverside	809,867	176,162	986,029	10.7%
San Bernardino	806,500	181,657	988,157	10.8%
Ventura	375,673	103,870	479,543	5.2%
Total	6,546,960	2,632,778	9,179,738	100.0%

Base: 30,274 vehicles weighted and expanded to represent 9,179,738 vehicles in the region.

**TABLE 50:
VEHICLE OWNERSHIP BY HOUSING UNIT TYPE BY COUNTY**

STUDY AREA COUNTY	HOUSING UNIT TYPE	VEHICLE OWNERSHIP			
		ZERO	ONE	TWO	THREE+
Imperial	Single	1,155	8,612	10,500	6,187
	Multiple	1,603	6,773	3,577	976
	All	2,758	15,385	14,077	7,163
Los Angeles	Single	121,504	480,416	719,506	406,285
	Multiple	292,527	686,196	352,269	75,072
	All	414,031	1,166,612	1,071,775	481,357
Orange	Single	10,526	107,407	272,777	155,370
	Multiple	49,973	189,995	121,919	27,321
	All	60,499	297,402	394,696	182,691
Riverside	Single	9,488	91,321	170,889	107,535
	Multiple	13,966	64,400	36,922	11,698
	All	23,454	155,721	207,811	119,233
San Bernardino	Single	9,581	95,721	166,014	110,151
	Multiple	25,029	73,311	40,901	7,886
	All	34,610	169,032	206,915	118,037
Ventura	Single	4,024	34,093	82,882	50,604
	Multiple	4,684	36,269	25,605	5,074
	All	8,708	70,362	108,487	55,678

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

Household income is positively associated with trip making. When controlling for dwelling unit type, however, income has less of an effect on trip making for households in Imperial and Los Angeles Counties. In these counties, the significant variance in trip making volume between low and high-income households disappears among households residing in multiple family dwellings.

**TABLE 51:
TOTAL TRIP RATES PER HOUSEHOLD BY INCOME LEVEL AND HOUSING UNIT TYPE BY COUNTY**

STUDY AREA COUNTY	HOUSING UNIT TYPE	INCOME								
		<\$10,000	\$10,000 - \$25K	\$25 - \$35K	\$35 - \$50K	\$50 - \$75K	\$75 - \$100K	\$100 - \$150K	\$150K+	TOTAL
Imperial	Single	5.34	9.33	9.32	9.97	9.63	10.22	13.09	11.37	8.71
	Multiple	7.30	8.27	7.35	7.96	6.44	8.68	6.53	7.91	7.13
	All	6.61	8.81	8.75	9.55	9.20	10.08	12.61	10.87	8.19
Los Angeles	Single	5.22	6.54	8.04	8.46	9.42	9.22	9.33	9.42	7.28
	Multiple	4.55	6.37	6.25	6.69	5.89	6.35	6.80	6.56	5.43
	All	4.75	6.44	7.14	7.63	8.04	8.33	8.67	8.89	6.45
Orange	Single	3.36	8.41	6.76	8.36	9.28	10.02	10.30	9.95	8.03
	Multiple	5.88	6.99	6.33	6.79	6.51	7.01	6.63	5.37	5.87
	All	5.31	7.38	6.52	7.56	8.23	9.34	9.62	9.38	7.13
Riverside	Single	5.92	7.60	9.54	9.81	9.57	10.44	9.32	9.92	8.41
	Multiple	4.96	6.17	6.27	7.97	7.48	6.60	7.77	8.95	5.85
	All	5.31	6.93	8.45	9.38	9.33	10.12	9.18	9.82	7.77
San Bernardino	Single	8.61	6.53	8.96	9.01	9.01	9.70	10.20	9.13	7.91
	Multiple	4.99	5.87	7.88	7.82	7.13	6.93	5.54	8.15	5.98
	All	6.42	6.17	8.62	8.72	8.71	9.52	9.69	8.98	7.37
Ventura	Single	5.70	6.33	6.75	8.55	9.24	10.52	9.33	11.46	7.81
	Multiple	3.70	6.48	6.00	7.22	6.97	5.79	6.88	8.01	5.87
	All	4.64	6.41	6.42	8.04	8.60	9.72	9.00	11.37	7.24

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.

The positive relationship between household income and trip-making is weaker when observing vehicle trips, rather total trips. The variance in trip-making behavior between households residing in single versus multiple family dwellings also disappears, with the exception of Imperial County.

**TABLE 52:
VEHICLE TRIP RATES PER HOUSEHOLD BY INCOME AND HOUSING UNIT TYPE BY COUNTY**

STUDY AREA COUNTY	HOUSING UNIT TYPE	INCOME								TOTAL
		<\$10,000	\$10,000 - \$25K	\$25 - \$35K	\$35 - \$50K	\$50 - \$75K	\$75 - \$100K	\$100 - \$150K	\$150K+	
Imperial	Single	2.41	4.18	5.02	5.31	6.58	7.01	9.45	9.58	5.07
	Multiple	2.47	4.67	4.31	5.38	4.33	6.94	5.85	3.97	3.81
	All	2.45	4.42	4.81	5.32	6.28	7.00	9.19	8.78	4.66
Los Angeles	Single	1.35	2.93	4.05	5.32	6.05	6.59	6.76	6.84	4.50
	Multiple	1.28	2.39	3.27	4.25	4.18	4.66	5.11	5.08	2.92
	All	1.30	2.60	3.66	4.82	5.32	5.99	6.32	6.52	3.79
Orange	Single	2.40	4.00	4.18	5.27	6.35	7.47	7.59	7.52	5.57
	Multiple	2.53	2.34	3.56	4.78	4.80	5.65	5.45	5.15	3.45
	All	2.50	2.79	3.84	5.02	5.76	7.06	7.19	7.23	4.69
Riverside	Single	3.10	3.96	5.05	5.96	6.25	6.96	6.45	6.89	5.23
	Multiple	2.32	3.58	3.82	4.99	5.07	5.00	6.08	5.35	3.56
	All	2.61	3.79	4.64	5.73	6.12	6.80	6.42	6.74	4.81
San Bernardino	Single	4.21	3.85	4.83	5.34	6.06	6.24	7.78	6.43	5.00
	Multiple	1.42	3.15	4.12	4.95	4.97	6.02	4.74	6.95	3.38
	All	2.52	3.47	4.60	5.25	5.89	6.23	7.45	6.51	4.55
Ventura	Single	1.52	3.20	3.93	5.48	6.37	7.33	6.81	7.94	5.21
	Multiple	1.60	2.74	3.91	4.21	5.36	4.67	4.75	6.33	3.61
	All	1.56	2.94	3.92	5.00	6.08	6.88	6.53	7.90	4.74

Base: 16,939 households weighted and expanded to represent 5,386,491 households in the region.



PERSON CHARACTERISTICS AND TRAVEL

DEMOGRAPHICS

The survey database contains demographic and travel information on 40,376 persons, representing 15,904,849 persons in the SCAG region. They made 41,235,382 total trips. These estimates reflect a trip rate per person of 2.78 trips for all persons and 2.59 trips for persons age 5 and older. Persons ages 34-44 reported the highest volume of trips – an average of 3.45 trips per person. While females comprised 50 percent of total persons, they reported 52 percent of all trips (2.68 trips per person).

**TABLE 53:
PERSONS AND TRIPS BY AGE**

AGE	# PERSONS	PERCENT	# TRIPS	PERCENT	TRIPS/ PERSON
Less than 5 years	1,473,801	9%	-	-	-
5-15 years	3,280,588	21%	7,447,315	18%	2.27
16-24 years	1,840,986	12%	4,507,182	11%	2.45
25-34 years	2,351,348	15%	7,183,361	17%	3.05
35-44 years	2,473,079	16%	8,520,545	21%	3.45
45-54 years	1,814,344	11%	6,049,134	15%	3.33
55-64 years	1,120,154	7%	3,567,635	9%	3.18
65+ years	1,403,329	9%	3,674,654	9%	2.62
Refused	147,221	1%	285,555	1%	1.94
Total	15,904,849	100%	41,235,382	100%	2.59

*Base: 40,376 persons weighted and expanded to represent 15,904,849 persons in the region.
114,430 total trips weighted and expanded to represent 41,235,382 trips, ages 5+, in the region.*

On an average weekday, 15 percent of persons (regardless of age) do not travel. Highest rates of non-travel were found among children (less than 16 years of age) and person 65+ years of age.

**TABLE 54:
PERSONS AND ZERO TRIPS BY AGE**

AGE	# PERSONS	PERCENT	# PERSONS WITH ZERO TRIPS	PERCENT OF PERSONS WITH ZERO TRIPS
Less than 5 years	1,473,801	9%	576,821	16%
5-15 years	3,280,588	21%	569,401	16%
16-24 years	1,840,986	12%	449,116	13%
25-34 years	2,351,348	15%	413,518	12%
35-44 years	2,473,079	16%	397,385	11%
45-54 years	1,814,344	11%	315,049	9%
55-64 years	1,120,154	7%	241,601	7%
65+ years	1,403,329	9%	478,073	14%
Refused	147,221	1%	56,330	2%
Total	15,904,849	100%	3,497,294	100%

Base: 40,376 persons weighted and expanded to represent 15,904,849 persons in the region.

**TABLE 55:
PERSONS AND TRIPS BY GENDER**

GENDER	# PERSONS	PERCENT	# TRIPS	PERCENT	TRIPS/ PERSON
Male	7,833,161	49%	19,675,011	48%	2.51
Female	7,995,064	50%	21,462,431	52%	2.68
Refused	76,623	0%	97,940	0%	1.28
Total	15,904,849	100%	41,235,382	100%	2.59

*Base: 40,376 persons weighted and expanded to represent 15,904,849 persons in the region.
114,430 total trips weighted and expanded to represent 41,235,382 trips, ages 5+, in the region.*

Race/ ethnicity was associated with trip-making behavior. White/ Not Hispanic persons made more trips on average than persons of other Races/ Ethnicities.

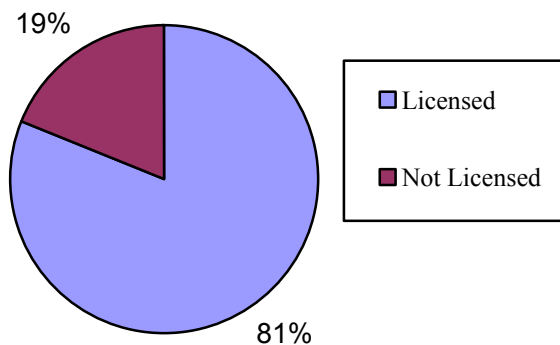
**TABLE 56:
PERSONS AND TRIPS BY RACE / ETHNICITY**

ETHNICITY	# PERSONS	PERCENT	# TRIPS	PERCENT	TRIPS/PERSON
White/Not Hispanic	6,528,588	41%	20,393,059	49%	3.12
Hispanic	5,928,937	37%	12,663,815	31%	2.14
African American	1,085,431	7%	2,504,261	6%	2.31
Asian/Pacific Islander	764,036	5%	1,916,990	5%	2.51
Other	561,213	4%	1,165,729	3%	2.08
Refuse	1,036,643	7%	2,591,529	6%	2.50
Total	15,904,849	100%	41,235,382	100%	2.59

*Base: 40,376 persons weighted and expanded to represent 15,904,849 persons in the region.
114,430 total trips weighted and expanded to represent 41,235,382 trips, ages 5+, in the region.*

Most persons age 16 and older (81 percent) were licensed drivers. Most unlicensed drivers (67 percent) were unemployed. Of all unlicensed drivers, most (68 percent) were in Los Angeles County.

**FIGURE 13:
DISTRIBUTION OF LICENSED DRIVERS**



Base: 31,830 persons 16+ weighted and expanded to represent 11,155,586 persons in the region.

In total, licensed drivers reported a total of 30,136,831 trips, which equates to 89 percent of all reported trips by respondents aged 16 and older. On average, licensed drivers made 3.3 trips on their assigned travel day, which is nearly twice that reported for unlicensed drivers. Unlicensed drivers reported 1.7 trips on average.

**TABLE 57:
PERSONS AND TRIPS BY LICENSED DRIVER STATUS**

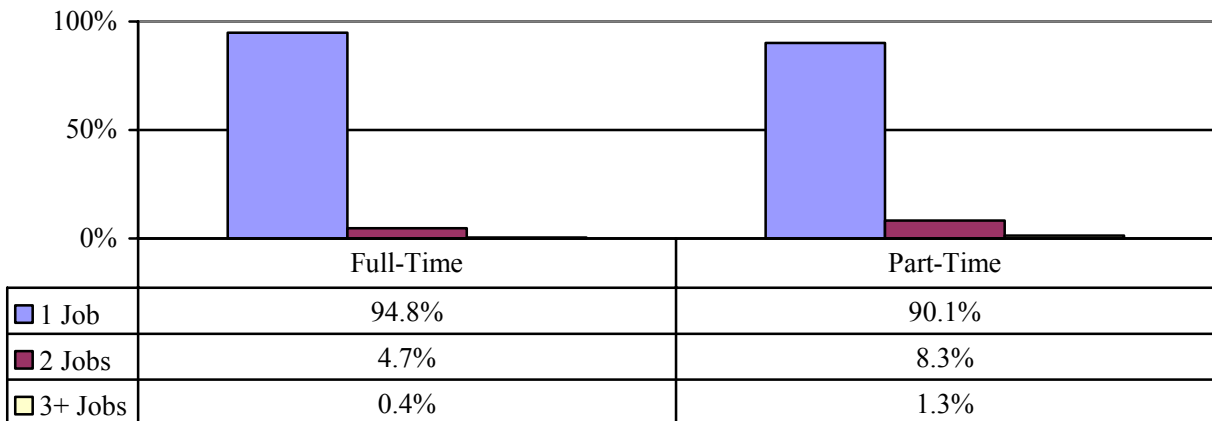
LICENSED DRIVERS	# PERSONS	PERCENT	# TRIPS	PERCENT	TRIPS/PERSON
Licensed	9,022,614	81%	30,136,831	89%	3.34
Not Licensed	2,069,520	19%	3,566,562	11%	1.72
Refuse	63,453	1%	84,674	0%	1.33
Total	11,155,586	100%	33,788,067	100%	3.03

Base: 31,830 persons 16+ weighted and expanded to represent 11,155,586 persons in the region.

EMPLOYMENT

Sixty-one percent of adults, aged 16 years and older, were employed either full- or part-time, representing 6,801,673 persons in the SCAG region. Among employed persons, most (76 percent) were employed full-time. Only a small number of persons (5 percent) held more than one job. Most of the persons who held more than one job worked part-time.

**FIGURE 14:
NUMBER OF JOBS AMONG EMPLOYED PERSONS**



Base: 19,555 persons weighted and expanded to represent 6,801,673 employed persons age 16+ in the region.

Employed persons made a total of 22,286,514 trips on their assigned travel day. They reported more trips than non-employed persons. Employed persons reported the most trips at 3.28 trips per person, followed by homemakers at 3.22 trips per person. Of not employed persons who provided a status, disabled persons reported the fewest trips 2.18 trips per person.

**TABLE 58:
PERSONS AND TRIPS BY EMPLOYMENT STATUS**

<i>Employment Status</i>	<i># Persons</i>	<i>Percent</i>	<i># Trips</i>	<i>Percent</i>	<i>Trips/Person</i>
Employed	6,801,673	43%	22,286,514	54%	3.28
Not Employed, Retired	1,414,729	9%	3,748,816	9%	2.65
Not Employed, Disabled	303,066	2%	660,863	2%	2.18
Not Employed, Homemaker	1,055,797	7%	3,395,375	8%	3.22
Unemployed	1,321,112	8%	3,148,716	8%	2.38
Not Employed, Other/Refuse	254,084	2%	547,783	1%	2.16
Not of Employment Age	4,754,389	30%	7,447,315	18%	1.57
Total	15,904,849	100%	41,235,382	100%	2.59

*Base: 40,376 persons weighted and expanded to represent 15,904,849 persons in the region.
114,430 total trips weighted and expanded to represent 41,235,382 trips, ages 5+, in the region.*