

i fromsportation

1990 NPTS

NATIONWIDE
PERSONAL
TRANSPORTATION
SURVEY

1990 NPTS
DATABOOK
VOLUME II

1990 NPTS Publications Series:

User's Guide for the Public Use Tape (for tape or diskette users)

Summary of Travel Trends

Travel Behavior Issues in the 90's

1990 NPTS Databook

NPTS Urban Travel Patterns

NPTS Special Subject Reports

Abbreviations used in this report:

MSA-metropolitan statistical area

NPTS—Nationwide Personal Transportation Survey

PMT-person miles of travel

POV-personally operated vehicle/privately owned vehicle

VMT- vehicle miles of travel

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16. Abstract

This report presents data on the amount, nature and characteristics of personal (non-commercial) travel by all modes of transportation in the U.S. The data is from a survey of individuals conducted throughout 1990. A large number of data relationships are presented and, therefore, the report is printed in two volumes.

Volume I contains information on the survey itself, a comparison of estimates of miles of travel taken from different portions of the survey, data on households, drivers and vehicles, and an extensive chapter on person trips and person miles of travel by all modes of transportation.

Volume II includes data on vehicle trips and vehicle miles of travel, journey-to-work trips, vehicle occupancy, long trips, commercial driving and highway accidents.

To the degree possible, each chapter within the report is organized to present results in the order of:

- person characteristics
- household characteristics
- · trip characteristics, and
- · temporal characteristics.

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1990 NPTS DATABOOK Volume II

Based on Data from the
1990 Nationwide Personal Transportation Survey (NPTS)

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OCTOBER 1994

FOREWORD

The 1990 Nationwide Personal Transportation Survey (NPTS) provides a comprehensive look at personal travel in the U. S. The 1990 survey and the three earlier surveys in the NPTS series yield important data on the travel behavior of the American population. The NPTS series provides data to examine the relationship among social and demographic change, land development patterns, and transportation. This series is an essential tool for those seriously interested in understanding travel behavior and transportation planning issues.

The NPTS data is intended to address a number of issues in transportation, ranging in scope from the impacts of gas tax changes to trip generation rates needed to calibrate travel demand models. Along the way there are a number of issues that relate to how we, as a nation, are evolving — the changing roles of women and men within the family structure, the growth and increased mobility of the older driver population, the continued increase in vehicle ownership, and the continued decentralization of our metropolitan areas. This Databook presents the 1990 survey findings we believe to be most useful in analyzing these issues. Despite the volume and coverage of this Databook, the contents only touch on the data potential of the NPTS series.

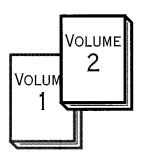
We hope that this Databook and the other publications in the NPTS report series contribute to a better understanding of the complex relationships associated with America's travel behavior. Even as these data are published, FHWA, in a cooperative effort with other Department of Transportation agencies, is planning an update of this data series during calendar year 1995.

David R. McElhanev

Director, Office of Highway Information Management

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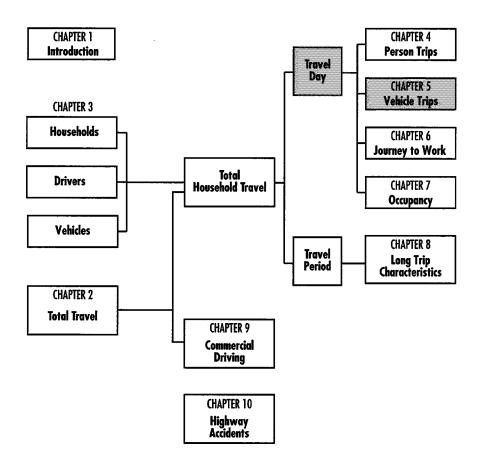
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CHAPTER 5

VEHICLE TRIPS AND VEHICLE MILES OF TRAVEL

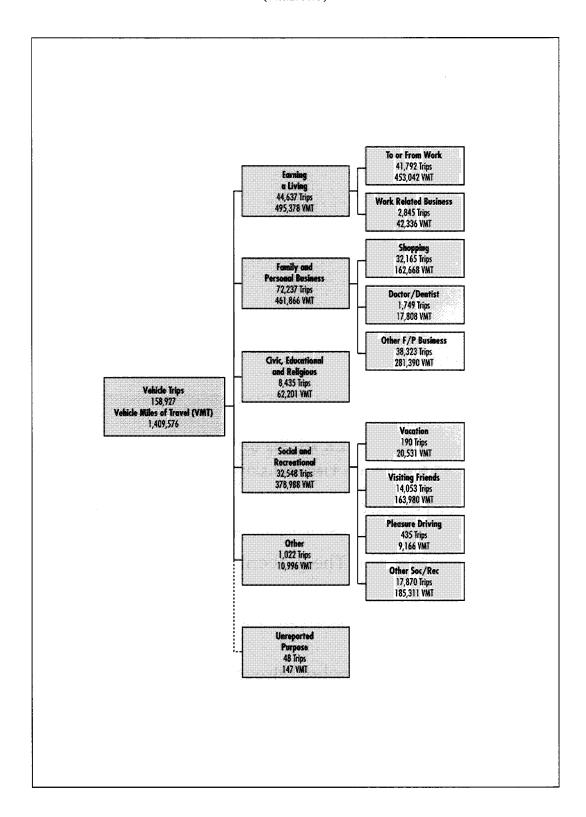


FROM 1969 TO 1990, VEHICLE MILES OF TRAVEL (VMT) INCREASED BY 82% DUE TO THE FOLLOWING FACTORS:

- More vehicles: The increase in household vehicles outpaced the increase in drivers, resulting in more vehicles than drivers.
- More women employed: The percent of women in the labor force doubled.
- More woman drivers: There was a 84% increase in women with a driver's license.
- More mobile: Every age cohort drove at least 30% more.
- More elderly licensed to drive: The proportion of individuals 65 years or older licensed to drive grew from 44% to 75%.

1990 VEHICLE TRIPS AND VEHICLE MILES BY PURPOSE

(MILLIONS)



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CHAPTER 5 VEHICLE TRIPS AND VEHICLE MILES OF TRAVEL

tatistics on vehicle trips and vehicle miles of travel (VMT) are presented in this chapter. A vehicle trip is a trip by a single vehicle regardless of the number of people in the vehicle. The number of vehicle trips increased 82 percent from 87,284 million in 1969 to 158,927 million in 1990. Although average length of vehicle trips was the same in 1990 as it had been in 1969, the increase in the number of trips resulted in an 82 percent increase in the number of vehicle miles of travel during the same period. The changes in demographic characteristics and vehicle travel are as shown below.

PERSON CHARACTERISTICS

In 1983, drivers in the age group 20 to 29 took more vehicle trips than drivers in other age groups. With the population getting older, the number of individuals between 20 and 29 years old in 1990 decreased by 6 percent and the number of individuals between 30 and 39 years old

increased. Consequently, the percentage of vehicle trips by drivers between 30 and 39 years old in 1990 became the highest compared to other age groups.

Men in all age groups took longer trips than women in the comparable age groups, except for the age group under 16. Although men took, on average, more vehicle trips than women, women between 30 and 50 years old took more vehicle trips than men in the same age group. The increased participation of women in the labor force contributed to increased driving by women. However, women still drove more for family and personal matters than men, and less for earning a living.

HOUSEHOLD CHARACTERISTICS

In 1990, households took an average of more than 1,700 vehicle trips per year — an increase of 15 percent from 1983. Households with two or more adults and with the youngest child 16 years or older took more vehicle trips per household

	1969	1977	1983	1990	Percent Change 69-90
LICENSED DRIVERS (000)					
TOTAL	102,986	127,552	147,015	163,025	58
Male	57,981	66,199	75,639	80,289	38
Female	45,005	61,353	71,376	82,707	84
HOUSEHOLD VEHICLES (000)			,		
	72,500	120,098	143,714	165,221	128
HOUSEHOLD VEHICLE TRIPS (000,000)					
	87,284	108,826	126,874	158,927	82
HOUSEHOLD VMT (000,000)					
	775,940	907,603	1,002,139	1,409,600	82

than any other type of household. This might be due to the fact that with children over 16 years old, these households were more likely to have more drivers available.

The percentage of vehicle trips by various household income groups increased as household income increased. On a perhousehold basis, an average household in 1983 with an income greater than \$40,000 took two and a half times more vehicle trips than an average household with an income less than \$10,000. Comparing the proportion of trips taken for earning a living, households with an annual income greater than \$40,000 showed 30 percent of their trips for this purpose, while the corresponding percentage for households with an income less than \$10,000 was only 17 percent. Not only did the number of vehicle trips per household increase with household income, annual vehicle miles of travel per household increased as well. On average, a household drove 15,100 miles per year in 1990 - an increase of 29 percent from 1983.

TRIP CHARACTERISTICS

In 1969, earning a living was the major reason to travel. However, since 1977 family and personal matters became the major reason to travel; and trips for these purposes continued to increase. Trips that were classified as for "family and personal reasons" included shopping trips, trips for medical treatment, and trips for errandrunning, including the purchase of services such as dry-cleaning, haircut and banking. From 1969 to 1983, shopping trips accounted for most of the trips that were classified as for family and personal reasons. By 1990, errand-running trips accounted for most of the family and personal business trips.

TABLE 5.1

NUMBER OF VEHICLE TRIPS, VEHICLE MILES OF TRAVEL, AND AVERAGE TRIP LENGTH BY DRIVER'S AGE AND SEX, 1990 NPTS

Age	% Licensed Drivers			Vehicle Mil	Average Trip Length¹ (miles)					
Under 162 Male 0.0 97,600 (0.0%) 469,066 (0.0%) 4.9										
		•		•	(0.0%) (0.1%)	4. 9 8.5				
Female	0.0	99,510	(0.1%)	831,853 1,300,919	(0.1%) (0.1%)	6.7				
SUBTOTAL 16-19	0.0	197,110	(0.1%)	1,300,717	(V.170)	0./				
Male	2.9	4,550,000	(2.8%)	38,204,999	(2.7%)	8.5				
Female	3.0	4,098,000	(2.6%)	28,580,092	(2.0%)	7.2				
SUBTOTAL	5.9	8,648,000	(5.4%)	66,785,091	(4.7%)	7.9				
20-29		0/0,5/50=	177.4.77							
Male	10.5	18,600,000	(11.7%)	200,714,982	(14.3%)	10.9				
Female	10.9	17,600,000	(11.1%)	146,814,723	(10.4%)	8.5				
SUBTOTAL	21.4	36,200,000	(22.8%)	347,529,705	(24.7%)	9.7				
30-39										
Male	11.6	20,900,000	(13.1%)	230,882,297	(16.4%)	11.2				
Female	12.2	23,000,000	(14.5%)	166,372,246	(11.8%)	7.3				
SUBTOTAL	23.8	43,900,000	(27.6%)	397,254,543	(28.2%)	9.2				
40-49	10 <u>2 1</u> 1	⁰⁹⁸	F0/1	270 500	/10 AN/1	11 /				
Male	8.9	15,200,000	(9.5%)	174,278,583	(12.4%)	11.6				
Female	9.0	15,700,000	(9.9%)	109,071,273	(7.7%)	7.0				
SUBTOTAL	17.9	30,900,000	(19.4%)	283,369,856	(20.1%)	9.3				
50-59	6.1	9,539,000	(6.0%)	102,464,054	(7.3%)	10.8				
Male Female	6.0	7,750,000 7,750,000	(0.0%) (4.9%)	56,612,741	(4.0%)	7.4				
SUBTOTAL	12.1	17,289,000	(10.9%)	159,076,795	(11.3%)	9.3				
60-64		17,207,444		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,						
Male	2.7	4,229,000	(2.7%)	38,070,561	(2.7%)	9.1				
Female	2.7	3,184,000	(2.0%)	19,391,855	(1.4%)	6.2				
SUBTOTAL	5.4	7,413,000	(4.7%)	57,462,416	(4.1%)	7.8				
65+										
Male	6.1	7,618,000	(4.8%)	58,109,760	(4.1%)	7.7				
Female	6.3	5,542,000	(3.5%)	27,010,986	(1.9%)	5.0				
SUBTOTAL	12.4	13,160,000	(8.3%)	85,120,746	(6.0%)	6.6				
TOTAL MALE	49.2	81,079,165	(51.0%)	849,621,708	(60.3%)	10.7				
TOTAL FEMALE	50.7	77,831,823	(49.0%)	559,868,442	(39.7%)	7.3				
TOTAL	100.0	158,927,000	(100.0%)	1,409,576,000	(100.0%)	9.0				

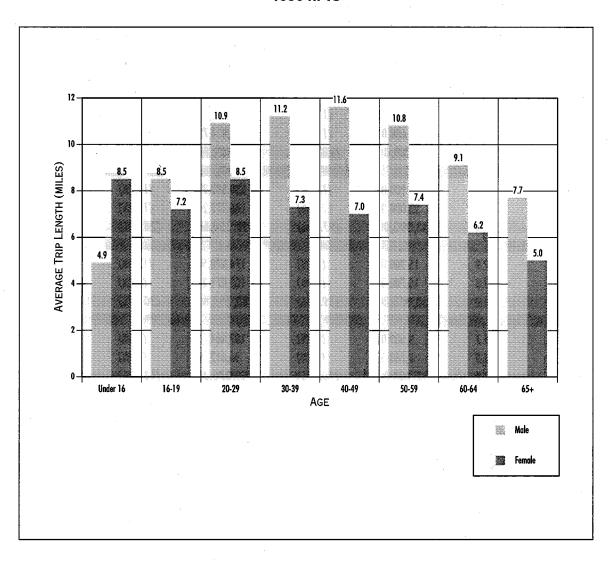
¹ Average trip length is calculated using only those trips where trip mileage information is available.

² Some states issue learner permits to individuals at age 14 or 15. The "under 16" category reflects these drivers.

³ Includes travel or drivers where age, sex, or both were unreported.

On a per-trip basis, men in all age groups took longer trips than women in comparable age groups, except for the age group younger than 16. The difference in the length of trips taken by men and women was the greatest for the age group between 40 and 49.

AVERAGE VEHICLE TRIP LENGTH BY DRIVER'S SEX AND AGE 1990 NPTS



The 1983 NPTS estimated that drivers in the age group 20 to 29 took more vehicle trips than drivers in other age groups. However, by 1990 drivers in the age group 20 to 29 reduced their share of trips from 1983, while drivers in the age groups 30 to 39 and 40 to 49 increased their share of trips during the

same period. This probably reflects the aging of the baby boomers over this time. These changes resulted in the percentage of vehicle trips by drivers between the ages of 30 to 39 being the highest among all age groups. There was also growth in trip making in the 65 and older group.

TABLE 5.2

DISTRIBUTION OF DRIVERS AND VEHICLE TRIPS BY DRIVER'S AGE 1983 AND 1990 NPTS¹ (PERCENTAGE)

Age	19	83	19	90
	Vehicle Trips	Drivers	Vehicle Trips	Drivers
Under 16 ²	1.4	0.0	0.1	0.0
16-19	6.0	6.6	5.4	5.9
20-29	25.6	24.6	22.8	21.4
30-39	25.2	<i>22.7</i>	27.6	23.8
40-49	15.9	<i>15.</i> 1	19.4	17.9
50-59	13.1	14.0	10.9	12.1
60-64	5.3	6.6	4.7	5.4
65+	7.4	10.4	8.3	12.4
Unreported Age	0.0	0.0	0.8	1.1
TOTAL	100.0	100.0	100.0	100.0

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Some states issue learner permits to individuals at age 14 or 15. The "under 16" category reflects these drivers.

NUMBER OF VEHICLE TRIPS BY DRIVER'S AGE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

Age	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL ²
Under 16 ¹	13,272	56,951	52,972	63,955	9,965	197,116
	(0.7%)	(28.9%)	(26.9%)	(32.4%)	(5.1%)	(100.0%)
16-19	1,684,696	2,787,707	1,496,029	2,604,084	75,563	8,648,269
	(19.5%)	(32.2%)	(17.3%)	(30.1%)	(0.9%)	(100.0%)
20-29	11,052,537	14,372,835	1,681,783	8,858,549	240,240	36,218,344
	(30.5%)	(39.7%)	(4.6%)	(24.5%)	(0.7%)	(100.0%)
30-39	13,523,033	20,299,284	1,919,720	7,877,922	215,445	43,851,583
	(30.8%)	(46.3%)	(4.4%)	(18.0%)	(0.5%)	(100.0%)
40-49	10,201,754	14,101,919	1,240,709	5,170,568	146,449	30,874,580
	(33.0%)	(45.7%)	(4.0%)	(16.7%)	(0.5%)	(100.0%)
50-59	5,485,214	7,962,657	676,937	3,039,590	121,666	17,288,642
	(31.7%)	(46.1%)	(3.9%)	(17.6%)	(0.7%)	(100.0%)
60-64	1,452,803	3,964,847	378,431	1,566,411	51,202	7,413,801
	(19.6%)	(53.5%)	(5.1%)	(21.1%)	(0.7%)	(100.0%)
65+	837,029	8,137,421	914,233	3,114,021	153,028	13,160,483
	(6.4%)	(61.8%)	(6.9%)	(23.7%)	(1.2%)	(100.0%)
TOTAL ²	44,637,479	72,236,579	8,434,633	32,547,726	1,021,713	158,927,467
	(28.1%)	(45.5%)	(5.3%)	(20.5%)	(0.6%)	(100.0%)

¹ Some states issue learner permits to individuals at age 14 or 15. The "under 16" category reflects these drivers.

² Includes trips where driver's age, trip purpose, or both were unreported.

For drivers between the ages of 20 and 59, the percentage of earning a living and civic, educational and religious trips remained basically similar across age categories, while the percentage of family and personal business trips rose with the driver's age and the percentage of social and recreational trips decreased.

DISTRIBUTION OF VEHICLE TRIPS BY TRIP PURPOSE AND DRIVER'S AGE
1990 NPTS

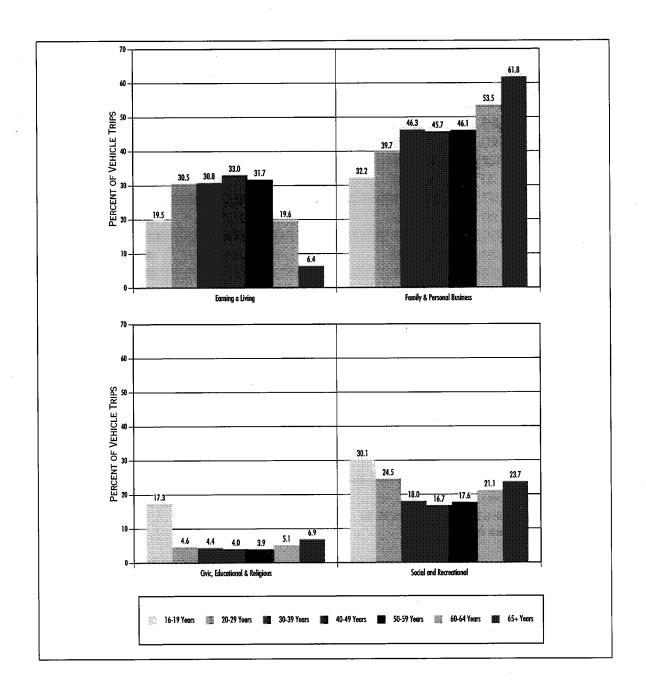


TABLE 5.4

NUMBER OF VEHICLE TRIPS TAKEN BY WOMEN' CATEGORIZED BY DRIVER'S AGE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

Age	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL ³
Under 16 ²	5,843	26,170	24,073	33,463	9,965	99,514
	(5.9%)	(26.3%)	(24.2%)	(33.6%)	(10.0%)	(100.0%)
16-19	760,012	1,509,339	688,323	1,111,229	29,484	4,098,387
	(18.5%)	(36.8%)	(16.8%)	(27.1%)	(0.7%)	(100.0%)
20-29	5,030,193	7,844,279	918,195	3,727,976	106,241	17,633,880
	(28.5%)	(44.5%)	(5.2%)	(21.1%)	(0.6%)	(100.0%)
30-39	5,849,807	12,227,659	1,129,417	3,664,367	122,059	22,995,910
	(25.4%)	(53.2%)	(4.9%)	(15.9%)	(0.5%)	(100.0%)
40-49	4,514,290	8,194,034	736,342	2,198,310	69,470	15,714,897
	(28.8%)	(52.1%)	(4.7%)	(14.0%)	(0.4%)	(100.0%)
50-59	2,123,216	3,998,361	324,795	1,245,338	58,082	7,749,793
	(27.4%)	(51.6%)	(4.2%)	(16.1%)	(0.7%)	(100.0%)
60-64	580,447	1,840,172	158,212	586,469	19,192	3,184,492
	(18.2%)	(57.8%)	(5.0%)	(18.4%)	(0.6%)	(100.0%)
65+	284,123	3,624,456	436,069	1,100,568	92,400	5,542,367
	(5.1%)	(65.4%)	(7.9%)	(19.9%)	(1.7%)	(100.0%)
TOTAL'	19,375,935	39,642,779	4,465,174	13,816,136	514,997	77,831,823
	(24.9%)	(50.9%)	(5.7%)	(17.8%)	(0.7%)	(100.0%)

¹ Does not include trips where driver's sex was unreported.

² Some states issue learner permits to individuals at age 14 or 15. The "under 16" category reflects these drivers.

Includes trips where driver's age, trip purpose, or both were unreported.

TABLE 5.5

NUMBER OF VEHICLE TRIPS TAKEN BY MEN' CATEGORIZED BY DRIVER'S AGE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

Age	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL ³
Under 16 ²	7,429	30,782	28,899	30,492	0	97,602
	(7.6%)	(31.5%)	(29.6%)	(31.2%)	(0.0%)	(100.0%)
16-19	924,684	1,278,368	807,706	1,492,855	46,079	4,549,882
	(20.3%)	(28.1%)	(17.8%)	(32.8%)	(1.0%)	(100.0%)
20-29	6,022,344	6,528,556	763,588	5,130,574	133,999	18,584,463
	(32.4%)	(35.1%)	(4.1%)	(27.6%)	(0.7%)	(100.0%)
30-39	7,673,226	8,071,625	790,303	4,213,555	93,386	20,855,673
	(36.8%)	(38.7%)	(3.8%)	(20.2%)	(0.4%)	(100.0%)
40-49	5,687,464	5,907,885	504,367	2,972,258	77,029	15,159,683
<u>.</u>	(37.5%)	(39.0%)	(3.3%)	(19.6%)	(0.5%)	(100.0%)
50-59	3,361,997	3,964,296	352,142	1,794,252	63,584	9 538,849
	(35.2%)	(41.6%)	(3.7%)	(18.8%)	(0.7%)	(100.0%)
60-64	872,356	2,124,675	220,219	979,942	32,010	4,229,310
	(20.6%)	(50.2%)	(5.2%)	(23.2%)	(0.8%)	(100.0%)
65+	552,906	4,512,965	478,165	2,013,453	60,628	7,618,116
	(7.3%)	(59.2%)	(6.3%)	(26.4%)	(0.8%)	(100.0%)
TOTAL ³	25,257,225	32,583,973	3,967,126	18,731,590	506,716	81,079,165
	(31.2%)	(40.2%)	(4.9%)	(23.1%)	(0.6%)	(100.0%)

¹ Does not include trips where driver's sex was unreported.

 $^{^{\}rm 2}$ Some states issue learner permits to individuals at age 14 or 15. The

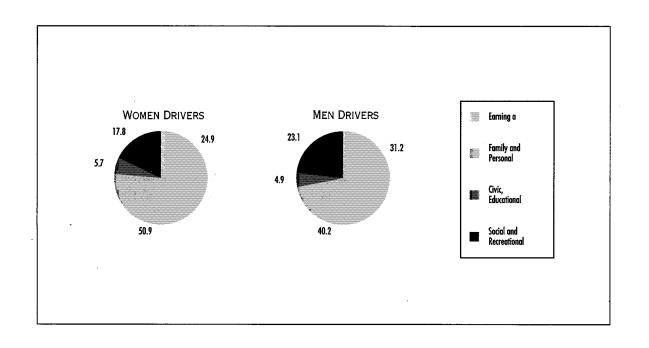
[&]quot;under 16" category reflects these drivers.

³ Includes trips where driver's age, trip purpose, or both were unreported.

The percentage of vehicle trips for family and personal business by women drivers was significantly higher than for men drivers. On the other hand, the percentage of vehicle trips for earning a living and for social and recreational purposes by men drivers was significantly

higher than the percentage by women drivers. The difference in the percentage of family and personal trips between men and women was most prominent for the age groups from 30 to 50 (Table 5.5).

TRIP PURPOSE COMPARISON BETWEEN WOMEN DRIVERS AND MEN DRIVERS
1990 NPTS



As expected, an obvious difference was observed between drivers 65 years and older and those younger than 65—older drivers

drove predominantly for family and personal business, while younger drivers drove mainly for earning a living.

TABLE 5.6

Number of Vehicle Miles of Travel Driven by Individuals 65 or Older vs. Individuals under 65 and Trip Purpose 1990 NPTS (MILLIONS)

Purpose	Individuals under 65 years	Individuals 65 years or older	TOTAL'
Earning a Living	485,564	6,950	495,378
	(37.0%)	(8.2%)	(35.1%)
Family and Personal Business	413,954	42,300	461,866
	(31.5%)	(49.7%)	(32.8%)
Civic, Educational, and Religious	58,100	3,713	62,201
	(4.4%)	(4.4%)	(4.4%)
Social and Recreational	344,696	31,496	378,988
	(26.3%)	(37.0%)	(26.9%)
Other	10,320	657	10,996
	(0.8%)	(0.7%)	(0.7%)
TOTAL'	1,312,779	85,121	1,409,600
	(100.0%)	(100.0%)	(100.0%)
Number of Drivers (000)	140,937	20,281	163,025
	(86.5%)	(12.4%)	(100.0%)

¹ Includes YMT or drivers where trip purpose, age, or both were unreported.

VEHICLE TRIPS AND VEHICLE MILES OF TRAVEL BY HOUSEHOLD COMPOSITION 1990 NPTS

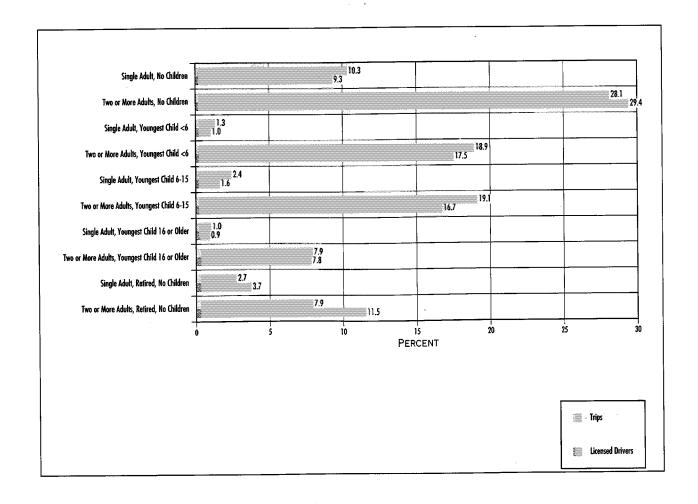
Household Composition	Number of Households (000)	Vehicle Trips (000)	Vehicle Miles (000)	Average Trip Length¹ (miles)
Single Adult,	15,505	16,418,589	148,191,387	9.1
No Children	(16.6%)	(10.3%)	(10.5%)	1 (C) 1 (C) 24 (S) 4
Two or More Adults,	24,182	44,612,626	436,160,614	9.9
No Children	(25.9%)	(28.1%)	(30.9%)	
Single Adult,	1,698	1,993,716	12,581,271	6.5
Youngest Child under 6	(1.8%)	(1.3%)	(0.9%)	
Two or More Adults,	13,791	29,965,811	272,453,225	9.2
Youngest Child under 6	(14.8%)	(18.9%)	(19.3%)	
Single Adult,	2,382	3,729,570	26,458,688	7.3
Youngest Child 6-15	(2.6%)	(2.4%)	(1.9%)	
Two or More Adults,	12,332	30,378,025	259,491,800	8.6
Youngest Child 6-15	(13.2%)	(19.1%)	(18.4%)	
Single Adult,	819	1,650,114	12,274,831	7.6
Youngest Child 16 or Older	(0.9%)	(1.0%)	(0.9%)	
Two or More Adults,	4,444	12,591,251	116,409,238	9.4
Youngest Child 16 or Older	(4.8%)	(7.9%)	(8.3%)	
Single Adult,	7,642	4,260,045	21,820,300	5.2
Retired, No Children	(8.2%)	(2.7%)	(1.6%)	
Two or More Adults,	9,777	12,527,002	97,542,590	7.9
Retired, No Children	(10.5%)	(7.9%)	(6.9%)	
TOTAL ²	93,347	158,927,466	1,409,600,000	9.0
	(100.0%)	(100.0%)	(100.0%)	

¹ Average trip length is calculated using only those records where trip mile information is available.

² Includes travel where household composition was unreported.

Compared with other groups, households with two or more adults and no children took the greatest number of vehicle trips. This group also took the longest trips.

DISTRIBUTION OF VEHICLE TRIPS AND LICENSED DRIVERS BY HOUSEHOLD COMPOSITION 1990 NPTS



ANNUAL VEHICLE TRIPS PER HOUSEHOLD BY TRIP PURPOSE AND HOUSEHOLD COMPOSITION 1990 NPTS

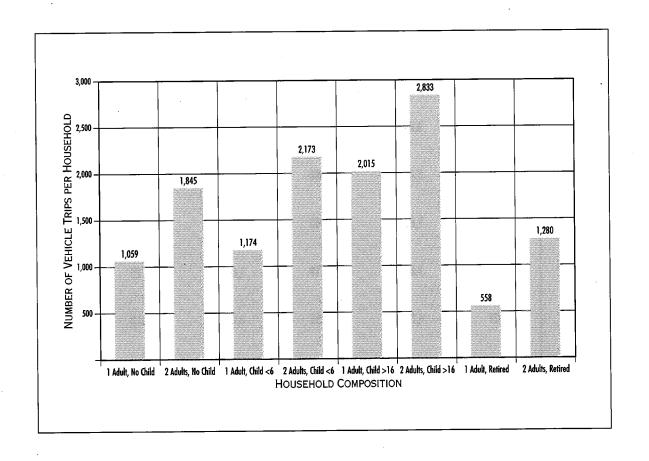
Household Composition	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL
Single Adult, No Children	299	448	35	271	6	1,059
Two or More Adults, No Children	623	741	80	389	12	1,845
Single Adult, Youngest Child under 6	216	610	75	257	16	1,174
Two or More Adults, Youngest Child under 6	643	1,070	104	346	10	2,173
Single Adult, Youngest Child 6-15	365	788	88	322	3	1,566
Two or More Adults,Youngest Child 6-15	726	1,125	158	435	18	2,462
Single Adult, Youngest Child 16 or Older	448	821	183	557	6 .	2,015
Two or More Adults, Youngest Child 16 or Older	882	1,084	228	627	12	2,833
Single Adult, Retired, No Children	9 .	355	42	144	8	558
wo or More Adults, Retired, No Children	133	742	75	317	13	1,280
ALL HOUSEHOLDS	478	774	90	349	11	1,702

In 1990, households took an average of more than 1,700 vehicle trips per year. Households with two or more adults and with the youngest child 16 years or older took the greatest number of vehicle trips per year.

This might be attributable to the fact that households with children over 16 years were more likely to have more drivers than other households.

FIGURE 5.5

ANNUAL VEHICLE TRIPS PER HOUSEHOLD BY HOUSEHOLD COMPOSITION
1990 NPTS



ANNUAL VEHICLE MILES OF TRAVEL PER HOUSEHOLD BY TRIP PURPOSE AND HOUSEHOLD COMPOSITION 1990 NPTS

Household Composition	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL
Single Adult, No Children	2,912	2,786	384	3,319	157	9,558
Two or More Adults, No Children	6,998	5,292	623	4,977	145	18,035
single Adult, /oungest Child under 6	1,470	3,453	364	2,023	101	7,411
wo or More Adults, Youngest Child under 6	7,825	6,823	683	4,326	95	19,752
ingle Adult, oungest Child 6- 5	3,127	4,413	825	2,726	17	11,108
wo or More dults,Youngest hild 6-15	8,392	6,843	1,256	4,435	113	21,039
ingle Adult, oungest Child 6 or Older	4,576	5,466	965	3,885	102	14,994
wo or More dults, Youngest hild 16 or Older	9,293	7,864	1,983	6,945	104	26,189
ingle Adult, etired, No hildren	59	1,636	119	1,015	25	2,854
wo or More dults, Retired, o Children	1,229	4,269	295	4,070	113	9,976
LL HOUSEHOLDS	5,307	4,958	666	4,060	118	15,101

VEHICLE TRIPS AND VEHICLE MILES OF TRAVEL BY PLACE OF RESIDENCE AND TRIP PURPOSE 1990 NPTS

	MSA, Within	Central City	MSA, Not in	Central City	<u>Not ir</u>	n MSA	<u>10</u>	<u>TAL</u>
	Vehicle Trip (000)	VMT (000,000)						
Earning a Living	14,679,857	136,656	20,314,471	247,320	9,643,150	111,400	44,637,478	495,378
	(27.7%)	(33.7%)	(29.0%)	(37.4%)	(26.9%)	(32.5%)	(28.1%)	(35.1%)
Family and Personal Business	24,079,845	130,272	31,508,523	212,545	16,648,211	119,049	72,236,579	461,866
	(45.4%)	(32.1%)	(45.0%)	(32.1%)	(46.4%)	(34.8%)	(45.5%)	(32.8%)
Gvic, Educational, and Religious	2,846,803	17,716	3,488,735	27,253	2,099,095	17,232	8,434,633	62,201
	(5.4%)	(4.4%)	(5.0%)	(4.1%)	(5.8%)	(5.0%)	(5.3%)	(4.4%)
Social and Recreational	11,108,919	115,203	14,199,580	170,856	7,239,227	92,929	32,547,726	378,988
	(20.9%)	(28.4%)	(20.3%)	(25.8%)	(20.2%)	(27.1%)	(20.5%)	(26.9%)
Other	319,999	5,384	441,111	3,758	260,603	1,855	1,021,713	10,996
	(0.6%)	(1.3%)	(0.6%)	(0.6%)	(0.7%)	(0.5%)	(0.6%)	(0.8%)
TOTAL!	53,053,726	405,278	69,973,368	661,826	35,900,373	342,472	158,927,467	1,409,576
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

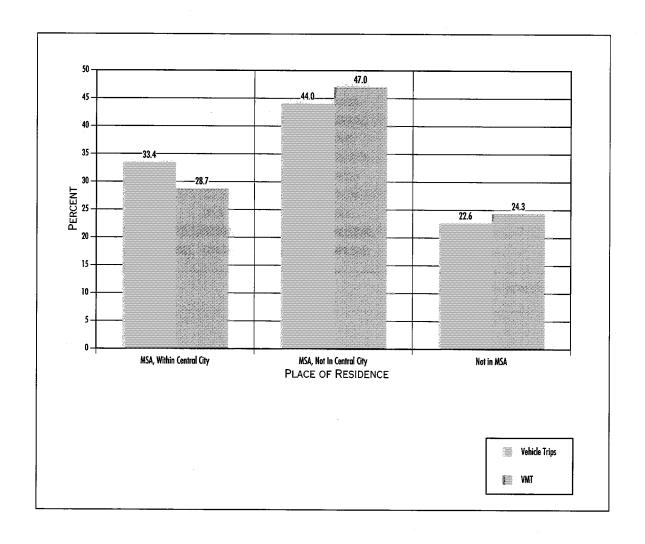
¹ Includes trips where trip purpose was unreported.

Drivers residing inside the central city boundary of metropolitan areas accounted for 33.4% of the total vehicle trips but only

28.7% of the total vehicle miles of travel, indicating their trips tended to be shorter than those by other drivers.

FIGURE 5.6

DISTRIBUTION OF VEHICLE TRAVEL BY PLACE OF RESIDENCE
1990 NPTS



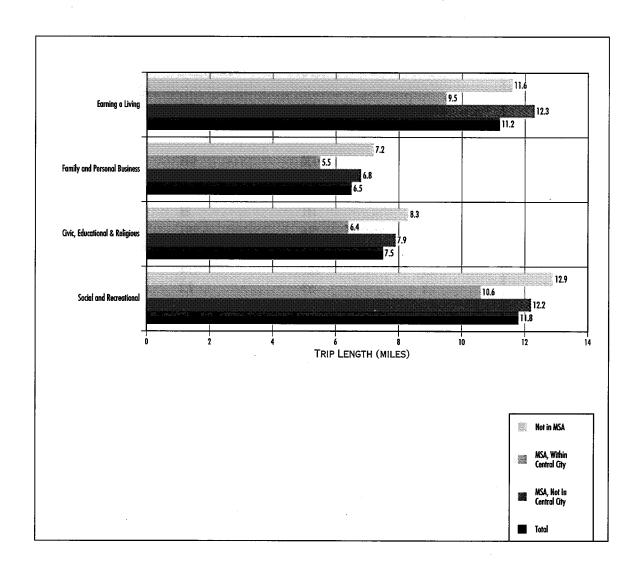
ANNUAL VEHICLE TRIPS, VEHICLE MILES OF TRAVEL, AND AVERAGE TRIP LENGTH PER HOUSEHOLD BY TRIP PURPOSE AND PLACE OF RESIDENCE 1990 NPTS

	MSA, Within Central City	MSA, Not in Central City	Not in MSA	<u>TOTAL</u>
Vehicle Trips				
Earning a Living	425	544	450	478
Family and Personal Business	696	844	777	774
Civic, Educational, and Religious	82	93	98	90
Social and Recreational	321	380	338	349
Other	9	12	12	11
TOTAL	1,533	1,873	1,675	1,702
Yehicle Miles of Travel				
Earning a Living	3,592	6,621	5,202	5,307
Family and Personal Business	3,767	5,690	5,559	4,948
Civic, Educational, and Religious	512	730	805	666
Social and Recreational	3,332	4,574	4,339	4,060
Other	156	101	86	118
TOTAL	11,359	17,716	15,991	15,100
Average Trip Length' (miles)				
Earning a Living	9.5	12.3	11.6	11.2
Family and Personal Business	5.5	6.8	7.2	6.5
Civic, Educational, and Religious	6.4	7.9	8.3	7.5
Social and Recreational	10.6	12.2	12.9	11.8
Other	16.8	8.5	7.2	10.8
ALL	7.8	9.6	9.6	9.0
Number of Households (000)	34,579	37,353	21,415	93,347

¹ Average trip length is calculated using only those records where trip mileage information is available.

In 1990, the average trip length was about nine miles. Trips for earning a living and for social and recreational purposes were longer on average. Trips for other purposes were significantly shorter than the average. Trip lengths were much shorter for residents inside the central city of metropolitan areas, compared with trips taken by other residents.

AVERAGE LENGTH OF VEHICLE TRIPS PER HOUSEHOLD BY TRIP PURPOSE AND PLACE OF RESIDENCE
1990 NPTS



The traditional morning and late afternoon peak periods of traffic were not as prominent as one might expect.

NUMBER OF VEHICLE TRIPS BY PLACE OF RESIDENCE AND TIME OF DAY
1990 NPTS
(THOUSANDS)

	MSA, Within Central City	MSA, Not in Central City	Not in MSA	TOTAL
1:00 a.m 6:00 a.m.	1,295,508	1,625,568	713,426	3,634,502
	(2.4%)	(2.3%)	(2.0%)	(2.3%)
6:00 a.m 9:00 a.m.	7,280,336	10,041,440	5,136,747	22,458,523
	(13.7%)	(14.4%)	(14.3%)	(14.1%)
9:00 a.m 1:00 p.m.	10,799,990	14,658,219	7,891,374	33,349,583
	(20.4%)	(20.9%)	(22.0%)	(21.0%)
1:00 p.m 4:00 p.m.	10,202,020	13,237,963	7,230,428	30,670,411
	(19.2%)	(18.9%)	(20.1%)	(19.3%)
4:00 p.m 7:00 p.m.	12,270,461	16,600,193	8,306,354	37,177,009
	(23.1%)	(23.7%)	(23 .1%)	(23.4%)
7:00 p.m 10:00 p.m.	6,538,526	8,579,150	3,939,018	19,056,694
	(12.3%)	(12.3%)	(11.0%)	(12.0%)
10:00 p.m 1:00 a.m.	2,339,014	2,772,899	1,319,440	6,431,353
	(4.4%)	(4.0%)	(3.7%)	(4.0%)
TOTAL'	53,053,726	69,973,368	35,900,373	158,927,467
	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes trips where start time of the trip was unreported.

DISTRIBUTION OF VEHICLE TRIPS BY PLACE OF RESIDENCE AND TIME OF DAY 1990 NPTS

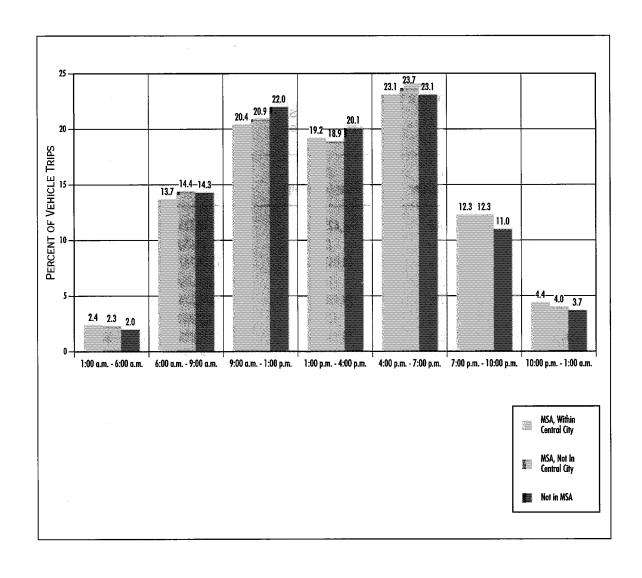


TABLE 5.13

NUMBER OF VEHICLE MILES OF TRAVEL BY PLACE OF RESIDENCE AND TIME OF DAY 1990 NPTS (THOUSANDS)

	MSA, Within Central City	MSA, Not in Central City	Not in MSA	TOTAL
1:00 a.m 6:00 a.m.	14,111,979	28,222,434	14,758,140	57,092,553
	(3.5%)	(4.3%)	(4.3%)	(4.1%)
6:00 a.m 9:00 a.m.	62,815,378	117,859,551	59,094,846	239,769,775
	(15.5%)	(17.8%)	(17.3%)	(17.0%)
9:00 a.m 1:00 p.m.	80,179,731	117,629,219	64,157,491	261,966,441
	(19.8%)	(17.8%)	(18.7%)	(18.6%)
1:00 p.m 4:00 p.m.	74,660,583	120,290,780	66,359,461	261,310,824
	(18.4%)	(18.2%)	(19.4%)	(18.5%)
4:00 p.m 7:00 p.m.	92,950,153	155,390,208	75,195,507	323,535,868
	(22.9%)	(23.5%)	(22.0%)	(23.0%)
7:00 p.m 10:00 p.m.	48,816,994	74,775,667	37,864,376	161,457,037
	(12.0%)	(11.3%)	(11.1%)	(11.5%)
10:00 p.m 1:00 a.m.	19,335,130	30,354,157	14,802,796	64,492,083
	(4.8%)	(4.6%)	(4.3%)	(4.6%)
TOTAL'	405,277,854	661,826,323	342,472,170	1,409,576,347
	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes miles of travel where start time of the trip was unreported.

Almost 60% of vehicle trips were less than five miles long. People living outside the central city of metropolitan areas tend to take longer trips than those inside the central city.

TABLE 5.14

NUMBER OF VEHICLE TRIPS BY PLACE OF RESIDENCE AND TRIP LENGTH
1990 NPTS
(THOUSANDS)

;	MSA, Within Central City	MSA, Not in Central City	Not in MSA	TOTAL
5 miles or less	33,411,853	38,595,614	21,804,799	93,812,266
	(63.0%)	(55.2%)	(60.7%)	(59.0%)
6 to 10 miles	9,704,585	13,366,573	5,526,648	28,597,806
	(18.3%)	(19.1%)	(15.4%)	(18.0%)
11 to 15 miles	3,992,878	6,690,568	3,006,301	13,689,747
	(7.5%)	(9.6%)	(8.4%)	(8.6%)
16 to 20 miles	1,792,770	3,917,227	1,635,702	7,345,699
	(3.4%)	(5.6%)	(4.6%)	(4.6%)
21 to 30 miles	1,643,136	3,471,394	1,597,026	6,711,556
	(3.1%)	(5.0%)	(4.4%)	(4.2%)
31 miles and over	1,630,082	3,183,411	2,042,593	6,856,086
	(3.1%)	(4.5%)	(5.7%)	(4.3%)
TOTAL	53,053,726	69,973,368	35,900,373	158,927,467
	(100.0%)	(100.0%)	(100.0%)	(100.0%)
!				

¹ Includes trips where trip length was unreported.

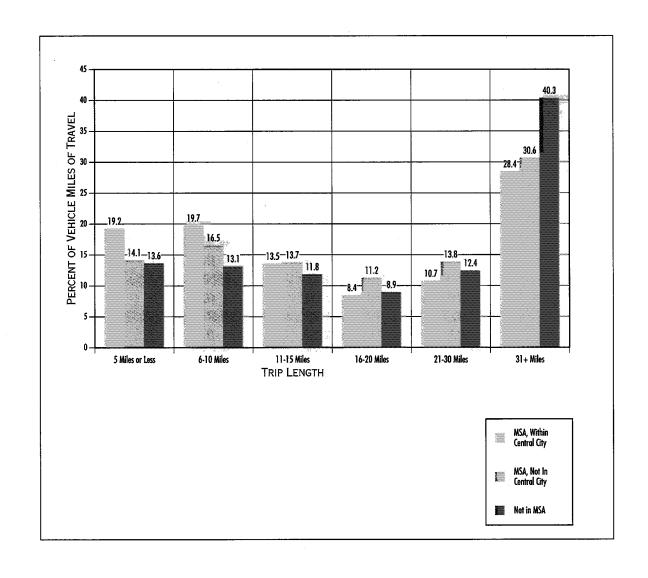
TABLE 5.15

NUMBER OF VEHICLE MILES OF TRAVEL BY PLACE OF RESIDENCE AND TRIP LENGTH 1990 NPTS (THOUSANDS)

	MSA, Within Central City	MSA, Not in Central City	Not in MSA	TOTAL
5 miles or less	77,884,410	93,371,631	46,561,715	217,817,756
	(19.2%)	(14.1%)	(13.6%)	(15.5%)
6 to 10 miles	79,759,044	109,063,077	44,749,732	233,571,853
: % 1 12 12 12 12 12 12 12 12 12 12 12 12 1	(19.7%)	(16.5%)	(13.1%)	(16.6%)
11 to 15 miles	54,682,277	90,841,875	40,374,236	185,898,388
	(13.5%)	(13.7%)	(11.8%)	(13.2%)
16 to 20 miles	34,223,144	74,406,482	30,565,087	139,194,713
	(8.4%)	(11.2%)	(8.9%)	(9.9%)
21 to 30 miles	43,515,964	91,368,665	42,321,952	177,206,581
	(10.7%)	(13.8%)	(12.4%)	(12.6%)
31 miles and over	115,213,014	202,774,592	137,899,449	455,887,055
	(28.4%)	(30.6%)	(40.3%)	(32.3%)
TOTAL	405,277,854	661,826,323	342,472,170	1,409,576,347
	(100.0%)	(100.0%)	(100.0%)	(100.0%)

FIGURE 5.9

DISTRIBUTION OF VEHICLE MILES OF TRAVEL BY PLACE OF RESIDENCE AND TRIP LENGTH 1990 NPTS



NUMBER OF VEHICLE TRIPS BY MSA SIZE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

			MSA Size				
	Less than 250,000	250,000 499,999	500,000 - 999,999	1,000,000 - 2,999,999	3,000,000 and over	Not in MSA	TOTAL
Earning a Living	4,509,994	4,061,861	4,486,340	9,273,891	12,662,242	9,643,150	44,637,478
	(27.4%)	(28.1%)	(29.0%)	(28.6%)	(28.6%)	(26.9%)	(28.1%)
Family & Personal Business	7,346,569	6,577,814	6,999,236	14,686,688	19,978,061	16,648,211	72,236,579
· · · · · · · · · · · · · · · · · · ·	(44.6%)	(45.5%)	(45.3%)	(45.2%)	(45.2%)	(46.4%)	(45.5%)
Civic, Educational, & Religious	944,663	750,993	900,455	1,569,858	2,169,569	2,099,095	8,434,633
	(5.7%)	(5.2%)	(5.8%)	(4.8%)	(4.9%)	(5.8%)	(5.3%)
Social and Recreational	3,559,298	2,994,146	2,892,829	6,678,024	9,184,202	7,239,227	32,547,726
	(21.6%)	(20.7%)	(18.7%)	(20.6%)	(20.8%)	(20.2%)	(20.5%)
Other	83,464	59,849	167,377	242,796	207,624	260,603	1,021,713
	(0.5%)	(0.4%)	(1.1%)	(0.7%)	(0.5%)	(0.7%)	(0.6%)
TOTAL	16,452,475	14,446,454	15,446,435	32,463,690	44,218,040	35,900,373	158,927,467
2 48 7 2 7 7 7 2 7 4 8	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
No. of Persons (000)	21,048	18,851	20,429	43,693	68,260	67,135	239,416
	(8.8%)	(7.9%)	(8.5%)	(18.3%)	(28.5%)	(28.0%)	(100.0%)

¹ Includes trips where trip purpose was unreported.

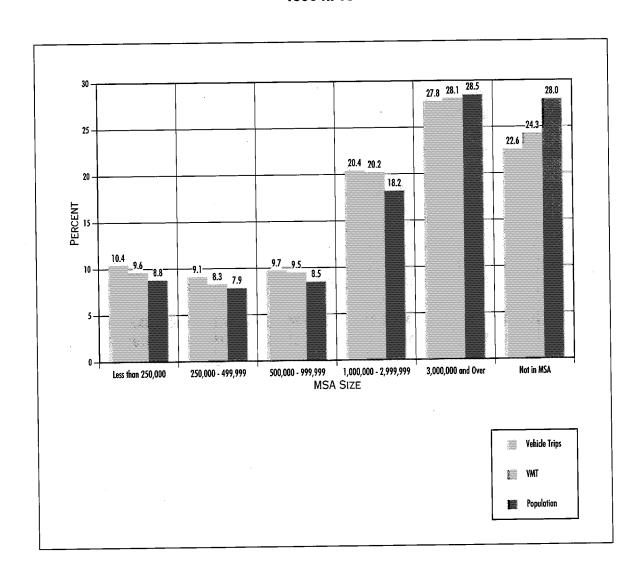
NUMBER OF VEHICLE MILES OF TRAVEL BY MSA SIZE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

			MSA Size				
TOTAL	Not in MSA	3,000,000 and over	1,000,000 - 2,999,999	500,000 - 999,999	250,000 - 499,999	Less than 250,000	
495,377,660	111,399,688	151,979,904	99,683,037	48,284,181	40,137,245	43,893,605	Earning a Living
(35.1%)	(32.5%)	(38.3%)	(35.1%)	(35.9%)	(34.2%)	(32.6%)	
461,865,943	119,048,885	122,657,493	92,106,655	46,136,789	39,463,294	42,452,827	Family & Personal Business
(32.8%)	(34.8%)	(30.9%)	(32.4%)	(34.4%)	(33.7%)	(31.5%)	
62,201,201	17,232,245	16,578,774	11,049,637	6,518,341	5,279,414	5,542,790	Gvic, Educational, & Religious
(4.4%)	(5.0%)	(4.2%)	(3.9%)	(4.9%)	(4.5%)	(4.1%)	
378,988,222	92,928,615	101,167,407	78,953,550	31,590,847	32,089,257	42,258,546	Social and Recreational
(26.9%)	(27.1%)	(25.5%)	(27.8%)	(23.5%)	(27.4%)	(31.3%)	***
10,996,301	1,854,623	4,310,806	2,165,612	1,772,769	251,612	640,879	Other
(0.8%)	(0.5%)	(1.1%)	(0.8%)	(1.3%)	(0.2%)	(0.5%)	
1,409,576,346	342,472,170	396,750,671	283,996,460	134,305,892	117,224,403	134,826,750	TOTAL'
(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	
239,416	67,135	68,260	43,693	20,429	18,851	21,048	No. of Persons (000)
(100.0%)	(28.0%)	(28.5%)	(18.3%)	(8.5%)	(7.9%)	(8.8%)	
•							
-					vas unreported.	where trip purpose w	¹ Includes miles of travel

On a per person basis, people living in metropolitan areas with a population of more than three million and those in non-MSA areas took fewer vehicle trips than people living in other areas. Their trips also tended to be longer than those by people living in other areas.

FIGURE 5.10

DISTRIBUTION OF POPULATION AND VEHICLE TRAVEL BY MSA SIZE
1990 NPTS



NUMBER OF VEHICLE TRIPS BY MSA SIZE AND TRIP LENGTH 1990 NPTS (THOUSANDS)

		-	MSA Size				
	Less than 250,000	250,000 - 499,999	500,000 - 999,999	1,000,000 - 2,999,999	3,000,000 and over	Not in MSA	TOTAL
5 miles or less	10,566,578	8,788,986	8,832,594	18,131,094	25,688,216	21,804,798	93,812,266
	(64.2%)	(60.8%)	(57.2%)	(55.9%)	(58.1%)	(60.7%)	(59.0%)
6 to 10 miles	2,984,378	2,830,147	2,960,046	6,388,703	7,907,884	5,526,648	28,597,806
*	(18.1%)	(19.6%)	(19.2%)	(19.7%)	(17.9%)	(15.4%)	(18.0%)
11 to 15 miles	1,076,728	1,208,841	1,532,043	3,230,042	3,635,791	3,006,302	13,689,747
. # . * * * * * * * * * * * * * * * * *	(6.5%)	(8.4%)	(9.9%)	(9.9%)	(8.2%)	(8.4%)	(8.6%)
16 to 20 miles	495,103	590,048	721,093	1,741,643	2,162,110	1,635,702	7,345,699
	(3.0%)	(4.1%)	(4.7%)	(5.4%)	(4.9%)	(4.6%)	(4.6%)
21 to 30 miles	455,152	471,110	619,518	1,403,604	2,165,146	1,597,026	6,711,556
	(2.8%)	(3.3%)	(4.0%)	(4.3%)	(4.9%)	(4.4%)	(4.2%)
31 miles and over	695,994	470,864	589,073	1,123,618	1,933,944	2,042,593	6,856,086
	(4.2%)	(3.3%)	(3.8%)	(3.5%)	(4.4%)	(5.7%)	(4.3%)
TOTAL	16,452,475	14,446,454	15,446,435	32,463,690	44,218,040	35,900,373	158,927,467
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

NUMBER OF VEHICLE MILES OF TRAVEL BY MSA SIZE AND TRIP LENGTH 1990 NPTS (THOUSANDS)

			MSA Size				
	Less than 250,000	250,000 - 499,999	500,000 - 999,999	1,000,000 - 2,999,999	3,000,000 and over	Not in MSA	TOTAL
5 miles or less	25,175,835	21,239,735	21,547,211	43,148,802	60,144,458	46,561,715	217,817,756
3,,,,,,	(18.7%)	(18.1%)	(16.0%)	(15.2%)	(15.2%)	(13.6%)	(15.5%)
6 to 10 miles	23,719,460	22,861,580	24,196,973	52,689,501	65,354,607	44,749,732	233,571,853
· · · · · · · · · · · · · · · · · · ·	(17.6%)	(19.5%)	(18.0%)	(18.6%)	(16.5%)	(13.1%)	(16.6%)
11 to 15 miles	14,586,896	16,380,919	20,737,530	44,118,052	49,700,755	40,374,236	185,898,388
,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(10.8%)	(14.0%)	(15.4%)	(15.5%)	(12.5%)	(11.8%)	(13.2%)
16 to 20 miles	9,361,657	11,237,693	13,547,776	33,275,389	41,207,111	30,565,087	139,194,713
	(6.9%)	(9.6%)	(10.1%)	(11.7%)	(10.4%)	(8.9%)	(9.9%)
21 to 30 miles	12,100,346	12,552,940	16,173,196	36,746,675	57,311,472	42,321,952	177,206,581
21 10 00 1111103	(9.0%)	(10.7%)	(12.0%)	(12.9%)	(14.4%)	(12.4%)	(12.6%)
31 miles and over	49,882,556	32,951,537	38,103,206	74,018,040	123,032,267	137,899,449	455,887,055
or imo and ord	(37.0%)	(28.1%)	(28.4%)	(26.1%)	(31.0%)	(40.3%)	(32.3%)
TOTAL	134,826,750	117,224,403	134,305,892	283,996,460	396,750,671	342,472,170	1,409,576,347
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

Table 5.20

NUMBER OF VEHICLE TRIPS BY URBANIZED AREA SIZE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

			Urbanized Area Si	ze¹			TOTAL
	50,000- 199,999	200,000- 499,999	500,000- 999,999	1,000,000 or more without rail/subway	1,000,000 or more with rail/subway	Not in Urbanized Area	
Earning a Living	3,897,300	3,165,700	3,055,201	9,395,233	8,241,504	16,882,540	44,637,478
	(26.7%)	(27.4%)	(28.6%)	(28.7%)	(28.7%)	(27.8%)	(28.1%)
Family & Personal Business	6,516,034	5,144,553	4,736,328	14,885,337	12,718,522	28,235,805	72,236,579
e e e e e e e e e e e e e e e e e e e	(44.7%)	(44.6%)	(44.4%)	(45.5%)	(44.3%)	(46.5%)	(45.5%)
Civic, Educational, & Religious	905,015	621,212	618,409	1,622,368	1,394,579	3,273,050	8,434,633
The second secon	(6.2%)	(5.4%)	(5.8%)	(5.0%)	(4.9%)	(5.4%)	(5.3%)
Social and Recreational	3,183,577	2,521,805	2,170,525	6,551,182	6,229,753	11,890,884	32,547,726
	(21.8%)	(21.8%)	(20.3%)	(20.0%)	(21.7%)	(19.6%)	(20.5%)
Other	84,818	88,253	91,913	237,508	115,417	403,804	1,021,713
į	(0.6%)	(0.8%)	(0.9%)	(0.7%)	(0.4%)	(0.7%)	(0.6%)
TOTAL!	14,591,495	11,543,315	10,672,563	32,706,962	28,705,127	60,708,005	158,927,467
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
No. of Persons (000)	18,544	14,733	14,228	44,045	47,360	83,191	222,101
	(8.3%)	(6.6%)	(6.4%)	(19.8%)	(21.3%)	(37.5%)	(100.0%)

¹ An urbanized area is different from an MSA in that the urbanized area is the more densely developed area of a metropolitan area, whereas MSA's follow county lines. (See Glossary, Appendix A)

² Includes trips where trip purpose was unreported.

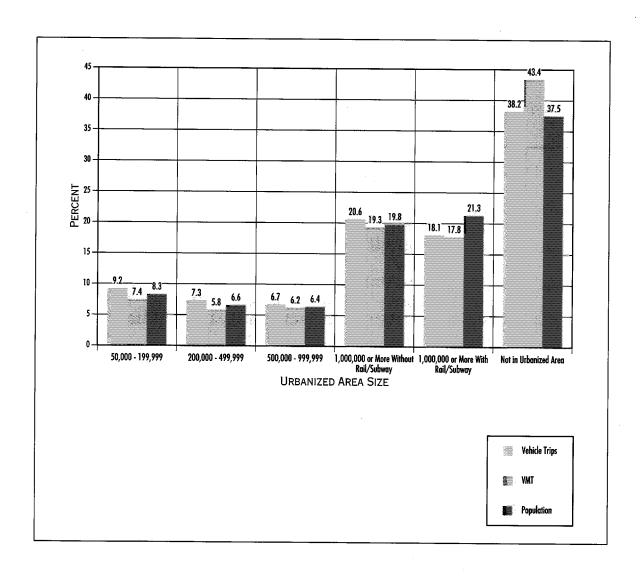
NUMBER OF VEHICLE MILES OF TRAVEL BY URBANIZED AREA SIZE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

		U	rbanized Area Size	e¹			,	
	50,000- 199,999	200,000- 499,999	500,000- 999,999	1,000,000 or more without rail/subway	1,000,000 or more with rail/subway	Not in Urbanized Area	TOTAL	
Earning a Living	31,438,054	28,248,223	28,528,095	100,262,105	95,815,456	211,085,727	495,377,660	
Entrang o crand	(30.2%)	(34.5%)	(32.6%)	(36.8%)	(38.1%)	(34.5%)	(35.1%)	
Family & Personal Business	32,405,626	26,960,474	27,781,444	87,459,888	72,723,489	214,535,022	461,865,943	
Tunny & Letsonia Dosiness	(31.2%)	(32.9%)	(31.8%)	(32.1%)	(28.9%)	(35.0%)	(32.8%)	
Civic, Educational, & Religious	4,564,436	3,342,136	4,908,630	11,337,747	10,580,330	27,467,922	62,201,201	
Citic' Engenious a vondinos	(4.4%)	(4.1%)	(5.6%)	(4.2%)	(4.2%)	(4.5%)	(4.4%)	
Social and Recreational	34,778,618	22,627,968	25,424,047	69,442,313	70,590,782	156,124,494	378,988,222	
Antida and more and	(33.4%)	(27.6%)	(29.1%)	(25.5%)	(28.1%)	(25.5%)	(26.9%)	
Other	788,916	739,705	806,028	3,924,213	1,718,948	3,018,491	10,996,301	
****	(0.8%)	(0.9%)	(0.9%)	(1.4%)	(0.7%)	(0.5%)	(0.8%)	
TOTAL ²	103,977,562	81,922,087	87,450,251	272,438,523	251,485,293	612,302,631	1,409,576,347	
IVIAL	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	
No. of Persons (000)	18,544	14,733	14,228	44,045	47,360	83,191	222,101	
	(8.3%)	(6.6%)	(6.4%)	(19.8%)	(21.3%)	(37.5%)	(100.0%)	

¹ An urbanized area is different from an MSA in that the urbanized area is the more densely developed area of a metropolitan area, whereas MSA's follow county lines. (See Glossary, Appendix A)

² Includes miles of travel where trip purpose was unreported.

DISTRIBUTION OF POPULATION AND VEHICLE TRAVEL BY URBANIZED AREA SIZE 1990 NPTS



Residents in large metropolitan areas with rail/subway services took more trips shorter than five miles and more trips greater than 30 miles than did those residing in areas of similar size but without rail/subway facilities. Otherwise, there is no significant differ-

ence in trip length between trips by these two groups of people. Compared with other people, those in non-urbanized areas took more than the average share of trips longer than 15 miles.

TABLE 5.22

NUMBER OF VEHICLE TRIPS BY URBANIZED AREA SIZE AND TRIP LENGTH

1990 NPTS

(THOUSANDS)

		Ü	rbanized Area Siz	e ^l			
-	50,000- 199,999	200,000- 499,999	500,000- 999,999	1,000,000 or more without rail/subway	1,000,000 or more with rail/subway	Not in Urbanized Area	TOTAL
5 miles or less	10,099,032	7,348,273	6,269,358	18,932,970	16,772,270	34,390,363	93,812,266
	(69.2%)	(63.7%)	(58.7%)	(57.9%)	(58.4%)	(56.6%)	(59.0%)
6 to 10 miles	2,491,631	2,347,199	2,172,855	6,185,924	5,193,037	10,207,160	28,597,806
	(17.1%)	(20.3%)	(20.4%)	(18.9%)	(18.1%)	(16.8%)	(18.0%)
11 to 15 miles	795,202	851,961	1,015,701	3,084,082	2,377,391	5,565,410	13,689,747
	(5.4%)	(7.4%)	(9.5%)	(9.4%)	(8.3%)	(9.2%)	(8.6%)
16 to 20 miles	315,768	307,342	456,569	1,635,495	1,330,350	3,300,175	7,345,699
	(2.2%)	(2.7%)	(4.3%)	(5.0%)	(4.6%)	(5.4%)	(4.6%)
21 to 30 miles	276,757	287,425	276,165	1,466,631	1,269,195	3,135,383	6,711,556
	(1.9%)	(2.5%)	(2.6%)	(4.5%)	(4.4%)	(5.2%)	(4.2%)
31 miles and over	475,208	292,671	325,433	989,605	1,203,760	3,569,409	6,856,086
, and 1, and 1, and 1	(3.3%)	(2.5%)	(3.0%)	(3.0%)	(4.2%)	(5.9%)	(4.3%)
TOTAL ²	14,591,495	11,543,315	10,672,563	32,706,962	28,705,127	60,708,005	158,927,46
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%

An urbanized area is different from an MSA in that the urbanized area is the more densely developed area of a metropolitan area, whereas MSA's follow county lines. (See Glossary, Appendix A)

² Includes trips where trip length was unreported.

NUMBER OF VEHICLE MILES OF TRAVEL BY URBANIZED AREA SIZE AND TRIP LENGTH 1990 NPTS (THOUSANDS)

		·	Urbanized Area Siz	re ¹	·		a TOTAL
	50,000- 199,999	200,000- 499,999	500,000- 999,999	1,000,000 or more without rail/subway	1,000,000 or more with rail/subway	Not in Urbanized Area	
5 miles or less	23,621,524	18,209,766	15,239,923	44,628,572	38,790,113	77,327,858	217,817,756
	(22.7%)	(22.2%)	(17.4%)	(16.4%)	(15.4%)	(12.6%)	(15.5%)
6 to 10 miles	19,804,802	19,093,858	17,978,912	51,022,990	42,849,016	82,822,276	233,571,853
	(19.0%)	(23.3%)	(20.6%)	(18.7%)	(17.0%)	(13.5%)	(16.6%)
11 to 15 miles	10,705,331	11,520,245	13,803,150	42,311,479	32,538,474	75,019,709	185,898,388
	(10.3%)	(14.1%)	(15.8%)	(15.5%)	(12.9%)	(12.3%)	(13.2%)
16 to 20 miles	6,102,084	5,806,800	8,646,587	31,069,449	25,455,107	62,114,685	139,194,713
	(5.9%)	(7.1%)	(9.9%)	(11.4%)	(10.1%)	(10.1%)	(9.9%)
21 to 30 miles	7,399,864	7,507,752	7,144,654	38,857,810	33,456,635	82,839,866	177,206,581
	(7.1%)	(9.2%)	(8.2%)	(14.3%)	(13.3%)	(13.5%)	(12.6%)
31 miles and over	36,343,957	19,783,666	24,637,025	64,548,223	78,395,947	232,178,237	455,887,055
	(35.0%)	(24.1%)	(28.2%)	(23.7%)	(31.2%)	(37.9%)	(32.3%)
TOTAL!	103,977,562	81,922,087	87,450,251	272,438,523	251,485,293	612,302,631	1,409,576,347
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ An urbanized area is different from an MSA in that the urbanized area is the more densely developed area of a metropolitan area, whereas MSA's follow county lines. (See Glossary, Appendix A)

² Includes miles of travel where trip length was unreported.

As expected, the number of vehicle trips increased as household income increased. The proportion of trips for earning a living taken by households with an income greater than \$40,000 was almost twice that of those with incomes less than \$10,000, probably

because the former group is much more likely to have two or more workers. Regardless of income, most households made 45%-50% of their vehicle trips for family and personal business, and another 20% for social and recreational purposes.

TABLE 5.24 NUMBER OF VEHICLE TRIPS BY TRIP PURPOSE AND HOUSEHOLD INCOME 1990 NPTS (THOUSANDS)

Purpose	Under \$10,000	\$10,000- 19,999	\$20,000- 29,999	\$30,000- 39,000	\$40,000 and Over	Unreported	TOTAL
Earning a Living	1,312,838	4,381,329	5,982,095	6,783,102	16,285,535	9,892,580	44,637,479
	(16.9%)	(25.0%)	(27.2%)	(29.0%)	(30.1%)	(28.9%)	(28.1%)
Family & Personal Business	3,979,038	8,294,965	10,075,426	10,790,899	23,803,177	15,293,075	72,236,579
	(51.2%)	(47.3%)	(45.8%)	(46.1%)	(44.1%)	(44.8%)	(45.5%)
Civic, Educational, & Religious	650,183	1,023,161	1,069,596	1,071,359	2,677,040	1,943,294	8,434,633
	(8.4%)	(5.8%)	(4.9%)	(4.6%)	(5.0%)	(5.7%)	(5.3%)
Social & Recreational	1,770,595	3,747,565	4,703,833	4,643,894	10,880,494	6,801,344	32,547,726
	(22.8%)	(21.4%)	(21.4%)	(19.8%)	(20.1%)	(19.9%)	(20.5)
Other	52,804	94,461	159,082	120,826	362,774	231,765	1,021,713
	(0.7%)	(0.5%)	(0.7%)	(0.5%)	(0.8%)	(0.7%)	(0.6%)
TOTAL'	7,768,401	17,552,482	22,002,187	23,410,160	54,023,181	34,171,056	158,927,467
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
ALL PURPOSES	(4.9%)	(11.0%)	(13.8%)	(14.7%)	(34.0%)	(21.5%)	(100.0%)

¹ Includes trips where trip purpose was unreported.

NUMBER OF VEHICLE MILES OF TRAVEL BY TRIP PURPOSE AND HOUSEHOLD INCOME 1990 NPTS (THOUSANDS)

Purpose	Under \$10,000	\$10,000- 19,999	\$20,000- 29,999	\$30,000- 39,000	\$40,000 and Over	Unreported	TOTAL
Earning a Living	12,324,190	40,087,097	59,122,496	75,589,201	203,290,341	104,964,335	495,377,660
j	(22.2%)	(31.0%)	(31.2%)	(35.1%)	(38.7%)	(35.6%)	(35.1%)
Family & Personal Business	21,814,580	45,265,975	65,721,885	70,060,343	158,542,380	100,460,781	461,865,944
	(39.2%)	(35.1%)	(34.7%)	(32.5%)	(30.2%)	(34.0%)	(32.8%)
Civic, Educational, & Religious	4,062,432	6,304,259	8,285,051	9,123,265	19,902,460	14,523,734	62,201,201
	(7.3%)	(4.9%)	(4.4%)	(4.2%)	(3.8%)	(4.9%)	(4.4%)
Social & Recreational	16,955,335	36,699,587	52,887,933	59,425,626	140,437,821	72,581,920	378,988,222
	(30.5%)	(28.4%)	(27.9%)	(27.6%)	(26.8%)	(24.6%)	(26.9%)
Other	426,379	724,268	3,567,583	1,072,033	2,586,359	2,619,679	10,996,301
3	(0.8%)	(0.6%)	(1.9%)	(0.5%)	(0.5%)	(0.9%)	(0.8%)
TOTAL	55,583,914	129,118,263	189,604,626	215,272,474	524,842,286	295,154,737	1,409,576,300
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
ALL PURPOSES	(3.9%)	(9.2%)	(13.5%)	(15.3%)	(37.2%)	(20.9%)	(100.0%)

 $^{^{\}rm I}$ Includes miles of travel where trip purpose was unreported.

The number of trips per household made for the purpose of earning a living decreased in every income group between 1983 and 1990. On the other hand, the number of trips for family and personal business increased over the same period for every income group.

TABLE 5.26

ANNUAL NUMBER OF VEHICLE TRIPS PER HOUSEHOLD BY TRIP PURPOSE AND HOUSEHOLD INCOME
1983 AND 1990 NPTS
(INCOME IN 1990 DOLLARS)

Purpose	Under \$10,000	\$10,000- 19,999	\$20,000- 39,999	\$40,000 and over	TOTAL
1983					
Earning a Living	152	404	639	763	514
Family & Personal Business	241	422	587	747	520
Civic, Educational, & Religious	51	80	123	171	109
Social & Recreational	159	286	362	464	330
Other	6	9	15	22	13
TOTAL	609	1,201	1,726	2,167	1,486
NO. OF HOUSEHOLDS (000)	18,014	18,435	27,757	21,165	85,371
PERCENT OF HOUSEHOLDS	21.1	21.6	32.5	24.8	100.0
1990					
Earning a Living	142	337	540	750	478
Family & Personal Business	430	638	883	1,096	774
Civic, Educational, & Religious	70	79	91	123	90
Social & Recreational	191	288	396	501	349
Other	6	7	12	17	11
TOTAL	839	1,349	1,922	2,487	1,702
NO. OF HOUSEHOLDS (000)	9,252	13,011	23,618	21,704	93,347
PERCENT OF HOUSEHOLDS	9.9	13.9	25.3	23.3	100.0°

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

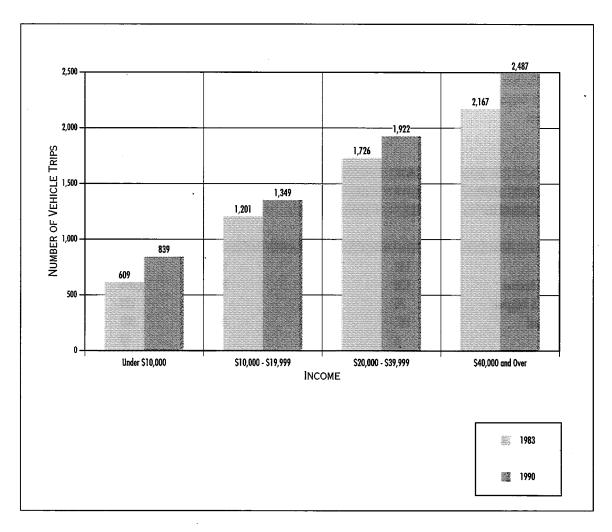
^{. &}lt;sup>2</sup> Includes 25,762 thousand (27.6%) households where household income was unreported.

On a per-household basis, a household in 1983 with an annual income greater than \$40,000 took an average of 256% more vehicle trips than a household with an income less than \$10,000. The gap in the number of vehicle trips per year between households in

the highest income category and those in the lowest narrowed in 1990. Highest-income households only took an average of 196% more vehicle trips than lowest-income households in 1990.

FIGURE 5.12

ANNUAL NUMBER OF VEHICLE TRIPS PER HOUSEHOLD BY HOUSEHOLD INCOME 1983 AND 1990 NPTS (INCOME IN 1990 DOLLARS)



ANNUAL VEHICLE MILES OF TRAVEL PER HOUSEHOLD BY TRIP PURPOSE AND HOUSEHOLD INCOME 1983 AND 1990 NPTS¹ (INCOME IN 1990 DOLLARS)

Purpose	Under \$10,000	\$10,000- 19,999	\$20,000- 39,999	\$40,000 and over	TOTAL
1983					
Earning a Living	1,135	3,392	5,666	7,385	4,613
Family & Personal Business	1,263	2,365	3,189	4,457	2,923
Civic, Educational, & Religious	248	495	646	1,019	611
Social & Recreational	1 ,425	2,558	3,459	4,893	3,205
Other	70	357	498	437	387
TOTAL	4,141	9,167	13,458	18,191	11,739
NO. OF HOUSEHOLDS (000)	18,014	18,435	27,757	21,165	85,371
PERCENT OF HOUSEHOLDS	21.1	21.6	32.5	24.8	100.0
1990					
Earning a Living	1,332	3,081	5,704	9,366	4,182
Family & Personal Business	2,358	3,479	5,749	7,305	3,872
Civic, Educational, & Religious	439	485	737	917	511
Social & Recreational	1,833	2,820	4,755	6,471	3,282
Other	46	56	196	119	90
TOTAL	6,008	9,921	17,141	24,178	15,100
NO. OF HOUSEHOLDS (000)	9,252	13,011	23,618	21,704	93,347
PERCENT OF HOUSEHOLDS	9.9	13.9	25.3	23.3	100.0

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

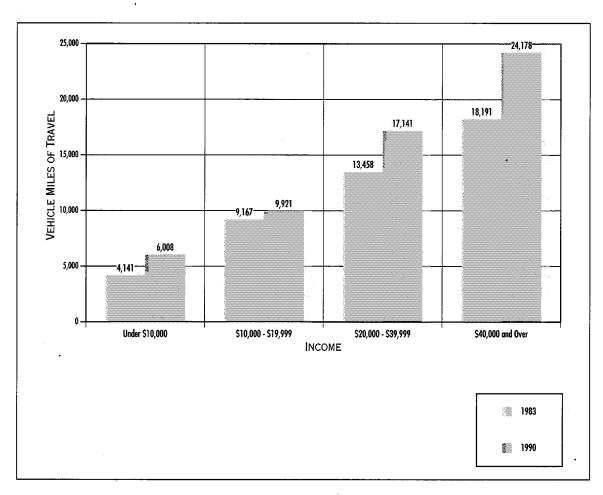
² Includes 25,762 thousand (27.6%) households where household income was unreported.

In analyzing data using household income, the reader should be aware that in 1990, only 72.4% of all surveyed households reported annual income. Thus, caution should be used in interpreting data displayed by income. A comparable percentage is not available for 1983 because income was imputed when it was not reported. Based on data from those households that reported income, annual

vehicle miles of travel per household increased as household income increased. In 1990, highest-income households drove 302% more than lowest-income households. However, this is less than the difference of 339% in the amount of driving per household between highest-income households and lowest-income households in 1983.

FIGURE 5.13

ANNUAL VEHICLE MILES OF TRAVEL PER HOUSEHOLD BY HOUSEHOLD INCOME 1983 AND 1990 NPTS (INCOME IN 1990 DOLLARS)



Between 20% and 26% of all vehicle trips were taken in vehicles 10 years or older, regardless of the number of vehicles available to the household. In general, the relative use of newer and older vehicles did not change

much as household vehicle availability increased. This has implications for energy consumption and air quality issues, and the introduction of recent safety features into the household vehicle fleet.

TABLE 5.28

ANNUAL VEHICLE TRIPS BY NUMBER OF HOUSEHOLD-BASED VEHICLES¹ AND AGE OF VEHICLE 1990 NPTS (MILLIONS)

Vehicle Age ²	1 Vehicle	2 Vehicles	3 or More Vehicles	TOTAL
1 Year or Less	2,334	5,876	3,716	11,926
	(6.6%)	(8.4%)	(8.2%)	(7.5%)
2 Years	3,399	8,608	4,755	16,762
	(9.6%)	(12.3%)	(10.4%)	(10.5%)
3 Years	3,227	8,064	4,532	15,823
	(9.1%)	(11.5%)	(10.0%)	(10.0%)
4 Years	4,021	7,490	4,067	15,578
ľ	(11.4%)	(10.7%)	(8.9%)	(9.8%)
5 Years	3,806	7,600	4,559	15,965
,	(10.7%)	(10.8%)	(10.0%)	(10.0%)
6 Years	3,222	6,451	4,074	13,747
	(9.1%)	(9.2%)	(9.0%)	(8.7%)
7 Years	2,913	5,600	3,860	12,373
	(8.2%)	(8.0%)	(8.5%)	(7.8%)
8 Years	1,813	3,274	2,463	7,550
	(5.1%)	(4.6%)	(5.4%)	(4.8%)
9 Years	1,433	2,710	1,983	6,126
·	(4.0%)	(3.8%)	(4.3%)	(3.9%)
10 or More Years	9,267	14,600	11,500	35,367
	(26.2%)	(20.7%)	(25.3%)	(22.3%)
TOTAL	35,435	70,273	45,509	158,927'
	(100.0%)	(100.0%)	(100.0%)	(100.0%)
ALL AGES	23.3%	46.0%	30.4%	100.0%
Number of Households (000)	30,654	35,872	18,248	84,774
	(36.3%)	(42.3%)	(21.5%)	(100.0%)

¹ Includes all vehicles owned by or available on a regular basis to the household.

² For vehicle distribution by vehicle age, see Table 3.25.

³ Includes trips where age of vehicle was unreported.

⁴ Does not include 8,573,000 households without a vehicle.

ANNUAL VEHICLE MILES OF TRAVEL AND AVERAGE TRIP LENGTH BY NUMBER OF HOUSEHOLD-BASED VEHICLES¹ AND AGE OF VEHICLE 1990 NPTS (THOUSANDS)

Vehicle Age ²	1 Vehicle	2 Vehicles	3 or More Vehicles	TOTAL	Average Trip Length (miles)
l Year or Less	21,851,363	57,920,864	41,480,178	121,252,405	10.3
	(8.6%)	(9.4%)	(9.2%)	(8.6%)	
2 Years	26,954,431	84,861,128	53,402,111	165,217,670	10.0
. 11 1 1 2	(10.6%)	(13.7%)	(11.9%)	(11.7%)	
3 Years	24,431,017	78,790,575	44,183,617	147,405,209	9.4
	(9.6%)	(12.7%)	(9.8%)	(10.5%)	
4 Years	32,487,350	69,019,068	44,815,042	146,321,460	9.5
	(12.8%)	(11.1%)	(10.0%)	(10.4%)	
5 Years	28,543,060	73,299,703	42,945,416	144,788,179	9.2
17.0 %8 1 s	(11.3%)	(11.8%)	(9.5%)	(10.3%)	
6 Years	23,999,328	53,813,494	40,967,370	118,780,192	8.7
N. A. J. S.	(9.5%)	(8.7%)	(9.1%)	(8.4%)	
7 Years	20,680,399	43,816,420	34,931,657	99,428,476	8.2
	(8.2%)	(7.1%)	(7.8%)	(7.1%)	
8 Years	12,920,140	26,084,857	21,410,426	60,415,423	8.1
	(5.1%)	(4.2%)	(4.7%)	(4.3%)	
9 Years	8,099,912	20,972,446	19,705,775	48,778,133	8.1
	(3.2%)	(3.4%)	(4.4%)	(3.5%)	
10 or More Years	53,552,100	110,543,948	106,007,933	270,103,981	7.7
·	(21.1%)	(17.9%)	(23.6%)	(19.2%)	
TOTAL	253,519,100	619,122,503	449,849,525	1,409,576,300	9.0
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	
Average Trip Length (miles)	7.3	8.9	10.0	9.0	

^{&#}x27; Includes all vehicles owned by or available on a regular basis to the household.

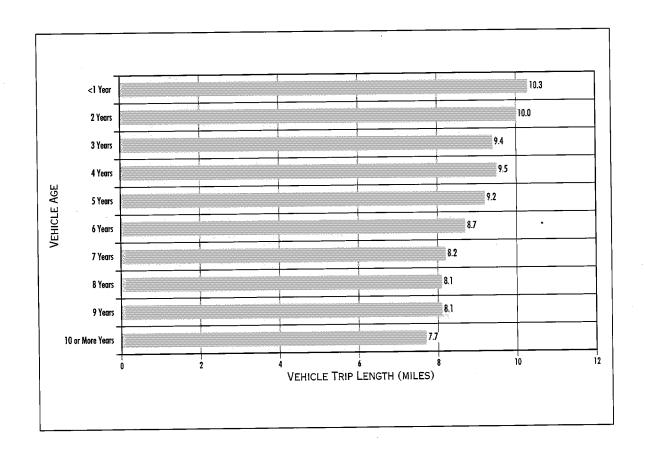
³ Includes miles of travel where age of vehicle was unreported.

 $^{^{\}rm 2}$ For vehicle distribution by vehicle age, see Table 3.25.

Based on the 1990 NPTS, older vehicles were used more for shorter trips than newer vehicles. The average vehicle trip length in 1990 was about nine miles, and vehicles less than six years old were used more for longer trips.

FIGURE 5.14

AVERAGE VEHICLE TRIP LENGTH BY AGE OF VEHICLE
1990 NPTS



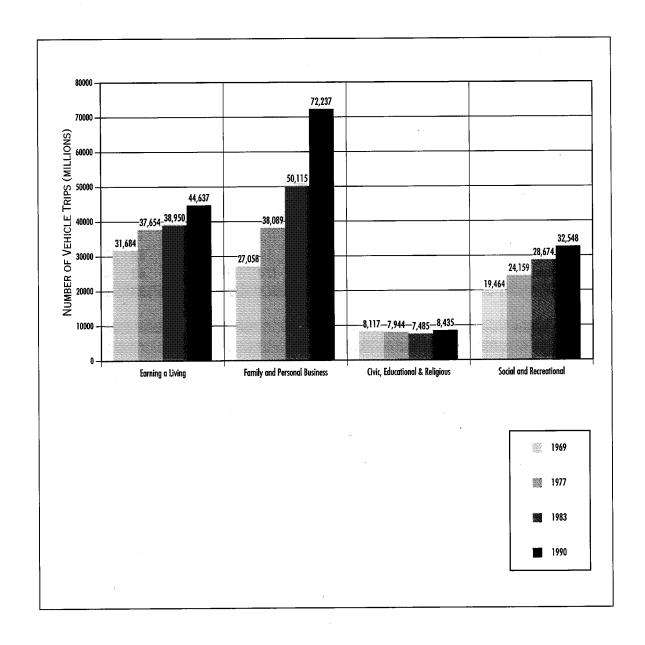
NUMBER OF VEHICLE TRIPS AND VEHICLE MILES OF TRAVEL BY TRIP PURPOSE 1969, 1977, 1983, AND 1990 NPTS¹ (MILLIONS)

	Vehicle Trips				Vehicle Miles of Travel			
	1969	1977	1983	1990	1969	1977	1983	1990
Earning A Living								
To or From Work	27,844	31,886	35,271	41,792	260,716	287,710	301,644	453,052
Work-Related Business	3,840	5,768	3,679	2,845	61,299	68,978	42,090	42,336
Subtotal	31,684	37,654	38,950	44,637	322,015	356,688	343,734	495,378
Family & Personal Business								\.
Shopping	13,354	20,242	25,375	32,165	58,196	100,744	134,287	162,668
Doctor/Dentist	1,484	1,632	1,522	1,749	12,415	16,337	15,032	17,809
Other Family/Personal	12,220	16,215	23,218	38,323	79,146	108,912	155,332	281,390
Subtotal	27,058	38,089	50,115	72,237	149,757	225,993	304,650	461,867
							•	•
Civic, Educational & Religious	1. 24							
Subtotal	8,117	7,944	7,485	8,435	38,021	47,195	41,088	62,201
Social & Recreational								
Vacation	0	109	254	190	20,174	5,446	21,045	20,531
Visit Friends/ Relatives	7,855	10,121	12,561	14,053	93,889	109,820	135,289	163,980
Pleasure Driving	1,222	544	507	435	24,054	8,168	11,024	9,166
Other Social/Recreational	10,387	13,386	15,352	17,870	118,719	124,342	133,284	185,311
Subtotal	19,464	24,159	28,674	32,548	256,836	247,776	300,642	378,988
OTHER ²								
Subtotal	960	979	1,649	1,070	9,311	29,951	12,026	11,166
TOTAL	87,284	108,826	126,874	158,927	775,940	907,603	1,002,139	1,409,600

Section 4 of Chapter 1.

FIGURE 5.15

NUMBER OF VEHICLE TRIPS BY TRIP PURPOSE 1969, 1977, 1983, AND 1990 NPTS



DISTRIBUTION OF VEHICLE TRIPS, VEHICLE MILES OF TRAVEL, AND AVERAGE TRIP LENGTH BY TRIP PURPOSE 1969, 1977, 1983, AND 1990 NPTS

Vehicle Trips (Percentage)			V		es of Trave intage)	el 	·	Trip Length (Miles)			
1969	1977	1983	1990	1969	1977	1983	1990	1969	1977	1983	1990
31.9	29.3	27.8	26.3	33.6	31.7	30.1	32.1	9.4	9.1	8.5	11.0
4.4	5.3	2.9	1.8	7.9	7.6	4.2	3.0	16.1	11.9	11.4	15.1
36.3	34.6	30.7	28.1	41.5	39.3	34.3	35.1	10.2	9.5	8.8	11.2
15.3	18.6	20.0	20.3	7.5	11.1	13.4	11.5	4.4	5.0	5.3	5.1
1.7	1.5	1.2	1.1	1.6	1.8	1.5	1.3	8.4	10.3	9.7	10.5
14.0	14.9	18.3	24.1	10.2	12.0	15.5	20.0	6.5	6.8	6.7	7.4
31.0	35.0	39.5	45.5	19.3	24.9	30.4	32.8	5.6	6.0	6.1	6.5
	5,475										
9.3	7.3	5.9	5.3	4.9	5.2	4.1	4.4	4.7	5.9	5.5	7.5
		2									
0.0	0.1	0.2	0.1	2.6	0.6	2.1	1.5	160.0	77.9	113.9	114.9
9.0	9.3	9.9	8.8	12.1	12.1	13.5	11.6	12.0	10.9	10.8	11.8
1.4	0.5	0.4	0.3	3.1	0.9	1.1	0.6	20.0	14.1	22.7	21.9
11.9	12.3	12.1	11.3	15.3	13.7	13.3	13.2	11.4	9.3	8.7	10.5
22.3	22.2	22.6	20.5	33.1	27.3	30.0	26.9	13.1	10.3	10.5	11.8
1.1	0.9	1.3	0.6	1.2	3.3	1.2	0.8	9.4	29.3	7.2	10.8
100.0	100.0	TOO O	100 A	100.0	100 O	100 0	100.0	8.9	8.4	7.9	9.0
TOTAL COLUMN COL	31.9 4.4 36.3 15.3 1.7 14.0 31.0 9.3 0.0 9.0 1.4 11.9 22.3	1969 1977 31.9 29.3 4.4 5.3 36.3 34.6 15.3 18.6 1.7 1.5 14.0 14.9 31.0 35.0 9.3 7.3 0.0 0.1 9.0 9.3 1.4 0.5 11.9 12.3 22.3 22.2	1969 1977 1983 31.9 29.3 27.8 4.4 5.3 2.9 36.3 34.6 30.7 15.3 18.6 20.0 1.7 1.5 1.2 14.0 14.9 18.3 31.0 35.0 39.5 0.0 0.1 0.2 9.0 9.3 9.9 1.4 0.5 0.4 11.9 12.3 12.1 22.3 22.2 22.6	1969 1977 1983 1990 31.9 29.3 27.8 26.3 4.4 5.3 2.9 1.8 36.3 34.6 30.7 28.1 15.3 18.6 20.0 20.3 1.7 1.5 1.2 1.1 14.0 14.9 18.3 24.1 31.0 35.0 39.5 45.5 9.3 7.3 5.9 5.3 0.0 0.1 0.2 0.1 9.0 9.3 9.9 8.8 1.4 0.5 0.4 0.3 11.9 12.3 12.1 11.3 22.3 22.2 22.6 20.5	1969 1977 1983 1990 1969 31.9 29.3 27.8 26.3 33.6 4.4 5.3 2.9 1.8 7.9 36.3 34.6 30.7 28.1 41.5 15.3 18.6 20.0 20.3 7.5 1.7 1.5 1.2 1.1 1.6 14.0 14.9 18.3 24.1 10.2 31.0 35.0 39.5 45.5 19.3 9.3 7.3 5.9 5.3 4.9 0.0 0.1 0.2 0.1 2.6 9.0 9.3 9.9 8.8 12.1 1.4 0.5 0.4 0.3 3.1 11.9 12.3 12.1 11.3 15.3 22.3 22.2 22.6 20.5 33.1 1.1 0.9 1.3 0.6 1.2	1969 1977 1983 1990 1969 1977 31.9 29.3 27.8 26.3 33.6 31.7 4.4 5.3 2.9 1.8 7.9 7.6 36.3 34.6 30.7 28.1 41.5 39.3 15.3 18.6 20.0 20.3 7.5 11.1 1.7 1.5 1.2 1.1 1.6 1.8 14.0 14.9 18.3 24.1 10.2 12.0 31.0 35.0 39.5 45.5 19.3 24.9 9.3 7.3 5.9 5.3 4.9 5.2 0.0 0.1 0.2 0.1 2.6 0.6 9.0 9.3 9.9 8.8 12.1 12.1 1.4 0.5 0.4 0.3 3.1 0.9 11.9 12.3 12.1 11.3 15.3 13.7 22.3 22.2 22.6 20.5 33.1 27.3	1969 1977 1983 1990 1969 1977 1983 31.9 29.3 27.8 26.3 33.6 31.7 30.1 4.4 5.3 2.9 1.8 7.9 7.6 4.2 36.3 34.6 30.7 28.1 41.5 39.3 34.3 15.3 18.6 20.0 20.3 7.5 11.1 13.4 1.7 1.5 1.2 1.1 1.6 1.8 1.5 14.0 14.9 18.3 24.1 10.2 12.0 15.5 31.0 35.0 39.5 45.5 19.3 24.9 30.4 9.3 7.3 5.9 5.3 4.9 5.2 4.1 0.0 0.1 0.2 0.1 2.6 0.6 2.1 9.0 9.3 9.9 8.8 12.1 12.1 13.5 1.4 0.5 0.4 0.3 3.1 0.9 1.1 11.9 12.3 12.1 11.3 15.3 13.7 13.3 <tr< td=""><td>1969 1977 1983 1990 1969 1977 1983 1990 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4 0.0 0.1 0.2 0.1 2.6 0.6 2.1 1.5 9.0 9.3 9.9 8.8 12.1 12.1 13.5 11.6 1.4 0.5 0.4 0.3 3.1<td>1969 1977 1983 1990 1969 1977 1983 1990 1969 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4 4.7 0.0 0.1 0.2 0.1 2.6 0.6 2.1 1.5 160.0 9.0 9.3 9.9 8.8<td>1969 1977 1983 1990 1969 1977 1983 1990 1969 1977 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 9.1 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 11.9 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 9.5 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 5.0 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 10.3 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 6.8 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 6.0 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4 4.7 5.9 0.0 0.1 0.2 0.1 2.6<!--</td--><td>1969 1977 1983 1990 1969 1977 1983 1990 1969 1977 1983 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 9.1 8.5 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 11.9 11.4 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 9.5 8.8 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 5.0 5.3 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 10.3 9.7 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 6.8 6.7 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 6.0 6.1 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4</td></td></td></td></tr<>	1969 1977 1983 1990 1969 1977 1983 1990 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4 0.0 0.1 0.2 0.1 2.6 0.6 2.1 1.5 9.0 9.3 9.9 8.8 12.1 12.1 13.5 11.6 1.4 0.5 0.4 0.3 3.1 <td>1969 1977 1983 1990 1969 1977 1983 1990 1969 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4 4.7 0.0 0.1 0.2 0.1 2.6 0.6 2.1 1.5 160.0 9.0 9.3 9.9 8.8<td>1969 1977 1983 1990 1969 1977 1983 1990 1969 1977 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 9.1 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 11.9 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 9.5 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 5.0 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 10.3 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 6.8 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 6.0 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4 4.7 5.9 0.0 0.1 0.2 0.1 2.6<!--</td--><td>1969 1977 1983 1990 1969 1977 1983 1990 1969 1977 1983 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 9.1 8.5 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 11.9 11.4 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 9.5 8.8 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 5.0 5.3 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 10.3 9.7 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 6.8 6.7 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 6.0 6.1 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4</td></td></td>	1969 1977 1983 1990 1969 1977 1983 1990 1969 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4 4.7 0.0 0.1 0.2 0.1 2.6 0.6 2.1 1.5 160.0 9.0 9.3 9.9 8.8 <td>1969 1977 1983 1990 1969 1977 1983 1990 1969 1977 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 9.1 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 11.9 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 9.5 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 5.0 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 10.3 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 6.8 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 6.0 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4 4.7 5.9 0.0 0.1 0.2 0.1 2.6<!--</td--><td>1969 1977 1983 1990 1969 1977 1983 1990 1969 1977 1983 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 9.1 8.5 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 11.9 11.4 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 9.5 8.8 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 5.0 5.3 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 10.3 9.7 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 6.8 6.7 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 6.0 6.1 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4</td></td>	1969 1977 1983 1990 1969 1977 1983 1990 1969 1977 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 9.1 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 11.9 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 9.5 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 5.0 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 10.3 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 6.8 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 6.0 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4 4.7 5.9 0.0 0.1 0.2 0.1 2.6 </td <td>1969 1977 1983 1990 1969 1977 1983 1990 1969 1977 1983 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 9.1 8.5 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 11.9 11.4 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 9.5 8.8 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 5.0 5.3 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 10.3 9.7 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 6.8 6.7 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 6.0 6.1 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4</td>	1969 1977 1983 1990 1969 1977 1983 1990 1969 1977 1983 31.9 29.3 27.8 26.3 33.6 31.7 30.1 32.1 9.4 9.1 8.5 4.4 5.3 2.9 1.8 7.9 7.6 4.2 3.0 16.1 11.9 11.4 36.3 34.6 30.7 28.1 41.5 39.3 34.3 35.1 10.2 9.5 8.8 15.3 18.6 20.0 20.3 7.5 11.1 13.4 11.5 4.4 5.0 5.3 1.7 1.5 1.2 1.1 1.6 1.8 1.5 1.3 8.4 10.3 9.7 14.0 14.9 18.3 24.1 10.2 12.0 15.5 20.0 6.5 6.8 6.7 31.0 35.0 39.5 45.5 19.3 24.9 30.4 32.8 5.6 6.0 6.1 9.3 7.3 5.9 5.3 4.9 5.2 4.1 4.4

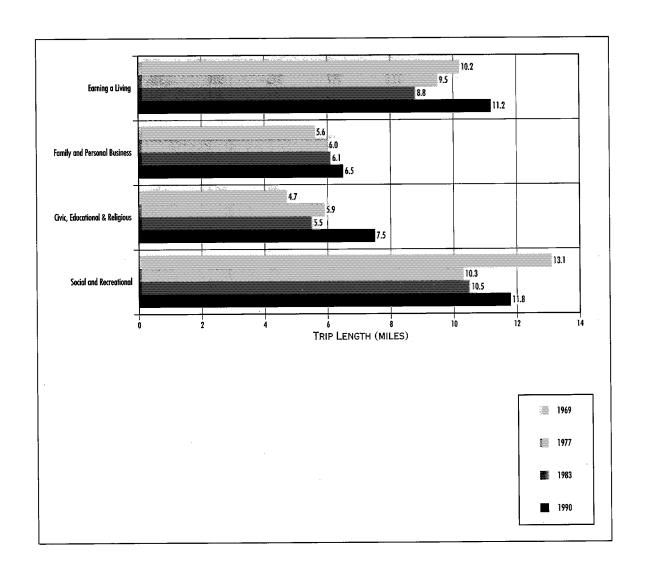
Section 4 of Chapter 1.

Although the number of vehicle trips for earning a living increased, the proportion has declined steadily, from 36.3% in 1969 to 28.1% in 1990. On the other hand, trips for family and personal business have continued to increase both in number and share. Not

only did the total number of vehicle trips increase for these purposes, these trips were also longer. Overall, more trips and slightly longer trip lengths contributed to an increase of 82% in the vehicle miles of travel from 1969 to 1990 (Tables 5.30 and 5.31).

FIGURE 5.16

AVERAGE VEHICLE TRIP LENGTH BY TRIP PURPOSE 1969, 1977, 1983, AND 1990 NPTS



ANNUAL VEHICLE TRIPS AND VEHICLE MILES OF TRAVEL PER HOUSEHOLD BY TRIP PURPOSE 1969, 1977, 1983, AND 1990 NPTS

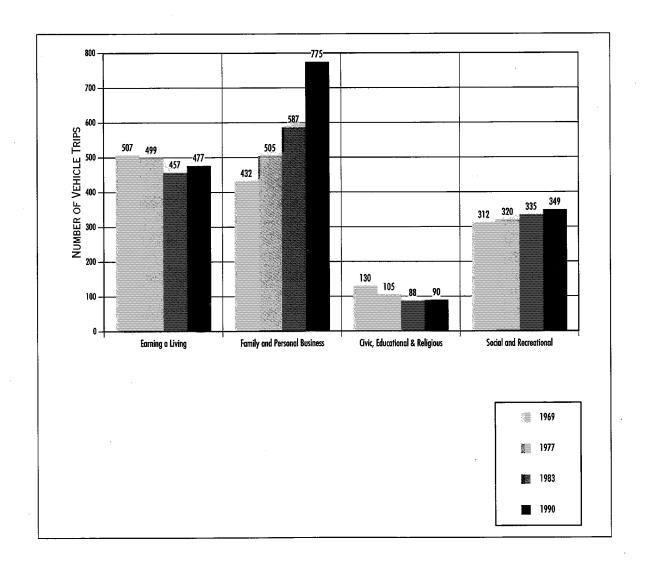
		Vehic	e Trips			Vehicle Miles of Travel			
	1969	1977	1983	1990	1969	1977	1983	1990	
Eðrhing A Living.	T. Die St. Best.				-				
To or From Work	445	423	414	447	4,183	3,815	3,538	4,853	
Work-Related Business	62	76	43	`30	986	915	495	454	
Subtofal	507	499	457	477	5,169	4,730	4,033	5,307	
Family & Personal Business						v			
Shopping	213	268	297	345	929	1,336	1,567	1,743	
Doctor/Dentist	24	22	18	19	204	217	172	191	
Other Family/Personal	195	215	272	411	1,270	1,444	1,816	3,014	
Subtotal	432	505	587	775	2,403	2,997	3,555	4,948	
Civic, Educational & Religious	·								
Subtotal	130	105	88	90	608	626	481	666	
Social & Recreational				to the lateral					
Vacation	0	1	3	2	321	72	250	220	
Visit Friends/ Relatives	126	134	147	151	1,499	1,456	1,590	1,757	
Pleasure Driving	20	7	6	5	382	108	132	98	
Other Social/Recreational	166	178	179	191	1,892	1,650	1,562	1,985	
Subtotal	312	320	335	349	4,094	3,286	3,534	4,062	
OTHER									
Subtotal	15	13	19	11	149	397	136	118	
TOTAL	1,396	1,442	1,486	1,702	12,423	12,036	11,739	15,101	

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

In 1969, trips for earning a living accounted for more household trips than any other purpose. However, by 1977 more vehicle trips were for family and personal business. This

was still true in 1990. Furthermore, trips taken for family and personal business continued to account for an increasing share of total vehicle travel.

ANNUAL VEHICLE TRIPS PER HOUSEHOLD BY TRIP PURPOSE 1969, 1977, 1983, AND 1990 NPTS



NUMBER OF VEHICLE TRIPS BY VEHICLE TYPE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

Vehicle Type	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL	% of Household Vehicles
Auto	34,179,986	58,762,763	7,394,619	26,512,946	815,344	127,693,762	74.7
	(76.6%)	(81.3%)	(87.7%)	(81.5%)	(79.8%)	(80.3%)	
Passenger Van	1,789,346	4,038,928	391,176	1,497,921	94,423	7,819,697	4.8
	(4.0%)	(5.6%)	(4.6%)	(4.6%)	(9.2%)	(4.9%)	
Cargo Van	319,494	242,140	11,850	124,967	96	698,548	0.6
	(0.7%)	(0.3%)	(0.1%)	(0.4%)	(0.0%)	(0.4%)	
Pickup Truck	7,732,470	8,559,797	611,910	3,932,239	105,223	20,945,765	17.2
	(17.3%)	(11.9%)	(7.3%)	(12.1%)	(10.3%)	(13.2%)	
Other Truck	451,089	375,435	5,575	155,993	0	988,091	0.6
	(1.0%)	(0.5%)	(0.1%)	(0.5%)	(0.0%)	(0.6%)	
RV/Motor Home	9,055	63,254	0	30,107	0	102,416	0.5
	(0.0%)	(0.1%)	(0.0%)	(0.1%)	(0.0%)	(0.1%)	
Motorcycle	117,232	127,559	9,203	232,783	0	486,777	1.3
•	(0.3%)	(0.2%)	(0.1%)	(0.7%)	(0.0%)	(0.3%)	
Moped	24,111	17,828	8,914	31,686	Û	82,538	0.1
•	(0.1%)	(0.0%)	(0.1%)	(0.1%)	(0.0%)	(0.1%)	
Other POV	328	38,153	Ó	10,723	6,627	55,831	0.1
	(0.0%)	(0.1%)	(0.0%)	(0.0%)	(0.6%)	(0.0%)	
TOTAL	44,623,111	72,225,857	8,433,247	32,529,365	1,021,713	158,927,467	100.0
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	

Cargo vans, pickup trucks and other types of trucks were frequently used for earning a living. This reflects the common use of these vehicles for commuting to work, service calls, construction activities or cargo delivery activities.

TABLE 5.34

DISTRIBUTION OF VEHICLE TRIPS BY VEHICLE TYPE AND TRIP PURPOSE 1990 NPTS (PERCENT) (WITHIN VEHICLE TYPE)

Vehicle Type	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL
Auto	26.8	46.0	5.8	20.8	0.6	100.0
Passenger Van	22.9	51.7	5.0	19.2	1.2	100.0
Cargo Van	45.7	34.7	1.7	17.9	0.0	100.0
Pickup Truck	36.9	40.9	2.9	18.8	0.5	100.0
Other Truck	45.7	38.0	0.6	15.8	0.0	100.0
RV/Motor Home	8.8	61.8	0.0	29.4	0.0	100.0
Motorcycle	24.1	26.2	1.9	47.8	0.0	100.0
Moped	29.2	21.6	10.8	38.4	0.0	100.0
Other POV	0.6	68.3	0.0	19.2	11.9	100.0
TOTAL	28.1	45.4	5.3	20.5	0.6	100.0

¹ Includes trips where trip purpose was unreported.

NUMBER OF VEHICLE MILES OF TRAVEL BY VEHICLE TYPE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

Vehicle Type	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL
Auto	366,164,393	362,044,815	54,985,549	298,159,397	9,388,469	1,090,853,204
	(73.9%)	(78.3%)	(88.4%)	(78.7%)	(85.4%)	(77.4%)
Passenger Van	18,765,518	29,011,256	2,004,705	21,039,630	438,535	71,283,350
*	(3.8%)	(6.3%)	(3.2%)	(5.6%)	(4.0%)	(5.1%)
Cargo Van	5,582,212	2,293,239	170,135	1,845,635	958	9,892,178
	(1.1%)	(0.5%)	(0.3%)	(0.5%)	(0.0%)	(0.7%)
Pickup Truck	93,014,514	63,047,551	4,961,843	51,171,212	1,114,002	213,320,291
.	(18.8%)	(13.7%)	(8.0%)	(13.5%)	(10.1%)	(15.1%)
Other Truck	10,825,614	3,138,237	11,004	1,109,387	0	15,084,241
	(2.2%)	(0.7%)	(0.0%)	(0.3%)	(0.0%)	(1.1%)
RV/Motor Home	14,715	740,206	0	1,783,828	0	2,538,749
	(0.0%)	(0.2%)	(0.0%)	(0.5%)	(0.0%)	(0.2%)
Motorcycle	715,496	998,874	60,310	3,592,691	0	5,367,371
1	(0.1%)	(0.2%)	(0.1%)	(0.9%)	(0.0%)	(0.4%)
Moped	207,820	35,809	7,656	65,498	0	316,784
Ì	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)
Other POV	82	539,074	0	87,215	54,337	680,709
#	(0.0%)	(0.1%)	(0.0%)	(0.0%)	(0.5%)	(0.0%)
TOTAL	495,377,660	461,865,944	62,201,202	378,988,222	10,996,301	1,409,576,300
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes miles of travel where trip purpose, vehicle type, or both were unreported.

DISTRIBUTION OF VEHICLE MILES OF TRAVEL BY VEHICLE TYPE AND TRIP PURPOSE 1990 NPTS (PERCENTAGE) (WITHIN VEHICLE TYPE)

Vehicle Type	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL
Auto	33.6	33.2	5.0	27.3	0.9	100.0
Passenger Van	26.3	40.7	2.8	<i>29.5</i>	0.6	100.0
Cargo Van	56.4	23.2	1. <i>7</i>	<i>18.7</i>	0.0	100.0
Pickup Truck	43.6	29.6	2.3	24.0	0.5	100.0
Other Truck	71.8	20.8	0.1	7.4	0.0	100.0
RV/Motor Home	0.6	29.2	0.0	70.3	0.0	100.0
Motorcycle	13.3	18.6	1.1	66.9	0.0	100.0
Moped	65.6	11.3	2.4	20.7	0.0	100.0
Other POV	0.0	79.2	0.0	12.8	8.0	100.0
TOTAL	35.1	32.8	4.4	26.9	0.8	100.0

Although roughly 75% of all vehicles were automobiles, they were used in more than 80% of the vehicle trips, demonstrating that they were used more frequently than other

types of vehicles. However, trips by automobiles amounted to only 77% of all miles travelled, indicating that trips by automobiles were slightly shorter than the average.

DISTRIBUTION OF VEHICLES AND VEHICLE TRAVEL BY SELECTED VEHICLE TYPE
1990 NPTS

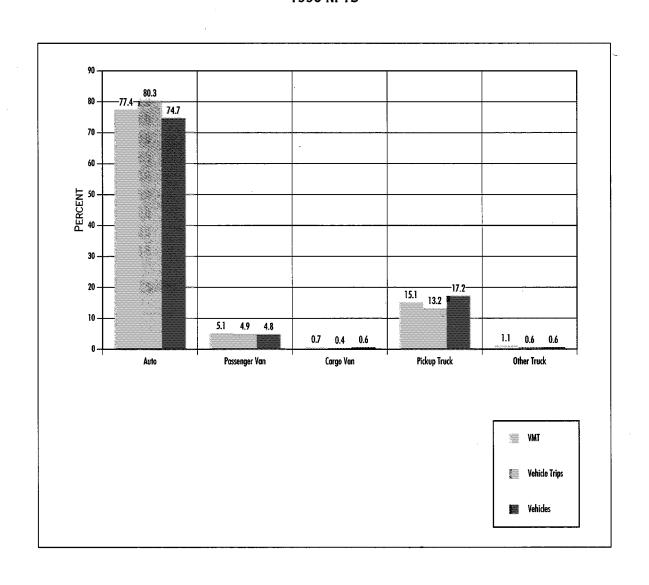
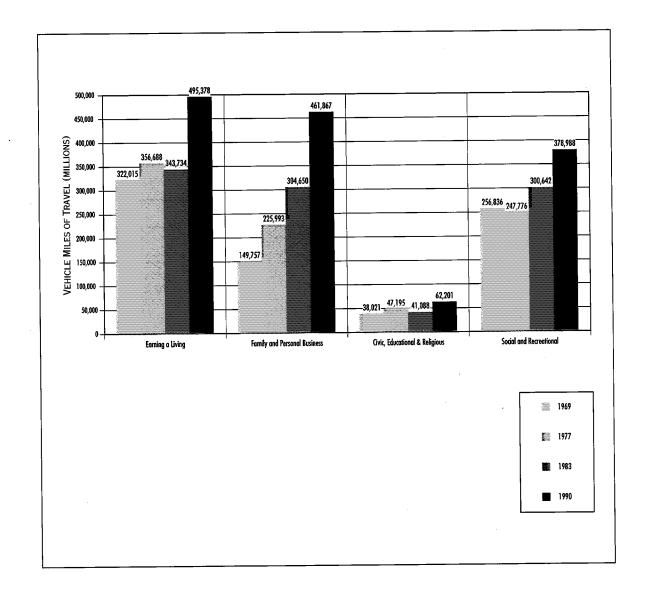


FIGURE 5.19

NUMBER OF VEHICLE MILES OF TRAVEL BY TRIP PURPOSE 1969, 1977, 1983 AND 1990 NPTS

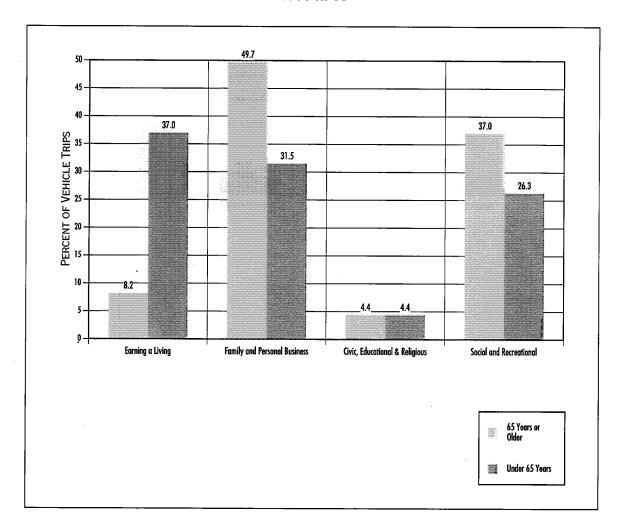


While earning a living and family and personal matters were the most common reasons to drive for those under 65 years old, individu-

als 65 years or older drove mostly for family and personal matters and for social and recreational reasons.

FIGURE 5 20

COMPARISON OF VEHICLE TRIPS TAKEN BY INDIVIDUALS 65 OR OLDER VS. INDIVIDUALS UNDER 65 CATEGORIZED BY TRIP PURPOSE 1990 NPTS



AVERAGE VEHICLE TRIP LENGTH' BY VEHICLE TYPE AND TRIP PURPOSE 1990 NPTS (MILES)

Vehicle Type	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	ALL
Auto	10.9	6.2	7.5	11.4	11.5	8.7
Passenger Van	10.6	7.2	5.1	14.1	4.6	9.2
Cargo Van	17.6	9.5	14.4	14.8	10.0	14.2
Pickup Truck	12.1	7.4	8.1	13.1	10.6	10.3
Other Truck	25.0	8.6	2.0	7.8	**	15.9
RV/Motor Home	1.6	11.7	**	59.3	**	24.8
Motorcycle	6.2	8.1	6.6	15.5	**	11.2
Moped	8.6	2.0	0.9	2.1	**	3.8
Other POV	0.3	14.1	**	8.1	8.2	12.2
ALL	11.2	6.5	7.5	11.8	10.8	9.0

¹ Information based on observations that had valid trip mile information.

^{**} Indicates no data reported.

For all trip purposes, individuals 65 years or older took shorter trips compared with those under 65 years old. For individuals 65 years

or older, trips for civic, educational and religious purposes were the shortest among all trip purposes.

TABLE 5.38

AVERAGE LENGTH¹ OF VEHICLE TRIPS BY INDIVIDUALS 65 OR OLDER VS. INDIVIDUALS UNDER 65 AND BY TRIP PURPOSE 1990 NPTS (MILES)

Purpose	Individuals under 65 years	Individuals 65 years or older	TOTAL
Earning a Living	11.3	8.3	11.2
Family and Personal Business	6.6	5.3	6.5
Civic, Educational, and Religious	7.9	4.1	7.5
Social and Recreational	12.0	10.3	11.8
Other	12.0	4.3	5.1
TOTAL	9.2	6.6	9.0

¹ Information based on observations that had valid trip mile information.

FIGURE 5.2

AVERAGE LENGTH OF VEHICLE TRIPS BY INDIVIDUALS 65 OR OLDER VS. INDIVIDUALS UNDER 65 AND BY TRIP PURPOSE 1990 NPTS

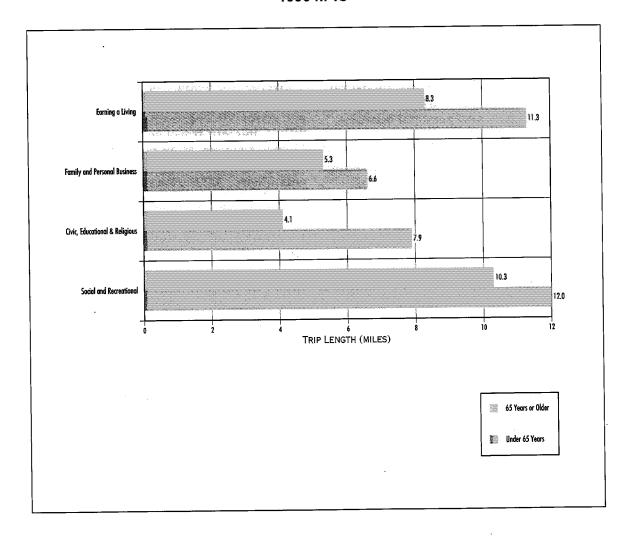


Table 5.39 through Table 5.41 present data on vehicle travel in terms of trip purpose and season of the year. Data in Table 5.39 show that there was almost no seasonal variation for some trip purposes, such as other family and personal business (errand-running). However, for some trip purposes, there was significant variation as to when driving took place, such as vacationing and pleasure driving. Compared with the overall distribution of vehicle trips by trip

purpose, driving to and from work had a slightly smaller share in winter months (25.2%) than in other months (Table 5.40). Conversely, the share of driving for shopping in winter (21.4%) was higher than the average share (20.2%). Both observations likely reflect different travel activities due to the holiday seasons. More driving took place in spring months than in other months of the year (Figure 5.22). However, summer trips were the longest (Table 5.39).

NUMBER OF VEHICLE TRIPS BY TRIP PURPOSE AND SEASON' 1990 NPTS (MILLIONS)

Purpose	Winter	Spring	Summer	Fall	TOTAL
Earning a Living					
To or From Work	9,756	11,964	10,200	9,872	41,792
	(23.3%)	(28.6%)	(24.4%)	(23.6%)	(100.0%)
Work-Related Business	515	1,104	638	588	2,845
	(18.1%)	(38.8%)	(22.4%)	(20.7%)	(100.0%)
Subtotal	10,271	13,068	10,838	10,460	44,637
	(23.0%)	(29.3%)	(24.3%)	(23.4%)	(100.0%)
amily and Personal Business					
Shopping	8,278	8,468	7,634	7,784	32,164
	(25.7%)	(26.3%)	(23.7%)	(24.2%)	(100.0%)
Doctor/Dentist	451	509	390	399	1,749
	(25.8%)	(29.1%)	(22.3%)	(22.8%)	(100.0%)
Other Family Business	10,191	9,825	9,191	9,116	38,323
	(26.6%)	(25.6%)	(24.0%)	(23.8%)	(100.0%)
Subtotal	18,920	18,802	17,215	17,299	72,236
and the second s	(26.2%)	(26.0%)	(23.8%)	(23.9%)	(100.0%)
Civic, Educational, and Religious	2.040	0.700	1 400	2,285	8,435
Subtotal	(24.4%)	2,699 (32.0%)	1,409 (16.7%)	(27.1%)	(100.0%)
Social and Recreational	(210170)	102:070)	(1 0 13 7 0)	(2,,0)	(1.00.0)
Vacation Section National Vacation	9	46	98	36	189
	(4.8%)	(24.3%)	(51.9%)	(19.0%)	(100.0%)
Visiting Friends	3,504	3,797	3,461	3,291	14,053
Committee of the commit	(24.9%)	(27.0%)	(24.6%)	(23.4%)	(100.0%)
Pleasure Driving	87	139	132	77	435
i ioasoro ostring	(20.0%)	(32.0%)	(30.3%)	(17.7%)	(100.0%)
Other Social/Recreational	3,611	4,999	5,264	3,996	17,870
Office Socialy Rectionation	(20.2%)	(28.0%)	(29.5%)	(22.4%)	(100.0%)
Subtotal	7,211	8,981	8,955	7,400	32,547
Jobioida	(22.2%)	(27.6%)	(27.5%)	(22.7%)	(100.0%)
Other	122.2 /0)	(27.070)	(27:370)	(22.7 70)	11001070
Subtotal	236	419	215	152	1,022
	(23.1%)	(41.0%)	(21.0%)	(14.9%)	(100.0%
TOTAL ²	38,703	43,979	38,643	37,602	158,927
	(24.2%)	(27.7%)	(24.3%)	(23.7%)	(100.0%
Average trip length (miles)	8.72	8.91	9.37	8.92	8.98

5-63

DISTRIBUTION OF VEHICLE TRIPS BY TRIP PURPOSE AND SEASON 1990 NPTS (PERCENTAGE) (WITHIN SEASON)

Purpose	Winter	Spring	Summer ·	Fall	TOTAL
Earning a Living	A A LA COMPANIENTE A LA		20 mg (MCD 20 20 10 10 10 10 10 10 10 10 10 10 10 10 10	Art. A Transition Street	
To or From Work	25.2	27.2	26.4	26.2	26.3
Work-Related Business	1.3	2.5	1.6	1.6	1.8
Subtotal	26.5	29.7	28.0	27.8	28.1
Family and Personal Business.					
Shopping	21.4	19.3	19.8	20.7	20.2
Doctor/Dentist	1.2	1.2	1.0	1.1	1.1
Other Family Business	26.3	22.3	23.8	24.2	24.1
Subtotal	48.9	42.8	44.6	46.0	45.4
Civic, Educational, and Religious		11.7			
Subtotal	5.3	6.1	3.6	6.1	5.3
Social and Recreational	, , , , , , , , , , , , , , , , , , , ,		- SS A		
Vacation	0.0	0.1	0.3	0.1	0.1
Visiting Friends	9.1	8.6	9.0	8.8	8.8
Pleasure Driving	0.2	0.3	0.3	0.2	0.3
Other Social/Recreational	9.3	11.4	13.6	10.6	11.2
Subtotal	18.6	20.4	23.2	19.7	20.5
Other.					****
Subtotal	0,6	1.0	0,5	0.4	0.6
TOTAL!	100.0	100.0	100.0	100.0	100.0

¹ Includes vehicle trips where trip purpose was unreported.

NUMBER OF VEHICLE MILES OF TRAVEL BY TRIP PURPOSE AND SEASON 1990 NPTS (MILLIONS)

Purpose	Winter	Spring .	Summer	Fall	TOTAL
arning a Living					
To or From Work	103,431	128,941	114,311	106,359	453,042
	(22.8%)	<i>(28.5%)</i>	(25.2%)	(23.5%)	(100.0%)
Work-Related Business	6,630	19,510	9,249	6,947	42,336
-	(15.7%)	(46.1%)	(21.8%)	(16.4%)	(100.0%)
Sebtotal	110,061	148,451	123,560	113,306	495,378
	(22.2%)	(30.0%)	(24.9%)	(22.9%)	(100.0%)
Family and Personal Basiness	77	San San San San San			
Shopping	44,301	41,139	38,005	39,222	162,667
	(27.2%)	(25.3%)	(23.4%)	(24.1%)	(100.0%)
Doctor/Dentist	4,919	4,484	4,229	4,177	17,809
	(27.6%)	(25.2%)	(23.7%)	(23.5%)	(100.0%)
Other Family Business	73,598	67,650	70,985	69,157	281,390
	(26.2%)	(24.0%)	(25.2%)	(24.6%)	(100.0%)
Subtotal	122,818	113,273	113,219	112,556	461,866
	(26.6%)	(24.5%)	(24.5%)	(24.4%)	(100.0%)
Civic, Educational, and Religious					/ 0 001
Subtotal	14,716	20,306	11,256	15,923	62,201
	(23.7%)	(32.6%)	(18.1%)	(25.6%)	(100.0%)
Social and Recreational					00 C00
Vacation	1,490	3,889	11,869	3,284	20,532
	(7.3%)	(18.9%)	(57.8%)	(16.0%)	(100.0%)
Visiting Friends	40,245	45,020	39,757	38,958	163,980
	(24.5%)	(27.5%)	(24.2%)	(23.8%)	(100.0%)
Pleasure Driving	1,984	2,506	3,194	1,482	9,166
	(21.6%)	(27.3%)	(34.8%)	(16.2%)	(100.0%)
Other Social/Recreational	40,516	48,631	51,768	44,396	185,311
	(21.9%)	(26.2%)	(27.9%)	(24.0%)	(100.0%)
Subtotal	84,235	100,046	106,588	88,120	378,989
	(22.2%)	(26.4%)	(28.1%)	(23.3%)	(100.0%)
Other			0.454	720	10,996
Subtotal	1,858	5,746	2,654	738 (4 794)	(100.0%)
	(16.9%)	(52.3%)	(24.1%)	(6.7%)	1,409,576
TOTAL	333,756	387,824	357,306	330,690	
	(23.7%)	(27.5%)	(25.3%)	(23.5%)	(100.0%)

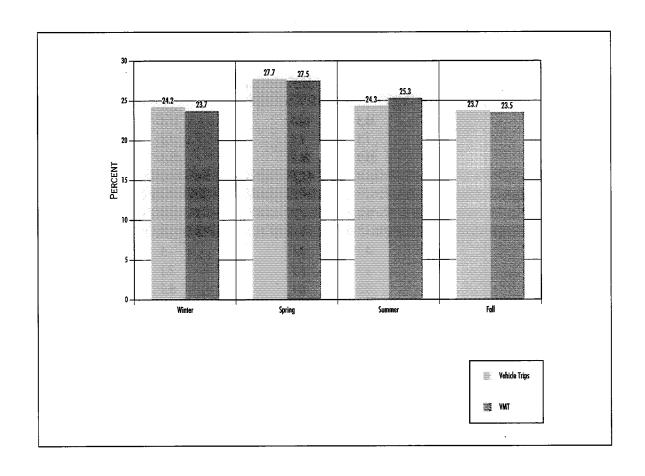
DISTRIBUTION OF VEHICLE MILES OF TRAVEL BY TRIP PURPOSE AND SEASON 1990 NPTS (PERCENTAGE) (WITHIN SEASON)

Purpose	Winter	Spring	Summer	Fall	TOTAL
Farning a Living	VII. 1978 S. 1984 S. 1			g - Karasan tan apatan pagaman Magaman Nasas pada	e service de la companya de
To or From Work	31.0	<i>33.3</i>	32.0	32.2	32.1
Work-Related Business	2.0	5.0	2.6	2.1	3.0
Subtotal	33.0	38.3	34.6	34.3	35.1
Family and Personal Business					
Shopping	13.3	10.6	10.6	11.9	11.5
Doctor/Dentist	1.5	1.2	1.2	1.3	1.3
Other Family Business	22.0	17.4	19.9	20.9	20.0
Subtotal	36.8	29.2	31.7	34.1	32.8
Civic, Educational, and Religious			1.00.		1
Subtotal	4.4	5.2	3.2	4.8	4.4
Social and Recreational					
Vacation	0.4	1.0	3.3	1.0	1.5
Visiting Friends	12.1	11.6	11.1	11.8	11.6
Pleasure Driving	0.6	0.7	0.9	0.4	0.7
Other Social/Recreational	12.1	12.5	14.5	13.4	13.1
Subtotal	25.2	25.8	29.8	26.6	26.9
Other					0.03.0
Subtotal	0.6	1.5	0.7	0.2	0.8
TOTAL	100.0	100.0	100.0	100.0	100.0

¹ Includes vehicle miles of travel where trip purpose was unreported.

FIGURE 5.22

DISTRIBUTION OF VEHICLE TRAVEL BY SEASON 1990 NPTS



DISTRIBUTION OF VEHICLE TRIPS BY DAY OF WEEK AND TRIP PURPOSE 1990 NPTS (WITHIN DAY OF WEEK)

Purpose	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Edining a Living							
To or From Work	9.0	31.4	31.3	<i>33.2</i>	32.1	<i>29.2</i>	12.2
Work-Related Business	0.7	2.0	2.4	1.8	2.0	1.9	1.5
Subtotal	9.7	33.4	33.7	35.0	34.1	31.1	13.7
Family and Personal Business							
Shopping	22.7	18.5	18.0	17.4	17.5	18.4	31.3
Doctor/Dentist	0.1	1.5	1.4	1.4	1.3	1.2	0.4
Other Family Business	18.0	<i>25.9</i>	<i>26.2</i>	24.8	<i>25.5</i>	25.8	20.9
Subtotal	40.8	45.9	45.6	43.6	44.3	45.4	52.6
Civic, Educational, and Religious							
Subtotal	16.7	4.2	4.7	4.8	4.4	2.6	1.4
Social and Recreational							
Vacation	0.4	0.1	0.1	0.1	0	0.1	0.2
Visiting Friends	15.9	6.5	6.9	6.6	7.2	8.6	12.3
Pleasure Driving	0.6	0.3	0.1	0.3	0.2	0.2	0.3
Other Social/Recreational	15.3	9.0	8.3	9.0	9.1	11.5	18.7
Subtotal	32.2	15.9	15.4	16.0	16.5	20.4	31.5
Other.							
Subtotal	0.6	0.6	0.6	0.6	0.7	0.5	0.8
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Avg. Trip Length ¹ (miles)	10.37	8.81	8.72	8.71	8.24	9.04	9.32
No. of Trips (000,000)	19,000	24,300	25,300	23,200	24,800	21,700	20,700
Distribution of Trips	11.9%	15.3%	15.9%	14.6%	15.6%	13.6%	13.0%

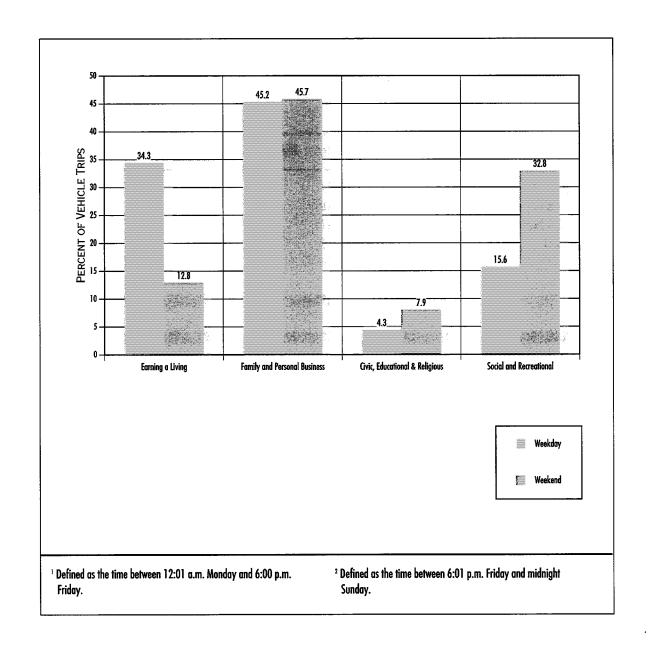
¹ Information based on observations with valid data on the trip length.

Vehicle trips were fairly evenly distributed among days of the week, with 75% of all trips made on weekdays and 25% on weekends. Family and personal business was the most common reason for travel on each day of the

week (Table 5.43). As expected, earning a living was the second most common reason to travel during weekdays, while social and recreational purposes were the second most common reason for travel during weekends.

Figure 5.2

DISTRIBUTION OF VEHICLE TRIPS BY WEEKDAY VS. WEEKEND AND TRIP PURPOSE 1990 NPTS



DISTRIBUTION OF VEHICLE TRIPS BY DAY OF WEEK AND TRIP PURPOSE 1990 NPTS (ACROSS DAY OF WEEK) (PERCENTAGE)

·	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	TOTAL
Earning a Living	4.1	18.2	19.1	18.2	18.9	15.1	6.4	100.0
Family and Personal Business	10.7	15.4	16.0	14.0	15.2	13.6	15.1	100.0
Civic, Educational, & Religious	37.5	12.2	14.1	13.2	12.9	6.6	3.5	100.0
Social & Recreational	18.7	11.8	11.9	11.3	12.5	13.9	19.9	100.0
Other	12.0	14.9	15.6	12.9	17.9	10.6	16.1	100.0
TOTAL	12.0	15.3	15.9	14.6	15.6	13.6	13.0	100.0
No. of Trips (000,000)	19,003	24,331	25,311	23,181	24,767	21,665	20,669	158,927
		NA T	· ··					

Driving by those 65 years or older was fairly evenly spread among the days of the week, while those younger than 65 years old drove Wednesday) than on other days of the week.

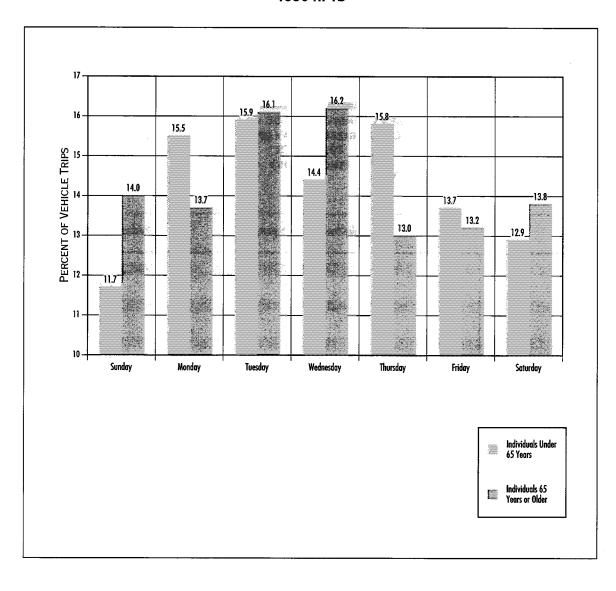
less during the weekends. Older individuals drove more during the mid-week (Tuesday and

NUMBER OF VEHICLE TRIPS TAKEN BY INDIVIDUALS 65 OR OLDER VS. INDIVIDUALS UNDER 65 CATEGORIZED BY DAY OF WEEK 1990 NPTS (THOUSANDS)

Day	Individuals under 65 years	Individuals 65 years or older
Sunday	16,976,964	1,847,705
	(11.7%)	(14.0%)
Monday	22,382,068	1,801,068
	(15.5%)	(13.7%)
Tuesday	23,007,186	2,124,025
	(15.9%)	(16.1%)
Wednesday	20,874,174	2,128,413
	(14.4%)	(16.2%)
Thursday	22,897,940	1,705,234
hursday	(15.8%)	(13.0%)
Friday	19,740,032	1,743,283
	(13.7%)	(13.2%)
Saturday	18,613,971	1,810,755
	(12.9%)	(13.8%)
TOTAL	144,492,336	13,160,483
	(100.0%)	(100.0%)

FIGURE 5.24

DISTRIBUTION OF VEHICLE TRIPS TAKEN BY INDIVIDUALS 65 OR OLDER VS. INDIVIDUALS UNDER 65 YEARS OF AGE CATEGORIZED BY DAY OF WEEK 1990 NPTS



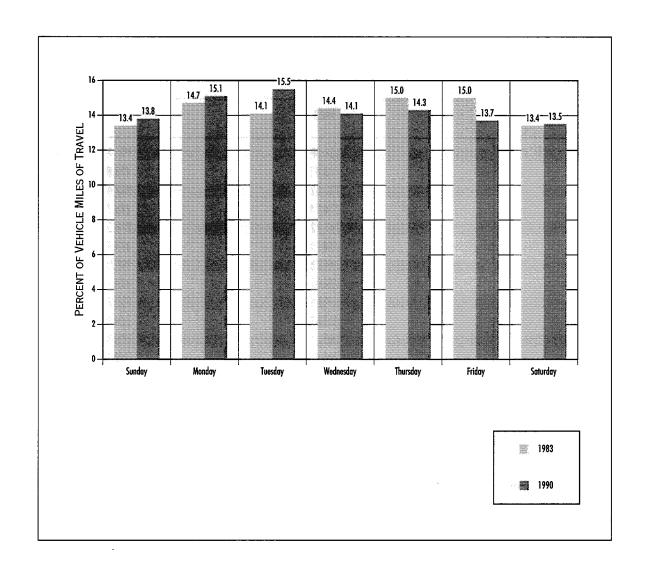
NUMBER OF VEHICLE MILES OF TRAVEL BY DAY OF WEEK 1983 AND 1990 NPTS¹ (MILLIONS)

Day	1983	1990
Sunday	134,301	194,255
	(13.4%)	(13.8%)
Monday	147,323	212,423
	(14.7%)	(15.1%)
Tuesday	141,126	218,511
<u> </u>	(14.1%)	(15.5%)
Wednesday	144,131	199,069
	(14.4%)	(14.1%)
Thursday	150,880	201,730
	(15.0%)	(14.3%)
Friday	150,450	193,383
	(15.0%)	(13.7%)
Saturday	133,928	190,205
	(13.4%)	(13.5%)
TOTAL	1,002,139	1,409,576
	(100.0%)	(100.0%)

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

FIGURE 5.25

DISTRIBUTION OF VEHICLE MILES OF TRAVEL BY DAY OF WEEK 1983 AND 1990 NPTS



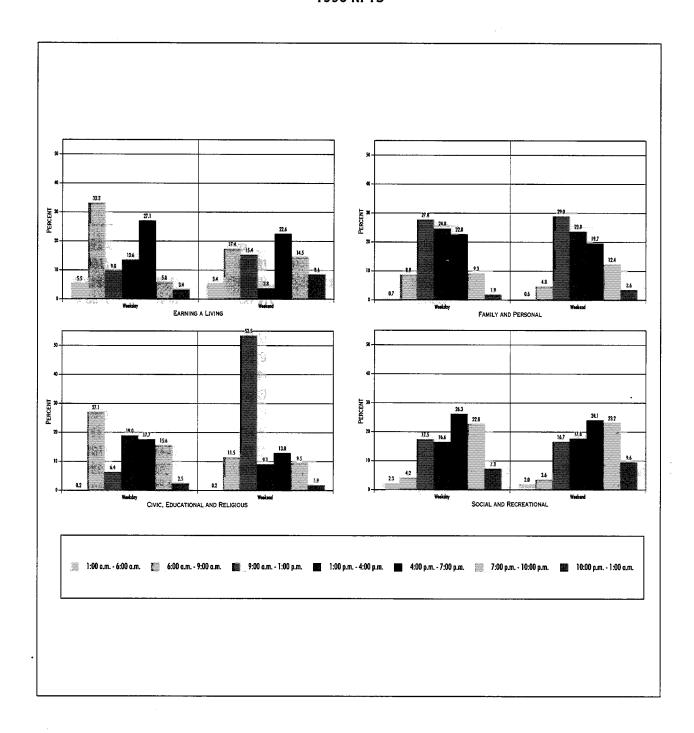
NUMBER OF VEHICLE MILES OF TRAVEL BY TRIP PURPOSE AND DAY OF WEEK 1990 NPTS (MILLIONS)

	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL
Sunday	19,760	57,520	18,869	96,940	1,143	194,255
	(10.2%)	(29.6%)	(9.7%)	(49.9%)	(0.6%)	(100.0%)
Monday	93,114	68,870	7,884	41,393	1,149	212,423
•• " • > > > > > > > > > > > > > > > > >	(43.8%)	(32.4%)	(3.7%)	(19.5%)	(0.5%)	(100.0%)
Tuesday	95,702	71,037	10,735	38,223	2,804	218,511
·*, · ·	(43.8%)	(32.5%)	(4.9%)	(17.5%)	(1.3%)	(100.0%)
Wednesday	90,460	60,592	8,582	37,559	1,842	199,069
•	(45.4%)	(30.4%)	(4.3%)	(18.9%)	(0.9%)	(100.0%)
Thursday	91,458	62,710	10,076	35,664	1,807	201,730
•	(45.3%)	(31.1%)	(5.0%)	(17.7%)	(0.9%)	(100.0%)
Friday	77,304	66,760	4,333	44,261	725	193,383
₹ 3.00 3	(40.0%)	(34.5%)	(2.2%)	(22.9%)	(0.4%)	(100.0%)
Saturday	27,580	74,377	1,722	84,948	1,526	190,205
◆48 0/1,77 0	(14.5%)	(39.1%)	(0.9%)	(44.7%)	(0.8%)	(100.0%)
TOTAL	495,378	461,866	62,201	378,988	10,996	1,409,576
	(35.1%)	(32.8%)	(4.4%)	(26.9%)	(0.8%)	(100.0%)

¹ Includes miles of travel where trip purpose was unreported.

FIGURE 5 26

DISTRIBUTION OF VEHICLE MILES OF TRAVEL BY WEEKDAY VS. WEEKEND, TIME OF DAY AND TRIP PURPOSE 1990 NPTS



DISTRIBUTION OF VEHICLE MILES OF TRAVEL BY TRIP PURPOSE AND DAY OF WEEK 1990 NPTS (PERCENTAGE) (ACROSS DAY OF WEEK)

	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL
Sunday	4.0	12.5	30.3	25.6	10.4	13.8
Monday	18.8	14.9	12.7	10.9	10.4	15.1
Tuesday	19.3	15.4	17.3	10.1	<i>25.5</i>	15.5
Wednesday	18.3	13.1	13.8	9.9	16.8	14.1
Thursday	18.5	13.6	16.2	9.4	16.4	14.3
Friday	15.6	14.5	7.0	11.7	6.6	13.7
Saturday	5.6	16.1	2.8	22.4	13.9	13.5
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0
% VMT	35.1	32.8	4.4	26.9	0.8	100.0

¹ Includes miles of travel where trip purpose was unreported.

TABLE 5.49 NUMBER OF VEHICLE TRIPS BY URBANIZED AREA SIZE AND TIME OF DAY 1990 NPTS

(THOUSANDS)

	50,000 199,999	200,000 499,999	500,000- 999,999	1,000,000 or more without rail/subway	1,000,000 or more with rail/subway	Not in Urbanized Area	TOTAL
1:00 a.m 6:00 a.m.	302,162	256,352	216,139	833,390	677,125	1,349,333	3,634,502
	(2.1%)	(2.2%)	(2.0%)	(2.5%)	(2.4%)	(2.2%)	(2.3%)
6:00 a.m 9:00 a.m.	1,968,716	1,670,666	1,504,035	4,651,286	3,844,569	8,819,250	22,458,523
	(13.5%)	(14.5%)	(14.1%)	(14.2%)	(13.4%)	(14.5%)	(14.1%)
9:00 a.m 1:00 p.m.	3,195,523	2,270,605	2,160,095	6,645,980	6,110,739	12,966,641	33,349,583
	(21.9%)	(19.7%)	(20.2%)	(20.3%)	(21.3%)	(21.4%)	(21.0%)
1:00 p.m 4:00 p.m.	2,960,688	2,256,193	2,015,168	6,102,518	5,312,674	12,023,169	30,670,411
	(20.3%)	(19.5%)	(18.9%)	(18.7%)	(18.5%)	(19.8%)	(19.3%)
4:00 p.m 7:00 p.m.	3,370,765	2,831,623	2,586,008	7,558,132	6,580,639	14,249,842	37,177,009
	(23.1%)	(24.5%)	(24.2%)	(23.1%)	(22.9%)	(23.5%)	(23.4%)
7:00 p.m 10:00 p.m.	1,742,890	1,354,759	1,392,926	4,171,238	3,568,410	6,826,471	19,056,694
	(11.9%)	(11.7%)	(13.1%)	(12.8%)	(12.4%)	(11.2%)	(12.0%)
10:00 p.m 1:00 a.m.	588,526	489,379	424,856	1,430,099	1,318,071	2,180,421	6,431,353
	(4.0%)	(4.2%)	(4.0%)	(4.4%)	(4.6%)	(3.6%)	(4.0%)
TOTAL	14,591,495	11,543,315	10,672,563	32,706,962	28,705,127	60,708,005	158,927,467
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

NUMBER OF VEHICLE MILES OF TRAVEL BY URBANIZED AREA SIZE AND TIME OF DAY 1990 NPTS (THOUSANDS)

	50,000- 199,999	200,000- 499,999	500,000- 999,999	1,000,000 or more without rail/subway	1,000,000 or more with rail/subway	Not in Urbanized Area	TOTAL
1:00 a.m 6:00 a.m.	2,800,649	2,251,979	2,315,688	10,316,830	11,547,736	27,859,671	57,092,553
	(2.7%)	(2.7%)	(2.6%)	(3.8%)	(4.6%)	(4.5%)	(4.1%)
6:00 a.m 9:00 a.m.	15,033,702	14,229,771	14,619,779	45,724,891	42,168,258	107,993,374	239,769,775
	(14.5%)	(17.4%)	(16.7%)	(16.8%)	(16.8%)	(17.6%)	(17.0%)
9:00 a.m 1:00 p.m.	23,252,362	15,895,277	14,162,125	49,762,967	46,038,380	112,855,329	261,966,441
** 0	(22.4%)	(19.4%)	(16.2%)	(18.3%)	(18.3%)	(18.4%)	(18.6%)
1:00 p.m 4:00 p.m.	20,021,459	14,859,302	17,422,871	48,979,319	44,556,331	115,471,542	261,310,824
	(19.3%)	(18.1%)	(19.9%)	(18.0%)	(17.7%)	(18.9%)	(18.5%)
4:00 p.m 7:00 p.m.	23,271,294	19,954,927	23,083,191	64,169,754	56,793,447	136,263,255	323,535,868
	(22.4%)	(24.4%)	(26.4%)	(23.6%)	(22.6%)	(22.3%)	(23.0%)
7:00 p.m 10:00 p.m.	12,688,573	8,964,208	9,547,031	31,778,907	30,745,650	67,732,668	161,457,037
	(12.2%)	(10.9%)	(10.9%)	(11.7%)	(12.2%)	(11.1%)	(11.5%)
10:00 p.m 1:00 a.m.	4,951,933	4,041,302	3,961,877	13,032,656	13,175,839	25,328,476	64,492,083
	(4.8%)	(4.9%)	(4.5%)	(4.8%)	(5.2%)	(4.1%)	(4.6%)
TOTAL!	103,977,562	81,922,087	87,450,251	272,438,523	251,485,293	612,302,631	1,409,576,34
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

 $^{^{\}rm 1}$ Includes miles of travel where start time of the trip was unreported.

TABLE 3.31

NUMBER OF VEHICLE TRIPS BY MSA SIZE AND TIME OF DAY 1990 NPTS (THOUSANDS)

		MSA Size					
	Less than 250,000	250,000- 499,999	500,000- 999,999	1,000,000- 2,999,999	3,000,000 and over	Not in MSA	TOTAL
1:00 a.m 6:00 a.m.	346,926	338,566	365,113	716,567	1,153,903	713,426	3,634,502
	(2.1%)	(2.3%)	(2.4%)	(2.2%)	(2.6%)	(2.0%)	(2.3%)
6:00 a.m 9:00 a.m.	2,301,275	2,156,792	2,225,043	4,629,149	6,009,516	5,136,747	22,458,523
1 g	(14.0%)	(14.9%)	(14.4%)	(14.3%)	(13.6%)	(14.3%)	(14.1%)
9:00 a.m 1:00 p.m.	3,485,122	2,982,844	3,001,756	6,720,420	9,268,067	7,891,374	33,349,583
	(21.2%)	(20.6%)	(19.4%)	(20.7%)	(21.0%)	(22.0%)	(21.0%)
1:00 p.m 4:00 p.m.	3,219,505	2,759,924	3,047,100	5,942,457	8,470,996	7,230,428	30,670,411
the first end on which is due so	(19.6%)	(19.1%)	(19.7%)	(18.3%)	(19.2%)	(20.1%)	(19.3%)
4:00 p.m 7:00 p.m.	3,886,742	3,472,690	3,784,043	7,592,458	10,134,721	8,306,354	37,177,009
	(23.6%)	(24.0%)	(24.5%)	(23.4%)	(22.9%)	(23.1%)	(23.4%)
7:00 p.m 10:00 p.m.	1,968,417	1,733,678	1,838,328	4,131,023	5,446,230	3,939,018	19,056,694
was taken ya ten ing atri	(12.0%)	(12.0%)	(11.9%)	(12.7%)	(12.3%)	(11.0%)	(12.0%)
10:00 p.m 1:00 a.m.	665,036	534,087	586,196	1,451,428	1,875,166	1,319,440	6,431,353
	(4.0%)	(3.7%)	(3.8%)	(4.5%)	(4.2%)	(3.7%)	(4.0%)
TOTAL'	16,452,475	14,446,454	15,446,435	32,463,690	44,218,040	35,900,373	158,927,467
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

Table **5.52**

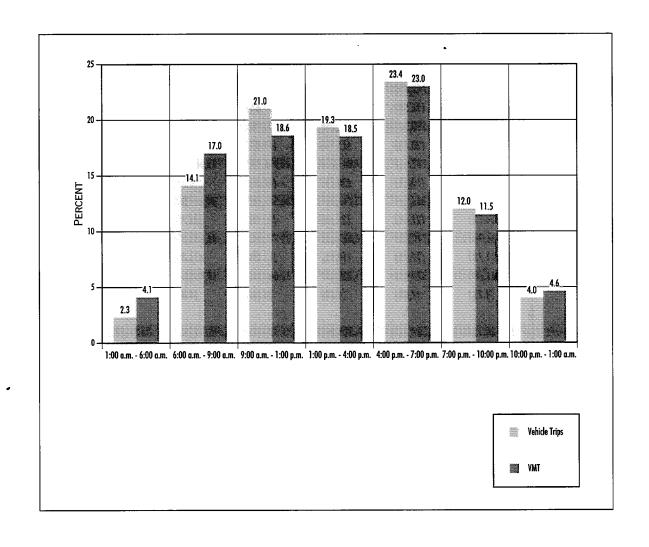
NUMBER OF VEHICLE MILES OF TRAVEL BY MSA SIZE AND TIME OF DAY 1990 NPTS (THOUSANDS)

	Less than 250,000	250,000- 499,999	500,000- 999,999	1,000,000- 2,999,999	3,000,000 and over	Not in MSA	TOTAL
1:00 a.m 6:00 a.m.	4,537,768	4,407,103	4,824,837	9,239,026	19,325,679	14,758,140	57,092,553
	(3.4%)	(3.8%)	(3.6%)	(3.3%)	(4.9%)	(4.3%)	(4.1%)
6:00 a.m 9:00 a.m.	20,851,460	19,742,425	23,291,058	50,049,774	66,740,212	59,094,846	239,769,77
,	(15.5%)	(16.8%)	(17.3%)	(17.6%)	(16.8%)	(17.3%)	(17.0%)
9:00 a.m 1:00 p.m.	28,802,832	24,310,360	20,802,248	54,003,465	69,890,045	64,157,491	261,966,44
	(21.4%)	(20.7%)	(15.5%)	(19.0%)	(17.6%)	(18.7%)	(18.6%)
1:00 p.m 4:00 p.m.	24,321,140	21,182,541	27,843,008	48,916,448	72,688,227	66,359,461	261,310,82
	(18.0%)	(18.1%)	(20.7%)	(17.2%)	(18.3%)	(19.4%)	(18.5%)
4:00 p.m 7:00 p.m.	32,499,612	25,333,251	33,717,591	66,572,905	90,217,002	75,195,507	323,535,86
	(24.1%)	(21.6%)	(25.1%)	(23.4%)	(22.7%)	(22.0%)	(23.0%)
7:00 p.m 10:00 p.m.	15,791,946	13,710,723	14,685,059	32,782,347	46,622,586	37,864,376	161,457,03
	(11.7%)	(11.7%)	(10.9%)	(11.5%)	(11.8%)	(11.1%)	(11.5%)
10:00 p.m 1:00 a.m.	5,661,784	5,373,472	5,828,027	13,661,385	19,164,619	14,802,796	64,492,083
	(4.2%)	(4.6%)	(4.3%)	(4.8%)	(4.8%)	(4.3%)	(4.6%)
TOTAL	134,826,750	117,224,403	134,305,892	283,996,460	396,750,671	342,472,170	1,409,576,34
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

 $^{^{\}rm 1}$ Includes miles of travel where start time of the trip was unreported.

More than 63% of vehicle trips took place between 9 a.m. and 7 p.m. However, these trips amounted to only 60% of the total vehicle miles of travel, indicating trips slightly shorter than the average. Longer vehicle trips usually took place when there was less traffic on the road.

DISTRIBUTION OF VEHICLE TRIPS AND TRAVEL BY TIME OF DAY
1990 NPTS



The following seven tables present driving by trip purpose and time of day (Tables 5.53 through 5.59). Overall, trips for earning a living (to and from work and work-related trips) accounted for more than 60% of early morning traffic (before 9 a.m.), while mid-day traffic (from 9 a.m. to 4 p.m.) was primarily for family and personal business (Table 5.53). As expected, the purpose and the time at which trips are made vary between weekdays and weekends. The most distinctive difference between weekday

and weekend driving can be observed in trips made for earning a living and for social and recreational purposes. While 34.3% of all weekday driving was for earning a living, the corresponding percentage was 12.8% during weekends (Tables 5.55 and 5.57). Conversely, while only 15.6% of all weekday driving was for social and recreational purposes, almost one third of the total weekend driving was for that purpose. Regardless of the time of the day, weekend trips were longer than weekday trips (Table 5.58).

NUMBER OF VEHICLE TRIPS BY TIME OF DAY AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

	1:00 a.m. to 6:00 a.m.	6:00 a.m. to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL
Earning a Living	2,430,391	13,873,772	4,668,434	6,073,584	11,810,848	3,099,341	1,811,933	44,637,479
	(66.9%)	(61.8%)	(14.0%)	(19.8%)	(31.8%)	(16.3%)	(28.2%)	(28.1%)
Family and Personal Business	496,364	5,468,945	20,167,045	17,539,909	15,678,138	7,312,715	1,697,280	72,236,580
	(13.7%)	(24.3%)	(60.5%)	(57.2%)	(42.2%)	(38.4%)	(26.4%)	(45.5%)
Civic, Educational, & Religious	17,877	1,728,099	2,692,138	1,250,241	1,322,278	1,096,366	189,546	8,434,633
	(0.5%)	(7.7%)	(8.1%)	(4.1%)	(3.5%)	(5.7%)	(2.9%)	(5.3%)
Social & Recreational	684,309	1,269,465	5,544,781	5,543,789	8,184,488	7,422,003	2,689,705	32,547,726
	(18.8%)	(5.7%)	(16.6%)	(18.1%)	(22.0%)	(38.9%)	(41.8%)	(20.5%)
Other	5,346	113,811	275,550	256,844	174,369	125,566	34,986	1,021,713
	(0.1%)	(0.5%)	(0.8%)	(0.8%)	(0.5%)	(0.7%)	(0.5%)	(0.6%)
TOTAL	3,634,502	22,458,523	33,349,583	30,670,411	37,177,009	19,056,694	6,431,353	158,927,467
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes trips where start time of the trip, trip purpose or both were unreported.

DISTRIBUTION OF VEHICLE TRIPS BY TIME OF DAY AND TRIP PURPOSE 1990 NPTS (ACROSS TIME OF DAY)

31. 7 7.0 2 20.	5 2	0.5 7.9 11.9	13.6 24.3 14.8	26.5 21.7 15.7	6.9 10.1 13.0	4.1 2.3 2.2	100.0 100.0 100.0
? 20.:	5 3	1.9	14.8	15.7	13.0	22	100 0
						že o že	100.0
3.9	9 1	7.0	17.0	25.1	22.8	8.3	100.0
5 11.	1 2	7.0	25 .1	17.1	12.3	3.4	100.0
3 14.	1 2	1.0	19.3	23.4	12.0	4.0	100.0

¹ Includes trips where trip purpose, time of day, or both were unreported.

NUMBER OF WEEKDAY VEHICLE TRIPS BY TIME OF DAY AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

	1:00 a.m. to 6:00 a.m.	6:00 a.m. to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL
Earning a Living	2,123,094	12,876,705	3,785,758	5,280,441	10,514,439	2,266,201	1,321,181	38,794,232
	(73.0%)	(66.0%)	(17.1%)	(24.0%)	(37.8%)	(19.0%)	(35.5%)	(34.3%)
Family and Personal Business	377,048	4,482,801	14,231,868	12,663,460	11,646,400	4,771,020	967,263	51,157,578
	(13.0%)	(23.0%)	(64.5%)	(57.6%)	(41.9%)	(40.0%)	(26.0%)	(45.2%)
Givic, Educational, & Religious	9,099	1,321,890	799,110	929,779	863,599	760,388	121,018	4,881,598
	(0.3%)	(6.8%)	(3.6%)	(4.2%)	(3.1%)	(6.4%)	(3.3%)	(4.3%)
Social & Recreational	397,721	743,063	3,093,419	2,930,116	4,649,866	4,026,654	1,289,146	17,656,963
7-7	(13.7%)	(3.8%)	(14.0%)	(13.3%)	(16.7%)	(33.8%)	(34.7%)	(15.6%)
Other	274	86,419	169,477	173,156	138,323	101,758	19,532	706,998
	(0.0%)	(0.4%)	(0.8%)	(0.8%)	(0.5%)	(0.9%)	(0.5%)	(0.6%)
TOTAL	2,907,451	19,515,310	22,081,266	21,981,890	27,815,843	11,926,725	3,718,141	113,221,187
.,	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes trips where time of day, trip purpose or both were unreported.

Table 5.56

DISTRIBUTION OF WEEKDAY VEHICLE TRIPS BY TIME OF DAY AND TRIP PURPOSE 1990 NPTS (PERCENTAGE) (ACROSS TIME OF DAY)

	1:00 a.m. to 6:00 a.m.	6:00 a.m. to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL
Earning a Living	5.5	33.2	9.8	13.6	27.1	5.8	3.4	100.0
Family and Personal Business	0.7	8.8	27.8	24.8	22.8	9.3	1.9	100.0
Civic, Educational, & Religious	0.2	27.1	16.4	19.0	17.7	15.6	2.5	100.0
Social & Recreational	2.3	4.2	17.5	16.6	26.3	22.8	7.3	100.0
Other	0.0	12.2	24.0	24.5	19.6	14.4	2.8	100.0
TOTAL	2.6	17.2	19.5	19.4	24.6	10.5	3.3	100.0

¹ Includes trips where time of day, trip purpose or both were unreported.

TABLE **5.57**

NUMBER OF WEEKEND VEHICLE TRIPS BY TIME OF DAY AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

<u>.</u>	1:00 a.m. to 6:00 a.m.	6:00 a.m. to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL
Earning a Living	307,297	997,067	882,676	793,143	1,296,408	833,140	490,752	5,730,924
	(42.3%)	(33.9%)	(7.8%)	(9.1%)	(13.8%)	(11.7%)	(18.1%)	(12.8%)
Family and Personal Business	119,316	986,144	5,935,178	4,876,449	4,031,737	2,541,695	730,016	20,463,833
	(16.4%)	(33.5%)	(52.7%)	(56.1%)	(43.1%)	(35.6%)	(26.9%)	(45.7%)
Civic, Educational, & Religious	8,778	406,209	1,893,028	320,462	458,679	335,977	68,529	3,539,984
	(1.2%)	(13.8%)	(16.8%)	(3.7%)	(4.9%)	(4.7%)	(2.5%)	(7.9%)
Social & Recreational	286,588	526,401	2,451,362	2,613,672	3,534,622	3,395,349	1,400,559	14,662,509
	(39.4%)	(17.9%)	(21.8%)	(30.1%)	(37.8%)	(47.6%)	(51.6%)	(32.8%)
Other	5,071	27,392	106,073	83,688	36,046	23,808	15,454	314,715
*	(0.7%)	(0.9%)	(0.9%)	(1.0%)	(0.4%)	(0.3%)	(0.6%)	(0.7%)
TOTAL	727,051	2,943,213	11,268,317	8,688,521	9,361,165	7,129,969	2,713,212	44,737,485
1	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

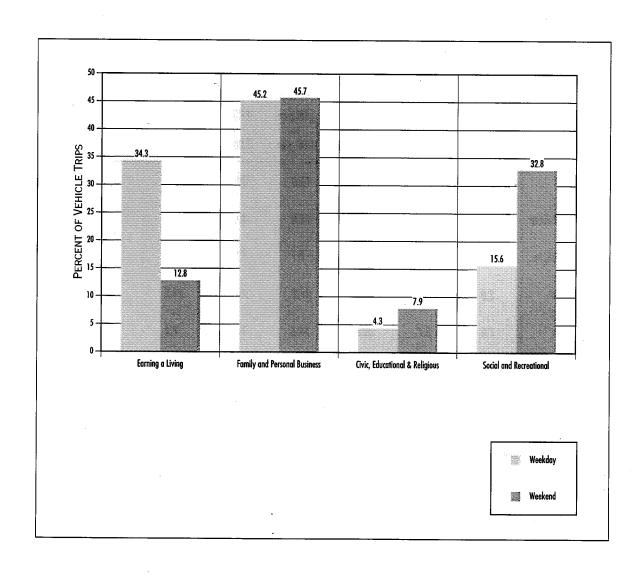
¹ Includes trips where trip purpose, time of day, or both were unreported.

DISTRIBUTION OF WEEKEND VEHICLE TRIPS BY TIME OF DAY AND TRIP PURPOSE 1990 NPTS (PERCENTAGE) (ACROSS TIME OF DAY)

	1:00 a.m. to 6:00 a.m.	6:00 a.m. to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL
Earning a Living	5.4	17.4	15.4	13.8	22.6	14.5	8.6	100.0
Family and Personal Business	0.6	4.8	29.0	23.8	19.7	12.4	3.6	100.0
Civic, Educational, & Religious	0.2	11.5	53.5	9.1	13.0	9.5	1.9	100.0
Social & Recreational	2.0	3.6	16.7	17.8	24.1	23.2	9.6	100.0
Other .	1.6	8.7	33.7	26.6	11.5	7.6	4.9	100.0
TOTAL	1.6	6.6	25.2	19.4	20.9	15.9	6.1	100.0

¹ Includes trips where trip purpose and time of day were unreported.

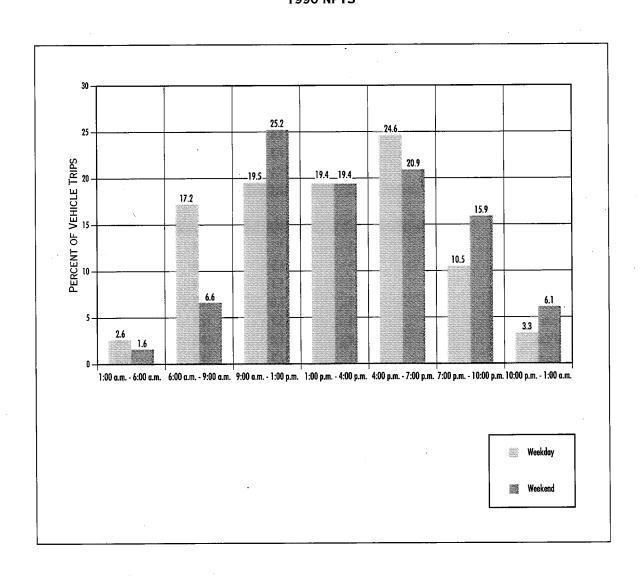
DISTRIBUTION OF VEHICLE TRIPS BY WEEKDAY VS. WEEKEND AND BY TRIP PURPOSE 1990 NPTS



According to the 1990 NPTS data, weekday traffic begins around 6 a.m. and peaks between 4 p.m. and 7 p.m. Very little traffic begins before 9 a.m. during weekends; traf-

fic peaks between 9 a.m. and 1 p.m.; continues until 10 p.m.; and diminishes considerably thereafter.

DISTRIBUTION OF VEHICLE TRIPS BY WEEKDAY VS. WEEKEND AND TIME OF DAY 1990 NPTS



AVERAGE VEHICLE TRIP LENGTH¹ BY TIME OF DAY, WEEKDAY VS. WEEKEND AND TRIP PURPOSE 1990 NPTS (MILES)

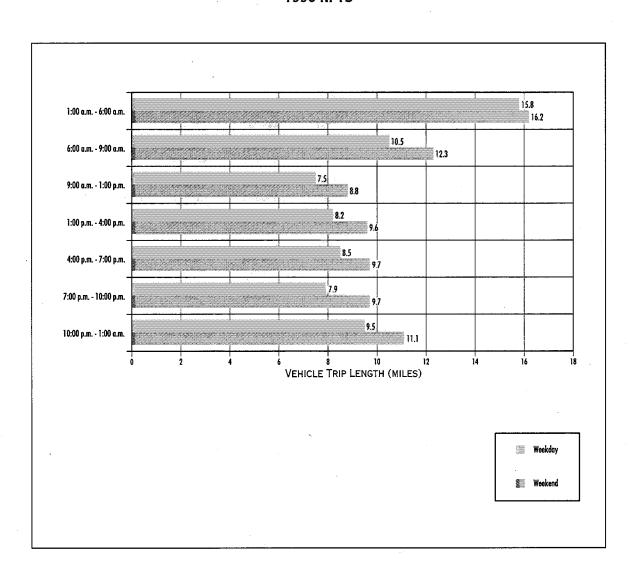
	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL
Weekday						
1:00 a.m 6:00 a.m.	16.5	11.2	31.6	15.9	*	15.8
6:00 a.m 9:00 a.m.	11.8	6.7	8.1	17.0	7.1	10.5
9:00 a.m 1:00 p.m.	9.5	5.8	8.9	11.6	17.0	7.5
1:00 p.m 4:00 p.m.	11.0	6.3	8.3	10.9	12.2	8.2
4:00 p.m 7:00 p.m.	10.4	6.5	8.4	9.0	8.1	8.5
7:00 p.m 10:00 p.m.	11.7	5.7	7.3	8.4	11.4	7.9
10:00 p.m 1:00 a.m.	11.2	6.7	15.4	9.2	4.2	9.5
TOTAL	11.3	6.2	8.5	10.2	11.4	8.7
Weekend	. "					
1:00 a.m 6:00 a.m.	14.1	23.6	*	13.4	*	16.2
6:00 a.m 9:00 a.m.	10.0	9.0	6.6	27.4	10.9	12.3
9:00 a.m 1:00 p.m.	10.1	6.3	5.1	17.4	7.2	8.8
1:00 p.m 4:00 p.m.	10.2	6.9	7.3	14.7	12.2	9.6
4:00 p.m 7:00 p.m.	10.2	7.4	5.7	12.7	11.0	9.7
7:00 p.m 10:00 p.m.	11.5	8.0	8.7	10.6	7.4	9.7
10:00 p.m 1:00 a.m.	11.5	9.1	7.7	12.2	10.2	11.1
TOTAL	10.6	7.2	6.1	13.8	9.3	9.8

 $^{^{\}rm I}$ Information based only on observations that had valid trip mile information.

^{*} Indicates insufficient data reported.

Regardless of the time of day, weekend trips were longer than weekday trips. Trips were longer during the hours when there was less traffic (before 6 a.m. on weekdays and before 9 a.m. on weekends).

AVERAGE VEHICLE TRIP LENGTH BY WEEKDAY VS. WEEKEND AND TIME OF DAY 1990 NPTS



NUMBER OF WEEKDAY' VEHICLE TRIPS BY TIME OF DAY AND TRIP LENGTH 1990 NPTS (THOUSANDS)

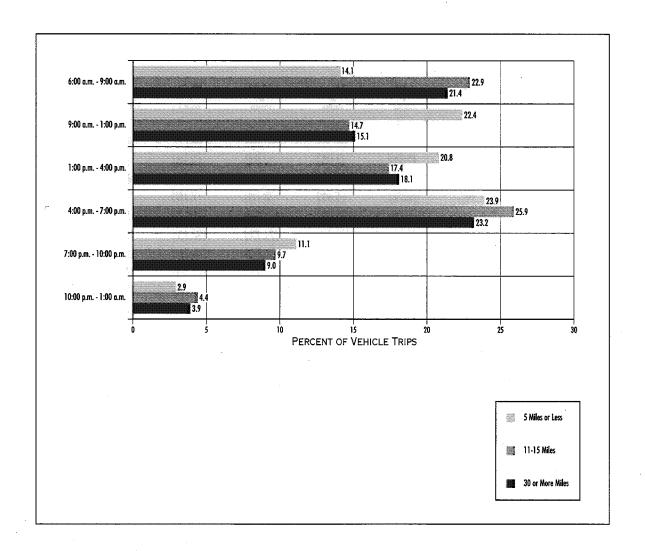
	5 miles or less	6-10 miles	11-15 miles	16-20 miles	21-30 miles	30 or more miles	TOTAL ²
1:00 a.m 6:00 a.m.	1,089,488	584,278	317,070	253,424	297,416	340,353	2,907,451
	(1.6%)	(2.8%)	(3.1%)	(4.9%)	(6.1%)	(7.4%)	(2.6%)
6:00 a.m 9:00 a.m.	9,379,939	4,192,028	2,316,196	1,224,905	1,255,636	985,840	19,515,310
	(14.1%)	(20.4%)	(22.9%)	(23.7%)	(25.6%)	(21.4%)	(17.2%)
9:00 a.m 1:00 p.m.	14,955,827	3,430,271	1,488,086	698,345	658,128	698,659	22,081,266
·	(22.4%)	(16.7%)	(14.7%)	(13.5%)	(13.4%)	(15.1%)	(19.5%)
1:00 p.m 4:00 p.m.	13,863,354	3,672,204	1,753,408	835,176	847,346	835,647	21,981,890
	(20.8%)	(17.9%)	(17.4%)	(16.2%)	(17.3%)	(18.1%)	(19.4%)
4:00 p.m 7:00 p.m.	15,922,908	5,392,582	2,612,092	1,328,110	1,243,505	1,071,482	27,815,843
	(23.9%)	(26.2%)	(25.9%)	(25.7%)	(25.4%)	(23.2%)	(24.6%)
7:00 p.m 10:00 p.m.	7,382,956	2,175,306	980,056	535,913	341,900	415,869	11,926,725
	(11.1%)	(10.6%)	(9.7%)	(10.4%)	(7.0%)	(9.0%)	(10.5%)
10:00 p.m1:00 a.m.	1,931,464	739,419	439,949	195,853	182,768	180,661	3,718,141
	(2.9%)	(3.6%)	(4.4%)	(3.8%)	(3.7%)	(3.9%)	(3.3%)
TOTAL	66,666,173	20,572,515	10,093,510	5,169,949	4,895,777	4,612,930	113,221,187
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
	(58.9%)	(18.2%)	(8.9%)	(4.6%)	(4.3%)	(4.1%)	(100.0%)

 $^{^{\}rm 1}$ Defined as the time between 12:01 a.m. Monday and 6:00 p.m. Friday.

² Includes trips where start time of trip, trip length, or both were unreported.

FIGURE 5.31

DISTRIBUTION OF WEEKDAY VEHICLE TRIPS BY SELECTED TIME OF DAY AND SELECTED TRIP LENGTH 1990 NPTS



NUMBER OF WEEKEND' VEHICLE TRIPS BY TIME OF DAY AND TRIP LENGTH 1990 NPTS (THOUSANDS)

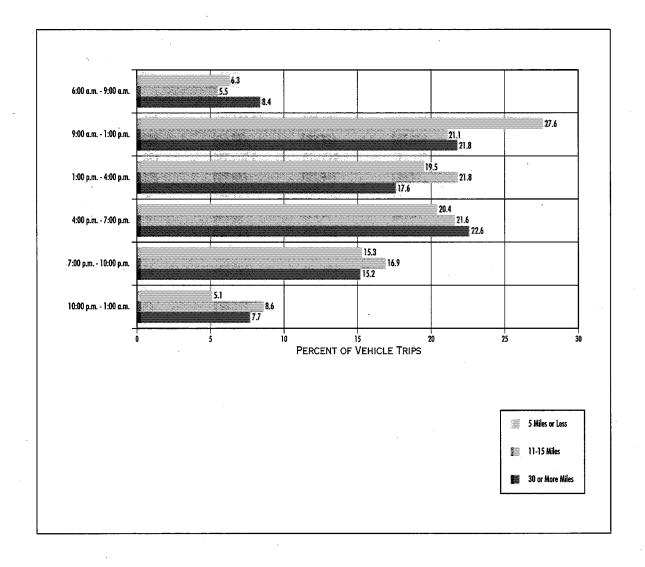
	5 miles or less	6-10 miles	11-15 miles	16-20 miles	21-30 miles	30 or more miles	TOTAL ²
1:00 a.m 6:00 a.m.	287,809	155,849	67,584	60,688	56,712	89,950	727,051
	(1.1%)	(2.0%)	(1.9%)	(2.8%)	(3.2%)	(4.1%)	(1.6%)
6:00 a.m 9:00 a.m.	1,684,407	543,954	197,159	172,166	127,270	184,273	2,943,213
	(6.3%)	(6.9%)	(5.5%)	(8.1%)	(7.1%)	(8.4%)	(6.6%)
9:00 a.m 1:00 p.m.	7,318,189	1,813,364	750,900	452,510	361,370	479,971	11,268,317
	(27.6%)	(22.9%)	(21.1%)	(21.2%)	(20.1%)	(21.8%)	(25.2%)
1:00 p.m 4:00 p.m.	5,177,316	1,534,940	774,460	356,726	386,263	386,818	8,688,521
	(19.5%)	(19.4%)	(21.8%)	(16.7%)	(21.5%)	(17.6%)	(19.4%)
4:00 p.m 7:00 p.m.	5,400,950	1,741,277	767,526	494,288	367,303	498,111	9,361,165
	(20.4%)	(22.0%)	(21.6%)	(23.2%)	(20.4%)	(22.6%)	(20.9%)
7:00 p.m 10:00 p.m.	4,064,638	1,381,784	599,244	362,611	297,150	334,874	7,129,969
	(15.3%)	(17.4%)	(16.9%)	(17.0%)	(16.5%)	(15.2%)	(15.9%)
10:00 p.m1:00 a.m.	1,360,568	524,764	306,351	154,617	170,337	169,707	2,713,212
	(5.1%)	(6.6%)	(8.6%)	(7.2%)	(9.5%)	(7.7%)	(6.1%)
TOTAL?	26,526,929	7,923,432	3,553,575	2,134,482	1,800,096	2,201,388	44,737,485
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Defined as the time between 6:01 p.m. Friday and midnight Sunday.

² Includes trips where start time of trip, trip length, or both were unreported.

FIGURE 5.32

DISTRIBUTION OF WEEKEND VEHICLE TRIPS BY SELECTED TIME OF DAY AND SELECTED TRIP LENGTH 1990 NPTS



NUMBER OF WEEKDAY VEHICLE TRIPS BY TRIP LENGTH AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

Miles	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL ²
5 or less	16,691,443	36,176,070	2,839,234	10,506,181	438,353	66,666,173
	(43.0%)	(70.7%)	(58.2%)	(59.5%)	(62.0%)	(58.9%)
6-10	8,738,762	7,581,431	915,010	3,208,338	128,974	20,572,515
	(22.5%)	(14.8%)	(18.7%)	(18.2%)	(18.2%)	(18.2%)
11-15	5,005,275	3,155,393	447,091	1,432,593	50,887	10,093,510
	(12.9%)	(6.2%)	(9.2%)	(8.1%)	(7.2%)	(8.9%)
16-20	2,785,040	1,364,583	273,459	711,442	35,424	5,169,949
	(7.2%)	(2.7%)	(5.6%)	(4.0%)	(5.0%)	(4.6%)
21-30	2,756,174	1,242,366	184,558	702,274	10,324	4,895,776
	(7.1%)	(2.4%)	(3.8%)	(4.0%)	(1.5%)	(4.3%)
31 or more	2,374,212	1,105,136	166,905	923,972	42,706	4,612,930
	(6.1%)	(2.2%)	(3.4%)	(5.2%)	(6.0%)	(4.1%)
TOTAL ²	38,794,232	51,157,578	4,881,598	17,656,963	706,998	113,221,187
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Defined as the time between 12:01 a.m. Monday and 6:00 p.m.

 $^{^{\}rm 2}$ Includes trips where trip length, trip purpose or both were unreported.

NUMBER OF WEEKEND' VEHICLE TRIPS BY TRIP LENGTH AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

Miles	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL ²
5 or less	2,703,955	13,968,653	2,391,790	7,254,886	198,453	26,526,929
	(47.2%)	(68.3%)	(67.6%)	(49.5%)	(63.1%)	(59.3%)
6-10	1,217,072	3,151,814	648,995	2,860,800	44,752	7,923,432
	(21.2%)	(15.4%)	(18.3%)	(19.5%)	(14.2%)	(17.7%)
11-15	701,413	1,173,937	234,562	1,411,592	30,584	3,553,575
	(12.2%)	(5.7%)	(6.6%)	(9.6%)	(9.7%)	(7.9%)
16-20	432,709	747,294	93,580	847,564	13,334	2,134,482
	(7.6%)	(3.7%)	(2.6%)	(5.8%)	(4.2%)	(4.8%)
21-30	287,349	560,322	71,706	870,251	9,559	1,800,096
	(5.0%)	(2.7%)	(2.0%)	(5.9%)	(3.0%)	(4.0%)
31 or more	308,190	614,167	61,087	1,201,177	16,767	2,201,388
	(5.4%)	(3.0%)	(1.7%)	(8.2%)	(5.3%)	(4.9%)
TOTAL ²	5,730,924	20,463,833	3,539,984	14,662,509	314,715	44,737,485
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Defined as the time between 6:01 p.m. Friday and midnight Sunday.

² Includes trips where trip length, trip purpose or both were unreported.

NUMBER OF VEHICLE MILES DRIVEN DURING WEEKDAY BY TRIP LENGTH AND TRIP PURPOSE 1990 NPTS

(THOUSANDS)

Miles	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social a Recreational	Other	TOTAL ²
5 or less	44,136,754	77,202,646	6,953,641	25,232,832	1,078,988	154,642,226
	(10.2%)	(24.7%)	(17.1%)	(14.2%)	(13.4%)	(15.9%)
6-10	71,877,457	61,586,792	7,260,651	26,215,182	1,028,389	167,968,471
	(16.5%)	(19.7%)	(17.8%)	(14.8%)	(12.7%)	(17.3%)
11-15	67,486,791	42,826,325	6,085,495	19,600,048	680,512	136,710,967
	(15.5%)	(13.7%)	(14.9%)	(11.0%)	(8.4%)	(14.0%)
16-20	52,081,868	26,048,670	5,272,157	13,526,544	695,700	97,624,940
	(12.0%)	(8.3%)	(12.9%)	(7.6%)	(8.6%)	(10.0%)
21-30	71,994,412	32,916,718	4,886,502	18,858,414	285,097	128,943,149
	(16.6%)	(10.5%)	(12.0%)	(10.6%)	(3.5%)	(13.2%)
31 or more	126,936,807	72,030,563	10,319,682	73,954,811	4,302,255	287,544,118
	(29.2%)	(23.0%)	(25.3%)	(41.7%)	(53.5%)	(29.5%)
TOTAL	434,514,089	312,611,714	40,778,128	177,387,832	8,070,941	973,433,871
٠.	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Defined as the time between 12:01 a.m. Monday and 6:00 p.m.

² Includes miles of travel where trip purpose was unreported.

NUMBER OF VEHICLE MILES DRIVEN DURING WEEKEND' BY TRIP LENGTH AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

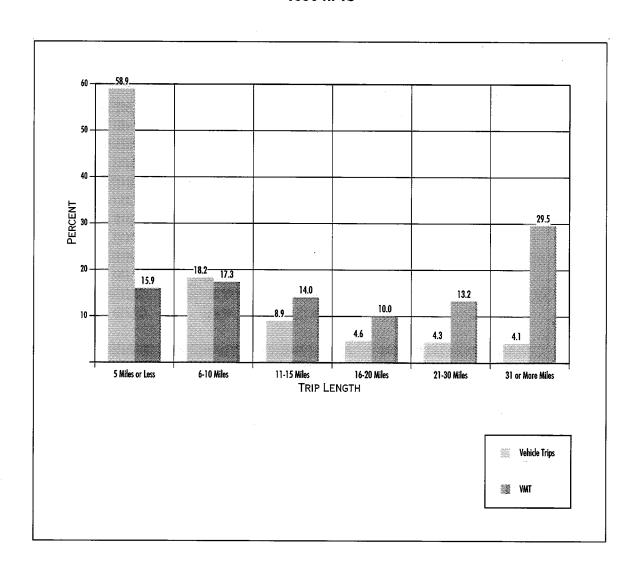
Miles	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL ²
5 or less	7,221,187	30,021,012	5,593,470	18,561,732	509,882	61,933,568
	(12.0%)	(20.6%)	(26.1%)	(9.3%)	(17.4%)	(14.4%)
6-10	10,143,281	25,639,352	5,065,660	23,545,984	361,625	64,755,902
	(16.9%)	(17.6%)	(23.7%)	(11.8%)	(12.4%)	(15.1%)
11-15	9,477,436	16,058,612	3,228,221	19,383,152	432,117	48,601,843
	(15.8%)	(11.0%)	(15.1%)	(9.7%)	(14.8%)	(11.3%)
16-20	8,169,928	14,260,520	1,752,260	16,322,114	252,678	40,757,500
	(13.6%)	(9.8%)	(8.2%)	(8.2%)	(8.6%)	(9.5%)
21-30	7,511,540	14,971,931	1,895,792	23,210,805	265,248	47,882,580
	(12.5%)	(10.3%)	(8.9%)	(11.6%)	(9.1%)	(11.1%)
31 or more	17,441,237	45,026,973	3,868,965	98,797,981	1,103,811	166,238,966
	(29.1%)	(30.8%)	(18.1%)	(49.4%)	(37.7%)	(38.6%)
TOTAL	59,964,609	145,978,400	21,404,370	199,821,767	2,925,360	430,170,359
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Defined as the time between 6:01 p.m. Friday and midnight Sunday.

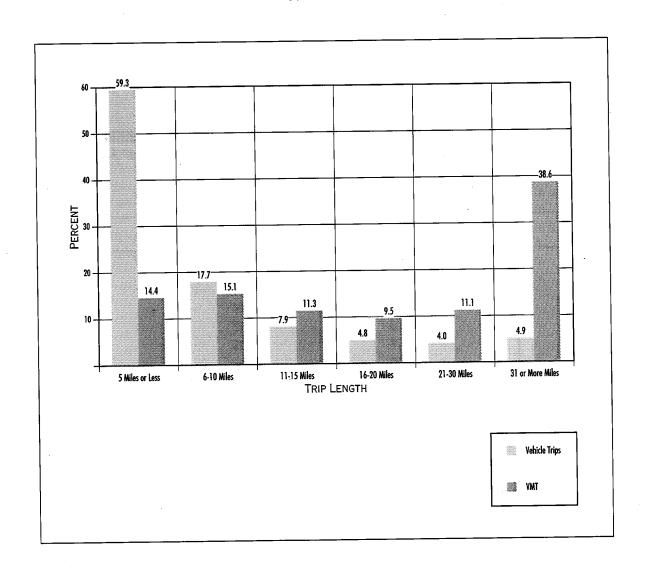
² Includes miles of travel where trip purpose was unreported.

Figure 5.33

DISTRIBUTION OF WEEKDAY VEHICLE TRAVEL BY TRIP LENGTH 1990 NPTS



DISTRIBUTION OF WEEKEND VEHICLE TRAVEL BY TRIP LENGTH
1990 NPTS



Tables 5.66 through 5.68 provide data on the amount of time drivers spend behind the wheel. On average, a driver spent almost one hour a day driving; however, this varied depending on the driver's age and gender. The gender difference in driving behavior was also observed in the amount of time spent driving a private vehicle — male drivers spent 22% more time driving a private vehicle than female drivers. The gender difference is most prevalent for drivers between the ages of 60 and 64.

TABLE 5.66

AVERAGE TIME SPENT DRIVING A PRIVATE VEHICLE IN A TYPICAL DAY' BY DRIVERS' AGE AND SEX 1990 NPTS (MINUTES)

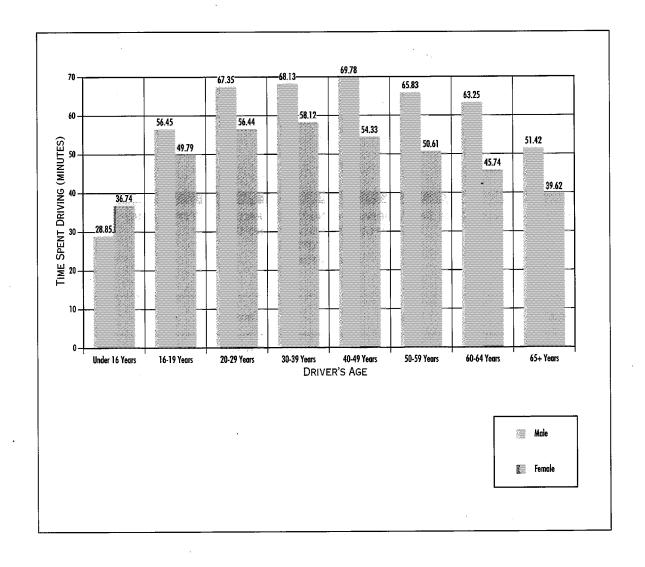
Male	Female	ALL
28.85	36.74	33.11
56.45	49.79	53.23
67.35	56.44	62.06
68.13	58.12	63.22
69.78	54.33	62.32
65.83	50.61	59.03
63.25	45.74	55.56
51.42	39.62	46.32
65.3 5	53.46	59.69
	28.85 56.45 67.35 68.13 69.78 65.83 63.25 51.42	28.85 36.74 56.45 49.79 67.35 56.44 68.13 58.12 69.78 54.33 65.83 50.61 63.25 45.74 51.42 39.62

¹ Does not include persons who did not drive a private vehicle on the day in which the household was interviewed. Does not include any driving done in a segmented trip. Also excludes driving done as an "essential part of work" (see Chapter 9, Commercial Driving).

² Some states issue learner permits to individuals at age 14 or 15. The "under 16" category reflects these drivers.

FIGURE 5.35

AVERAGE TIME SPENT DRIVING A PRIVATE VEHICLE IN A TYPICAL DAY BY DRIVER'S AGE AND SEX 1990 NPTS



The impact of employment status on the amount of time spent driving a private vehicle is smaller in female drivers than in male drivers. Employed female drivers spent 15% more time driving a private vehicle than unemployed female drivers, while the corre-

sponding percentage for male drivers is 23%. Furthermore, employment status affects the gender difference - 22% between employed male and female drivers vs. 14% in unemployed drivers.

TABLE 5.67

AVERAGE TIME SPENT DRIVING A PRIVATE VEHICLE IN A TYPICAL DAY¹ BY EMPLOYMENT STATUS AND SEX 1990 NPTS (MINUTES)

67.72	55.61	62.40
54.97	48.34	51.05
65.35	53.46	59.69
-	54.97	54.97 48.34

Does not include persons who did not drive a private vehicle on the day in which the household was interviewed. Does not include any driving

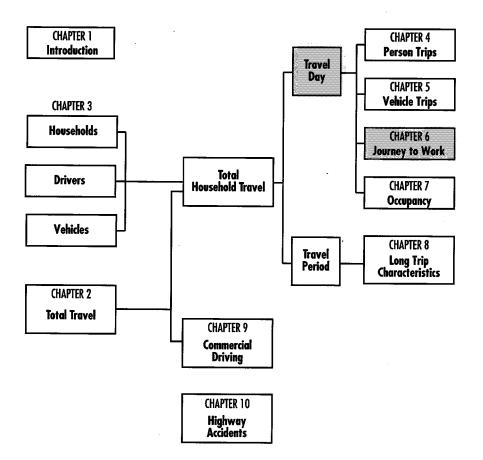
done in a segmented trip. Also excludes driving done as an "essential part of work" (see Chapter 9, Commercial Driving).

In a typical day, people living in larger MSA's spent more time driving a private vehicle than those living in smaller areas. The difference in the amount of time spent driving becomes negligible for areas with a population greater than 500,000.

TABLE 5.68

AVERAGE TIME AND AVERAGE MILES SPENT DRIVING A PRIVATE VEHICLE IN A TYPICAL DAY' BY URBANIZED AREA SIZE 1990 NPTS (MINUTES)

Urbanized Area Size	Average Time Spent Driving a Vehicle
50,000-199,999	52.96
200,000-499,999	53.97
500,000-999,999	58.12
1,000,000 or more without rail/subway	59.50
1,000,000 or more with rail/subway	62.35
Not in Urbanized Area .	61.35
AU.	59.69
¹ Does not include persons who did not drive a private vehicle on the in which the household was interviewed. Does not include any driv	e day done in a segmented trip. Also excludes driving done as an "essential part of work" (see Chapter 9, Commercial Driving).



CHAPTER 6

JOURNEY TO WORK AND WORK-RELATED TRIPS



BETWEEN 1969 AND 1990:

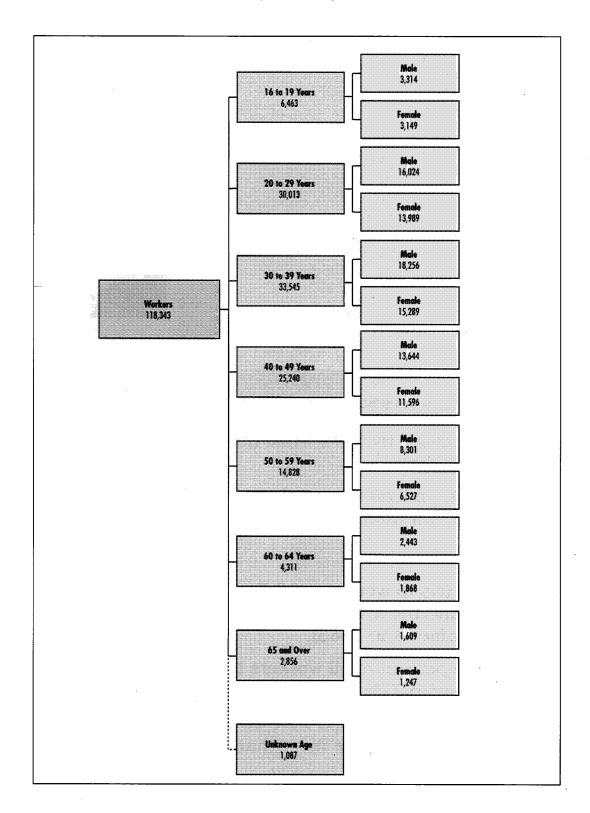
- Workers increased by 56%, while the population only increased by 21%.
- There were 42 million new workers, with 36% of them men and 64% of them women.

IN 1990:

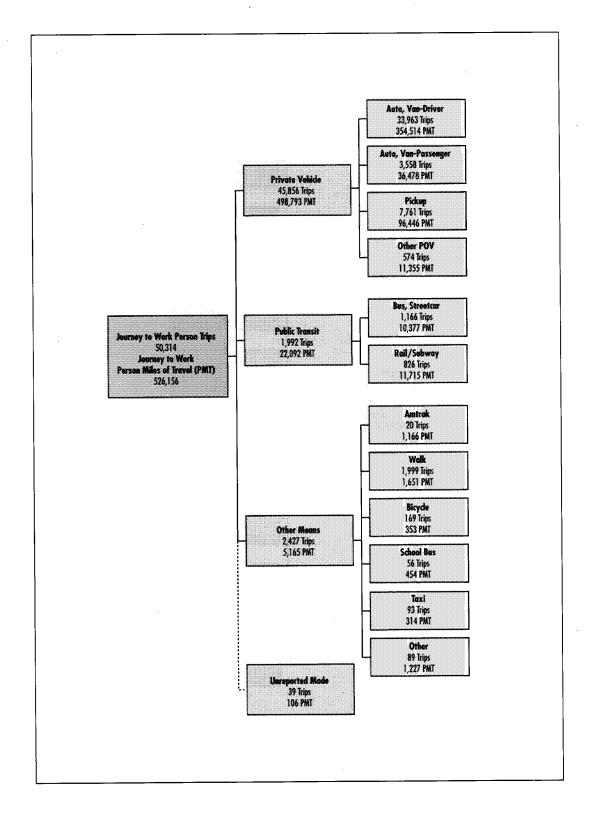
- The average trip to work was 10.7 miles (26% longer than 1983 trips) and the average travel time was 20 minutes (about the same as in 1983).
- Eighty-three percent of all workers travelled to work by private vehicle, with 71% driving alone and 12% carpooling.
- Two-thirds of all work trips were 10 miles or less and only 12% of trips to work were more than 20 miles.

1990 WORKERS BY AGE AND SEX

(THOUSANDS)

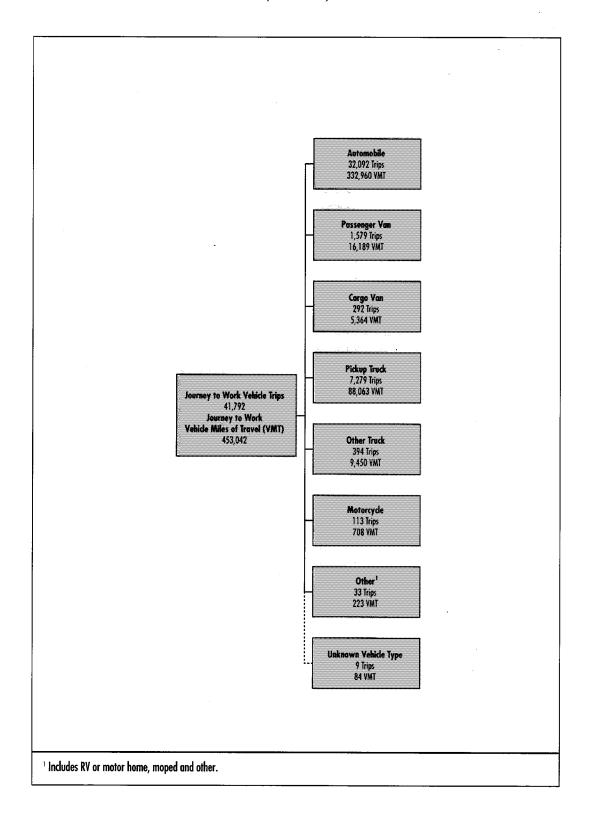






1990 JOURNEY TO WORK VEHICLE TRIPS AND MILES OF TRAVEL BY VEHICLE TYPE

(MILLIONS)



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CHAPTER 6 JOURNEY TO WORK AND WORK-RELATED TRIPS

TATISTICS on journey to work and work-related trips are presented in this chapter. Journey to work refers to a one-way trip from one's home to a place where one reports to work, or from work back to home. Work-related trips are not considered journey to work trips. Trips related to business activities, such as trips to attend a meeting, a professional convention or to purchase supplies, are referred to as work-related trips. A person is considered employed, or a worker, if he/she worked for pay, either full time or part time, during the week before the interview.

Questions on journey to work trips were asked in two different sections of the 1990 NPTS questionnaire. First, an individual was asked how he/she usually travelled to and from work during the previous week. This information is on the tupical or usual travel mode. The same individual was then asked to report all trips taken during the sampled day (travel day). If that individual went to work that day, then information was recorded on trips travelling to and from work that day. If the individual used a different mode travelling to and from work on the sampled day than what he/she would usually use, then the mode actually used for the journey to work trip on the sampled day was different from the so-called usual mode for the journey to work trip. Throughout this chapter, the term "usual mode" will be used to distinguish statistics based on data on the usual mode from those based on data on actual mode.

INCREASE IN NUMBER OF WORKERS

From 1969 to 1990, the number of workers increased by 56 percent, which was two and a half times the 21 percent increase in the total population. This difference reflects, in part, the increase of working-age individuals in the population and the increased participation by women in the labor force. While 37 percent of all females 16 years or older were employed in 1969, the corresponding percentage in 1990 increased to 56 percent. In contrast, the percentage of males employed remained stable from 1969 to 1990, about 75 percent.

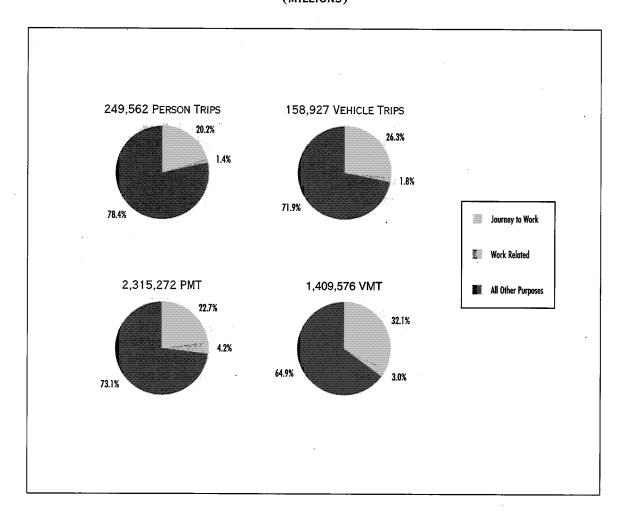
MAGNITUDE OF JOURNEY TO WORK AND WORK-RELATED TRAVEL

The 1990 NPTS estimated that there were 50 billion journey to work trips in 1990, which amounted to more than 526 billion person miles of travel (23 percent of total person miles) and 453 billion vehicle miles of travel (32 percent of total vehicle miles) (Figure 6.1). Journey to work and work-related travel accounted for 27 percent of the total number of person trips on week-days. However, the corresponding percentage on weekends is only one-tenth of the percentage on weekdays (2.8 percent).

The proportion of journey to work trips increased as household income increased. On average, there were 500 journey to work trips per household; and more than 420 journey to work trips per worker per year. For lower income households (less than \$10,000 a year), 12 percent of their annual person trips were for travelling to and from work, while 21 percent of total trips by households with income greater than \$40,000 were for travelling to and from work.

FIGURE 6.1

STATISTICS ON TRAVEL BY TRIP PURPOSE 1990 NPTS (MILLIONS)



MODE PREFERENCE FOR TRAVELLING TO AND FROM WORK

The great majority of workers commuted to work using privately-owned vehicles (POV). Female workers used public transportation slightly more than male workers and they also travelled to and from work as passengers in privately owned vehicles more than males. Workers 60 years or older were more likely to commute using public transit and other means of transportation, including walking, than younger workers. Public transit and means of travel other than POV were also common among the youngest workers (20 years or younger).

The percentage of workers who commuted using public transportation increased as the population size of a metropolitan area increased.

COMMUTING PATTERNS

The average length of journey to work trips was 10.7 miles, with segmented trips¹ longer than non-segmented trips. Workers residing inside the central city of a Metropolitan Statistical Area (MSA) took a significantly greater number of segmented trips than workers residing elsewhere.

Journey to work trips by public transit were the longest, both in miles and in minutes, when compared to trips by other modes of transportation. On average, commute speed increased from 1983 to 1990 with the increase by privately owned vehicles being the most notable.

Improvement in commute speed was partially a result of the continued development of suburban and exurban residential areas which allowed travelling to and from

work at faster speeds. The improved speeds contributed to a slightly shorter commute time although the commuting distance increased from 8.5 miles in 1983 to 10.7 miles in 1990. In addition, mode shifts from carpooling and public transit to single-occupant vehicles also played a role in the decline in commute time.

TEMPORAL PATTERNS OF COMMUTING

Weekday journey to work trips peaked between 6 and 9 a.m. and between 4 and 7 p.m., but diminished considerably after 7 p.m. Journey to work trips on weekends, on the other hand, peaked around 4 p.m. and remained fairly high until 1 a.m.

More than half of weekday morning travel before 9 a.m. was for journey to work trips. However, journey to work trips were, as expected, considerably less prevalent in morning traffic during weekends. Between 85 percent to 95 percent of weekend travel that occurred after 9 a.m. was not related to work.

¹ See Page 4-50 of Volume 1 of the 1990 Nationwide Personal Transportation Survey Databook for detailed explanations of segmented trips.

The number of workers increased by 56% from 1969 to 1990, while the total population increased by only 21%. This difference reflects, in part, the increase in the percentage of working-age individuals, as well as

increased participation by women in the work force. In 1969, an average worker drove 3,441 miles commuting to work that, as compared to 3.828 miles in 1990, representing an increase of 11% over the time period.

TABLE 6.

SUMMARY STATISTICS ON JOURNEY TO WORK AND WORK-RELATED TRAVEL 1969, 1977, 1983 AND 1990 NPTS¹

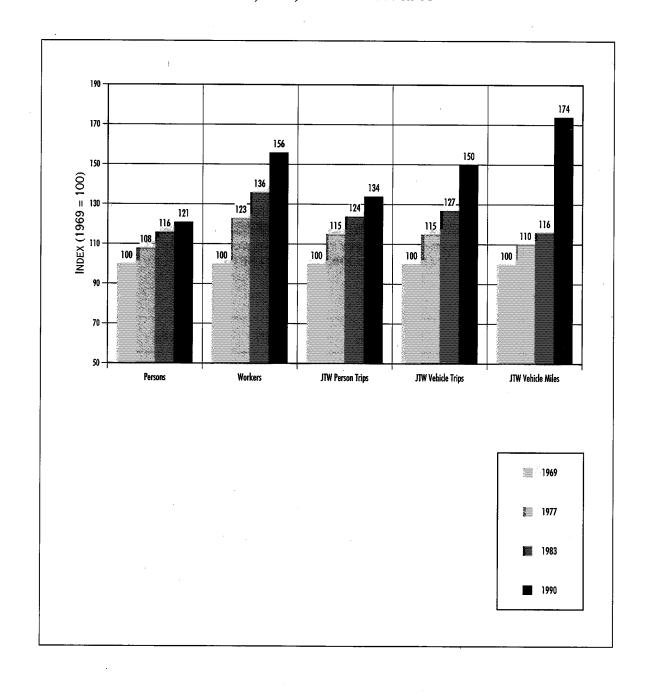
	1969	1977	1983	1990
Persons (000)	197,213	213,141	229,453	239,416
Workers (000)	75,758	93,019	103,244	~ 118,343
Journey to Work Trips				
Annual Person Trips (000,000)	37,638	43,767	46,493	50,314
Annual Vehicle Trips (000,000)	27,844	31,886	35,271	41,792
Annual VMT (000,000)	260,716	287,710	301,644	453,042
Work-Related Trips				
Annual Person Trips (000,000)	**	7,624	5,283	3,529
Annual Vehicle Trips (000,000)	3,840	5,768	3,679	2,845
Annual VMT (000,000)	61,299	68,978	42,090	42,336

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

^{**} Indicates data not available.

SUMMARY STATISTICS ON JOURNEY TO WORK PERSON TRIPS

1969, 1977, 1983 AND 1990 NPTS



SUMMARY STATISTICS ON WORKERS AND THEIR TRAVEL 1990 NPTS AND 1990 CENSUS DATA

	1990 Census Data	1990 NPTS
Number of Workers (000)	115,070	118,343
% Male	54.7	54.1
% Female	45.3	45.9
Workers as a Percent of Population	46.27	49.43
Workers per Household	1.25	1.27
Workers per Vehicle	0.76	0.72
Workers' Average Commute Time to Work (minutes)	22.4	20.0
Distribution of Workers by Usual Mode of Transportation to Work (000)		
Private Vehicle ¹	99,593	97,838
	(86.5%)	(82.7%)
% Drive Alone	73.2	70.7 ²
% Carpool	13.4	12.0 ²
Motorcycle	242	306
	(0.2%)	(0.3%)
Public Transif ³	5,890	5,951
	(5.1%)	(5.0%)
Walkéd tó Work	4,489	4,416
	(3.9%)	(3.7%)
Other ⁴	1,450	2,981
	(1.3%)	(2.5%)
Worked at Home	3,406	Unknown
	(3.0%)	
Unknown		6,851
	(0.0%)	(5.8%)

Source: 1990 Census Data: U.S. Department of Transportation, Federal Highway Administration, <u>Journey-to-Work Trends in the United States and its Major Metropolitan Areas, 1960-1990</u>, 1994, Tables 2-1 & 2-4, pp. 2-2 & 2.6.

¹ Includes car, truck, jeep and van.

² This percentage is calculated based on data on the first journey to work trip taken on the respondent's sample day. This does not include 40,270,122 (41.2%) persons usually driving a private vehicle to work, whose carpooling status on the sample day is unknown.

³ Includes bus, trolley, streetcar, subway, railroad and ferry.

⁴ Includes bicycle, taxicab and other means.

The great majority of workers commuted to work using privately owned vehicles. Female workers used public transportation slightly more than male workers.

TABLE 6.3

NUMBER OF WORKERS BY SEX AND USUAL MODE OF COMMUTING¹ 1990 NPTS (THOUSANDS)

Note: See Limitations of Data on Transit² in Chapter 1, Section 5

•	Male	Female	TOTAL ³
Private Vehicle			
Car, Truck, Jeep, and Van	53,482	44,342	97,838
	(83.6%)	(81.6%)	(82.7%)
Motorcycle	306	**	306
·	(0.5%)	(0.0%)	(0.3%)
Subtotal - Private	53,788	44,342	98,143
	(84.0%)	(81.6%)	(82.9%)
Public Transportation			
Bus or Trolley	1,644	1,913	3,557
and the second s	(2.6%)	(3.5%)	(3.0%)
Subway/Rail	1,279	1,066	2,344
	(2.0%)	(2.0%)	(2.0%)
Other Public	47		50
	(0.1%)	(0.0%)	(0.0%)
Subtotal - Public	2,970	2,981	5,951
	(4.6%)	(5.5%)	(5.0%)
Other Means			
<u> Taxi</u>	67	90	157
	(0.1%)	(0.2%)	(0.1%)
Bicycle	322	107	429
	(0.5%)	(0.2%)	(0.4%)
Walk	2,358	2,058	4,416
	(3.7%)	(3.8%)	(3.7%)
Other	1,120	1,275	2,395
	(1.8%)	(2.3%)	(2.0%)
Subtotal - Other	3,867	3,530	7,397
	(6.0%)	(6.5%)	(6.3%)
TOTAL ³	63,996	54,334	118,343
_	(100.0%)	(100.0%)	(100.0%)
ALL MODES	54.1	45.9	100.0

¹ Mode categories were selected to conform with decennial Census categories.

² Estimates of "usual" transit use are based on 1321 workers who reported that their typical means to work was bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

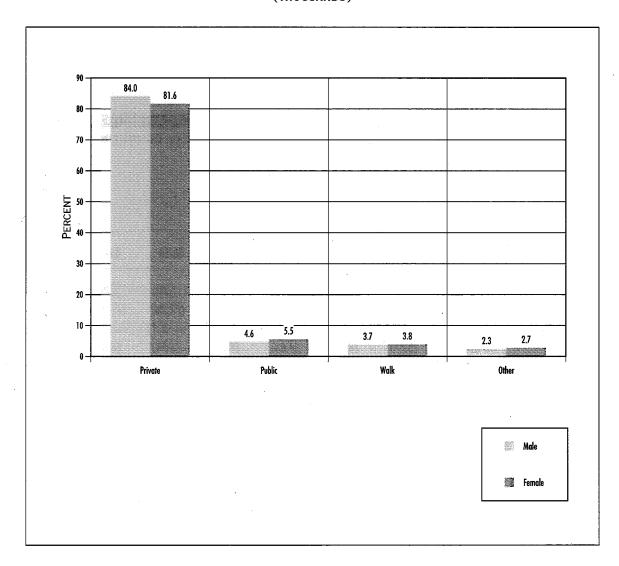
Includes workers whose sex, usual mode of transportation or both were unreported.

^{*} Indicates insufficient data reported.

^{**} Indicates no data reported.

FIGURE 6.3

DISTRIBUTION OF WORKERS BY SEX AND USUAL MODE OF COMMUTING 1990 NPTS (THOUSANDS)



The use of private vehicles for commuting was about the same for all age groups until workers reached the age of 60. Workers 60 years or older tended to use more public transit and other means of transportation,

including walking, than younger workers. Using public transit and other means of travel for commuting was also common among workers younger than 20 years old.

TABLE 6.4

NUMBER OF WORKERS BY WORKER'S AGE AND USUAL MODE OF COMMUTING 1990 NPTS (THOUSANDS)

Note: See Limitations of Data on Transit¹ in Chapter 1, Section 5

	16-19	20-29	30-39	40-49	50-59	60-64	65+	TOTAL ²
Private Vehicle	5,166	24,885	28,314	21,283	12,246	3,331	2,042	98,143
	(79.9%)	(82.9%)	(84.4%)	(84.3%)	(82.6%)	(77.3%)	(71.5%)	(82.9%)
Public Transportation	336	1,931	1,385	1,149	614	251	188	5,951
	(5.2%)	(6.4%)	(4.1%)	(4.6%)	(4.1%)	(5.8%)	(6.6%)	(5.0%)
Other Means	620	1,758	1,998	1,334	837	379	412	7,397
	(9.6%)	(5.9%)	(6.0%)	(5.3%)	(5.6%)	(8.8%)	(14.4%)	(6.3%)
TOTAL ²	6,463	30,013	33,545	25,240	14,827	4,311	2,856	118,343
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
% of Workers by Age	5.5%	25.4%	28.3%	21.3%	12.5%	3.6%	2.4%	100.0%

¹ Estimates of "usual" transit use are based on 1321 workers who reported that their typical means to work was bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes workers whose age, usual mode of transportation or both were unreported.

Workers between the ages of 20 and 50 took more than three quarters of the estimated 50 billion annual journey to work trips. This pattern was similar for men and women. On average, male workers took slightly more journey to work trips than female workers, 429 compared to 420 trips per year, respectively.

NUMBER OF JOURNEY TO WORK PERSON TRIPS BY WORKER'S SEX AND AGE 1990 NPTS (THOUSANDS)

Age	Male	Female	TOTAL
5-15	170,841	168,937	339,778
•	(0.6%)	(0.7%)	(0.7%)
16-19	1,312,638	1,094,891	2,407,529
	(4.8%)	(4.8%)	(4.8%)
20-29	6,988,786	6,090,232	13,079,018
	(25.4%)	(26.7%)	(26.0%)
30-39	8,024,968	6,586,128	14,611,096
	(29.2%)	(28.8%)	(29.0%)
40-49	5,900,358	4,964,292	10,864,650
•	(21.5%)	(21.7%)	(21.6%)
50-59	3,457,222	2,536,644	5,993,866
	(12.6%)	(11.1%)	(11.9%)
60-64	891,144	744,514	1,635,658
	(3.2%)	(3.3%)	(3.3%)
65+	565,216	376,533	941,749
	(2.1%)	(1.6%)	(1.9%)
TOTAL	27,474,321	22,835,631	50,314,271
	(100.0%)	(100.0%)	(100.0%)
All Ages	54.6%	45.4%	100.0%
No. of Workers	63,996	54,334	118,343
	(54.1%)	(45.9%)	(100.0%)
Trips per Worker	429	420	425

¹ Includes trips where worker's age was unreported.

While the majority of workers, both male and female, drove themselves to work, female workers rode to work as passengers of a privately owned vehicle more frequently than

male workers. Female workers also tended to commute using public transit more than their male counterparts.

TABLE 6.6

Number of Journey to Work Person Trips by Sex and Actual Mode of Commuting¹ 1983 and 1990 NPTS² (THOUSANDS)

Note: See Limitations of Data on Transit³ in Chapter 1, Section 5

	<u> </u>	ale	Female		TO	TAL4
Mode	1983	1990	1983	1990	1983	1990
Private Vehicle - Driver	20,639,563	23,366,048	12,439,840	18,412,617	33,079,403	41,782,983
	(75.7%)	(85.0%)	(64.7%)	(80.6%)	(71.1%)	(83.0%)
Private Vehicle - Passengers	3,410,565	1,748,889	4,151,131	2,324,588	7,561,696	4,073,477
	(12.5%)	(6.4%)	(21.6%)	(10.2%)	(16.3%)	(8.1%)
Public Transportation	951,223	1,021,843	1,146,386	990,044	2,097,609	2,011,887
	(3.5%)	(3.7%)	(6.0%)	(4.3%)	(4.5%)	(4.0%)
Walk	1,318,106	1,034,708	1,012,680	964,587	2,330,785	1,999,294
	(4.8%)	(3.8%)	(5.3%)	(4.2%)	(5.0%)	(4.0%)
Other	255,864	284,748	160,005	122,918	415,869	407,665
	(0.9%)	(1.0%)	(0.8%)	(0.5%)	(0.9%)	(0.8%)
TOTAL'	27,271,019	27,474,321	19,222,600	22,835,631	46,493,619	50,314,271
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

In tables containing BOTH 1983 AND 1990 NPTS data, the category "train" (included in the public transportation category) includes both commuter rail and Amtrak. These were collected as one mode in the 1983 survey, and the 1990 data were tabulated to be comparable to the 1983.

² For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

³ Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

Includes trips where sex, mode of transportation or both were unreported.

FIGURE 6.4

DISTRIBUTION OF JOURNEY TO WORK PERSON TRIPS BY MODE OF COMMUTING 1983 AND 1990 NPTS

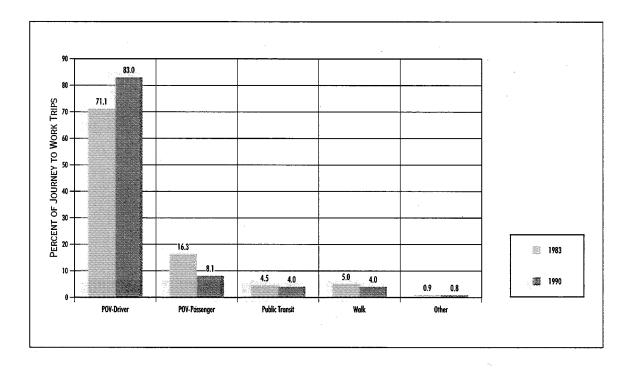
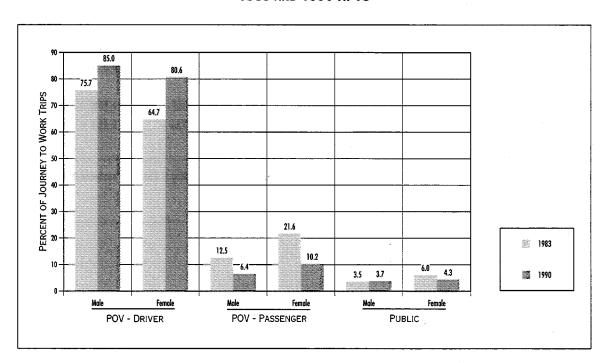


FIGURE 6.5

DISTRIBUTION OF JOURNEY TO WORK PERSON TRIPS BY SEX AND MODE OF COMMUTING 1983 AND 1990 NPTS



The proportion of workers residing in MSA's with population greater than 3 million increased from 16.0% in 1977 to 32.2% in 1990. This increase indicates the growth of metropolitan areas as well as the migration of the labor force from small and non-metropoli-

tan areas to large metropolitan areas. The comparison between 1983 and 1990 data can be misleading since the definition of MSA's changed between 1983 and 1990 (see Appendix B).

TABLE 6.7

Number of Workers by MSA Size 1977, 1983 and 1990 NPTS¹ (THOUSANDS)

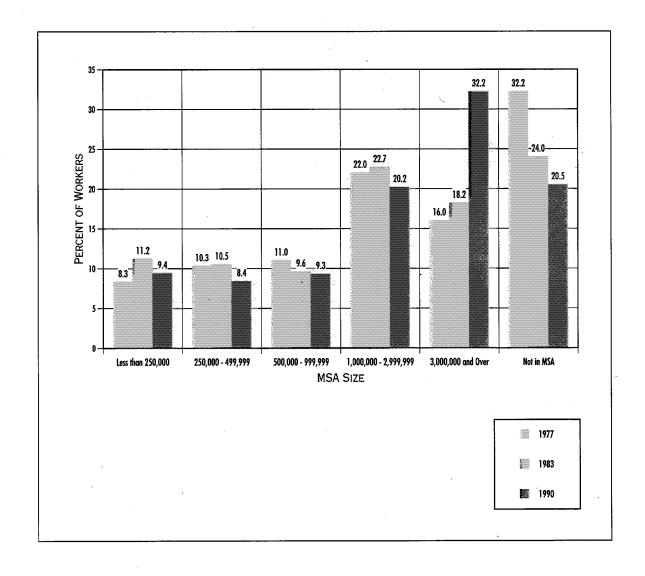
	Less than 250,000	250,000 - 499,999	500,000 - 999,999	1,000,000 - 2,999,999	3,000,000 and Over	Not in MSA	TOTAL
1977	7,883	9,586	10,280	20,434	14,884	29,952	93,019
	(8.3%)	(10.3%)	(11.0%)	(22.0%)	(16.0%)	(32.2%)	(100.0%)
1983	11,612	10,812	9,931	23,465	18,740	24,774	103,244²
	(11.2%)	(10.5%)	(9.6%)	(22.7%)	(18.2%)	(24.0%)	(100.0%)
1990	11,148	9,981	11,003	23,880	38,067	24,264	118,343
	(9.4%)	(8.4%)	(9.3%)	(20.2%)	(32.2%)	(20.5%)	(100.0%)

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

Includes 3.8% of workers living in MSA's, but location in MSA is unknown.

FIGURE 6.6

DISTRIBUTION OF WORKERS BY MSA SIZE 1977, 1983 AND 1990 NPTS



The percentage of workers who usually commuted using privately owned vehicles was less in larger MSA's. In other words, the percentage of workers usually using public transit for journey to work trips was greater in larger MSA's, reaching almost 11% of workers in metropolitan areas with a population greater than 3 million.

NUMBER OF WORKERS BY MSA SIZE AND USUAL MODE OF COMMUTING 1990 NPTS

(THOUSANDS)

Note: See Limitations of Data on Transit¹ in Chapter 1, Section 5

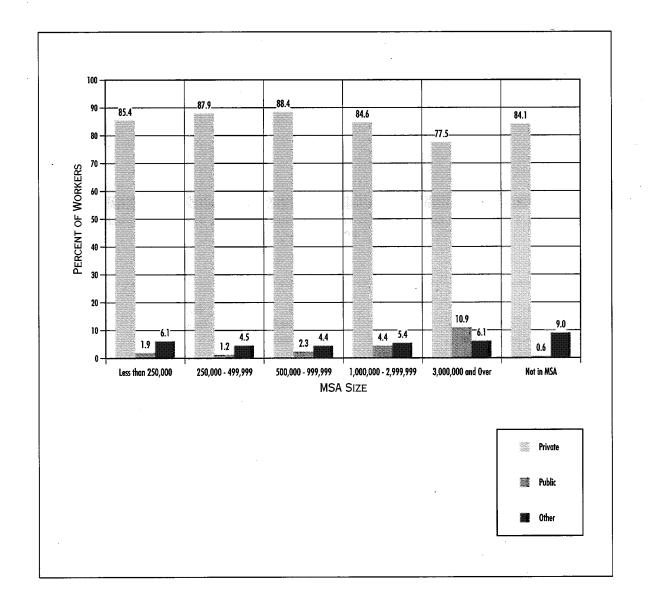
<i>:</i>	Less than 250,000	250,000- 499,999	500,000- 999,999	1,000,000- 2,999,999	3,000,000 and Over	Not in MSA	TOTAL
Private Vehicle	9,522	8,774	9,729	20,194	29,507	20,416	98,143
	(85.4%)	(87.9%)	(88.4%)	(84.6%)	(77.5%)	(84.1%)	(82.9%)
Public Transportation	216	118	248	1,054	4,165	149	5,951
	(1.9%)	(1.2%)	(2.3%)	(4.4%)	(10.9%)	(0.6%)	(5.0%)
Other Means	682	448	479	1,299	2,315	2,173	7,397
	(6.1%)	(4.5%)	(4.4%)	(5.4%)	(6.1%)	(9.0%)	(6.3%)
TOTAL ²	11,148	9,981	11,003	23,880	38,066	24,264	118,343
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

Estimates of "usual" transit use are based on 1321 workers who reported that their typical means to work was bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes workers whose usual mode of transportation was unreported.

FIGURE 6.7

DISTRIBUTION OF WORKERS BY MSA SIZE AND USUAL MODE OF COMMUTING 1990 NPTS



Traffic congestion is typically a more serious problem in more densely populated areas. This table presents commute distances and speeds by different population density categories. People living in the densest areas

(with at least 7.500 people per square mile) have a commute distance almost 25% shorter than those living in the least dense areas; however, their commute trips took 35% more time.

TABLE 6.9

AVERAGE TRAVEL TIME, TRIP LENGTH AND SPEED OF COMMUTE PERSON TRIPS BY POPULATION DENSITY 1990 NPTS

Population Density ¹	Average Commute Trip Distance (miles)	Average Commute Travel Time ² (minutes)	Average Commute Speed ³ (miles per hour)	Percent of Person Trips	Percent of Households
Less than 2,000	11.40	18.94	36.43	63.0	61.3
2,000-3,999	9.95	19.85	30.99	14.9	14.8
4,000-7,499	9.43	20.38	29.11	12.6	12.8
7,500 or more	8.73	25.60	23.65	9.5	11.1
TOTAL	10.65	19.95	33.32	100.0	100.0

Population density is calculated as persons per square mile for the zip code in which the household is located.

² Includes both travel time and time spent waiting for transportation.

³ Average commuting speed is calculated using nonsegmented trips only.

The number of workers increased 27.2% from 1977 to 1990. The data show that in 1990, a greater proportion of workers resided inside the central cities of MSA's than in 1977. However, this is largely due to the difference

in the definition of central city between 1983 and 1990 (see Appendix B). Workers who resided in non-MSA areas decreased by 19% from 1977 to 1990.

TABLE 6.10

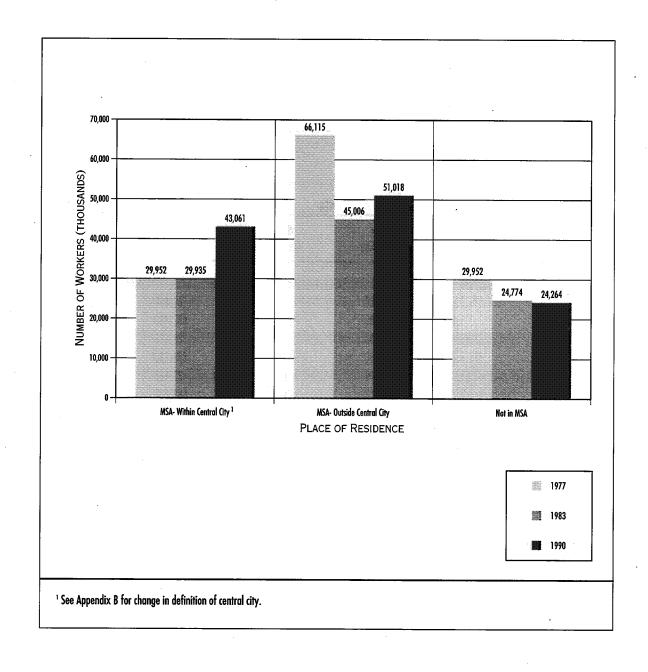
NUMBER OF HOUSEHOLDS AND WORKERS BY PLACE OF RESIDENCE 1977, 1983 AND 1990 NPTS¹ (THOUSANDS)

	In M	SA		
	Within Central City	Outside Central City	Not in MSA	TOTAL
nien I a Franc Lebra	874.8 S. J. 1998			
Number of Households 1977	26,319	24,433	24,660	75,412
•	(34.9%)	(32.4%)	(32.7%)	(100.0%)
1983	27,438	34,349	20,590	85,371
•	(32.1%)	(40.2%)	(24.1%)	(100.0%)
1990	34,579	37,353	21,415	93,347
	(37.0%)	(40.0%)	(22.9%)	(100.0%)
Number of Workers				
1977	29,952	33,115	29,952	93,019
	(32.2%)	(35.6%)	(32.2%)	(100.0%)
1983	29,935	45,006	24,774	103,224
	(29.0%)	(43.6%)	(24.0%)	(100.0%)
1990	43,061	51,018	24,264	118,343
	(36.4%)	(41.1%)	(20.5%)	(100.0%)
Number of Workers per Household				
1977	1.14	1.36	1.21	1.23
1983	1.09	1.31	1.20	1.21
	1.25	1.37	1.13	1.27

⁶⁻¹⁹

Figure 6.8

NUMBER OF WORKERS BY PLACE OF RESIDENCE 1977, 1983 AND 1990 NPTS



The average length of a commute trip increased by 26% from 8.5 miles in 1983 to 10.7 miles in 1990 while the commute time increased by a substantially lower rate of 10% during the same period. The increase in commute distance may partially reflect the

continued development of suburban and exurban residential areas. The resulting commutes are longer but are travelled at faster speeds. In terms of the number of miles travelled per hour, commuting speeds for all areas improved between 1983 and 1990.

TABLE 6.1

COMMUTING PATTERNS OF JOURNEY TO WORK PERSON TRIPS BY MODE OF TRANSPORTATION AND PLACE OF RESIDENCE 1983 AND 1990 NPTS¹

Note: See Limitations of Data on Transit² in Chapter 1, Section 5

	In M in Centr			ASA, entral City		ot MSA	TO	TAL
Mode	1983	1990	1983	1990	1983	1990	1983	1990
Average Commute Trip Distance	(Miles)							
Auto	7.5	8.8	9.2	11.6	7.0	10.6	8.5	10.4
Truck	8.6	12.5	11.4	13.5	5.4	13.5	10.4	13.0
Bus	7.1	8.2	8.1	13.1	**	15.7	7.5	9.3
TOTAL'	7.5	9.0	9.4	11.9	6.4	11.0	8.5	10.7
Average Commute Travel Time*	(Minutes)				-			
Auto	16.8	17.2	18.4	20.3	14.3	16.3	17.2	18.4
Truck	18.1	20.0	20.8	23.3	13.0	20.0	19.1	21.4
Bus	34.3	44.0	32.7	52.7	**	58.3	33.7	46.6
TOTAL	19.2	19.5	19.0	21.6	14.2	17.2	18.2	20.0
Average Commute Speed ⁵ (Miles	The second of th							
TOTAL'	23.4	29.5	29.7	34.3	27.0	37.8	28.0	33.3

- ¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.
- ² Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.
- 3 Includes all modes of transportation.
- 4 Includes both travel time and time spent waiting for transportation.
- Average commute speed is calculated using nonsegmented trips only.
- ** Indicates no data available.

Commute distances increased as urbanized area size increased. Commute trips in non-urbanized areas were the longest in length and were travelled at higher average speeds, reflecting less congested and higher speed roads.

TABLE 6.12

AVERAGE TRAVEL TIME, TRIP LENGTH AND SPEED OF JOURNEY TO WORK PERSON TRIPS BY URBANIZED AREA SIZE 1990 NPTS

Urbanized Area Size	Average Commute Trip Distance (miles)	Average Commute Travel Time¹ (minutes)	Average Commute Speed ² (miles per hour)
50,000-199,999	7.3	14.5	31.0
200,000-499,999	8.6	16.1	32.3
500,000-999,999	9.2	18.6	30.4
1,000,000 or more without subway/rail	10.5	20.3	31.9
1,000,000 or more with subway/rail	11.1	25.1	29.5
Not in Urbanized Area	11.9	18.8	38.0
TOTAL	10.7	20.0	33.3

¹ Includes both travel time and time spent waiting for transportation.

² Average commuting speed is calculated using nonsegmented trips only.

AVERAGE WAITING TIME FOR JOURNEY TO WORK PERSON TRIPS WHEN PUBLIC TRANSPORTATION IS USED BY MODE OF TRANSPORTATION AND URBANIZED AREA SIZE 1990 NPTS

(MINUTES)

Note: See Limitations of Data on Transit¹ in Chapter 1, Section 5

Urbanized Area Size	Bus, Streetcar or Trolley	Rail or Subway²	TOTAL
50,000-199,999	8.57	**	8.57
200,000-499,999	6.93	**	6.93
500,000-999,999	12.21	**	12.21
1,000,000 or more without rail/subway	-10.20	*	9.98
1,000,000 or more with rail/subway	11.03	8.43	9.54
Not in Urbanized Area	8.55	*	7.98
TOTAL	10.43	8.32	9.56

- Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.
- ² Rail/Subway includes trips by subway, elevated rail and commuter
- * Indicates insufficient data were reported.
- ** Indicates no data reported.

On average, a household took more than 500 commute trips per year. The proportion of journey to work trips increased as household income increased. For households who provided income information, those with income less than \$10,000 in 1990 took almost 73% fewer journey to work trips than households

with incomes of more than \$40,000. The corresponding percentage in 1983 was 77%, suggesting that the gap in tripmaking for journey to work between the lowest and the highest income categories narrowed slightly.

TARLE 6 14

Number of Households and Journey to Work Person Trips by Household Income (Income in 1990 Dollars) 1983 and 1990 NPTS¹

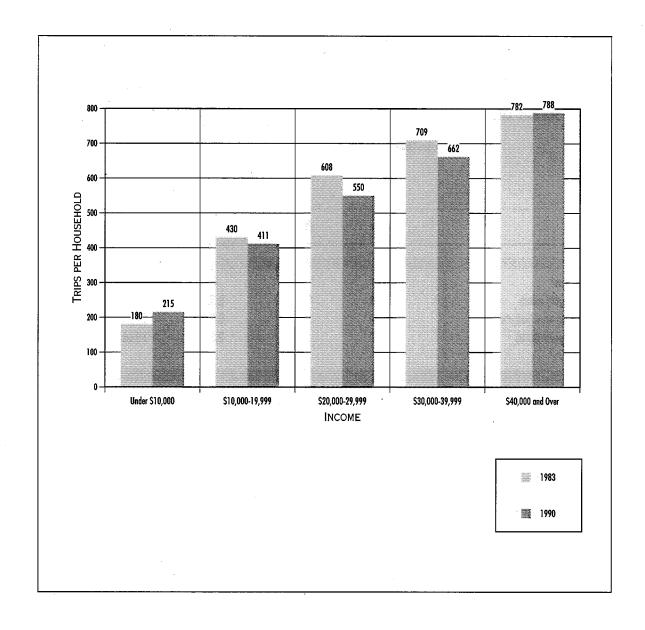
,	1983			1990			
Income	Number of Households (000)	Number of Commute Person Trips (000)	Number of Commute Trips per Household	Number of Households (000)	Number of Commute Person Trips (000)	Number of Commute Trips per Household	
Under \$10,000	18,016	3,236,781	180	9,252	1,992,241	215	
	(21.1%)	(7.1%)		(13.7%)	(4.0%)		
\$10,000 - 19,999	18,437	7,934,221	430	13,011	5,349,320	411	
	(21.6%)	(17.3%)		(19.2%)	(10.6%)	•	
\$20,000 - 29,999	15,694	9,544,563	608	12,294	6,762,758	550	
	(18.4%)	(20.8%)		(18.2%)	(13.4%)		
\$30,000 - 39,999	12,065	8,559,963	709	11,323	7,501,082	662	
	(14.1%)	(18.7%)		(16.8%)	(14.9%)		
\$40,000 or more	21,167	16,557,472	782	21,704	17,106,573	788	
	(24.8%)	(36.1%)		(32.1%)	(34.0%)		
TOTAL	85,371	45,833,000	537	93,347	50,314,271	539	
	(100.0%)	(100.0%)		(100.0%)	(100.0%)		

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Includes trips where household income was unreported.

FIGURE 6.9

NUMBER OF JOURNEY TO WORK PERSON TRIPS PER HOUSEHOLD BY HOUSEHOLD INCOME 1983 AND 1990 NPTS



Privately owned vehicles continued to be, by far, the most common way of travelling to and from work. Journey to work trips by public transit were the longest, both in miles and in minutes, when compared to trips by other modes of transportation. On average, commute speed improved from 1983 to 1990, with the improvement by privately owned vehicles being the most noticeable.

TABLE 6.15

WORKERS AND THEIR HOME TO WORK PERSON TRAVEL BY MODE OF TRANSPORTATION¹ 1983 AND 1990 NPTS²

Note: See Limitations of Data on Transit³ in Chapter 1, Section 5

	Private	Public	Walk	Other	TOTAL
1983					
Percent of workers	86.1	5.1	4.1	4.8	100.0°
Average trip length (miles)	8.86	11.81	0.32	7.07	8.54
Average commute time (minutes)	17.62	39.77	8.58	21.55	18.20
Average travel speed (MPH)	30.17	17.82	2.24	19.68	28.15
1990					
Percent of workers ⁴	<i>82.9</i>	5.0	3.7	2.5	100.°
Average trip length (miles)	11.02	13.27	0.83	5.88	10.65
Average commute time (minutes) ⁶	18.89	50.22	9.86	22.06	19.65
Average travel speed (MPH) ⁷	34.71	18.00	3.27	15.10	33.34

- In tables containing BOTH 1983 AND 1990 NPTS data, the category "train" (included in the public transportation category) includes both commuter rail and Amtrak. These were collected as one mode in the 1983 survey, and the 1990 data were tabulated to be comparable to the 1983 data.
- For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.
- ³ Estimates of "usual" transit use are based on 1321 workers who reported that their typical means to work was bus, subway, elevated rail or commuter train. Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.
- The percentage of workers travelling by different modes of transportation is based on the worker's usual mode of transportation. The rest of the statistics in this table are based on the actual mode of transportation as reported in the sampled day (travel day).
- 5 Includes 6% workers whose usual mode of transportation was unreported.
- 6 Includes both travel time and time waiting for transportation.
- ⁷ Average commute speed is calculated using non-segmented trips only.

STATISTICS ON JOURNEY TO WORK PERSON TRIPS' BY ACTUAL MODE OF TRANSPORTATION 1990 NPTS

Note: See Limitations of Data on Transit² in Chapter 1, Section 5

	No. of Person Trips (000)	No. of Person Miles (000)	Average Trip Length³ (miles
Private Vehicles			
Auto, Van - Driver	33,963,202	354,514,077	10.6
•	(67.5%)	(67.4%)	
Auto, Van - Passenger	3,558,012	36,478,537	10.6
	(7.1%)	(6.9%)	
Pickup	7,761,545	96,445,643	12.6
•	(15.4%)	(18.3%)	
Other Private Vehicles	573,710	11,354,666	20.7
	(1.1%)	(2.2%)	
Subtotal	45,856,469	498,792,923	11.0
	(91.1%)	(94.8%)	
Public Transportation			
Bus, Streetcar	1,165,799	10,377,333	9.8
,	(2.3%)	(2.0%)	
Rail/Subway ⁴	826,253	11,715,329	17.3
•	(1.6%)	(2.2%)	
Subtotal	1,992,051	22,092,661	12.8
	(4.0%)	(4.2%)	
Other Means		•	
Amtrak	19,836	1,165,687	58.8
	(0.0%)	(0.2%)	
Taxi	93,182	313,606	3.5
	(0.2%)	(0.1%)	
Bike	169,380	353,176	71
	(0.3%)	(0.1%)	
Walk	1,999,298	1,651,237	0.8
······································	(4.0%)	(0.3%)	
School Bus	55,957	453,668	8.5
	(0.1%)	(0.1%)	•
Other	89,149	1,227,531	13.8
······	(0.2%)	(0.2%)	`
Subtotal	2,426,802	5,164,905	2.2
	(4.8%)	(1.0%)	***
TOTAL ⁵	50,314,271	526,155,669	10.7
	(100.0%)	(100.0%)	* V * 7

¹ Based on journey to work data collected on the sampled day (travel day).

² Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

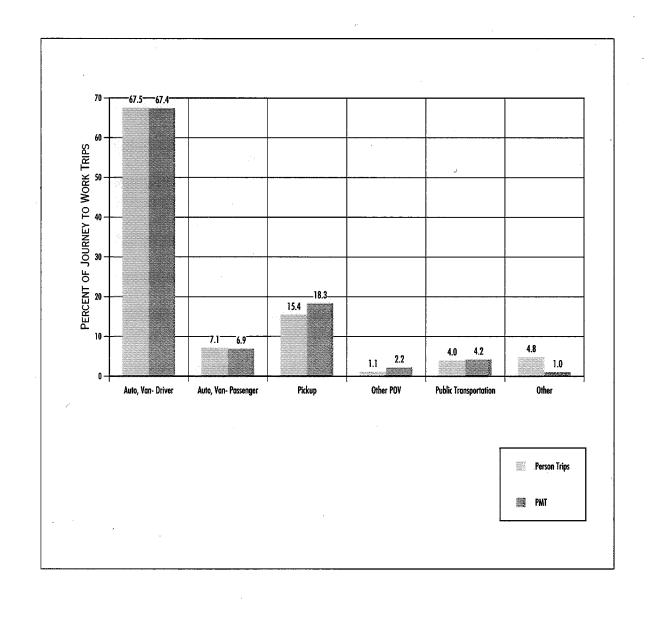
³ Average trip length is calculated using only those records with trip mile information present.

⁴ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁵ Includes trips where mode of transportation was unreported.

FIGURE 6.10

DISTRIBUTION OF JOURNEY TO WORK PERSON TRAVEL BY MODE OF TRANSPORTATION 1990 NPTS



STATISTICS ON JOURNEY TO WORK VEHICLE TRIPS BY VEHICLE TYPE 1990 NPTS (MILLIONS)

Vehicle Type	Vehicle Trips	Vehicle Miles of Travel (VMT)
Auto	32,092	332,960
	(76.8%)	(73.5%)
Passenger Van	1,579	16,189
	(3.8%)	(3.6%)
Cargo Van	292	5,364
	(0.7%)	(1.2%)
Pickup Truck	7,279	88,063
,	(17.4%)	(19.4%)
Other Truck	394	9,450
	(0.9%)	(2.1%)
RV/Motor Home	9	15
	(0.0%)	(0.0%)
Motorcycle	113	708
	(0.3%)	(0.2%)
Moped	24	208
	(0.1%)	(0.0%)
Other POV	0	0
	(0.0%)	(0.0%)
TOTAL	41,792	453,042
	(100.0%)	(100.0%)

¹ Includes trips and miles of travel where vehicle type was unreported.

In the 1990 NPTS, trips were defined as "segmented" if there is a change of vehicle (or mode) during the trip <u>and</u> if one of the modes involves public transportation (see Page 4-50 of Volume 1 for details). Segmented trips accounted for 2% of the journey to work trips

and 3% of the total commute travel. More than half of the segmented work-trips were taken by workers residing in the Northeast region. Land use patterns and well developed rapid transit systems contributed to the high percentage in that region.

TABLE 6.18

NUMBER OF JOURNEY TO WORK PERSON TRIPS BY SEGMENTED VS. Non-SEGMENTED TRIPS AND CENSUS REGION 1990 NPTS

Segn		nted Commute Tri	ips	Nonsegmo	Nonsegmented Commute Trips		TOTAL COMMUTE TRIPS		
Census No. of Trips Region (000)	•	No. of Person Miles (000)	Avg. Trip Length ¹ (miles)	No. of Trips (000)	No. of Person Miles (000)	Avg. Trip Length ¹ (miles)	No. of Trips (000)	No. of Person Miles (000)	Avg. Trip Length ¹ (miles)
Northeast	541,893	9,743,185	20.7	10,060,793	103,659,445	10.6	10,602,686	113,402,631	11.1
	(52.4%)	(62.1%)		(20.4%)	(20.3%)		(21.1%)	(21.5%)	
North Central	132,273	1,315,667	10.3	12,280,191	121,976,313	10.0	12,412,464	123,291,980	10.0
	(12.8%)	(8.4%)		(24.9%)	(23.9%)		(24.7%)	(23.4%)	
South	220,916	3,134,990	16.7	17,096,687	181,857,246	10.8	17,317,603	184,992,236	10.9
	(21.4%)	(20.0%)		(34.7%)	(35.6%)		(34.4%)	(35.2%)	
West	139,225	1,483,687	11.5	9,842,293	102,985,135	10.6	9,981,518	104,468,822	10.6
	(13.5%)	(9.5%)		(20.0%)	(20.2%)		(19.8%)	(19.9%)	
TOTAL	1,034,307	15,677,529	17.1	49,279,964	510,478,140	10.5	50,314,271	526,155,669	10.7
	(100.0%)	(100.0%)		(100.0%)	(100.0%)		(100.0%)	(100.0%)	

Average trip length is calculated using only those records with trip mileage information present.

Workers living inside the central city of an MSA took a significantly greater percentage of segmented trips than workers living elsewhere. This observation reflected the fact that public transportation was more accessi-

ble for workers living inside the central city of an MSA. Their trip lengths were also significantly shorter than those of workers living elsewhere.

TABLE 6.19

NUMBER OF JOURNEY TO WORK PERSON TRIPS BY SEGMENTED VS. Non-SEGMENTED TRIPS AND PLACE OF RESIDENCE 1990 NPTS

	Segmented Commute Trips		Nonsegm	Nonsegmented Commute Trips			TOTAL COMMUTE TRIPS		
	No. of Trips (000)	No. of Person Miles (000)	Avg. Trip Length ¹ (miles)	No. of Trips (000)	No. of Person Miles (000)	Avg. Trip Length ¹ (miles)	No. of Trips (000)	No. of Person Miles (000)	Avg. Trip Length¹ (miles)
MSA									
Central City	650,839	7,738,799	13.7	17,470,587	150,901,722	8.8	18,121,426	158,640,521	9.0
•	(3.6%)	(4.9%)		(96.4%)	(95.1%)		(100.0%)	(100.0%)	
Not in Central City	358,014	7,343,810	22.6	21,397,884	246,719,873	11.7	21,755,898	254,063,683	11.9
	(1.6%)	(2.9%)		(98.4%)	(97.1%)		(100.0%)	(100.0%)	
Not In MSA									
	25,454	594,920	23.4	10,411,492	112,856,545	10.9	10,436,946	113,451,465	11.0
	(0.2%)	(0.5%)		(99.8%)	(99.5%)		(100.0%)	(100.0%)	
TOTAL	1,034,307	15,677,529	17.1	49,279,963	510,478,140	10.5	50,314,271	526,155,669	10.7
	(2.1%)	(3.0%)		(97.9%)	(97.0%)		(100.0%)	(100.0%)	

¹ Average trip length is calculated using only those records with trip mileage information present.

NUMBER OF JOURNEY TO WORK PERSON TRIPS BY TRIP SEGMENTED STATUS AND MSA SIZE 1990 NPTS

	Segme	gmented Commute Trips		Nonsegmented Commute Trips TOTAL COMMUTE TRIPS		onsegmented Commute Trips TOTAL COMMU		IPS	
MSA Size	No. of Trips (000)	No. of Person Miles (000)	Avg. Trip Length ¹ (miles)	No. of Trips (000)	No. of Person Miles (000)	Avg. Trip Length ¹ (miles)	No. of Trips (000)	No. of Person Miles (000)	Avg. Trip Length¹ (miles)
Less than 250,000	24,726	287,592	11.6	4,735,505	40,539,585	8.7	4,760,231	40,827,177	8.7
	(2.4%)	(1.8%)		(9.6%)	(7.9%)		(9.5%)	(7.8%)	
250,000-499,999	15,244	70,177	5.4	4,242,636	40,484,650	9.6	4,257,880	40,554,827	9.6
	(1.5%)	(0.5%)		(8.6%)	(7.9%)		(8.5%)	(7.7%)	
500,000-999,999	29,939	346,080	16.0	4,770,362	49,197,457	10.5	4,800,301	49,543,537	10.5
	(2.9%)	(2.2%)		(9.7%)	(9.6%)		(9.5%)	(9.4%)	
1,000,000-2,999,999	165,159	1,741,957	11.4	10,067,621	102,275,487	10.3	10,232,780	104,017,444	10.3
	(16.0%)	(11.1%)		(20.4%)	(20.0%)		(20.3%)	(19.8%)	
3,000,000 and Over	773,785	12,636,803	18.6	15,052,318	165,124,416	11.3	15,826,103	177,761,219	11.6
	(74.8%)	(80.6%)		(30.5%)	(32.4%)		(31.5%)	(33.8%)	
Not in MSA	25,454	594,920	23.4	10,411,521	112,856,545	10.9	10,436,975	113,451,465	11.0
	(2.4%)	(3.8%)		(21.1%)	(22.1%)		(20.7%)	(21.5%)	
TOTAL	1,034,307	15,677,529	17.1	49,279,963	510,478,140	10.5	50,314,271	526,155,669	10.7
Î	(100.0%)	(100.0%)		(100.0%)	(100.0%)		(100.0%)	(100.0%)	

DISTRIBUTION OF JOURNEY TO WORK PERSON TRIPS BY TRIP SEGMENTED STATUS AND PRIMARY' MODE OF TRANSPORTATION 1990 NPTS

(THOUSANDS)

Note: See Limitations of Data on Transit² in Chapter 1, Section 5

Primary Mode	Non-segmented Commute Trip	Segmented Commute Trip	TOTAL COMMUTE TRIPS
Private Vehicles		a transportation of the second	
Auto, Van - Driver	33,957,075	6,127	33,963,202
	(68.9%)	(0.6%)	(67.5%)
Auto, Van - Passenger	3,518,652	39,360	3,558,012
•	(7.1%)	(3.8%)	(7.1%)
Pickup	7,754,245	7,300	7,761,545
	(15.7%)	(0.7%)	(15.4%)
Other Private Vehicl e s	573,710	0	573,710
	(1.1%)	(0.0%)	(1.1%)
Subtotal	45,803,682	52,787	45,856,469
A.S. (2) (2) (2)	(92.8%)	(5.1%)	(91.1%)
Public Transportation	/00.000	474,000	1 1/5 750
Bus, Streetcar	690,852	474,900	1,165,752
- 4.6	(1.4%)	(45.9%)	(2.3%)
Rail/Subway ³	393,466	432,787	826,253
	(0.8%)	(41.8%)	(1.6%)
Subtotal	1,084,318	907,687	1,992,005
	(2.2%)	(87.8%)	(4.0%)
Other Means	7,000	11 000	19,836
Amtrak	7,928	11,908	•
-: ·	(0.0%)	(1.2%)	(0.0%) 93,182
Taxi	93,182	0	(0.2%)
a-l	(0.2%)	<i>(0.0%)</i> 0	· · · · · · · · · · · · · · · · · · ·
Bike	169,380	•	169,380 (0.3%)
ur A	(0.3%)	(0.0%)	1,99 9 ,298
Walk	1,948,688	50,610	· ·
6 I I I I I	(4.0%)	(4.9%)	(4.0%)
School Bus	55,957	0	55,957 (0.1%)
	(0.1%)	(0.0%)	
Other	77,869	11,280	89,149
	(0.2%)	(1.1%)	(0.2%)
Subtotal	2,353,004	73,798	2,426,802
	(4.8%)	(7.1%)	(4.8%)
TOTAL'	49,279,963	1,034,307	50,314,271
	(100.0%)	(100.0%)	(100.0%)

¹ For segmented trips, primary mode refers to the mode used during the trip segment with the longest travel time in minutes.

that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Includes trips where mode of transportation was unreported.

DISTRIBUTION OF JOURNEY TO WORK PERSON MILES OF TRAVEL BY TRIP SEGMENTED STATUS AND PRIMARY MODE OF TRANSPORTATION 1990 NPTS

(THOUSANDS)

Note: See Limitations of Data on Transit 2 in Chapter 1, Section 5

Primary Mode	Non-segmented Commute Trip	Segmented Commute Trip	TOTAL COMMUTE TRIPS
Private Vehicles			
Auto, Van - Driver	354,413,801	100,276	354,514,077
	(69.4%)	(0.6%)	(67.4%)
Auto, Van - Passenger	35,395,453	1,083,084	36,478,537
	(6.9%)	(6.9%)	(6.9%)
Pickup	96,378,922	66,721	96,445,643
	(18.9%)	(0.4%)	(18.3%)
Other Private Vehicles	11,354,666	Ú	11,354,666
	(2.2%)	(0.0%)	(2.2%)
Subtotal	497,542,842	1,250,081	498,792,923
	(97.4%)	(7.9%)	(94.8%)
Public Transportation			-
Bus, Streetcar	5,059,594	5,317,738	10,377,332
	(1.0%)	(33.9%)	(2.0%)
Rail/Subway ³	4,401,866	7,313,463	11,715,329
	(0.9%)	(46.6%)	(2.2%)
Subtotal	9,461,460	12,631,201	22,092,661
	(1.9%)	(80.6%)	(4.2%)
Other Means			
Amtrak	118,945	1,046,742	1,165,687
	(0.0%)	(6.7%)	(0.2%)
axi	313,606	0	313,606
	(0.1%)	(0.0%)	(0.1%)
Bike	353,176	0	353,176
	(0.1%)	(0.0%)	(0.1%)
Valk	1,203,323	447,914	1,651,237
	(0.2%)	(2.9%)	(0.3%)
chool Bus	453,668	0	453,668
	(0.1%)	(0.0%)	(0.1%)
ther	925,939	301,592	1,227,531
	(0.2%)	(1.9%)	(0.2%)
ubtotal	3,368,657	1,796,248	5,164,904
	(0.7%)	(11.5%)	(1.0%)
'OTAL'	510,478,140	15,677,529	526,155,669
	(100.0%)	(100.0%)	(100.0%)

¹ For segmented trips, primary mode refers to the mode used during the trip segment with the longest travel time in minutes.

² Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note

that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Includes trips where mode of transportation was unreported.

AVERAGE TRIP LENGTH¹ OF JOURNEY TO WORK PERSON TRIPS BY TRIP SEGMENTED STATUS AND PRIMARY² MODE OF TRANSPORTATION 1990 NPTS

(MILES)

Note: See Limitations of Data on Transit³ in Chapter 1, Section 5

Primary Mode	Non-segmented Commute Trip	Segmented Commute Trip	TOTAL COMMUTE TRIPS
Private Vehicles			
Auto, Van - Driver	10.6	16.4	10.6
Auto, Van - Passenger	10.4	28.1	10.6
Pickup	12.6	9.1	12.6
Other Private Vehicle	20.7	0	20.7
Subtotal	11.0	24.1	11.0
Public Transportation			
Bus, Streetcar	8.0	12.5	9.8
Rail/Subway ⁴	14.2	19.9	17.3
Subtotal	10.0	16.0	12.8
Other Means			
Amtrak	15.0	87.9	58.8
Taxi	3.5	0	3.5
Bike	2.1	0	2.1
Walk	0.6	9.1	0.8
School Bus	8.5	0	8.5
Other	11.9	26.7	13.8
Subtotal	1.4	24.7	2.2
TOTAL ^s	10.5	17.1	10. 7

Average trip length is calculated using only those records with trip mile information present.

² For segmented trips, primary mode refers to the mode used during the trip segment with the longest travel time in minutes.

³ Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

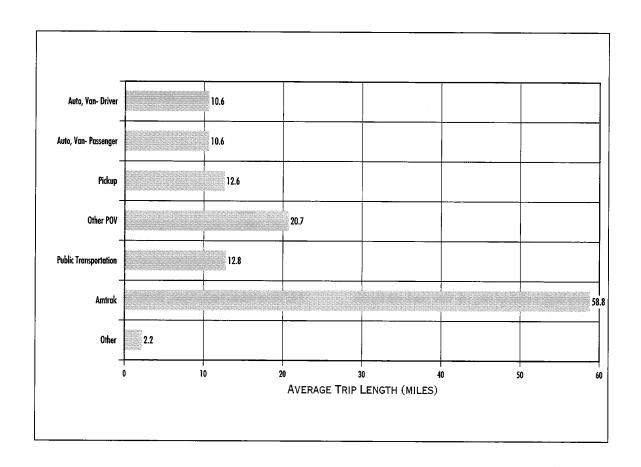
⁴ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁵ Includes trips where mode of transportation was unreported.

The 1990 NPTS estimated that there were 50 billion journey to work trips in 1990, which amounted to more than 526 billion person miles of travel (Table 6.16). Ninety-one percent of the trips used privately-owned vehicles (Table 6.21). Of all modes, trips by

Amtrak had the longest distance of all journey to work trips. The average length of segmented journey to work trips was one and a half times longer than non-segmented trips — 17.1 miles for a segmented trip and 10.5 miles for a non-segmented trip (Table 6.23).

AVERAGE TRIP LENGTH OF JOURNEY TO WORK PERSON TRIPS BY MODE OF TRANSPORTATION 1990 NPTS



In the 1990 NPTS, data were collected on a maximum of four trip segments. Segmented trips having more than four segments were assumed to be 4-segment trips. More than

80% of the segmented journey to work trips had no more than three segments; and 63% of the segmented journey to work trips included walking.

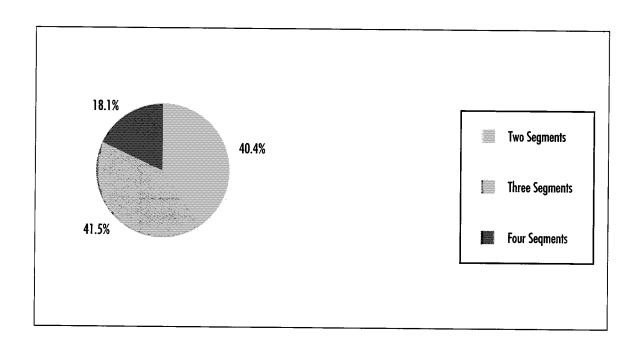
TABLE 6.24

NUMBER OF SEGMENTED JOURNEY TO WORK PERSON TRIPS BY NUMBER OF SEGMENTS TAKEN 1990 NPTS (THOUSANDS)

No. of Trips
417,643
(40.4%)
428,841
(41.5%)
187,823
(18.1%)
1,034,307
(100.0%)
654,372
(63.3%)

FIGURE 6.12

DISTRIBUTION OF SEGMENTED JOURNEY TO WORK PERSON TRIPS BY NUMBER OF SEGMENTS TAKEN 1990 NPTS



NUMBER OF JOURNEY TO WORK PERSON TRIPS BY TRAVEL TIME AND URBANIZED AREA SIZE 1990 NPTS (MILLIONS)

Urbanized Area Size	0-4 min.	5-9 min.	10-19 min.	20-29 min.	30-39 min.	40-49 min.	50+ min.	TOTAL'
50,000-199,999	422	917	1,674	676	237	89	84	4,145
	(10.2%)	(22.1%)	(40.4%)	(16.3%)	(5.7%)	(2.1%)	(2.0%)	(100.0%)
200,000-499,999	275	685	1,357	673	260	104	70	3,461
	(7.9%)	(19.8%)	(39.2%)	(19.4%)	(7.5%)	(3.0%)	(2.0%)	(100.0%)
500,000-999,999	220	477	1,191	758	403	168	83	3,329
	(6.6%)	(14.3%)	(35.8%)	(22.8%)	(12.1%)	(5.0%)	(2.5%)	(100.0%)
1,000,000 or more without rail/subway	658	1,464	3,470	2,055	1,435	622	448	10,292
	(6.4%)	(14.2%)	(33.7%)	(20.0%)	(13.9%)	(6.0%)	(4.4%)	(100.0%)
1,000,000 or more with rail/subway	664	1,622	3,185	1,965	1,418	968	1,158	11,206
	(5.9%)	(14.5%)	(28.4%)	(17.5%)	(12.7%)	(8.6%)	(10.3%)	(100.0%)
Not in Urbanized Area	1,916	3,467	5,585	2,869	1,691	1,009	1,080	17,881
	(10.7%)	(19.4%)	(31.2%)	(16.0%)	(9.5%)	(5.6%)	(6.0%)	(100.0%)
TOTAL	4,155	8,632	16,462	8,996	5,445	2,960	2,923	50,314
	(8.3%)	(17.2%)	(32.7%)	(17.9%)	(10.8%)	(5.9%)	(5.8%)	(100.0%)

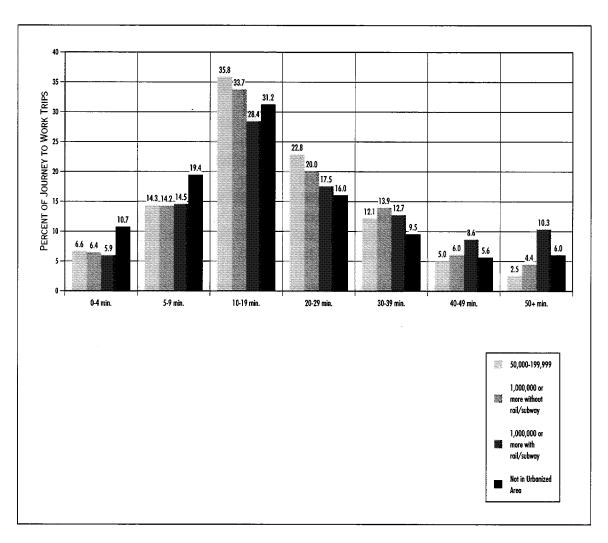
¹ Includes trips where travel time was unreported.

On average, most journey to work trips were 10 to 19 minutes in duration. Travel times differed depending on the size of the urban area. For example, more than 70% of journey to work trips in small urban areas (with a population less than 200 thousand) were less than 20 minutes. However, less than half of

the journey to work trips in areas with a population more than 1 million, and with rail and subway available, were less than 20 minutes. The percentage of journey to work trips lasting more than 50 minutes in larger urban areas (10.3%) was almost twice of that of the national average (5.8%).

FIGURE 6.13

DISTRIBUTION OF JOURNEY TO WORK PERSON TRIPS BY TRAVEL TIME AND SELECTED URBANIZED AREA SIZE 1990 NPTS



NUMBER OF JOURNEY TO WORK PERSON TRIPS BY TRIP LENGTH AND URBANIZED AREA SIZE 1990 NPTS (MILLIONS)

Urbanized Area Size	5 miles or less	6-10 miles	11-15 miles	16-20 miles	21-30 miles	30 miles or more	TOTAL
50,000-199,999	2,468	937	349	118	114	117	4,145
	(59.5%)	(22.6%)	(8.4%)	(2.8%)	(2.8%)	(2.8%)	(100.0%)
200,000-499,999	1,730	921	388	142	129	106	3,461
	(50.0%)	(26.6%)	(11.2%)	(4.1%)	(3.7%)	(3.1%)	(100.0%)
500,000-999,999	1,474	873	490	201	117	108	3,329
	(44.3%)	(26.2%)	(14.7%)	(6.0%)	(3.5%)	(3.2%)	(100.0%)
1,000,000 or more without rail/subway	4,275	2,370	1,431	892	761	396	10,292
	(41.5%)	(23.0%)	(13.9%)	(8.7%)	(7.4%)	(3.8%)	(100.0%)
1,000,000 or more with rail/subway	5,007	2,179	1,281	765	805	745	11,206
	(44.7%)	(19.4%)	(11.4%)	(6.8%)	(7.2%)	(6.6%)	(100.0%)
Not in Urbanized Area	7,983	3,330	2,165	1,392	1,406	1,431	17,881
	(44.6%)	(18.6%)	(12.1%)	(7.8%)	(7.9%)	(8.0%)	(100.0%)
TOTAL	22,937	10,610	6,104	3,511	3,332	2,903	50,314
	(45.6%)	(21.1%)	(12.1%)	(7.0%)	(6.6%)	(5.8%)	(100.0%)

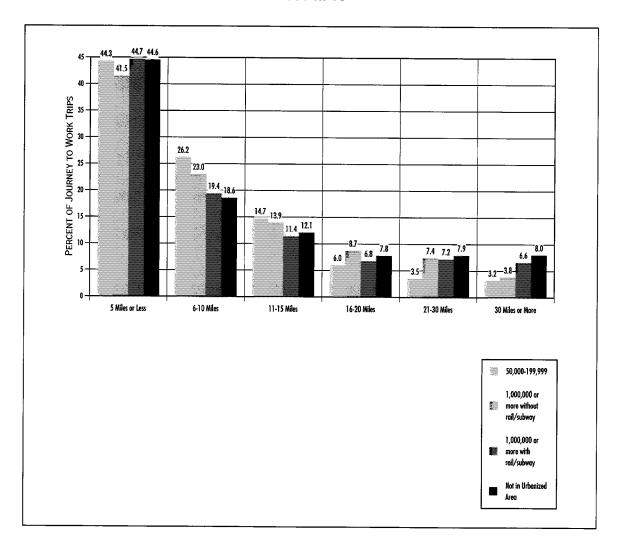
¹ Includes 1.8% of total trips where trip length was unreported.

Almost half of all journey to work trips, on average, were shorter than 5 miles. Journey to work trips in small urban areas (with a population size less than 200 thousand) were significantly shorter than those in other areas. On the other hand, trips to and from

work by those residing in non-urbanized areas were longer than trips by people living in other areas; and were relatively similar to trips by people in areas with more than 1 million in population and having rail and subway available.

FIGURE 6.14

DISTRIBUTION OF JOURNEY TO WORK PERSON TRIPS BY TRIP LENGTH AND SELECTED URBANIZED AREA SIZE 1990 NPTS



NUMBER OF JOURNEY TO WORK PERSON TRIPS BY MODE OF TRANSPORTATION AND TRAVEL TIME 1990 NPTS (MILLIONS)

	0-4 min	5-9 min	10-19 min	20-29 min	30-39 min	40-49 min	50 + min	TOTAL ²
Private Vehicles								
Auto, Van-Driver	2,642	5,957	11,778	6,183	3,645	1,938	1,458	33,963
•	(63.6%)	(92.5%)	(94.2%)	(94.2%)	(90.4%)	(88.6%)	(76.4%)	(91.1%)
Auto, Van-Passenger	282	653	1,184	578	364	182	235	3,558
	(6.8%)	(7.6%)	(7.2%)	(6.4%)	(6.7%)	(6.1%)	(8.0%)	(7.1%)
Pickup	592	1,259	2,364	1,597	890	470	490	7,762
.1.4	(14.2%)	(14.6%)	(14.4%)	(17.8%)	(16.3%)	(15.9%)	(16.8%)	(15.4%)
Other Private Vehicles	47	114	177	118	22	32	49	574
	(1.1%)	(1.3%)	(1.1%)	(1.3%)	(0.4%)	(1.1%)	(1.7%)	(1.1%)
Subtotal	3,563	7,983	15,503	8,476	4,921	2,622	2,232	45,857
	(85.8%)	(92.5%)	(94.2%)	(94.2%)	(90.4%)	(88.6%)	(76.4%)	(91.1%)
Public Transportation.						-9177		
Bus, Streetcar	3	34	214	193	256	152	285	1,166
	(0.1%)	(0.4%)	(1.3%)	(2.1%)	(4.7%)	(5.1%)	(9.8%)	(2.3%)
Rail/Subway³	6	11	65	83	144	143	343	826
	(0.1%)	(0.1%)	(0.4%)	(0.9%)	(2.6%)	(4.8%)	(11.7%)	(1.6%)
Subtotal	9	45	280	276	400	295	628	1,992
·	(0.2%)	(0.5%)	(1.7%)	(3.1%)	(7.4%)	(10.0%)	(21.5%)	(4.0%)
Other Means								
Amtrak	**	**	4	2	2	1	10	20
	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.4%)	(0.0%)
Taxi	1	23	46	14	2	**	**	93
	(0.0%)	(0.3%)	(0.3%)	(0.2%)	(0.0%)	(0.0%)	(0.0%)	(0.2%)
Bike	17	26	66	33	21	7	**	169
	(0.4%)	(0.3%)	(0.4%)	(0.4%)	(0.4%)	(0.2%)	(0.0%)	(0.3%)
Walk	562	540	526	168	70	29	18	1,999
	(13.5%)	(6.3%)	(3.2%)	(1.9%)	(1.3%)	(1.0%)	(0.6%)	(4.0%)
School Bus	1	4	14	8	12	**	15	56
	(0.0%)	(0.0%)	(0.1%)	(0.1%)	(0.2%)	(0.0%)	(0.5%)	(0.1%)
Other	2	10	22	18	13	7	18	89
	(0.0%)	(0.1%)	(0.1%)	(0.2%)	(0.2%)	(0.2%)	(0.6%)	(0.2%)
Subtotal	584	602	678	243	120	44	61	2,426
	(14.0%)	(7.0%)	(4.1%)	(2.7%)	(2.2%)	(1.5%)	(2.1%)	(4.8%)
TOTAL ²	4,155	8,632	16,462	8,996	5,445	2,960	2,923	50,314
i	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes trips where mode of transportation, travel time or both were unreported.

³ Rail/Subway includes trips by subway, elevated rail and commuter

^{**} Indicates no data reported.

TARLE 6 28

Number of Journey to Work Person Trips by Mode of Transportation and Trip Length 1990 NPTS (MILLIONS)

	5 miles or less	6-10 miles	11-15 miles	16-20 miles	21-30 miles	30 miles or more	TOTAL ^{2,4}
Private Vehicles							
Auto, Van-Driver	14,852	7,741	4,404	2,452	2,310	1,805	33,963
	(64.8%)	(73.0%)	(72.1%)	(69.8%)	(69.3%)	(62.2%)	(67.5%)
Auto, Van-Passenger	1,824	615	373	194	217	230	3,558
	(8.0%)	(5.8%)	(6.1%)	(5.5%)	(6.5%)	(7.9%)	(7.1%)
Pickup	3,049	1,671	1,008	684	646	621	7,762
1 A) 1 A 1 A 4380 1 B	(13.3%)	(15.7%)	(16.5%)	(19.5%)	(19.4%)	(21.4%)	(15.4%)
Other Private Vehicles	236	115	98	31	15	53	574
	(1.0%)	(1.1%)	(1.6%)	(0.9%)	(0.5%)	(1.8%)	(1.1%)
Subtotal	19,961	10,142	5,883	3,361	3,188	2,709	45,857
	(87.0%)	(95.6%)	(96.4%)	(95.7%)	(95.7%)	(93.3%)	(91.1%)
Public Transportation							
Bus, Streetcar	492	277	124	71	48	44	1,166
	(2.1%)	(2.6%)	(2.0%)	(2.0%)	(1.4%)	(1.5%)	(2.3%)
Rail/Subway³	214	130	63	65	84	123	826
&c	(0.9%)	(1.2%)	(1.0%)	(1.9%)	(2.5%)	(4.2%)	(1.6%)
Subtotal	706	407	187	136	132	167	1,992
	(3.1%)	(3.8%)	(3.1%)	(3.9%)	(3.9%)	(5.7%)	(4.0%)
Other Means				5 47			
Amtrak	*	*	*	**	•	9	20
	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.3%)	(0.0%)
Taxi	81	4	*	*	**	•	93
	(0.4%)	(0.0%)	(0.0%)	0.0%)	(0.0%)	(0.0%)	(0.2%)
Bike	160	7	**	*	**	**	169
	(0.7%)	(0.1%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.3%)
Walk	1,945	26	*	12	*	*	1,999
	(8.5%)	(0.2%)	(0.0%)	(0.3%)	(0.0%)	(0.0%)	(4.0%)
School Bus	31	4	13	**	*	*	56
	(0.1%)	(0.0%)	(0.2%)	(0.0%)	(0.0%)	(0.0%)	(0.1%)
Other	44	18	9	**	5	13	89
	(0.2%)	(0.2%)	(0.1%)	(0.0%)	(0.2%)	(0.4%)	(0.2%)
Subtotal	2,264	61	30	12	12	28	2,426
	(9.9%)	(0.6%)	(0.5%)	(0.3%)	(0.4%)	(1.0%)	(4.8%)
TOTAL ^{2,4}	22,937	10,610	6,104	3,511	3,332	2,903	50,314
N.J. 3030		/	(100.0%)	(100.0%)	(100.0%)	ant to the	

Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Includes trips where mode of transportation, trip length or both were unreported.

Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Includes records where insufficient data were reported in other cells.

^{*} Indicates insufficient data reported.

^{**} Indicates no data reported.

NUMBER OF JOURNEY TO WORK PERSON TRIPS BY DAY OF WEEK AND MODE OF TRANSPORTATION¹ 1983 AND 1990 NPTS² (THOUSANDS)

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	TOTAL
1983								
Private Vehicle Driver	5,826,875	6,301,661	6,793,185	6,916,485	6,035,349	2,155,416	1,317,705	35,346,676
	(74.6%)	(75.3%)	(76.1%)	(75.9%)	(78.2%)	(76.0%)	(76.6%)	(76.0%)
Private Vehicle Passenger	874,812	1,062,830	964,079	1,038,840	902,987	422,575	213,310	5,479,433
	(11.2%)	(12.7%)	(10.8%)	(11.4%)	(11.7%)	(14.9%)	(12.4%)	(11.8%)
Public Transportation	484,271	401,700	392,773	473,857	262,406	82,246	53,327	2,150,580
	(6.2%)	(4.8%)	(4.4%)	(5.2%)	(3.4%)	(2.9%)	(3.1%)	(4.6%)
Other	624,866	602,549	776,619	683,447	517,095	175,837	135,899	3,516,312
	(8.0%)	(7.2%)	(8.7%)	(7.5%)	(6.7%)	(6.2%)	(7.9%)	(7.6%)
TOTAL	7,810,824	8,368,740	8,926,656	9,112,628	7,717,838	2,836,073	1,720,241	46,493,000
,	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
1990								
Private Vehicle Driver	7,642,872	7,915,188	7,708,270	7,945,079	6,332,546	2,531,139	1,707,889	41,782,983
	(83.2%)	(82.2%)	(84.4%)	(83.1%)	(83.3%)	(82.5%)	(80.0%)	(83.0%)
Private Vehicle Passenger	768,333	714,296	670,646	706,950	646,068	335,668	231,516	4,073,477
	(8.4%)	(7.4%)	(7.3%)	(7.4%)	(8.5%)	(10.9%)	(10.8%)	(8.1%)
Public Transportation	389,447	414,537	320,039	456,161	309,441	65,219	57,043	2,011,887
	(4.2%)	(4.3%)	(3.5%)	(4.8%)	(4.1%)	(2.1%)	(2.7%)	(4.0%)
Other	373,651	575,038	427,686	444,787	313,788	132,371	139,637	2,406,959
,	(4.1%)	(6.0%)	(4.7%)	(4.6%)	(4.1%)	(4.3%)	(6.5%)	(4.8%)
TOTAL'	9,183,274	9,624,933	9,128,877	9,565,503	7,605,035	3,069,020	2,137,628	50,314,271
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

In tables containing BOTH 1983 AND 1990 NPTS data, the category "train" (included in the public transportation category) includes both commuter rail and Amtrak. These were collected as one mode in the 1983 survey, and the 1990 data were tabulated to be comparable to the 1983.

 $^{^{\}rm 2}$ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

³ Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

Includes trips where mode of transportation was unreported.

As expected, most journey to work trips occurred during the middle of the week and the fewest on the weekend. Approximately 10% of journey to work trips were on weekends.

TABLE 6.30

DISTRIBUTION OF JOURNEY TO WORK PERSON TRIPS BY DAY OF WEEK AND MODE OF TRANSPORTATION' 1983 AND 1990 NPTS² (ACROSS DAY OF WEEK)

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	TOTAL
1983			. 4					
Private Vehicle Driver	16.5	17.8	19.2	19.6	17.1	6.1	<i>3.7</i>	100.0
Private Vehicle Passenger	16.0	19.4	17.6	19.0	16.5	7.7	3.9	100.0
Public Transportation	22.5	18.7	18.3	22.0	12.2	3.8	2.5	100.0
Other .	17.8	17.1	22.1	19.4	14.7	5.0	3.9	100.0
TOTAL	16.8	18.0	19.2	19.6	16.6	6.1	3.7	100.0
1990								
Private Vehicle Driver	18.3	18.9	18.4	19.0	15.2	6.1	4.1	100.0
Private Vehicle Passenger	18.9	17.5	16.5	17.4	15.9	8.2	<i>5.7</i>	100.0
Public Transportation	19.4	20.6	15.9	22.7	15.4	3.2	2.8	100.0
Other	15.5	23.9	17.8	18.5	13.0	5.5	5.8	100.0
TOTAL*	18.3	19.1	18.1	19.0	15.1	6.1	4.2	100.0

In tables containing BOTH 1983 AND 1990 NPTS data, the category "train" (included in the public transportation category) includes both commuter rail and Amtrak. These were collected as one mode in the 1983 survey, and the 1990 data were tabulated to be comparable to the 1983.

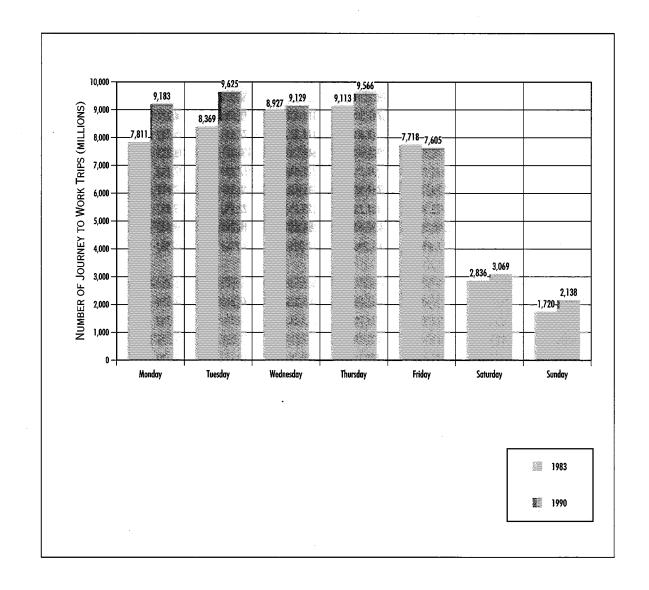
For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

³ Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

⁴ Includes trips where mode of transportation was unreported.

FIGURE 6.15

Number of Journey to Work Person Trips by Day of Week 1983 and 1990 NPTS



NUMBER OF PERSON TRIPS BY WEEKDAY VS. WEEKEND, TRIP PURPOSE, AND TIME OF DAY 1990 NPTS (THOUSANDS)

	1:00 a.m. to 6:00 a.m.	6:00 a.m. to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL ³
WEEKDAY			. My g s					
Journey to Work	2,518,485	14,763,593	3,742,339	5,818,407	12,073,582	2,568,277	1,519,253	43,726,712
	(5.8%)	(33.8%)	(8.6%)	(13.3%)	(27.6%)	(5.9%)	(3.5%)	(100.0%)
Work-Related Business	37,376	448,023	932,683	648,132	510,011	208,235	80,870	2,940,327
4	(1.3%)	(15.2%)	(31.7%)	(22.0%)	(17.3%)	(7.1%)	(2.8%)	(100.0%)
Other	1,232,723	15,178,765	26,784,387	29,795,316	28,340,647	16,373,119	3,750,796	126,136,016
	(1.0%)	(12.0%)	(21.2%)	(23.6%)	(22.5%)	(13.0%)	(3.0%)	(100.0%)
Subtotal	3,788,584	30,390,381	31,459,409	36,261,855	40,924,240	19,149,631	5,350,919	172,803,055
	(2.2%)	(17.6%)	(18.2%)	(21.0%)	(23.7%)	(11.1%)	(3.1%)	(100.0%)
WEEKEND								
Journey to Work	333,597	1,127,697	956,481	863,335	1,487,210	971,596	583,377	6,439,359
	(5.2%)	(17.5%)	(14.9%)	(13.4%)	(23.1%)	(15.1%)	(9.1%)	(100.0%)
Work-Related Business	12,901	71,141	133,556	107,119	117,886	74,795	25,085	572,557
	(2.3%)	(12.4%)	(23.3%)	(18.7%)	(20.6%)	(13.1%)	(4.4%)	(100.0%)
Other	702,036	3,024,922	17,514,628	13,751,576	14,426,868	11,736,666	3,967,808	68,092,253
	(1.0%)	(4.4%)	(25.7%)	(20.2%)	(21.2%)	(17.2%)	(5.8%)	(100.0%)
Subtotal	1,048,534	4,223,760	18,604,665	14,722,030	16,031,964	12,783,057	4,576,270	75,104,169
	(1.4%)	(5.6%)	(24.8%)	(19.6%)	(21.3%)	(17.0%)	(6.1%)	(100.0%)
TOTAL'	4,837,118	34,614,141	50,064,074	50,983,885	56,956,204	31,932,688	9,927,189	249,562,297
	(1.9%)	(13.9%)	(20.1%)	(20.4%)	(22.8%)	(12.8%)	(4.0%)	(100.0%)

¹ Defined as the time between 12:01 a.m. Monday and 6:00 p.m.

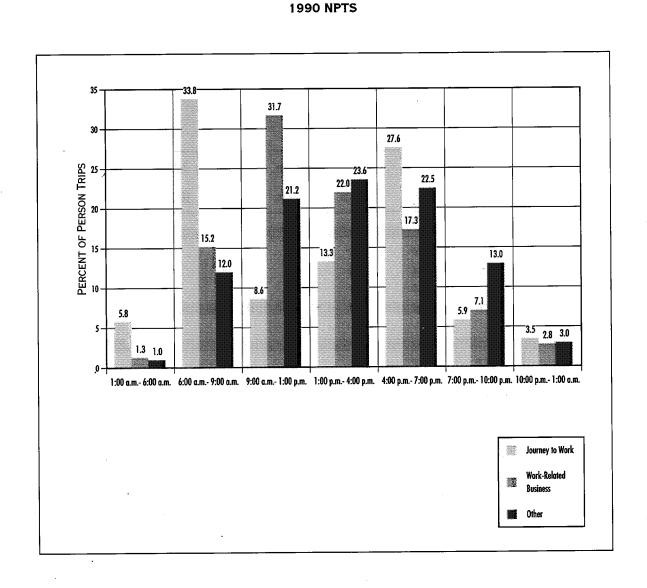
 $^{^{2}}$ Defined as the time between 6:01 p.m. Friday and midnight Sunday.

 $^{^{\}rm 3}$ Includes trips where time of day, weekday vs. weekend $\tilde{\rm or}$ both were unreported.

Table 6.31 illustrates how trips for different purposes occurred at different times of the day, and how this temporal distribution varied from weekdays to weekends. Weekday journey to work trips peaked between 6 and 9 a.m and between 4 and 7 p.m. Trips for

work-related business tended to peak between 9 a.m. and 4 p.m.. For trips that were not related to work (such as errand running), more than two-thirds of them occurred between 9 a.m. and 7 p.m..

DISTRIBUTION OF WEEKDAY PERSON TRIPS BY TRIP PURPOSE, AND TIME OF DAY



This table presents the number of journey to work trips as a percentage of total person trips by time of day and by weekday versus weekend. More than two-thirds of weekday morning travel before 9 a.m. was for com-

muting to work. However, journey to work trips were, as expected, considerably less prevalent in morning traffic during weekends. Between 85% to 95% of weekend travel after 9 a.m. was for purposes other than work.

TABLE 6.32

DISTRIBUTION OF PERSON TRIPS BY WEEKDAY' VS. WEEKEND,2 TRIP PURPOSE, AND TIME OF DAY
1990 NPTS
(WITHIN TIME OF DAY)

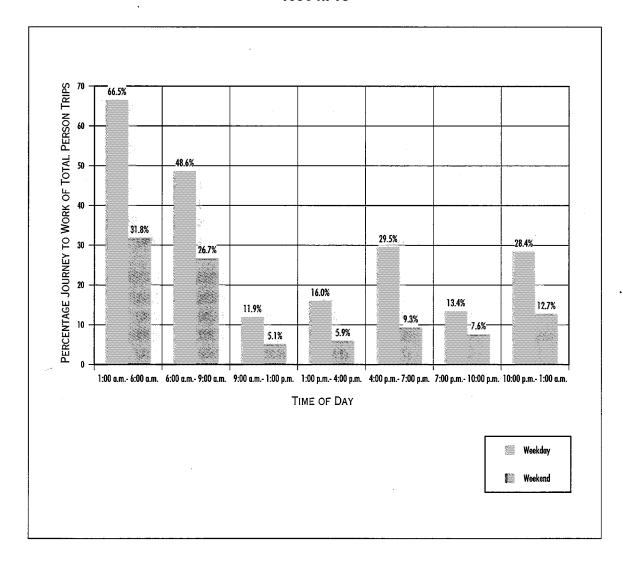
	1:00 a.m. to 6:00 a.m.	6:00 a.m. to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	LATOT
WEEKDAY		A-450	none e e	i Napa e				
Journey to Work	66.5	48.6	11.9	16.0	29.5	13.4	28.4	25.3
Work-Related Business	1:0	1.4	3.0	1.8	1.2	1.1	1.5	1.7
Other	32.5	50.0	<i>85.1</i>	<i>82.2</i>	69.3	<i>85.5</i>	70.1	73.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
WEEKEND		Serg			(5)3 1 187			
Journey to Work	31.8	26.7	5.1	5.9	9.3	7.6	12.7	8.6
Work-Related Business	1.2	1.7	0.7	0.7	0.7	0.6	0.5	0.7
Other	<i>67.0</i>	71.6	94.1	93.4	90.0	91.8	<i>86.7</i>	90.7
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

¹ Defined as the time between 12:01 a.m. Monday and 6:00 p.m. Friday.

 $^{^{\}rm 2}$ Defined as the time between 6:01 p.m. Friday and midnight Sunday.

FIGURE 6.17

JOURNEY TO WORK PERSON TRIPS AS A PERCENTAGE OF TOTAL PERSON TRIPS BY WEEKDAY VS. WEEKEND AND TIME OF DAY 1990 NPTS



Number of Journey to Work Person Trips by Time of Day and Mode of Transportation¹ 1983 and 1990 NPTS² (THOUSANDS)

	1:00 a.m. to 6:00 a.m.	6:00 a.m to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL ⁴
1983								
Private Vehicle Driver	1,874,319	10,876,200	3,965,817	4,687,357	8,086,155	1,969,187	1,396,627	33,079,400
	(69.3%)	(72.7%)	(70.9%)	(69.3%)	(69.3%)	(73.7%)	(76.5%)	(71.1%)
Private Vehicle Passenger	498,846	2,343,202	837,638	1,215,341	1,964,136	399,894	239,305	7,561,696
,	(18.5%)	(15.7%)	(15.0%)	(18.0%)	(16.8%)	(15.0%)	(13.1%)	(16.3%)
Public Transportation	113,781	839,836	150,773	219,817	652,198	79,585	34,399	2,097,609
•	(4.2%)	(5.6%)	(2.7%)	(3.3%)	(5.6%)	(3.0%)	(1.9%)	(4.5%)
Other	128,904	678,645	542,313	548,087	617,184	127,640	96,820	2,746,654
	(4.8%)	(4.5%)	(9.7%)	(8.1%)	(5.3%)	(4.8%)	(5.3%)	(5.9%)
TOTAL*	2,702,948	14,962,800	5,594,275	6,760,033	11,667,700	2,673,124	1,825,693	46,493,000
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
1990								
Private Vehicle Driver	2,391,287	13,462,567	3,771,894	5,491,180	11,315,524	2,868,263	1,719,226	41,782,983
	(83.8%)	(84.7%)	(80.3%)	(82.2%)	(83.5%)	(81.0%)	(81.8%)	(83.0%)
Private Vehicle Passenger	243,814	1,108,742	411,197	599,335	1,053,922	337,078	211,328	4,073,477
	(8.6%)	(7.0%)	(8.8%)	(9.0%)	(7.8%)	(9.5%)	(10.1%)	(8.1%)
Public Transportation	84,664	736,865	146,319	213,314	589,627	125,510	64,430	2,011,887
	(3.0%)	(4.6%)	(3.1%)	(3.2%)	(4.3%)	(3.6%)	(3.0%)	(4.0%)
Other	132,317	581,368	368,85 9	377,912	597,531	209,021	107,645	2,406,959
	(4.6%)	(3.7%)	(7.8%)	(5.6%)	(4.4%)	(5.9%)	(5.1%)	(4.8%)
TOTAL'	2,852,082	15,891,290	4,698,820	6,681,741	13,560,792	3,539,873	2,102,630	50,314,271
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ In tables containing BOTH 1983 AND 1990 NPTS data, the category "train" (included in the public transportation category) includes both commuter rail and Amtrak. These were collected as one mode in the 1983 survey, and the 1990 data were tabulated to be comparable to the 1983.

For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

³ Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

Includes trips where mode of transportation, trip start time or both were unreported.

NUMBER OF WEEKDAY JOURNEY TO WORK PERSON TRIPS BY TIME OF DAY AND MODE OF TRANSPORTATION¹ 1983 AND 1990 NPTS² (THOUSANDS)

	1:00 a.m. to 6:00 a.m.	6:00 a.m to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL ⁴
1983								
Private Vehicle-Driver	1,700,619	10,076,200	3,313,657	4,101,577	7,215,372	1,459,433	988,348	29,024,140
***************************************	(69.9%)	(72.5%)	(70.2%)	(68.6%)	(69.2%)	(76.4%)	(75.4%)	(71.0%)
Private Vehicle-Passenger	463,797	2,194,698	690,547	1,084,775	1,775,461	220,993	173,145	6,642,456
****	(19.1%)	(15.8%)	(14.6%)	(18.1%)	(17.0%)	(11.6%)	(13.2%)	(16.2%)
Public Transportation	93,221	804,682	134,593	181,778	612,916	68,754	29,014	1,932,179
	(3.8%)	(5.8%)	(2.9%)	(3.0%)	(5.9%)	(3.6%)	(2.2%)	(4.7%)
Other	107,808	613,932	499,727	537,838	539,411	98,548	76,400	2,473,664
	(4.4%)	(4.4%)	(10.6%)	(9.0%)	(5.2%)	(5.2%)	(5.8%)	(6.0%)
TOTAL'	2.431.374	10,904,992	4,720,167	5,979,400	10,419,444	1,909,912	1,311,025	40,891,511
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
1990								
Private Vehicle-Driver	2,096,667	12,531,839	3,000,746	4,774,805	10,126,123	2,095,238	1,253,560	36,435,186
	(83.3%)	(84.9%)	(80.2%)	(82.1%)	(83.9%)	(81.6%)	(82.5%)	(83.3%)
Private Vehicle-Passenger	222,705	991,948	299,415	499,749	902,508	235,772	133,838	3,353,015
	(8.8%)	(6.7%)	(8.0%)	(8.6%)	(7.5%)	(9.2%)	(8.8%)	(7.7%)
Public Transportation	83,282	707,158	126,242	193,841	531,160	90,730	51,513	1,829,743
	(3.3%)	(4.8%)	(3.4%)	(3.3%)	(4.4%)	(3.5%)	(3.4%)	(4.2%)
Other	115,831	530,896	315,386	350,011	511,389	146,537	80,342	2,079,162
	(4.6%)	(3.6%)	(8.4%)	(6.0%)	(4.2%)	(5.7%)	(5.3%)	(4.8%)
TOTAL'	2,518,485	14,763,593	3,742,339	5,818,407	12,073,582	2,568,277	1,519,253	43,726,712
nes nec 🖛 125 minimentalmentelemente	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

In tables containing BOTH 1983 AND 1990 NPTS data, the category "train" (included in the public transportation category) includes both commuter rail and Amtrak. These were collected as one mode in the 1983 survey, and the 1990 data were tabulated to be comparable to the 1983.

For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting

Includes trips where mode of transportation, trip start time or both were unreported.

NUMBER OF WEEKEND JOURNEY TO WORK PERSON TRIPS BY TIME OF DAY AND MODE OF TRANSPORTATION¹ 1983 AND 1990 NPTS² (THOUSANDS)

	1:00 a.m. to 6:00 a.m.	6:00 a.m to 9:00 a.m.	9:00 a.m. to 1:00 a.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL ⁴
1983	The output will be			45-62	ti de la Proposition	er de se	istani.	
Private Vehicle - Driver	173,700	800,038	652,160	585,780	870,784	509,754	408,279	4,027,002
	(64.0%)	(75.6%)	(74.6%)	(75.0%)	(69.8%)	(66.8%)	(79.3%)	(72.6%)
Private Vehicle -Passenger	35,049	148,504	147,091	130,566	188,675	178,902	66,160	903,355
	(12.9%)	(14.0%)	(16.8%)	(16.7%)	(15.1%)	(23.4%)	(12.9%)	(16.3%)
Public Transportation	20,560	35,154	16,180	38,039	39,281	10,831	5,385	165,430
	(7.6%)	(3.3%)	(1.9%)	(4.9%)	(3.1%)	(1.4%)	(1.0%)	(3.0%)
Other	21,096	64,713	42,586	10,249	77,773	29,093	20,419	268,788
Table 1 Same Same	(7.8%)	(6.1%)	(4.9%)	(1.3%)	(6.2%)	(3.8%)	(4.0%)	(4.8%)
TOTAL'	271,574	1,057,840	874,108	780,632	1,248,269	763,211	514,668	5,548,075
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
1990	a je nepří napře seja se	C+ (O2 (+ (A) \$, 8).	7.54	to describe the second				× ,
Private Vehicle - Driver	294,620	930,724	771,148	716,375	1,189,404	773.025	465,666	5,243,309
77.77	(88.3%)	(82.5%)	(80.6%)	(83.0%)	(80.0%)	(79.6%)	(79.8%)	(81.4%)
Private Vehicle -Passenger	21,109	116,794	111,783	99,586	151,414	101,306	77,490	688,727
	(6.3%)	(10.4%)	(11.7%)	(11.5%)	(10.2%)	(10.4%)	(13.3%)	(10.7%)
Public Transportation	1,382	29,707	20,077	19,473	58,468	34,780	12,917	176,804
• • • • •	(0.4%)	(2.6%)	(2.1%)	(2.3%)	(3.9%)	(3.6%)	(2.2%)	(2.7%)
Other	16,486	50,472	53,473	27,901	86,142	62,485	27,303	324,353
	(4.9%)	(4.5%)	(5.6%)	(3.2%)	(5.8%)	(6.4%)	(4.7%)	(5.0%)
TOTAL'	333,597	1,127,697	956,481	863,335	1,487,210	971,596	583,377	6,439,359
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ In tables containing BOTH 1983 AND 1990 NPTS data, the category "train" (included in the public transportation category) includes both commuter rail and Amtrak. These were collected as one mode in the 1983 survey, and the 1990 data were tabulated to be comparable to the 1983.

For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

³ Estimates of "actual" transit use are based on 1240 person trips to work on travel day by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

Includes trips where mode of transportation, start time of trip or both were unreported.

From 1983 to 1990, about 87 to 88 percent of all journey to work trips occurred on week-days. Weekday trips to work peaked from 6 a.m. to 9 a.m., and from 4 p.m. to 7 p.m.; and diminished considerably after 7 p.m.

Journey to work trips on weekends, on the other hand, peaked around 4 p.m. and remained fairly high until 1 a.m. These patterns were true in both 1983 and 1990.

TABLE 6.36

DISTRIBUTION OF JOURNEY TO WORK PERSON TRIPS BY WEEKDAY VS. WEEKEND AND TIME OF DAY 1983 AND 1990 NPTS (ACROSS TIME OF DAY)

: ""	1:00 a.m. to 6:00 a.m.	6:00 a.m to 9:00 a.m.	9:00 a.m. to 1:00 p.m.	1:00 p.m. to 4:00 p.m.	4:00 p.m. to 7:00 p.m.	7:00 p.m. to 10:00 p.m.	10:00 p.m. to 1:00 a.m.	TOTAL ⁴
1983								
Weekday (%)	5.9	34.0	11.5	14.6	25.5	4.7	3.2	100.0
Weekend (%)	4.9	19.1	15.8	14.1	22.5	13.8	9.3	100.0
ALL (000)	2,702,948	14,962,800	5,594,275	6,760,033	11,667,700	2,673,124	1,825,693	46,493,000
	(5.8%)	(32.2%)	(12.0%)	(14.5%)	(25.1%)	(5.7%)	(3.9%)	(100.0%)
1990								
Weekday (%)	5.8	33.8	8.6	13.3	27.6	5.9	3.5	100.0
Weekend (%)	5.2	17.5	14.9	13.4	23.1	15.1	9.1	100.0
ALL (000)	2,852,082	15,889,542	4,698,269	6,681,741	13,556,604	3,539,872	2,102,629	50,314,271
	(5.7%)	(31.6%)	(9.3%)	(13.3%)	(26.9%)	(7.0%)	(4.2%)	(100.0%)

¹ Defined as the time between 12:01 a.m. Monday and 6:00 p.m. Friday.

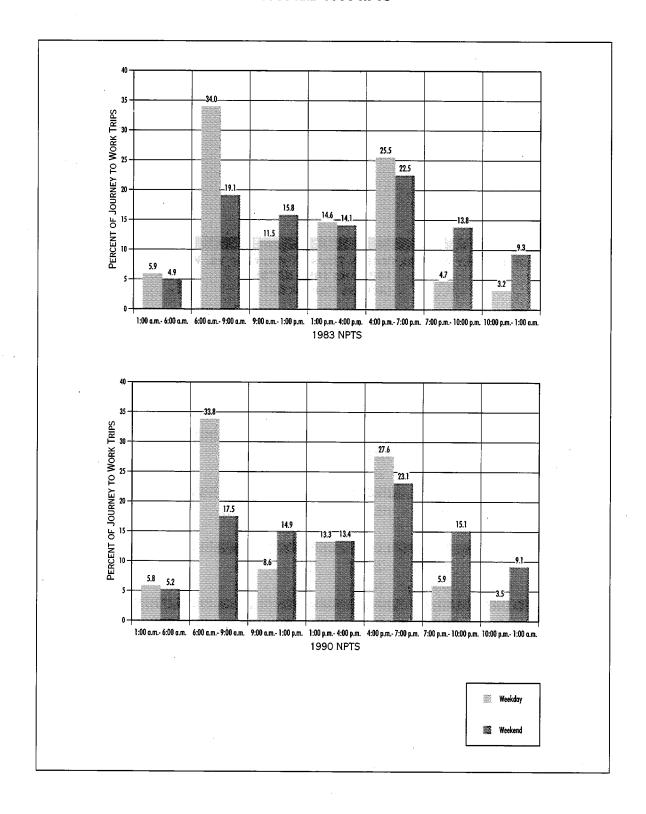
² Defined as the time between 6:01 p.m. Friday and midnight Sunday.

³ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

⁴ Includes trips where time of day was unreported.

FIGURE 6 18

DISTRIBUTION OF JOURNEY TO WORK PERSON TRIPS BY WEEKDAY VS. WEEKEND AND TIME OF DAY 1983 AND 1990 NPTS



STATISTICS ON WORK-RELATED PERSON TRIPS BY MODE OF TRANSPORTATION 1990 NPTS

	No. of Person Trips (000)	No. of Person Miles (000)	Average Trip Length ² (miles)
Private Vehicles			
Auto, Van - Driver	2,325,639	35,998,046	15.8
	(65.9%)	(37.0%)	
Auto, Van - Passenger	306,574	7,680,964	25.6
	(8.7%)	· (7.9%)	
Pickup	482,426	6,122,242	12.7
	(13.7%)	(6.3%)	
Other Private Vehicle	63,615	1,383,741	21.8
	(1.8%)	(1.4%)	
Subtotal	3,178,254	51,184,993	16.4
	(90.1%)	(52.6%)	
Public Transportation		040 670	F-4
Bus, Streetcar	61,954	343,578	5.7
	(1.8%)	(0.3%)	
Rail/Subway ^s	29,935	456,514	15.7
	(0.8%)	(0.5%)	
Subtotal	91,890	800,092	8.9
	(2.6%)	(0.8%)	
Other Means		1222:202	
Amtrak	1,682	672,965	400.0
	(0.0%)	(0.7%)	
Airplane	52,163	43,534,058	1074.2
	(1.5%)	(44.7%)	
Toxi	13,508	60,934	4.5
	(0.4%)	(0.1%)	
Bike	4,920	3,151	0.6
	(0.1%)	(0.0%)	
Walk	154,031	92,237	0.6
	(4.4%)	(0.1%)	
Other	22,732	771,239	44.1
	(0.6%)	(0.8%)	
Subtotal	249,036	45,134,584	195.7
	(7.1%)	(46.3%)	
TOTAL'	3,528,663	97,379,907	28.2
	(100.0%)	(100.0%)	

¹ Estimates of "actual" transit use are based on 39 person trips for work-related travel by bus, subway, elevated rail or commuter train. Note that the NPTS estimate of transit trips for all purposes is 20% lower than the Federal Transit Administration's Section 15 reporting system.

² Average trip length is calculated using only those records with trip mile information present.

³ Rail/Subway includes trips by subway, elevated rail and commuter train.

⁴ Includes trips where mode of transportation was unreported.

STATISTICS ON WORK-RELATED VEHICLE TRIPS BY VEHICLE TYPE 1990 NPTS (MILLIONS)

Vehicle Type	Vehicle Trips	Vehicle Miles of Travel (VMT)
Auto	2,088	33,204
	(73.4%)	(78.4%)
Passenger Van	211	2,576
	(7.4%)	(6.1%)
argo Van	27	218
·	(1.0%)	(0.5%)
Tickup Truck	454	4,951
	(15.9%)	(11.7%)
ther Truck	57	1,375
	(2.0%)	(3.3%)
lotorcycle	4	8
	(0.1%)	(0.0%)
OTAL	2,845	42,336
	(100.0%)	(100.0%)

STATISTICS ON WORK-RELATED PERSON TRIPS BY TRAVEL TIME 1990 NPTS

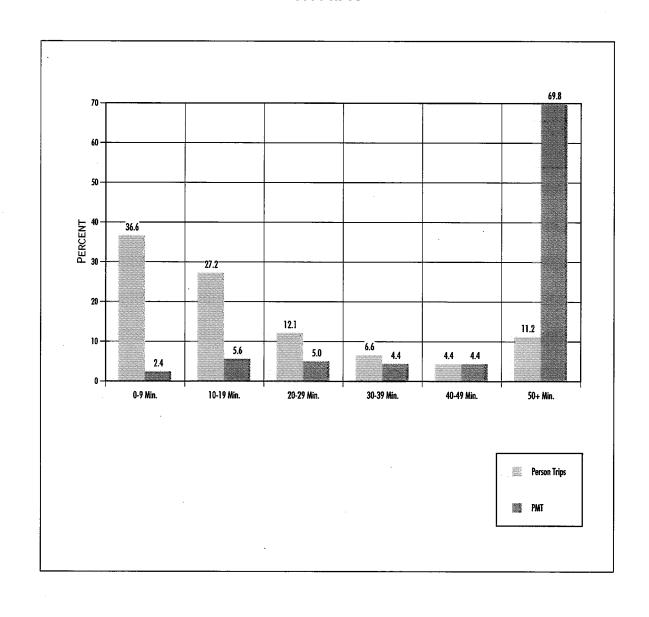
	No. of Person Trips (000)	No. of Person Miles (000)	Average Trip Length ¹ (miles)
0-9 min.	1,292,449	2,323,477	1.80
	(36.6%)	(2.4%)	
10-19 min.	959,586	5,423,055	5.70
	(27.2%)	(5.6%)	
20-29 min.	427,258	4,909,415	11.65
	(12.1%)	(5.0%)	
30-39 min.	232,330	4,308,590	19.21
	(6.6%)	(4.4%)	
40-49 min.	154,400	4,302,402	28.69
	(4.4%)	(4.4%)	
50+ min.	395,470	68,017,296	180.61
	(11.2%)	(69.8%)	
TOTAL ²	3,528,663	97,379,907	28.20
	(100.0%)	(100.0%)	

Average trip length is calculated using only those records with trip mile information present.

² Includes trips and miles of travel where travel time was unreported.

FIGURE 6.19

DISTRIBUTION OF WORK-RELATED PERSON TRIPS AND MILES OF TRAVEL BY TRAVEL TIME 1990 NPTS



Compared with journey to work trips, work-related trips were more than twice as long — 28.2 miles vs. 10.7 miles. This difference is largely due to the greater percentage of work-related trips that were 30 miles or longer.

While 6% of journey to work trips were to places 30 miles or farther, the corresponding percentage was 12% for work-related trips. The average trip length for trips 30 miles or longer was 184 miles.

TABLE 6.40

STATISTICS ON WORK-RELATED PERSON TRIPS BY TRIP LENGTH 1990 NPTS

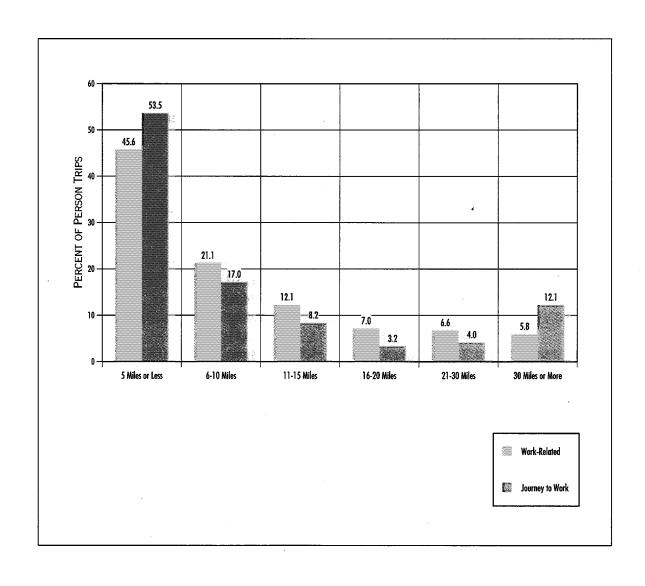
,	No. of Person Trips (000)	No. of Person Miles (000)	Average Trip Length ¹ (miles)
5 miles or less	1,886,222	4,179,532	2.22
	(53.5%)	(4.3%)	
6-10 miles	598,381	4,839,744	8.09
	(17.0%)	(5.0%)	
11-15 miles	288,326	3,959,401	13.73
i	(8.2%)	(4.1%)	
16-20 miles	112,697	2,114,630	18.76
•	(3.2%)	(2.2%)	
21-30 miles	140,306	3,702,803	26.39
	(4.0%)	(3.8%)	
31 or more miles	427,473	78,583,798	183.83
	(12.1%)	(80.7%)	
TOTAL ²	3,528,663	97,379,907	28.20
	(100.0%)	(100.0%)	

Average trip length is calculated using only those records with trip mile information present.

² Includes trips and miles of travel where start time of the trip was unreported.

FIGURE 6.20

COMPARISON OF JOURNEY TO WORK PERSON TRIPS AND WORK-RELATED PERSON TRIPS BY TRIP LENGTH 1990 NPTS



TARLE 6.4

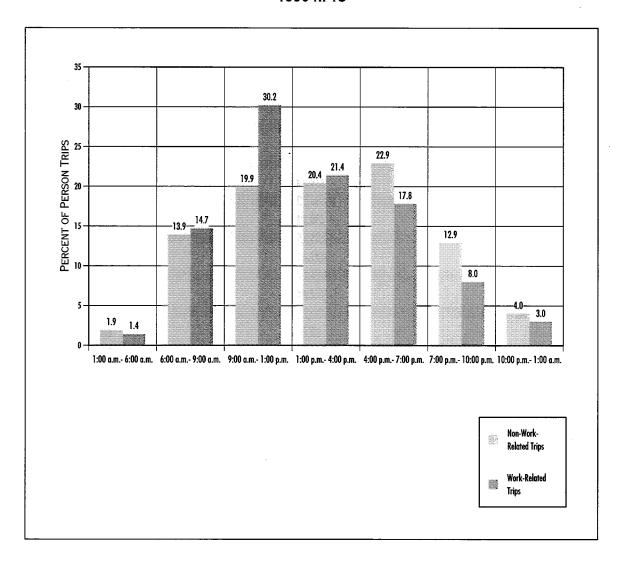
STATISTICS ON WORK-RELATED PERSON TRIPS BY TIME OF DAY 1990 NPTS

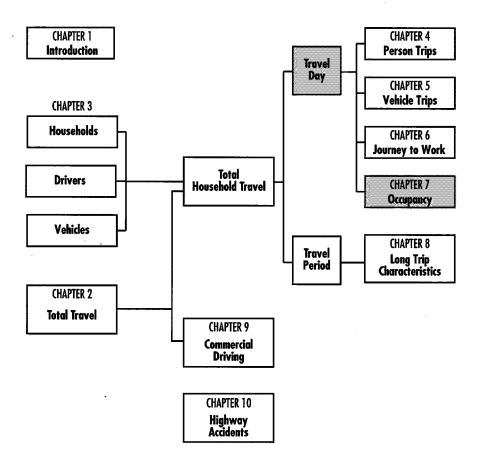
	No. of Person Trips (000)	No. of Person Miles (000)
1:00 a.m. to 6:00 a.m.	50,277	1,166,391
	(1.4%)	(1.2%)
6:00 a.m. to 9:00 a.m.	519,164	26,293,657
	(14.7%)	(27.0%)
9:00 a.m. to 1:00 p.m.	1,066,239	22,708,524
	(30.2%)	(23.3%)
1:00 p.m. to 4:00 p.m.	755,252	17,257,601
	(21.4%)	(17.7%)
1:00 p.m. to 7:00 p.m.	627,897	16,687,470
	(17.8%)	(17.1%)
7:00 p.m. to 10:00 p.m.	283,030	8,222,581
	(8.0%)	(8.4%)
10:00 p.m. to 1:00 a.m.	105,955	1,411,024
	(3.0%)	(1.4%)
TOTAL	3,528,663	97,379,907
	(100.0%)	(100.0%)

¹ Includes trips and miles of travel where start time of trip was unreported.

FIGURE 6.2

DISTRIBUTION OF NON-WORK-RELATED PERSON TRIPS AND WORK-RELATED PERSON TRIPS BY TIME OF DAY 1990 NPTS





CHAPTER 7

VEHICLE OCCUPANCY AND RIDESHARING



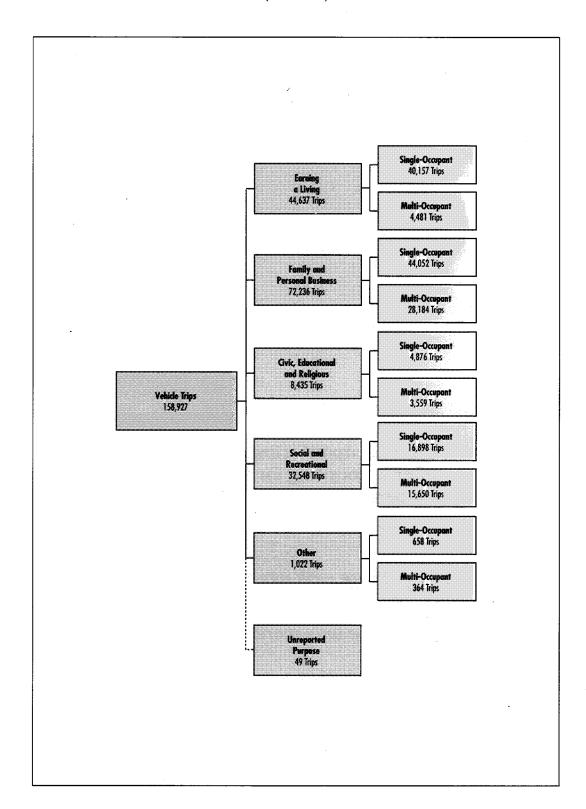
The number of single-occupant trips increased by 13% between 1977 and 1990, after accounting for the increase in total vehicle trips during the period.

Ridesharing was a function of:

- Vehicle ownership. There was more ridesharing in households with fewer vehicles.
- Stage of life cycle. There was more ridesharing in households with young children.
- Trip purpose. There was more ridesharing in social and recreational trips.
- Trip length. There was more ridesharing in longer trips.

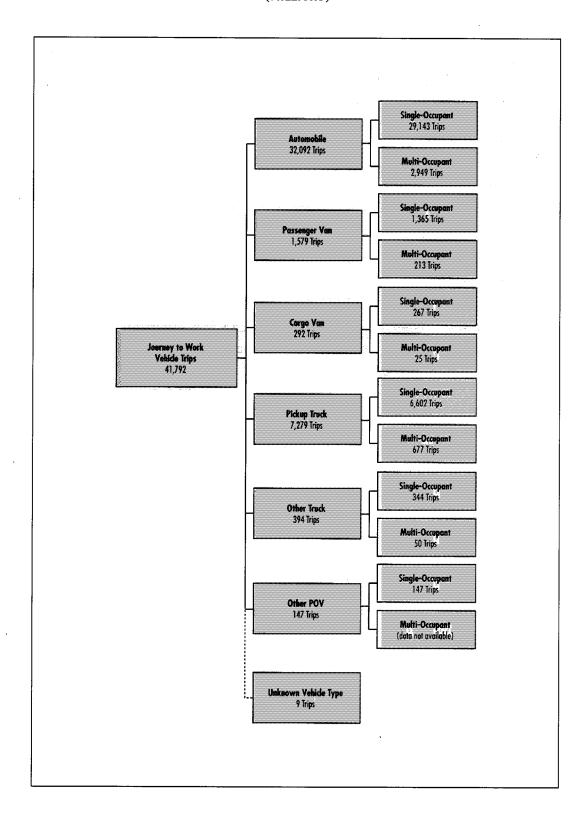
1990 VEHICLE TRIPS BY PURPOSE AND RIDESHARING STATUS

(MILLIONS)



1990 JOURNEY TO WORK VEHICLE TRIPS BY VEHICLE TYPE AND RIDESHARING STATUS

(MILLIONS)



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CHAPTER 7 VEHICLE OCCUPANCY AND RIDESHARING

His chapter presents trends in vehicle occupancy and ridesharing patterns. Vehicle occupancy is expressed in two different ways. One definition of vehicle occupancy is the average number of persons per vehicle trip. A second way of defining vehicle occupancy is the number of person miles of travel per vehicle mile of travel. The latter definition takes into account trip length and, therefore, may be a preferred measure for studying issues such as energy consumption and air quality. Throughout this chapter, the specific definition of vehicle occupancy being used is clearly stated on all tables.

The percentage of multi-occupant trips has declined since 1977. While 40.4 percent of the trips in 1977 were multi-occupant, this percentage was only 32.9 percent in 1990.

VEHICLE AVAILABILITY

For households that have at least one vehicle available per driver, the proportion of trips that were single-occupant was significantly greater than that for other households. This observation suggests that vehicle ownership affects the level of ridesharing.

HOUSEHOLD CHARACTERISTICS

Based on households that provided income information, there seems to be little evidence that sharing rides is related to household income alone. However, the likelihood of sharing rides to and from work is somewhat affected by household income. Households with income less than \$20,000 tended to share their rides to and from work more than households with higher income.

Having children in a household affects the prevalence of multi-occupant vehicle trips, particularly, if the children are very young (under 6 years old). As children grow older and more independent, the percentage of multi-occupant trips drop.

TRIP PURPOSE

The likelihood of sharing rides differed depending on the trip purpose. Trips for social and recreational purposes were most likely to be multi-occupant, while trips for earning a living were least likely to be multi-occupant. Consequently, vehicle occupancy in journey to work and work-related trips was the lowest while vehicle occupancy in social and recreational trips was the highest.

	Single-Occupant Vehicle Trips (000)	Multi-Occupant Vehicle Trips (000)	TOTAL (000)
1977	64,860,296	43,965,704	108,826,000
	(59.6%)	(40.4%)	(100.0%)
1983	83,356,218	43,517,782	126,874,000
ĺ	(65.7%)	(34.3%)	(100.0%)
1990	106,670,900	52,256,713	158,927,613
Î	(67.1%)	(32.9%)	(100.0%)

Of all journey to work trips, 70 percent were single-occupant in automobiles, 16 percent were single-occupant in pickup trucks and 4 percent were single-occupant in other vehicle types. Only 10 percent of journey to work vehicle trips were multi-occupant, and more than half of those were by automobile. Sharing rides to and from work was more common as trip distance increased.

TYPE OF VEHICLE

Trips by passenger vans and recreational vehicles had the highest vehicle occupancy rate. This pattern reflects the occupant-carrying capacity of different types of vehicles. Vehicle occupancy rate increased with household size for almost all types of privately owned vehicles, except for the motorcycle and moped categories.

TRIP LENGTH

Trip length also affects the proportion of vehicle trips that were rideshared. About 66 to 67 percent of vehicle trips that were less than 30 miles long were single-occupant. However, this percentage decreased to 58 percent for trips 30 miles or longer.

There was a significantly larger percentage of single-occupant vehicle trips by households that have <u>at least</u> one vehicle available per driver than by households in which there are

more drivers than vehicles. This pattern suggests that vehicle ownership greatly affects the level of ridesharing.

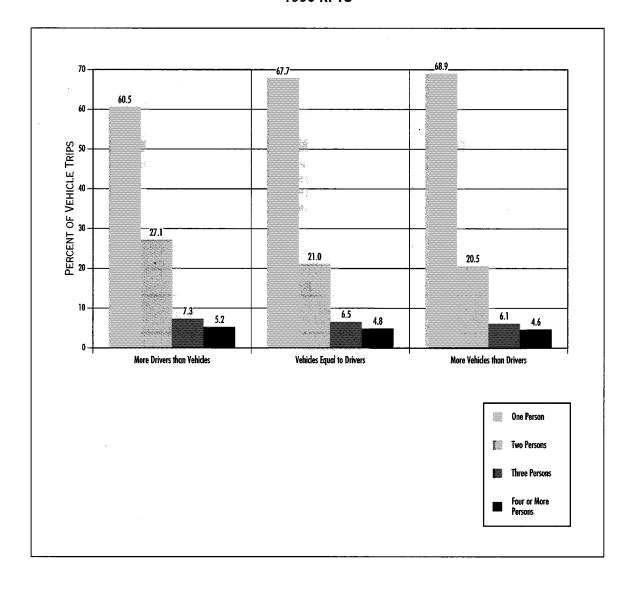
TABLE 7 1

NUMBER OF VEHICLE TRIPS BY NUMBER OF OCCUPANTS AND NUMBER OF HOUSEHOLD VEHICLES VS. NUMBER OF DRIVERS 1990 NPTS (THOUSANDS)

	Number of Persons on Trip							
Household Vehicles vs. Drivers	1	2	3	4	5-10	11 or More	TOTAL	
More drivers than vehicles	12,307,402	5,501,422	1,478,482	666,607	382,182	**	20,336,096	
Ĭ	(60.5%)	(27.1%)	(7.3%)	(3.3%)	(1.9%)	**	(100.0%)	
Vehicles equal to drivers	63,943,246	19,857,891	6,114,586	2,884,608	1,593,109	26,702	94,420,143	
	(67.7%)	(21.0%)	(6.5%)	(3.1%)	(1.7%)	(0.0%)	(100.0%)	
More vehicles than drivers	30,420,148	9,044,374	2,684,714	1,364,796	652,402	4,795	44,171,228	
Ì	(68.9%)	(20.5%)	(6.1%)	(3.1%)	(1.5%)	(0.0%)	(100.0%)	
TOTAL	106,670,797	34,403,687	10,277,782	4,916,011	2,627,693	31,497	158,927,467	
	(67.1%)	(21.6%)	(6.5%)	(3.1%)	(1.7%)	(0.0%)	(100.0%)	
					<u>-</u>			

FIGURE 7.1

DISTRIBUTION OF VEHICLE TRIPS BY NUMBER OF OCCUPANTS, NUMBER OF HOUSEHOLD VEHICLES AND NUMBER OF DRIVERS 1990 NPTS



As expected, trips taken by passenger vans and recreational vehicles had the highest occupancy rate, while trips taken by mopeds had the lowest. Vehicle occupancy rates increase with household size for almost all types of privately owned vehicles, except the motorcycle and moped categories due to their inherent limits on occupancy.

TABLE 7.2

AVERAGE VEHICLE OCCUPANCY BY NUMBER OF HOUSEHOLD MEMBERS AND VEHICLE TYPE (PERSON MILES PER VEHICLE MILE) 1990 NPTS

	Number of Household Members						
Vehicle Type	1	2	3	4	5 or more	ALL	
Auto	1.28	1.52	1.63	1.75	1.91	1.62	
Passenger Van	*	1.81	2.06	2.51	3.14	2.55	
Cargo Van	1.23	1.24	1.08	1.32	1.33	1.24	
Pickup Truck	1.31	1.36	1.42	1.55	1.80	1.47	
Other Truck	1.15	1.23	1.23	1.71	1.36	1.41	
RV/Motor Home***	*	*	**	*	*	2.55	
Motorcycle	1.19	1.44	1.11	1.42	1.74	1.37	
Moped	*	*	1.08	1.03	1.00	1.04	
Other POV***	**	*	*	*	**	2.29	
ALL	1.35	1.51	1.61	1.77	2.01	1.64	
% of Households	24.6	32.3	17.3	15.1	10.7	100.0	

Indicates insufficient data reported.

^{*} Indicates no data reported.

^{***} Insufficient data to disaggregate by number in household.

AVERAGE VEHICLE OCCUPANCY BY VEHICLE TYPE
1990 NPTS

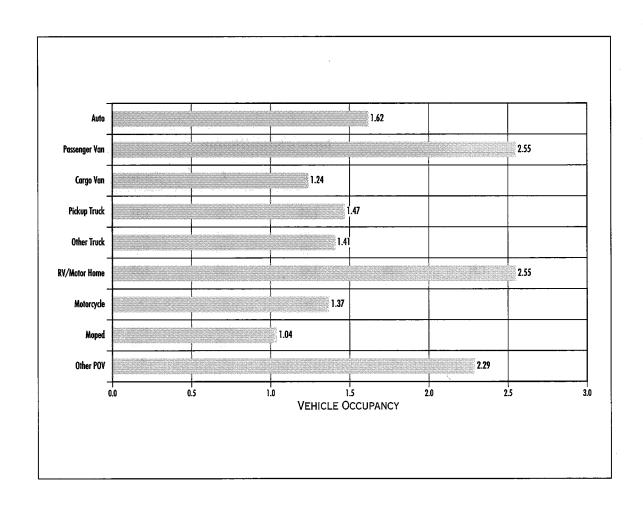


TABLE 7.3

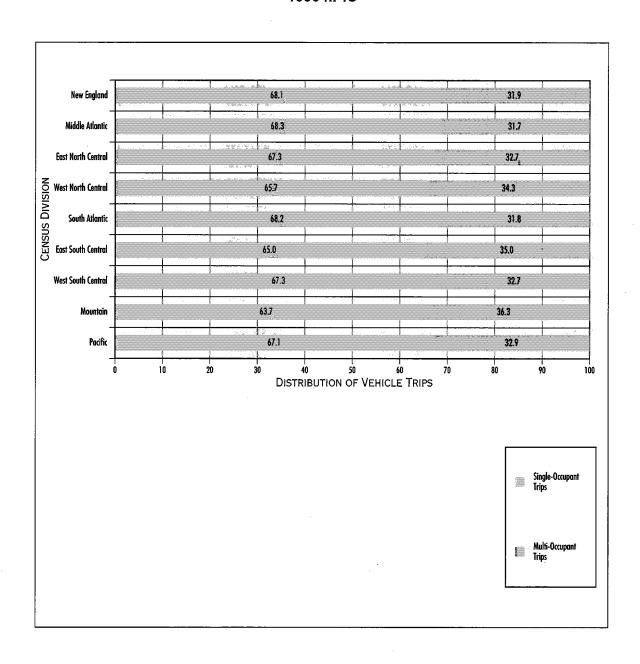
NUMBER OF VEHICLE TRIPS BY CENSUS DIVISION AND RIDESHARING STATUS 1990 NPTS (THOUSANDS)

	Single-Occupant Trips	Multi-Occupant Trips	TOTAL
New England	5,757,432	2,695,473	8,452,905
	(68.1%)	(31.9%)	(100.0%)
Middle Atlantic	14,047,533	6,517,040	20,564,573
	(68.3%)	(31.7%)	(100.0%)
Subtotal - Northeast	19,804,965	9,212,513	29,017,478
	(68.3%)	(31.7%)	(100.0%)
East North Central	18,805,067	9,154,376	27,959,443
	(67.3%)	(32.7%)	(100.0%)
West North Central	8,087,290	4,229,592	12,316,882
	(65.7%)	(34.3%)	(100.0%)
Subtotal - North Central	26,892,357	13,383,968	40,276,325
	(66.8%)	(33.2%)	(100.0%)
South Atlantic	19,183,748	8,942,013	28,125,761
	(68.2%)	(31.8%)	(100.0%)
East South Central	6,550,672	3,520,571	10,071,243
	(65.0%)	(35.0%)	(100.0%)
West South Central	12,083,674	5,858,298	17,941,972
	(67.3%)	(32.7%)	(100.0%)
Subtotal - South	37,818,094	18,320,882	56,138,976
	(67.4%)	(32.6%)	(100.0%)
Mountain	6,155,061	3,510,949	9,666,009
	(63.7%)	(36.3%)	(100.0%)
Pacific	16,000,319	7,828,359	23,828,678
ĺ	(67.1%)	(32.9%)	(100.0%)
Subtotal - West	22,155,380	11,339,308	33,494,687
	(66.1%)	(33.9%)	(100.0%)
TOTAL	106,670,797	52,256,670	158,927,467
Ì	(67.1%)	(32.9%)	(100.0%)

¹ See glossary for a listing of states in each Census Division.

On average, two-thirds of vehicles trips were single-occupant. This average did not vary significantly by Census Division.

DISTRIBUTION OF VEHICLE TRIPS BY CENSUS DIVISION AND RIDESHARING STATUS
1990 NPTS



IABLE 7.4

AVERAGE VEHICLE OCCUPANCY FOR JOURNEY TO WORK TRIPS BY CENSUS REGION AND MSA SIZE (PERSON MILES PER VEHICLE MILE) 1990 NPTS

MSA Size	Northeast	North Central	South	West	ALL
< 250,000	1.12	1.14	1.18	1.19	1.16
250,000-499,999	1.16	1.05	1.12	1.14	1.11
500,000-999,999	1.18	1.15	1.11	1.11	1.12
1,000,000-2,999,999	1.11	1.08	1.11	1.14	1.11
3,000,000 or more	1.13	1.08	1.11	1.16	1.13
Not in MSA	1.11	1.09	1.25	1.30	1.19
AU	1.13	1.09	1.16	1.18	1.14

NUMBER OF VEHICLE TRIPS BY MSA SIZE, PLACE OF RESIDENCE AND RIDESHARING STATUS 1990 NPTS (THOUSANDS)

MSA Size	Single-Occupant	Multi-Occupant	TOTAL
Less than 250,000			
Central City	6,064,986	3,002,026	9,067,012
	(55.4%)	(54.5%)	(55.1%)
Non-Central City	4,875,120	2,510,342	7,385,462
	(44.6%)	(45.5%)	(44.9%)
TOTAL	10,940,107	5,512,368	16,452,474
	(100.0%)	(100.0%)	(100.0%)
250,000-499,999			
Central City	4,623,552	2,240,255	6,863,807
	(48.1%)	(46.3%)	(47.5%)
Non-Central City	4,979,162	2,603,485	7,582,647
	(51.9%)	(53.7%)	(52.5%)
TOTAL	9,602,714	4,843,740	14,446,454
	(100.0%)	(100.0%)	(100.0%)
500,000-999,999			
Central City	4,825,446	2,383,758	7,209,205
	(47.2%)	(45.7%)	(46.7%)
Non-Central City	5,403,282	2,833,949	8,237,231
	(52.8%)	(54.3%)	(53.3%)
TOTAL	10,228,728	5,217,707	15,446,435
	(100.0%)	(100.0%)	(100.0%)
1,000,000-2,999,999			
Central City	9,889,800	4,869,971	14,759,771
	(45.4%)	(45.6%)	(45.5%)
Non-Central City	11,904,546	5,799,374	17,703,919
	(54.6%)	(54.4%)	(54.5%)
TOTAL	21,794,346	10,669,344	32,463,690
	(100.0%)	(100.0%)	(100.0%)
3,000,000 or more			·
Central City	10,521,347	4,632,584	15,153,931
	(34.6%)	(33.4%)	(34.3%)
Non-Central City	19,845,514	9,218,594	29,064,109
	(65.4%)	(66.6%)	(65.7%)
TOTAL	30,366,861	13,851,178	44,218,039
	(100.0%)	(100.0%)	(100.0%)

There was no large difference in ridesharing among small to medium size MSA's (with population less than three million). However, in MSA's with population more than three million, the proportion of vehicle trips that

were multi-occupant decreased. People residing outside the central city tended to share rides slightly more than those residing inside the central city.

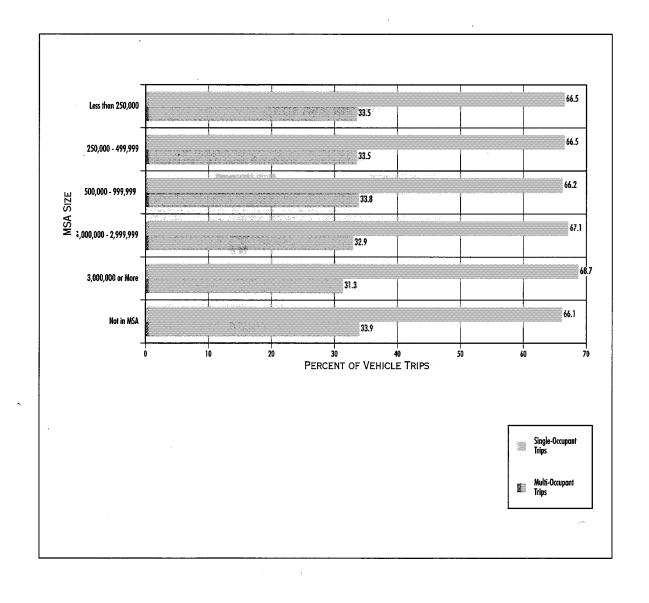
TABLE 7.6

DISTRIBUTION OF VEHICLE TRIPS BY MSA SIZE, PLACE OF RESIDENCE AND RIDESHARING STATUS 1990 NPTS (WITHIN MSA SIZE)

MSA Size	Single-Occupant	Single-Occupant Multi-Occupant	
Less than 250,000			
Central City	66.9	33.1	100.0
Non-Central City	66.0	34.0	100.0
TOTAL	66.5	33.5	100.0
250,000-499,999			
Central City	67.4	32.6	100.0
Non-Central City	65.7	34.3	100.0
TOTAL	66.5	33.5	100.0
500,000-999,999			
Central City	66.9	<i>33.</i> 1	100.0
Non-Central City	65.6	34.4	100.0
TOTAL	66.2	33.8	100.0
1,000,000-2,999,999			
Central City	67.0	33.0	100.0
Non-Central City	67.3	32.8	100.0
TOTAL	67.1	32.9	100.0
3,000,000 or more			
Central City	69.4	30.6	100.0
Non-Central City	68.3	31.7	100.0
TOTAL	68.7	31.3	100.0

DISTRIBUTION OF VEHICLE TRIPS BY MSA SIZE AND RIDESHARING STATUS

1990 NPTS



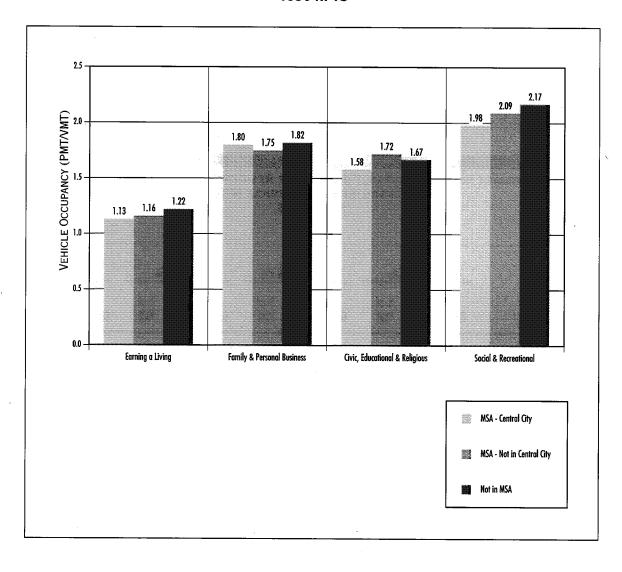
Vehicle occupancy rates vary with the purpose of travel. Travel to work and work related travel combined has the lowest rate of occupancy of all personal travel, particularly for trips taken by people who live inside the central city.

AVERAGE VEHICLE OCCUPANCY BY PLACE OF RESIDENCE AND TRIP PURPOSE
(PERSON MILES PER VEHICLE MILE)
1990 NPTS

	In MSA, in Central City		In MSA, not in Central City		Not in MSA		ALL	
	Avg. Occupancy	% of VMT	Avg. Occupancy	% of VMT	Avg. Occupancy	% of VMT	Avg. Occupancy	% of VMT
Earning a Living	1.13	33.7	1.16	37.4	1.22	32.5	1.16	35.1
Family & Personal Business	1.80	32.1	1.75	32.1	1.82	34.8	1.78	32.8
Civic, Educational, & Religious	1.58	4.4	1.72	4.1	1.67	5.0	1.67	4.4
Social & Recreational	1.98	28.4	2.09	<i>25.8</i>	2.17	27.1	2.08	26.9
Other	1.41	1.3	1.47	0.6	1.74	0.5	1.49	0.8
ALL	1.61	100.0	1.62	100.0	1.71	100.0	1,64	100.0

FIGURE 7.5

AVERAGE VEHICLE OCCUPANCY BY PLACE OF RESIDENCE AND TRIP PURPOSE (PERSON MILES PER VEHICLE MILE) 1990 NPTS



NUMBER OF VEHICLE TRIPS BY POPULATION DENSITY, PLACE OF RESIDENCE AND RIDESHARING STATUS
1990 NPTS

(THOUSANDS)

Population Density ¹	Single-Occupant Trips	Multi-Occupant Trips	TOTAL	
In MSA, Within Central City				
Less than 2,000	15,016,667	7,288,361	22,305,029	
•	(41.8%)	(42.6%)	(42.0%)	
2,000-3,999	7,990,562	3,927,706	11,918,267	
• • • • • • • • • • • • • • • • • • • •	(22.2%)	(22.9%)	(22.5%)	
4,000-7,499	7,755,256	3,498,570	11,253,826	
• mandade and a distribution of the first of the	(21.6%)	(20.4%)	(21.2%)	
7,500 or More	5,162,647	2,413,957	7,576,604	
	(14.4%)	(14.1%)	(14.3%)	
TOTAL	35,925,132	17,128,594	53,053,726	
,	(100.0%)	(100.0%)	(100.0%)	
In MSA, Not in Central City				
Less than 2,000	30,505,815	15,140,571	45,646,386	
——————————————————————————————————————	(64.9%)	(65.9%)	(65.2%)	
2,000-3,999	8,473,917	4,033,695	12,507,613	
	(18.0%)	(17.6%)	(17.9%)	
4,000-7,499	5,806,828	2,778,799	8,585,627	
,	(12.4%)	(12.1%)	(12.3%)	
7,500 or More	2,221,064	1,012,678	3,233,743	
	(4.7%)	(4.4%)	(4.6%)	
TOTAL	47,007,624	22,965,744	69,973,368	
	(100.0%)	(100.0%)	(100.0%)	
Not in MSA				
Less than 2,000	23,329,034	11,902,970	35,232,003	
•	(98.3%)	(97.9%)	(98.1%)	
2,000-3,999	234,857	128,585	363,442	
* * * * * * * * * * * * * * * * * * * *	(1.0%)	(1.1%)	(1.0%)	
4,000-7,499	83,571	62,032	145,603	
· · · · · · · · · · · · · · · · · · ·	(0.4%)	(0.5%)	(0.4%)	
7,500 or More	90,579	68,746	159,325	
	(0.4%)	(0.6%)	(0.4%)	
TOTAL	23,738,041	12,162,333	35,900,373	
82-2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	(100.0%)	(100.0%)	(100.0%)	

¹ Population Density is calculated as persons per square mile for the zip code in which the household is located.

There seems to be little correlation between the likelihood of ridesharing and household income alone.

Number of Vehicle Trips by Number of Occupants and Household Income 1990 NPTS (THOUSANDS)

Income	Number of Persons on Trip								
	1	2	3	4	5-10	11 or More	TOTAL		
Under \$10,000	5,129,160	1,624,274	605,084	295,147	98,320	16,416	7,768,401		
, ,	(66.0%)	(20.9%)	(7.8%)	(3.8%)	(1.3%)	(0.2%)	(100.0%)		
\$10,000 - \$19,999	11,546,347	4,087,113	1,127,235	528,080	259,430	4,277	17,552,482		
	(65.8%)	(23.3%)	(6.4%)	(3.0%)	(1.5%)	(0.0%)	(100.0%)		
\$20,000 - \$29,999	14,505,479	5,030,125	1,445,173	618,049	401,379	1,982	22,002,187		
	(65.9%)	(22.9%)	(6.6%)	(2.8%)	(1.8%)	(0.0%)	(100.0%)		
530,000 - 539,999	15,689,180	4,870,579	1,601,044	801,627	445,420	2,310	23,410,160		
	(67.0%)	(20.8%)	(6.8%)	(3.4%)	(1.9%)	(0.0%)	(100.0%)		
\$40,000 and over	35,932,754	11,878,304	3,525,902	1,749,016	930,694	6,512	54,023,181		
	(66.5%)	(22.0%)	(6.5%)	(3.2%)	(1.7%)	(0.0%)	(100.0%)		
Unreported	23,867,877	6,913,292	1,973,344	924,093	492,450	**	34,171,056		
	(69.8%)	(20.2%)	(5.8%)	(2.7%)	(1.4%)	**	(100.0%)		
TOTAL	106,670,797	34,403,687	10,277,782	4,916,011	2,627,693	31,497	158,927,467		
	(67.1%)	(21.6%)	(6.5%)	(3.1%)	(1.7%)	(0.0%)	(100.0%)		

While there was little evidence supporting the relationship between household income and the likelihood of ridesharing in general, a pattern did emerge. Households with annual income less than \$20,000 shared their rides

to and from work more than those with higher income. Among higher income households, there was very little difference in the percentage of journey to work vehicle trips that were single-occupant.

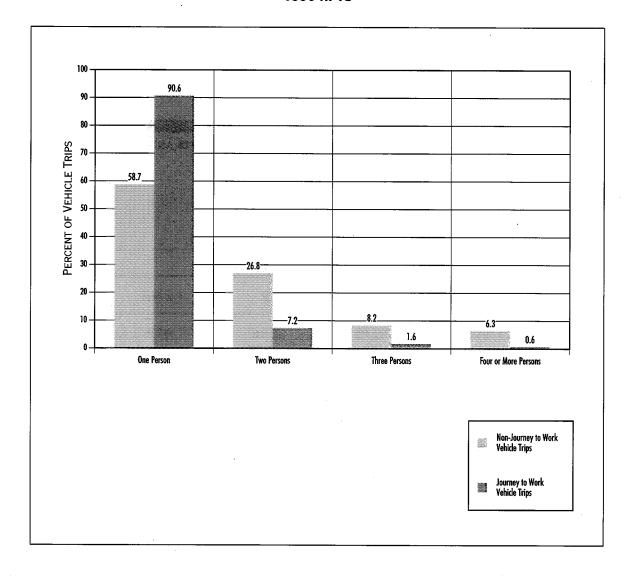
TABLE 7.10

Number of Journey to Work Vehicle Trips by Number of Occupants and Household Income 1990 NPTS (THOUSANDS)

		N	umber of Persons on the 1	<u> </u>	
Income	1	2	3	4 or More	TOTAL
Under \$10,000	1,104,359	122,962	35,030	10,739	1,273,090
İ	(86.7%)	(9.7%)	(2.8%)	(0.8%)	(100.0%)
\$10,000 - \$19,999	3,616,610	409,656	100,875	46,014	4,173,155
	(86.7%)	(9.8%)	(2.4%)	(1.1%)	(100.0%)
\$20,000 - \$29,999	5,120,417	369,802	91,498	16,526	5,598,244
	(91.5%)	(6.6%)	(1.6%)	(0.3%)	(100.0%)
\$30,000 - \$39,999	5,810,781	441,760	80,984	38,350	6,371,875
, , , , , , , , , , , , , , , , , , , ,	(91.2%)	(6.9%)	(1.3%)	(0.6%)	(100.0%)
\$40,000 and over	13,670,007	1,014,540	251,980	95,731	15,032,258
	(90.9%)	(6.7%)	(1.7%)	(0.6%)	(100.0%)
Unreported	8,554,516	633,996	110,925	44,074	9,343,511
•	(91.6%)	(6.8%)	(1.2%)	(0.5%)	(100.0%)
TOTAL	37,876,690	2,992,716	671,291	251,435	41,792,133
	(90.6%)	(7.2%)	(1.6%)	(0.6%)	(100.0%)

FIGURE 7.6

DISTRIBUTION OF JOURNEY TO WORK VEHICLE TRIPS VS. OTHER VEHICLE TRIPS BY NUMBER OF PERSONS ON THE TRIP 1990 NPTS



Vehicle occupancy of journey to work trips has declined since 1983 across all income groups. However, trips taken by lower income households have a slightly higher occupancy rate than those of higher income households.

TABLE 7.11

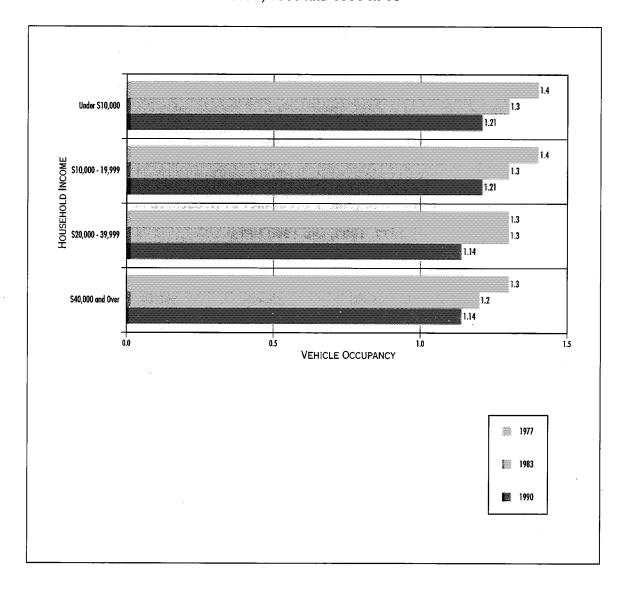
AVERAGE JOURNEY TO WORK VEHICLE OCCUPANCY BY HOUSEHOLD INCOME (PERSON MILES PER VEHICLE MILE)
1977, 1983, AND 1990 NPTS¹

	Under \$10,000	\$10,000- 19,999	\$20,000- 39,999	\$40,000 and over	All Income Groups
1977²	1.4	1.4	1.3	1.3	1.3
1983 ²	1.3	1.3	1.3	1.2	1.3
1990	1.21	1.21	1.14	1.14	1.14

¹ For more information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Occupancy rates from 1977 and 1983 were calculated to tenths, not hundredths.

AVERAGE JOURNEY TO WORK VEHICLE OCCUPANCY BY HOUSEHOLD INCOME (PERSON MILES PER VEHICLE MILE) 1977, 1983 AND 1990 NPTS



Having children in a household affects the prevalence of multi-occupant vehicle trips, particularly, if the children are very young (under 6 years old). As children grow older and more independent, the percentage of multi-occupant trips drop.

TABLE 7.12

NUMBER OF VEHICLE TRIPS BY HOUSEHOLD COMPOSITION AND RIDESHARING STATUS 1990 NPTS (THOUSANDS)

Household Composition	Single-Occupant Trips	Multi-Occupant Trips	TOTAL
Single Adult,	13,855,580	2,563,009	16,418,589
No Children	(84.4%)	(15.6%)	(100.0%)
Two or More Adults, No Children	32,675,966 (73.2%)	11,936,660 (26.8%)	44,612,626 (100.0%)
Single Adult, Youngest Child Under 6	858,718 (42.19)	1,134,998	1,993,716
- 1 7 4	(43.1%)	(56.9%)	(100.0%)
Two or More Adults, Youngest Child Under 6	16,100,621 (53.7%)	13,865,190 <i>(46.3%)</i>	29,965,811 (100.0%)
Single Adult, Youngest Child 6-15	2,123,436 (56.9%)	1,606,134 (43.1%)	3,729,570 (100.0%)
Two or More Adults,	18,736,117	11,641,908	30,378,025
Youngest Child 6-15	(61.7%)	(38.3%)	(100.0%)
Single Adult,	1,207,615	442,499	1,650,114
Youngest Child 16 or Older	(73.2%)	(26.8%)	(100.0%)
Two or More Adults, Youngest Child 16 or Older	9,009,426 (71.6%)	3,581,826 (28.4%)	12,591,251 (100.0%)
Single Adult,	3,545,559	714,485	4,260,045
Retired - No Children	(83.2%)	(16.8%)	(100.0%)
Two or More Adults,	7,957,608	4,569,394	12,527,002
Retired - No Children	(63.5%)	(36.5%)	(100.0%)
TOTAL	106,670,797	52,256,670	158,927,467
	(67.1%)	(32.9%)	(100.0%)

¹ Includes trips where household composition was unreported.

TABLE 7.13

AVERAGE VEHICLE OCCUPANCY BY HOUSEHOLD COMPOSITION AND TRIP PURPOSE (PERSON MILES PER VEHICLE MILE) 1990 NPTS

	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social/ Recreational	Other	ALL
Single Adult, No Children	1.07	1.40	1.36	1.54	1.06	1.34
Two or More Adults, No Children	1.14	1.61	1.40	1.84	1.40	1.48
Single Adult, Youngest Child Under 6	1.22	2.45	1.55	2.61	3.31	2.22
Two or More Adults, Youngest Child Under 6	1.24	2.27	2.32	2.83	1.94	1.98
Single Adult, Youngest Child 6-15	1.13	1.80	1.78	2.12	*	1.69
Two or More Adults, Youngest Child 6-15	1.18	1.92	1.84	2.66	1.95	1.77
Single Adult, Youngest Child 16 or Older	1.05	1.51	1.47	1.44	*	1.35
Two or More Adults, Youngest Child 16 or Older	1.16	1.61	1.34	1.90	1.19	1.50
Single Adult, Retired - No Children	1.02	1.28	1.42	1.51	1.34	1.36
Two or More Adults, Retired - No Children	1.11	1.58	1.61	1.86	1.38	1.64
ALL	1.16	1.78	1.67	2.08	1.49	1.64

^{*} Indicates insufficient data reported.

TABLE 7.14

NUMBER OF VEHICLE TRIPS BY TRIP PURPOSE AND NUMBER OF PERSONS IN VEHICLE 1990 NPTS (THOUSANDS)

No. of Persons in Vehicle	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL
1	40,156,697	44,052,476	4,875,928	16,897,704	657,635	106,670,797
	(90.0%)	(61.0%)	(57.8%)	(51.9%)	(64.4%)	(67.1%)
2	3,396,423	18,987,560	2,024,743	9,734,911	249,985	34,403,687
	(7.6%)	(26.3%)	(24.0%)	(29.9%)	(24.5%)	(21.6%)
3	761,777	5,638,883	801,201	3,011,065	62,362	10,277,782
	(1.7%)	(7.8%)	(9.5%)	(9.3%)	(6.1%)	(6.5%)
4	191,279	2,387,247	406,914	1,885,398	38,753	4,916,011
	(0.4%)	(3.3%)	(4.8%)	(5.8%)	(3.8%)	(3.1%)
5-10	123,604	1,161,597	324,238	1,005,276	12,978	2,627,693
	(0.3%)	(1.6%)	(3.8%)	(3.1%)	(1.3%)	(1.7%)
11 or More	7,698	8,817	1,610	13,373	**	31,497
	(0.0%)	(0.0%)	(0.0%)	(0.0%)	**	(0.0%)
TOTAL	44,637,479	72,236,579	8,434,633	32,547,726	1,021,713	158,927,467
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
Distribution of Trips	28.1%	45.5%	5.3%	20.5%	0.6%	100.0%
¹ Includes trips where trip pu	rpose was unreported.		** Indicates no	data reported.		

The likelihood of sharing rides differed depending on the trip purpose. While social and recreational trips were most likely to be shared (48%), trips for earning a living were

least likely to involve ridesharing (10.0%). Of all multi-occupant trips, family and personal trips accounted for more than half (54%).

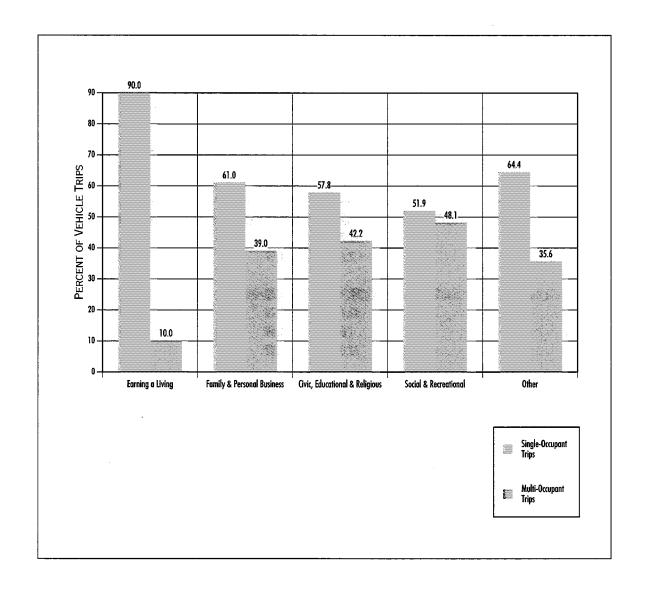
TABLE 7.15

NUMBER OF VEHICLE TRIPS BY TRIP PURPOSE AND RIDESHARING STATUS 1990 NPTS (THOUSANDS)

	Earning a Living	Family and Personal Business	Civic, Educational and Religious	Social and Recreational	Other	TOTAL ¹
Number of Vehicle Trips		V-				
Single-Occupant	40,156,697	44,052,476	4,875,928	16,897,704	657,635	106,670,797
•	(90.0%)	(61.0%)	(57.8%)	(51.9%)	(64.4%)	(67.1%)
Multi-Occupant	4,480,781	28,184,104	3,558,705	15,650,023	364,077	52,256,670
	(10.0%)	(39.0%)	(42.2%)	(48.1%)	(35.6%)	(32.9%)
TOTAL	44,637,479	72,236,579	8,434,633	32,547,726	1,021,713	158,927,467
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
Distribution of Vehicle Trips						
Single-Occupant	(37.6%)	(41.4%)	(4.6%)	(15.8%)	(0.6%)	(100.0%)
Multi-Occupant	(8.6%)	(53.9%)	(6.8%)	(30.0%)	(0.7%)	(100.0%)
TOTAL	(28.1%)	(45.5%)	(5.3%)	(20.5%)	(0.6%)	(100.0%)

FIGURE 7.8

DISTRIBUTION OF VEHICLE TRIPS BY TRIP PURPOSE AND RIDESHARING STATUS 1990 NPTS



Vehicle occupancy rate, calculated as person miles of travel per vehicle mile of travel, declined steadily from 1977 to 1990. This decline was evident in trips of all purposes. Trips for social and recreational purposes continued to have the highest vehicle occupancy

rate. In air quality non-attainment areas, trips to work are targeted for transportation control measures to encourage ridesharing. This is because trips to work account for about one-third of all vehicle miles of travel and have the lowest average occupancy rate (1.14).

TABLE 7.16

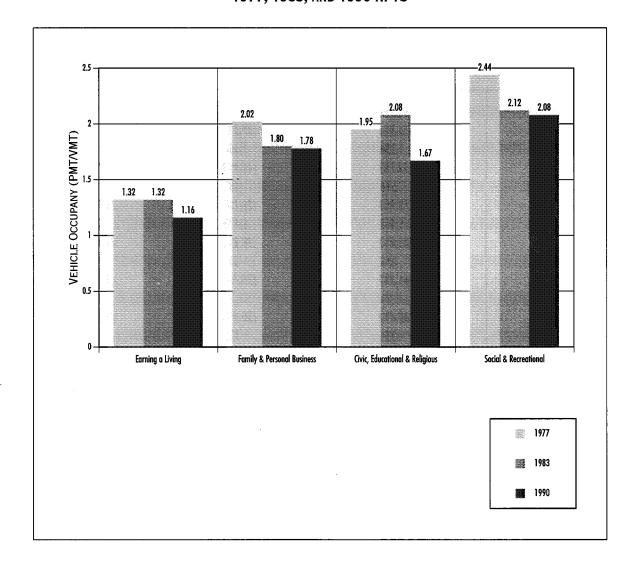
AVERAGE VEHICLE OCCUPANCY BY TRIP PURPOSE (PERSON MILES PER VEHICLE MILE) 1977, 1983, AND 1990 NPTS'

	197	77		983	19	990
Trip Purpose	Average Occupancy	Percent of VMT	Average Occupancy	Percent of VMT	Average Occupancy	Percent of VMT
EARNING A LIVING	1.32	39.3	1.32	34.3	1.16	35.1
To or from Work	1.30	31.7	1.29	30.2	1.14	32.1
Work Related	1.39	7.6	1.57	4.2	1.42	3.0
FAMILY & PERSONAL BUSINESS	2.02	24.9	1.80	30.4	1.78	32.8
Shopping	2.06	11.1	1.79	13.3	1.71	11,5
Medical/Dental	2.14	1.8	1.69	1.5	1.52	1.3
Other	1.96	12.0	1.82	15.5	1.84	20.0
CIVIC, EDUCATIONAL, & RELIGIOUS	1.95	5.2	2.08	4.1	1.67	4.4
SOCIAL & RECREATIONAL	2.44	27.3	2.12	30.0	2.08	26.9
Visiting Friends	2.25	12.1	2.01	13.5	1.82	11.6
Pleasure Driving	3.19	0.9	2.34	1.1	1.99	0.7
Vacation	2.68	0.6	2.52	2.1	2.38	1.5
Other	2.59	13.7	2.15	13.3	2.28	13.1
OTHER & UNKNOWN	2.20	3.3	1.92	1.2	1.49	0.8
ALL PURPOSES	1.89	100.0	1.75	100.0	1.64	100.0

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

FIGURE 7.9

AVERAGE VEHICLE OCCUPANCY BY TRIP PURPOSE (PERSON MILES PER VEHICLE MILE) 1977, 1983, AND 1990 NPTS



NUMBER OF VEHICLE TRIPS BY VEHICLE TYPE AND RIDESHARING STATUS 1990 NPTS (MILLIONS)

Vehicle Type	Single-Occupant	Multi-Occupant	TOTAL
Automobile	85,335	42,359	127,694
	(66.8%)	(33.2%)	(100.0%)
Passenger Van	4,154	3,666	7,820
	(53.1%)	(46.9%)	(100.0%)
argo Van	516	182	698
	(73.9%)	(26.1%)	(100.0%)
ickup Truck	15,451	5,495	20,946
7 Section 12 Action 12 Act	(73.8%)	(26.2%)	(100.0%)
Other Truck	655	333	988
200000000000000000000000000000000000000	(66.3%)	(33.7%)	(100.0%)
V or Motor Home	71	31	102
	(69.6%)	(30.4%)	(100.0%)
lotorcycle	354	132	487
	(72.7%)	(27.1%)	(100.0%)
lóped	7,4	8	82
	(90.2%)	(9.8%)	(100.0%)
Other POV	14	42	56
Î	(25.0%)	(75.0%)	(100.0%)
OTAL!	106,671	52,257	158,927
	(67.1%)	(32.9%)	(100.0%)

TABLE 7.18

NUMBER OF SINGLE-OCCUPANT VEHICLE TRIPS BY VEHICLE TYPE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL ²
Auto	30,818,417	35,863,811	4,291,272	13,839,207	503,449	85,334,642
en and valid the property of the mon	(76.7%)	(81.4%)	(88.0%)	(81.9%)	(76.6%)	(80.0%)
Passenger Van	1,524,547	1,890,798	143,650	523,874	71,149	4,154,018
•	(3.8%)	(4.3%)	(2.9%)	(3.1%)	(10.8%)	(3.9%)
Pickup Truck	6,971,275	5,765,453	419,214	2,210,392	81,615	15,450,616
• • • • • • • • • • • • • • • • • • • •	(17.4%)	(13.1%)	(8.6%)	(13.1%)	(12.4%)	(14.5%)
Motorcycle and Moped	141,343	103,524	16,510	167,075	**	428,452
	(0.4%)	(0.2%)	(0.3%)	(1.0%)	(0.0%)	(0.4%)
Other ¹	689,122	419,734	3,895	142,386	1,421	1,256,558
	(1.7%)	(1.0%)	(0.1%)	(0.8%)	(0.2%)	(1.2%)
TOTAL ²	40,156,697	44,052,476	4,875,928	16,897,704	657,635	106,670,797
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes cargo van, non-pickup truck, RV/motor home and other privately owned vehicles.

^{**} Indicates no data reported.

² Includes trips where vehicle type, trip purpose, or both were unreported.

TABLE 7.19

NUMBER OF MULTI-OCCUPANT VEHICLE TRIPS BY VEHICLE TYPE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL ²
Auto	3,361,569	22,898,951	3,103,347	12,673,739	311,894	42,359,120
	(75.0%)	(81.2%)	(87.2%)	(81.0%)	(85.7%)	(81.1%)
Passenger Van	264,800	2,148,130	247,526	974,047	23,274	3,665,679
*** **** **** **** ***	(5.9%)	(7.6%)	(7.0%)	(6.2%)	(6.4%)	(7.0%)
Pickup Truck	761,195	2,794,344	192,695	1,721,847	23,608	5,495,148
	(17.0%)	(9.9%)	(5.4%)	(11.0%)	(6.5%)	(10.5%)
Motorcycle and Moped	**	41,863	1,607	97,393	**	140,863
	(0.0%)	(0.1%)	(0.0%)	(0.6%)	(0.0%)	(0.3%)
Other ¹	90,844	299,248	13,530	179,404	5,301	588,327
	(2.0%)	(1.1%)	(0.4%)	(1.1%)	(1.5%)	(1.1%)
TOTAL ³	4,480,781	28,184,104	3,558,705	15,650,023	364,077	52,256,670
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes cargo van, non-pickup truck, RV/motor home and other privately owned vehicles.

^{**} Indicates no data reported.

² Includes trips where vehicle type, trip purpose, or both were unreported.

Among all types of privately owned vehicles, trips by pickup trucks, motorcycles or mopeds were considerably more likely to be singleoccupant, reflecting the inherent occupancy limitations of these vehicles. For example, 33.2% of automobile trips were multi-occupant whereas only 26.2% of pickup-truck trips were multi-occupant.

TABLE 7.20

DISTRIBUTION OF VEHICLE TRIPS BY TRIP PURPOSE, VEHICLE TYPE AND RIDESHARING STATUS 1990 NPTS (WITHIN MODE)

	Earning o	ı Living	Pers	y and onal iness		ric, nal, and jious		l and	Oti	ner		TOTAL ²	
	Single	Multi	Single	Multi	Single	Multi	Single	Multi	Single	Multi	Single	Multi	ALL
Auto	24.1	2.6	28.1	17.9	3.4	2.4	10.8	9.9	0.4	0.2	66.8	33.2	100.0
Passenger Van	19.5	3.4	24.2	27.5	1.8	3.2	6.7	12.5	0.9	0.3	53.1	46.9	100.0
Pickup Truck	33.3	3.6	27.5	13.3	2.0	0.9	10.6	8.2	0.4	0.1	73.8	26.2	100.0
Motorcycle and Moped	24.8	**	18.2	7.4	2.9	0.3	29.3	17.1	**	**	<i>75.3</i>	24.7	100.0
Other ¹	37.4	4.9	22.8	16.2	0.2	0.7	7.7	9.7	0.1	0.3	68.1	31.9	100.0
TOTAL ²	25.3	2.8	27.7	17.7	3.1	2.1	10.6	9.8	0.4	0.2	67.1	32.9	100.0

¹ Includes cargo van, non-pickup truck, RV/motor home and other privately owned vehicles.

² Includes trips where vehicle type, trip purpose, or both were unreported.

^{**} Indicates no data reported.

FIGURE 7.10

DISTRIBUTION OF VEHICLE TRIPS BY VEHICLE TYPE AND RIDESHARING STATUS 1990 NPTS

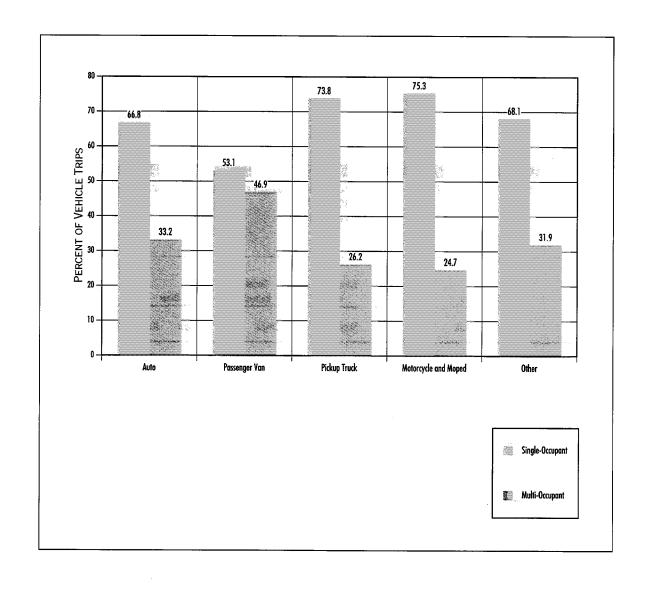


TABLE 7.21

NUMBER OF JOURNEY TO WORK VEHICLE TRIPS BY VEHICLE TYPE AND RIDESHARING STATUS 1990 NPTS (THOUSANDS)

Vehicle Type	Single-Occupant	Multi-Occupant	TOTAL
Automobile	29,143,140	2,949,237	32,092,377
	(76.9%)	(75.3%)	(76.8%)
assenger Van	1,365,401	213,331	1,578,732
•	(3.6%)	(5.4%)	(3.8%)
Cargo Van	266,907	25,172	292,079
•	(0.7%)	(0.6%)	(0.7%)
Pickup Truck	6,601,584	677,384	7,278,968
	(17.4%)	(17.3%)	(17.4%)
Other Truck	343,580	50,318	393,898
	(0.9%)	(1.3%)	(0.9%)
RV or Motor Home	9,055	**	9,055
	(0.0%)	(0.0%)	(0.0%)
Motorcycle	113,435	**	113,435
	(0.3%)	(0.0%)	(0.3%)
Moped	24,111	**	24,111
	(0.1%)	(0.0%)	(0.1%)
Other POV	328	**	328
	(0.0%)	(0.0%)	(0.0%)
TOTAL ¹	37,876,690	3,915,443	41,792,133
	(100.0%)	(100.0%)	(100.0%)

Of all journey to work vehicle trips, 70% were single-occupant in automobiles, 16% were single-occupant in pickup trucks, and another 4% were single-occupant in other vehicle

types. About 10% of journey to work vehicle trips were multi-occupant, and more than half of those were by automobile.

TABLE 7 22

NUMBER OF JOURNEY TO WORK VEHICLE TRIPS BY NUMBER OF OCCUPANTS AND VEHICLE TYPE 1990 NPTS (THOUSANDS)

_	Number of Persons on the Trip				
_	1	2	3	4+	TOTAL
Auto	29,143,140	2,245,724	524,413	179,100	32,092,377
	(69.7%)	(5.4%)	(1.3%)	(0.4%)	(76.8%)
Passenger Van	1,365,401	135,338	30,063	47,930	1,578,732
	(3.3%)	(0.3%)	(0.1%)	(0.1%)	(3.8%)
Pickup Truck	6,601,584	547,596	107,032	22,757	7,278,968
	(15.8%)	(1.3%)	(0.3%)	(0.0%)	(17.4%)
Motorcycle and Moped	137,546	**	**	**	137,546
	(0.3%)	**	**	**	(0.3%)
Other	619,870	64,058	9,784	1,648	695,360
	(7.5%)	(0.2%)	(0.0%)	(0.0%)	(1.7%)
TOTAL'	37,876,690	2,992,716	671,291	251,435	41,792,133
	(90.6%)	(7.2%)	(1.6%)	(0.6%)	(100.0%)

¹ Includes trips where vehicle type was unreported.

^{**} Indicates no data reported.

TABLE 7.23

AVERAGE VEHICLE OCCUPANCY BY TRIP PURPOSE AND VEHICLE TYPE (PERSON MILES PER VEHICLE MILE) 1990 NPTS

Vehicle Type	Earning a Living	Family & Personal Business	Civic, Educational & Religious	Social & Recreational	Other	ALL
Auto	1.14	1.76	1.64	2.02	1.50	1.62
Passenger Van	1.46	2.41	2.81	3.72	1.26	2.55
Cargo Van	1.13	1.39	1. 92	*	1.00	1.24
Pickup Truck	1.18	1.65	1.49	1.80	1.48	1.47
Other Truck	1.25	1.66	*	2.21	**	1.41
RV/Motor Home	1.00	2.67	**	2.51	**	2.55
Motorcycle	1.00	1.43	1.00	1.43	**	1.37
Moped	*	1.08	1.21	1.11	**	1.04
ALL	1.16	1.78	1.67	2.08	1.49	1.64

^{*} Indicates insufficient data reported.

^{**} Indicates no data reported.

Of all vehicle trips, 40% were single-occupant trips less than 5 miles long and 13% were two-person trips less than 5 miles long. The proportion of single-occupant vehicle trips decreased from almost 70% for trips 11-15 miles long to 58% for trips 30 miles or longer.

TABLE 7.24

NUMBER OF VEHICLE TRIPS BY NUMBER OF OCCUPANTS AND TRIP LENGTH 1990 NPTS (THOUSANDS)

	Number of Persons on the Trip						
	1	2	3	4	5-10	11 or More	TOTAL
5 miles or less	63,188,082	20,346,334	6,253,805	2,672,557	1,344,976	6,512	93,812,266
	(67.4%)	(21.7%)	(6.7%)	(2.8%)	(1.4%)	(0.0%)	(100.0%)
6-10 miles	19,361,665	6,087,461	1,783,851	885,051	473,523	6,255	28,597,806
	(67.7%)	(21.3%)	(6.2%)	(3.1%)	(1.7%)	(0.0%)	(100.0%)
11-15 miles	9,556,328	2,759,425	706,276	453,635	214,083	**	13,689,747
	(69.8%)	(20.2%)	(5.2%)	(3.3%)	(1.6%)	**	(100.0%)
16-20 miles	4,921,030	1,599,262	437,137	241,696	142,193	4,381	7,345,699
	(67.0%)	(21.8%)	(6.0%)	(3.3%)	(1.9%)	(0.1%)	(100.0%)
21-30 miles	4,439,743	1,474,501	415,274	258,899	119,883	3,256	6,711,556
	(66.2%)	(22.0%)	(6.2%)	(3.9%)	(1.8%)	(0.0%)	(100.0%)
31 or more miles	3,947,463	1,747,921	562,498	317,794	269,315	11,094	6,856,086
	(57.6%)	(25.5%)	(8.2%)	(4.6%)	(3.9%)	(0.2%)	(100.0%)
TOTAL ¹	106,670,797	34,403,687	10,277,782	4,916,011	2,627,693	31,497	158,927,467
	(67.1%)	(21.6%)	(6.5%)	(3.1%)	(1.7%)	(0.0%)	(100.0%)

FIGURE 7.11

DISTRIBUTION OF VEHICLE TRIPS BY NUMBER OF OCCUPANTS AND SELECTED TRIP LENGTH 1990 NPTS

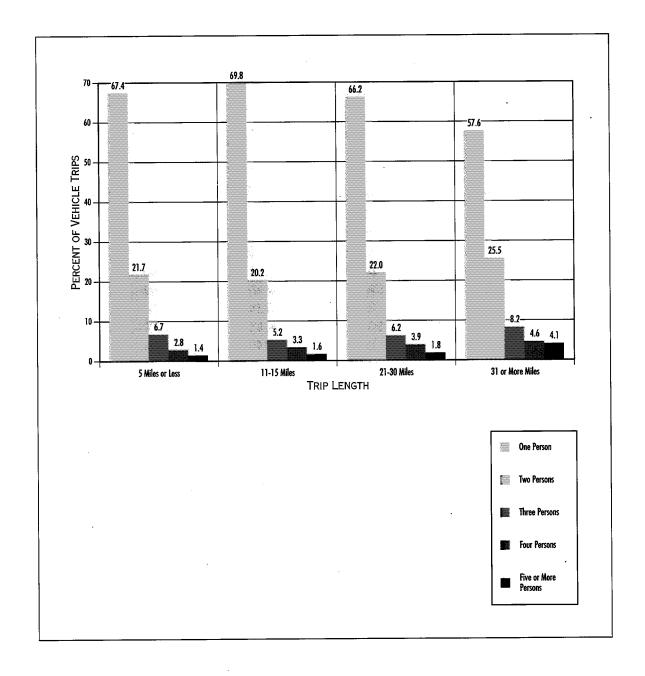


TABLE 7.25

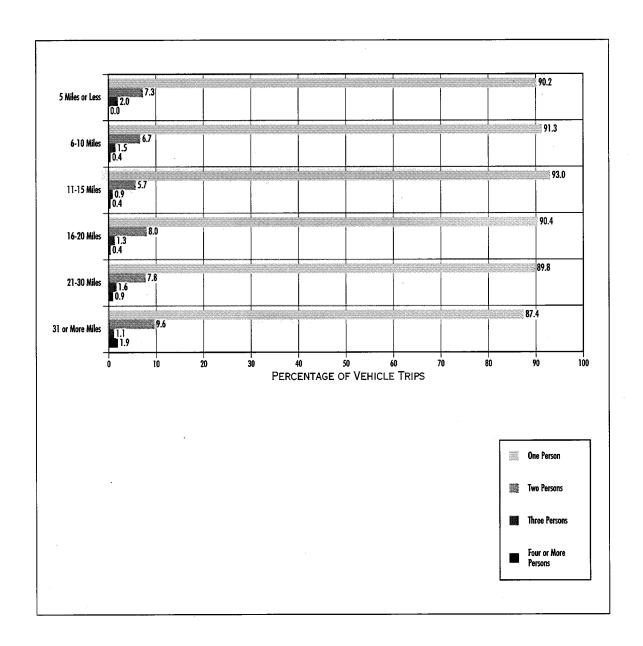
NUMBER OF JOURNEY TO WORK VEHICLE TRIPS BY NUMBER OF OCCUPANTS AND TRIP LENGTH 1990 NPTS (THOUSANDS)

		Number of Persons on the Trip						
	1	2	3	4 or More	TOTAL			
5 miles or less	16,177,290	1,301,642	357,310	101,850	17,938,092			
	(90.2%)	(7.3%)	(2.0%)	(0.6%)	(100.0%)			
6-10 miles	8,626,772	636,004	146,277	38,220	9,447,273			
	(91.3%)	(6.7%)	(1.5%)	(0.4%)	(100.0%)			
11-15 miles	5,081,880	313,291	48,037	22,509	5,465,717			
	(93.0%)	(5.7%)	(0.9%)	(0.4%)	(100.0%)			
16-20 miles	2,825,876	248,655	40,425	11,664	3,126,621			
	(90.4%)	(8.0%)	(1.3%)	(0.4%)	(100.0%)			
21-30 miles	2,619,678	226,935	45,316	26,568	2,918,498			
	(89.8%)	(7.8%)	(1.6%)	(0.9%)	(100.0%)			
31 or more miles	2,098,265	229,324	26,999	46,592	2,401,180			
	(87.4%)	(9.6%)	(1.1%)	(1.9%)	(100.0%)			
TOTAL'	37,876,690	2,992,716	671,291	251,435	41,792,133			
	(90.6%)	(7.2%)	(1.6%)	(0.6%)	(100.0%)			

Similar to other types of trips, when journey to work trips were 30 miles or longer, the likelihood of sharing rides became considerably greater than in shorter trips. Also, longer journey to work trips had a greater percentage of trips with more than three individuals on the trip.

FIGURE 7.12

DISTRIBUTION OF JOURNEY TO WORK VEHICLE TRIPS BY NUMBER OF OCCUPANTS AND TRIP LENGTH 1990 NPTS



The vehicle occupancy rate of journey to work trips, expressed as the number of person trips per vehicle trip, declined from 1977 to 1990. Carpooling was more common as trip distance increased. In 1990, there were

1.1 persons for every vehicle trip that was shorter than 20 miles. For trips longer than 20 miles, the corresponding rate increased to 1.2 persons for every vehicle trip.

TABLE 7.26

AVERAGE JOURNEY TO WORK VEHICLE OCCUPANCY BY TRIP LENGTH (PERSON TRIP PER VEHICLE TRIP) 1977, 1983, AND 1990 NPTS¹

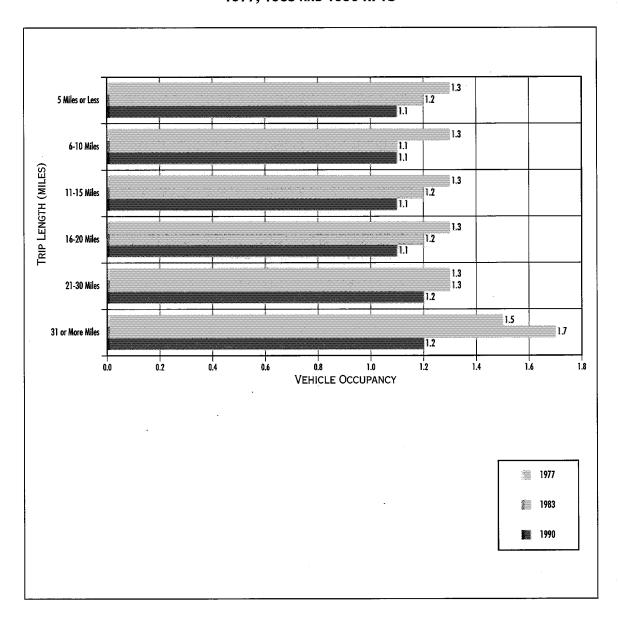
			•	Trip Length (Miles)			
	5 or Less	6-10	11-15	16-20	21-30	31 or More	ALL
1977²	1.3	1.3	1.3	1.3	1.3	1.5	1.3
1983 ²	1.2	1.1	1.2	1.2	1.3	1.7	1.2
1990	1.13	1.11	1.09	1.12	1.15	1.19	1.13

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

² Occupancy rates from 1977 and 1983 were only calculated to tenths, not hundredths.

FIGURE 7.13

AVERAGE JOURNEY TO WORK VEHICLE OCCUPANCY BY TRIP LENGTH (PERSON TRIP PER VEHICLE TRIP) 1977, 1983 AND 1990 NPTS



Tables 7.26 and 7.27 report vehicle occupancy rates for journey to work trips. Table 7.26 defines vehicle occupancy as the number of person trips per vehicle trip. Table 7.27 defines vehicle occupancy as person miles travelled per vehicle mile travelled. As indicated earlier, vehicle occupancy rate defined

as person miles travelled per vehicle mile travelled takes into account the trip length and, therefore, is preferred for some analyses. In 1977 and 1983, vehicle occupancy increased significantly for trips over 30 miles. In 1990, there is only a slight increase in occupancy for trips over 30 miles.

TABLE 7.27

AVERAGE JOURNEY TO WORK VEHICLE OCCUPANCY BY TRIP LENGTH
(PERSON MILES PER VEHICLE MILE)
1977, 1983, AND 1990 NPTS¹

			•	Trip Length (Miles)			
	5 or Less	6-10	11-15	16-20	21-30	31 or More	ALL
1977²	1.2	1.3	1.3	1.3	1.3	1.6	1.3
1983 ²	1.2	1.1	1.1	1.2	1.3	. 1.8	1.3
1990	1.12	1.11	1.09	1.12	1.14	1.21	1.14

¹ For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

Occupancy rates from 1977 and 1983 were only calculated to tenths, not hundredths.

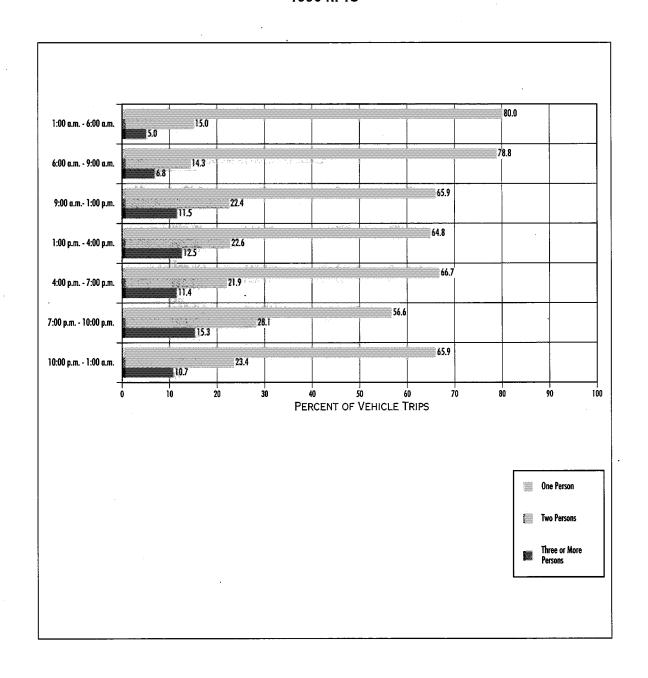
TABLE 7.28

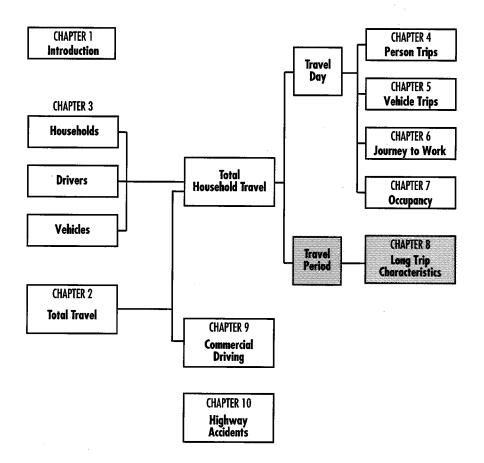
Number of Vehicle Trips by Number of Occupants and Time of Day 1990 NPTS (THOUSANDS)

	Number of Persons on the Trip						
	1	2	3	4	5-10	11 or More	TOTAL
1:00 a.m 6:00 a.m.	2,906,878	546,188	102,076	58,412	20,948	**	3,634,502
	(80.0%)	(15.0%)	(2.8%)	(1.6%)	(0.6%)	**	(100.0%)
6:00 a.m 9:00 a.m.	17,687,642	3,215,178	1,018,291	301,323	230,467	5,623	22,458,523
	(78.8%)	(14.3%)	(4.5%)	(1.3%)	(1.0%)	(0.0%)	(100.0%)
9:00 a.m 1:00 p.m.	21,991,527	7,478,494	2,274,575	1,048,480	546,625	9,883	33,349,583
·	(65.9%)	(22.4%)	(6.8%)	(3.1%)	(1.6%)	(0.0%)	(100.0%)
1:00 p.m 4:00 p.m.	19,885,922	6,934,066	2,315,363	949,282	578,793	6,985	30,670,411
•	(64.8%)	(22.6%)	(7.5%)	(3.1%)	(1.9%)	(0.0%)	(100.0%)
4:00 p.m 7:00 p.m.	24,797,031	8,137,953	2,412,751	1,201,242	623,297	4,734	37,177,009
	(66.7%)	(21.9%)	(6.5%)	(3.2%)	(1.7%)	(0.0%)	(100.0%)
7:00 p.m 10:00 p.m.	10,782,772	5,347,218	1,525,619	919,039	477,775	4,273	19,056,694
	(56.6%)	(28.1%)	(8.0%)	. (4.8%)	(2.5%)	(0.0%)	(100.0%)
10:00 p.m 1:00 a.m.	4,238,998	1,505,184	354,100	255,858	77,212	**	6,431,353
***************************************	(65.9%)	(23.4%)	(5.5%)	(4.0%)	(1.2%)	**	(100.0%)
TOTAL'	106,670,797	34,403,687	10,277,782	4,916,011	2,627,693	31,497	158,927,467
	(67.1%)	(21.6%)	(6.5%)	(3.1%)	(1.7%)	(0.0%)	(100.0%)

Figure 7.14

DISTRIBUTION OF VEHICLE TRIPS BY NUMBER OF OCCUPANTS AND TIME OF DAY 1990 NPTS





CHARACTERISTICS OF LONGER TRIPS

CHAPTER 8

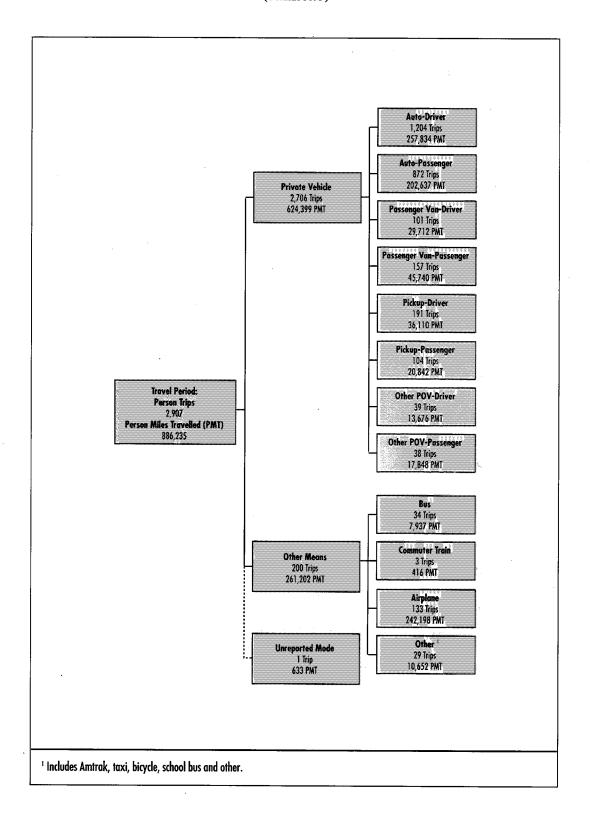
CHARACTERISTICS OF LONGER TRIPS



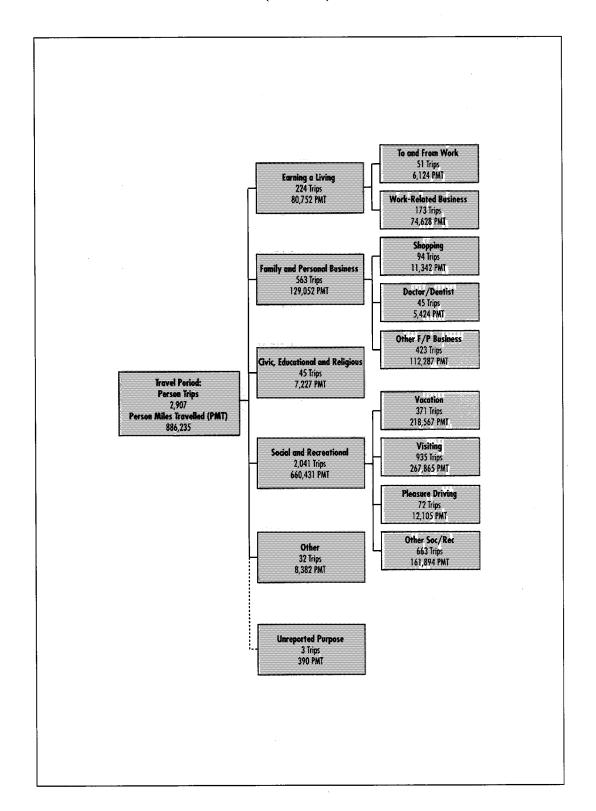
IN 1990, LONG-DISTANCE TRAVEL ACCOUNTED FOR 18% OF THE TOTAL VEHICLE MILES OF TRAVEL.

- Most were by personal vehicles for social and recreational purposes during spring and summer months.
- Increased with household income.
- Two-thirds was less than 200 miles long.
- Destinations depended on the size of the origins.

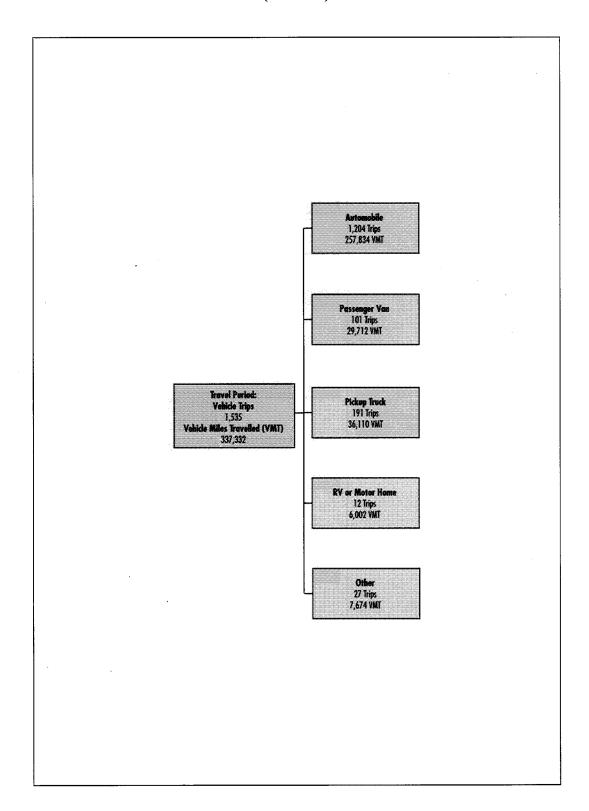
1990 TRAVEL PERIOD PERSON TRIPS/PMT BY MODE



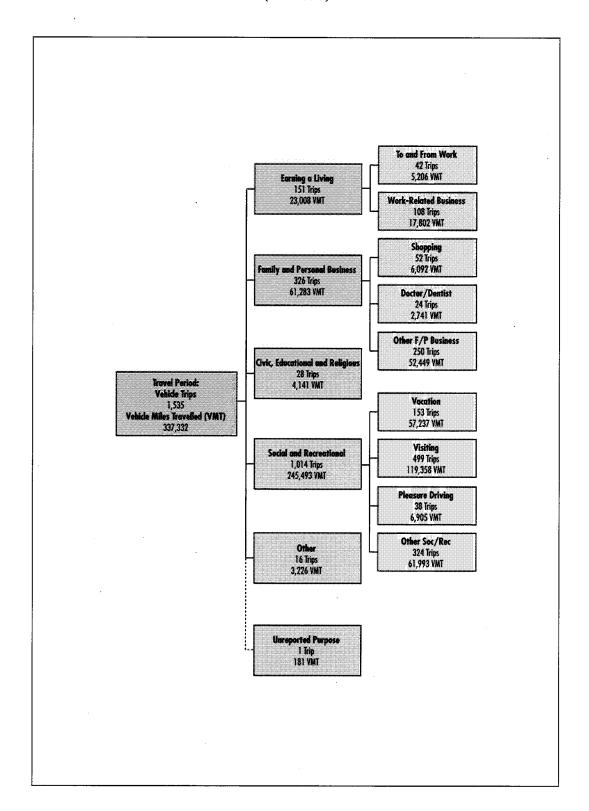
1990 TRAVEL PERIOD PERSON TRIPS/PMT BY PURPOSE



1990 TRAVEL PERIOD VEHICLE TRIPS/VMT BY VEHICLE TYPE



1990 TRAVEL PERIOD VEHICLE TRIPS/VMT BY PURPOSE



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CHAPTER 8 CHARACTERISTICS OF LONGER TRIPS

In one section of the 1990 NPTS questionnaire, data were collected on longer trips. A long trip is defined as a trip that meets the following two criteria: (1) the trip is 75 miles or longer one-way, and (2) the respondent returned home during the travel period (the fourteen-day period ending on the travel day). Trips collected in this section of the questionnaire are referred to as "travel period trips". The recall period for the travel period was fourteen days in order to collect a sufficient number of long trips for analysis.

Data on travel period trips were collected for all household members 5 years or older. As noted earlier, data on household members between the ages of 5 and 13 were provided by a knowledgeable household member 14 years or older. Furthermore, proxy interviews were allowed in the 1990 survey if household members 14 years or older could not be reached after repetitive contacts.

Information was collected on trip destination, trip purpose, main means of transportation, number of persons travelling together, number of miles driven, the household vehicle used for the trip (if a household vehicle was used), etc. Similar information was obtained for both the outgoing and return portions of each trip.

Long-distance travel is considerably less frequent than typical daily travel. Estimates of long-distance travel based on data collected in the travel period section cannot be annualized, on a per household or per capita basis, as simply as annualizing daily trips collected in the travel day section. To predict the average number of long-distance trips taken in a year based on travel patterns observed in a two-week period, one needs to take into account not only travelers' demographics, household characteristics, and vehicle ownership patterns, but also trip purposes and sea-

sonality effects. For example, if the two-week travel period for a household was during summer months, it would be erroneous to assume that long-distance travel patterns throughout the year for this household would follow patterns similar to those collected in the summer months. Consequently, one should <u>not</u> estimate long-distance trip rates on a per household or per capita basis without developing a statistical procedure to accurately annualize the data.

The 1990 NPTS survey estimated that:

- There were 1.5 billion travel-period vehicle trips, and 2.9 billion travelperiod person trips taken in 1990;
- These trips amounted to 337 billion vehicle miles of travel and 886 billion person miles of travel;
- Average length of a one-way travelperiod vehicle trip was 220 miles;
- High income households tended to take more travel period trips and more travel period trips for work-related purposes than households in other income groups;
- Almost 90 percent of the households with a single retired adult and with no children did not take any long trips during the two-week recall period, while the corresponding percentage was 64 percent for households with two or more adults and with their youngest children between the ages 16 and 21;
- The majority of travel-period trips were by privately owned vehicles for social and recreational purposes during the spring and summer; and
- Sixty-eight percent of the travel-period trips were to places less than 200 miles from home.

Due to definitional differences, straightforward comparison cannot be made between trip estimates based on the NPTS data and trip estimates based on the 1990 National Travel Survey (NTS) conducted by the U.S. Travel Data Center. First, a trip in the NTS consists of both outgoing and return portions of the trip, while the NPTS considers the outgoing trip and the return trip as separate trips. Second, a trip in the NTS is at least 100 miles long while a trip in the NPTS's travel period section is at least 75 miles long one-way. Third, journeys to work and trips taken by students to and from school are not included in the NTS. Fourth, the trip purpose

categories used in each survey are not identical. To maximize the compatibility between these two surveys, trips recorded in the travel period section of the 1990 NPTS questionnaire are modified to be consistent as much as possible with those in the NTS -- (1) both outgoing and return portions of the trip are counted as one trip. (2) only trips 100 miles long one-way are included, and (3) journeys to work are excluded. Although Tables 8.1 and 8.2 provide some comparisons of trip estimates based on these two surveys, the reader is cautioned in interpreting these comparisons.

TABLE 8.1

COMPARISONS OF LONG-DISTANCE PERSON TRIPS BASED ON NTS DATA AND NPTS DATA BY TRIP PURPOSE 1990 NPTS AND NTS

	NTS Data¹	NPTS Data ²
Projected Person Trips (000,000)	1,274.5	1,052.1
Business	16%³	5.9%4
Civic, Educational or Religious	** 5	1.1%
Social, Recreational or Pleasure	76%	73.6%
Family and Personal Business or Other	7%6	19.3%
Unreported	**	0.1%
omoponiou ,	<u> </u>	

- ¹ Source: 1990 National Travel Survey, conducted by the U.S. Travel Data Center, Washington, D.C.
- $^{\rm 2}$ NPTS data are adjusted to conform to NTS's definition of "a trip".
- ³ Includes any trip where the purpose of the trip is given as "business, convention, seminar or meeting".
- 4 Includes work related trips only.

- 5 NTS data does not include any trips taken by students to or from school.
- 6 Includes medical, funeral, wedding and other.
- "Indicates no data reported.

TABLE 8.2

COMPARISONS OF LONG-DISTANCE PERSON TRIPS BASED ON NTS DATA AND NPTS DATA BY MODE OF TRANSPORTATION 1990 NPTS AND NTS

NTS Data¹	NPTS Data ²
1,274.5	1,052.1
79 %³	79.4%
**	9.3%
**	0.3%
THE MET SAME PROPERTY OF PROPERTY OF THE SECOND OF THE SEC	S. 1. 100 S. 101 S. 101 S. 102 S. 103 S.
17%4	6.0%
2%	1.4%
1%	0.04%
1%	0.8%
	1,274.5 79%³ ** ** 17%⁴ 2% 1%

¹ Source: 1990 National Travel Survey, conducted by the U.S. Travel Data Center, Washington, D.C.

² NPTS data are adjusted to conform to NTS's definition of "a trip".

³ Includes rental cars..

Includes any trip in which the one type of transportation used to cover most of the miles on that trip is given as "airplane".

Includes some trips where mode was unable to be determined because a different mode was used for either the outgoing portion or the return portion of the trip.

[&]quot;Indicates no data reported.

In order to understand longer trips in the total context of travel, Table 8.3 presents summary data showing the distribution of travel by travel day (typically daily travel),

travel period (longer trips) and commercial driving (e.g. truck driver, bus driver, etc.). See Chapter 2 for a more complete discussion of total estimates of travel.

TABLE 8.3

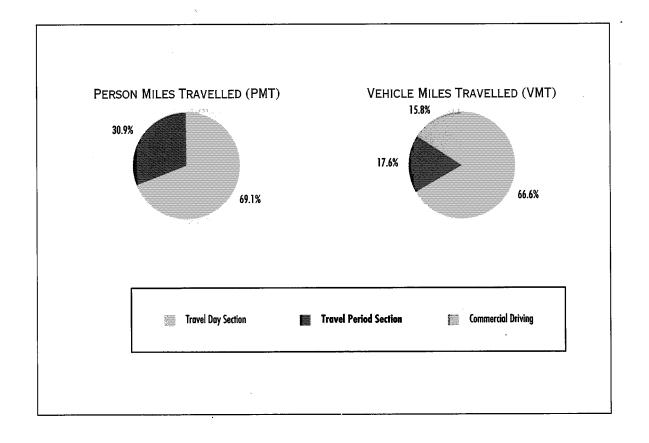
TRAVEL SUMMARY STATISTICS BY DATA SOURCE¹ 1990 NPTS (MILLIONS)

	Estimate of Annual Miles Based on Various Data Sources						
	Travel Day Section Adjusted ²	Travel Period Section	Commercial Driving Section	TOTAL			
Person Miles Travelled (PMT)	1,982,068 (333,205)	886,235	**	2,868,303			
Vehicle Miles Travelled (VMT)	1, 275,792 (133,784)	337,332	303,118	1,916,242			
Refer to Chapter 2 for more of sources. "Indicates no data available.	explanations concerning different data	ping trips. TI to avoid dou	in the parentheses are the travel e hese estimates are excluded from th ble-counting. Travel day estimate w red to as the "Travel Day Section Ac	e travel day estimates rithout overlapping			

⁸⁻⁵

FIGURE 8 1

DISTRIBUTION OF SUMMARY STATISTICS BY DATA SOURCE 1990 NPTS



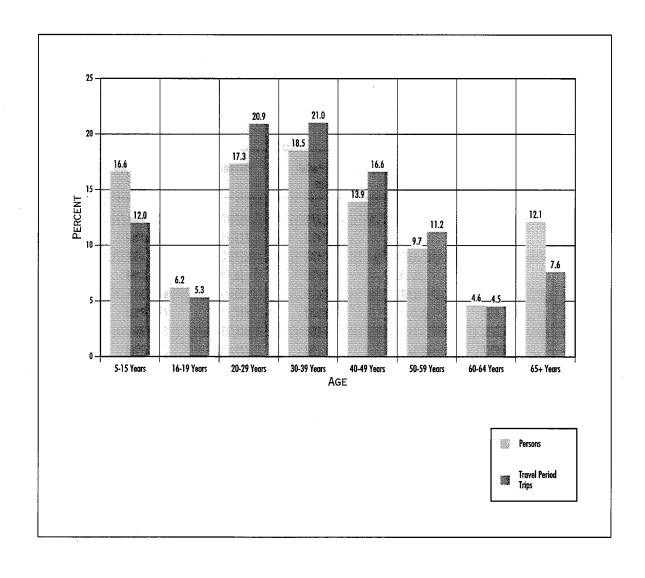
Individuals between the ages of 20 and 59 took a proportionally greater number of long-distance trips. This was true for both males and females. Trip rates for long-distance travel declined for individuals 65 or older.

NUMBER OF PERSONS AND TRAVEL PERIOD PERSON TRIPS BY AGE AND SEX 1990 NPTS (THOUSANDS)

	Mc	ile	Fem	ale	TOTAL		
Age	Travel Period Trips	Persons	Travel Period Trips	Persons	Travel Period Trips	Persons	
5-15	179,012	18,997	168,779	17,973	347,791	36,970	
***************************************	(11.6%)	(17.9%)	(12.4%)	(15.5%)	(12.0%)	(16.6%)	
16-19	76,829	6,727	77,527	7,124	154,357	13,851	
	(5.0%)	(6.3%)	(5.7%)	(6.1%)	(5.3%)	(6.2%)	
20-29	329,883	18,471	278,673	19,851	608,556	38,322	
ander - Sababanas anno anno anno anno a	(21.3%)	(17.4%)	(20.5%)	(17.1%)	(20.9%)	(17.3%)	
30-39	323,775	19,821	287,188	21,337	610,962	41,158	
***	(20.9%)	(18.7%)	(21.1%)	(18.4%)	(21.0%)	(18.5%)	
40-49	264,733	15,035	218,843	15,734	483,576	30,769	
***	(17.1%)	(14.2%)	(16.1%)	(13.6%)	(16.6%)	(13.9%)	
50-59	171,553	10,400	153,298	11,221	324,851	21,621	
****	(11.1%)	(9.8%)	(11.3%)	(9.7%)	(11.2%)	(9.7%)	
60-64	71,319	4,649	60,357	5,479	131,676	10,128	
	(4.6%)	(4.4%)	(4.4%)	(4.7%)	(4.5%)	(4.6%)	
65+	120,390	11,325	99,630	15,615	220,020	26,940	
****	(7.8%)	(10.7%)	(7.3%)	(13.5%)	(7.6%)	(12.1%)	
Unreported	10,171	739	14,188	1,515	25,282	2,342	
•	(0.6%)	(0.7%)	(1.0%)	(1.3%)	(0.9%)	(1.1%)	
TOTAL	1,547,665	106,164	1,358,483	115,849	2,907,0711	222,101	
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	

FIGURE 8.2

DISTRIBUTION OF PERSONS AND TRAVEL PERIOD PERSON TRIPS BY AGE 1990 NPTS



Households without children were more likely to select airplanes for their long-distance travel than households with children. Those households used privately owned vehicles more for their long-distance travel. The cost of airfares for the entire household is one probable reason for the prevalence of POV travel in households with children.

Table 8.5

Number of Travel Period *Person* Trips by Household Composition and Mode of Transportation 1990 NPTS (THOUSANDS)

	Private Vehicle	Bus	Airplane	Other	TOTAL
Single adult, no children	222,647	4,957	15,016	3,845	246,464
	(90.3%)	(2.0%)	(6.1%)	(1.6%)	(100.0%)
Two or more adults, no children	832,629	10,015	51,530	9,156	903,966
	(92.1%)	(1.1%)	(5.7%)	(1.0%)	(100.0%)
Single adult, youngest child under 6	29,275	503	1,136	10	30,924
	(94.7%)	(1.6%)	(3.7%)	(0.0%)	(100.0%)
Two or more adults, youngest child under 6	507,071	3,872	18,088	4,863	534,115
	(94.9%)	(0.7%)	(3.4%)	(0.9%)	(100.0%)
Single adult, youngest child 6-15	65,658	1,264	1,028	1,543	69,507
	(94.5%)	(1.8%)	(1.5%)	(2.2%)	(100.0%)
Two or more adults, youngest child 6-15	563,212	6,952	19,680	8,787	598,631
38 (1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	(94.1%)	(1.2%)	(3.3%)	(1.5%)	(100.0%)
Single adult, youngest child 16-21	17,807	582	313	333	19,034
	(93.6%)	(3.1%)	(1.6%)	(1.7%)	(100.0%)
Two or more adults, youngest child 16-21	172,979	1,736	6,870	934	182,617
** (#\$	(94.7%)	(1.0%)	(3.8%)	(0.5%)	(100.0%)
Single adult, retired, no children	42,392	1,937	3,836	815	48,980
	(86.5%)	(4.0%)	(7.8%)	(1.7%)	(100.0%)
Two or more adults retired, no children	235,191	2,108	13,447	2,318	253,338
	(92.8%)	(0.8%)	(5.3%)	(0.9%)	(100.0%)
Unreported	17,231	**	2,265	**	19,496
,	(88.4%)	(0.0%)	(11.6%)	(0.0%)	(100.0%)
TOTAL	2,706,091	33,926	133,208	32,603	2,907,071
	(93.1%)	(1.2%)	(4.6%)	(1.1%)	(100.0%)

The 1990 NPTS estimated that American households took a total of 1.5 billion vehicle trips at least 75 miles long in 1990. These long trips amounted to more than 337 billion

vehicle miles of travel. Travel by households with annual income more than \$40,000 accounted for 36% of the total long-distance driving, both in terms of trips and miles.

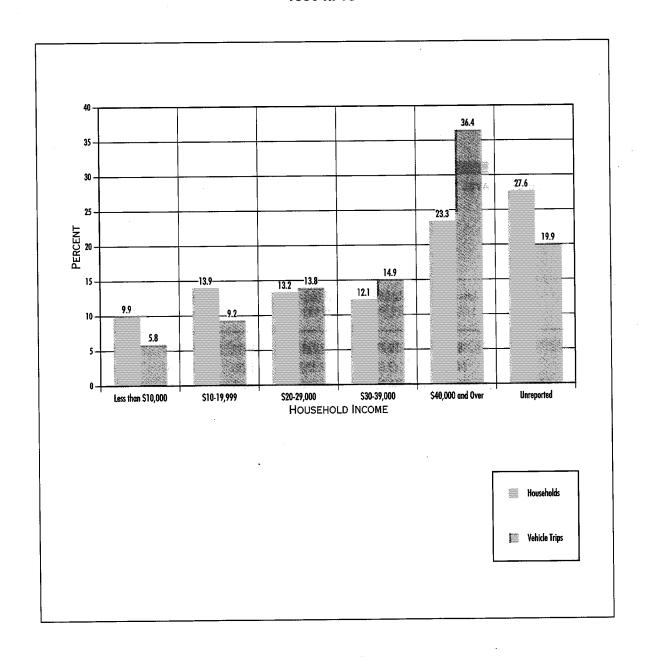
TABLE 8

SUMMARY STATISTICS ON TRAVEL PERIOD VEHICLE TRIPS BY HOUSEHOLD INCOME 1990 NPTS

Income	Number of Households me (000)		Travel Period <i>Vehicle</i> Trips (000)		Travel Period <i>Vehicle</i> Miles of Travel (000,000)		Average Travel Period Trip Lengths (miles)	
Under \$10,000	9,252	(9.9%)	89,472	(5.8%)	17,734	(5.3%)	198.2	
\$10,000-\$19,999	13,011	(13.9%)	141,794	(9.2%)	35,961	(10.7%)	253.6	
\$20,000-\$29,999	12,294	(13.2%)	211,489	(13.8%)	39,847	(11.8%)	188.4	
\$30,000-\$39,999	11,323	(12.1%)	228,192	(14.9%)	57,149	(16.9%)	250.4	
>\$40,000	21,704	(23.3%)	559,525	(36.4%)	123,071	(36.5%)	220.0	
Unreported	25,762	(27.6%)	304,794	(19.9%)	63,571	(18.8%)	208.6	
TOTAL	93,347	(100.0%)	1,535,265	(100.0%)	337,332	(100.0%)	219.7	

FIGURE 8.3

DISTRIBUTION OF HOUSEHOLDS AND TRAVEL PERIOD VEHICLE TRIPS BY HOUSEHOLD INCOME 1990 NPTS



In terms of person trips by all modes, households with annual income greater than \$40,000 took more long-distance person trips by all modes than households in other income groups — 38% of the 2.9 billion long-distance person trips estimated in the 1990

NPTS. Social and recreational activities generated approximately 70% of total travel period person trips. High-income households took more long-distance trips for work-related business and took longer trips than households in other income groups.

Number of Travel Period Person Trips by Household Income and Trip Purpose
1990 NPTS

	Less than \$10,000	\$10,000- \$19,999	\$20,000- \$29,999	\$30,000- \$39,999	\$40,000 or More	Unreported	TOTAL
Earning a Living	8,121	10,710	27,761	26,292	100,617	50,807	224,308
	(4.9%)	(3.9%)	(7.3%)	(6.2%)	(9.2%)	(8.9%)	(7.7%)
Family and Personal Business	26,955	60,055	90,796	67,458	205,665	111,799	562,728
	(16.1%)	(21.7%)	(24.0%)	(15.8%)	(18.9%)	(19.7%)	(19.4%)
Civic, Educational, & Religious	4,333	5,795	4,565	7,152	16,307	7,282	45,434
	(2.6%)	(2.1%)	(1.2%)	(1.7%)	(1.5%)	(1.3%)	(1.6%)
Social & Recreational	125,466	196,745	250,464	320,620	756,847	390,220	2,040,362
	(75.1%)	(71.0%)	(66.2%)	(75.2%)	(69.4%)	(68.7%)	(70.2%)
Other ¹	2,122	3,780	4,578	4,937	10,785	8,037	34,239
·	(1.3%)	(1.3%)	(1.2%)	(1.1%)	(1.0%)	(1.4%)	(1.1%)
TOTAL	166,997	277,085	378,164	426,459	1,090,221	568,145	2,907,071
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
Average Trip Length (Miles)	277	281	263	303	336	294	305

TABLE 8.8

NUMBER OF TRAVEL PERIOD PERSON TRIPS BY HOUSEHOLD INCOME AND MODE OF TRANSPORTATION 1990 NPTS (THOUSANDS)

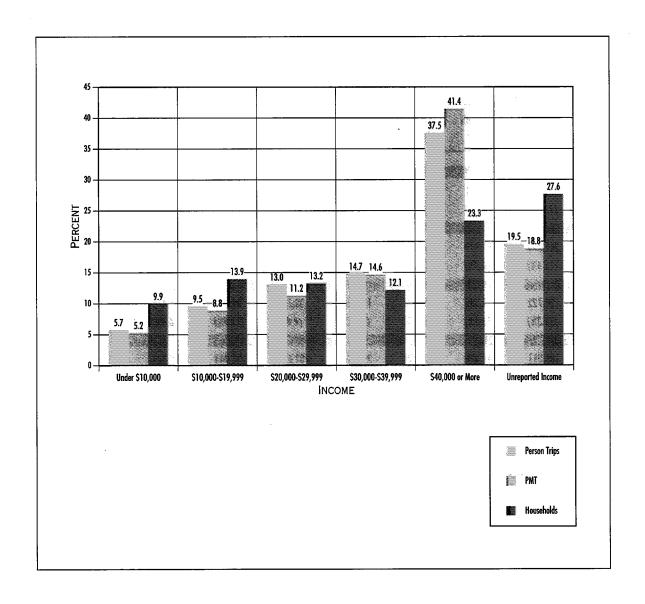
Income	Private Vehicle	Bus	Commuter Train	Amtrak	Airplane	Other	TOTAL
Under \$10,000	150,974	4,583	147	3,226	6,346	1,409	166,997
	(90.4%)	(2.7%)	(0.1%)	(1.9%)	(3.8%)	(0.8%)	(100.0%)
\$10,000 - \$19,999	262,152	5,900	68	478	7,656	831	277,086
	(94.6%)	(2.1%)	(0.0%)	(0.2%)	(2.8%)	(0.3%)	(100.0%)
\$20,000 - \$29,999	360,520	3,623	**	259	12,136	1,614	378,164
	(95.3%)	(1.0%)	(0.0%)	(0.1%)	(3.2%)	(0.4%)	(100.0%)
\$30,000 - \$39,999	404,281	5,849	461	1,992	10,375	3,402	426,459
, ,	(94.8%)	(1.4%)	(0.1%)	(0.5%)	(2.4%)	(0.8%)	(100.0%)
\$40,000 or More	1,004,337	7,399	2,081	5,380	64,533	5,945	1,090,221
	(92.1%)	(0.7%)	(0.2%)	(0.5%)	(5.9%)	(0.5%)	(100.0%)
Unreported	523,827	6,572	486	1,452	32,162	3,373	568,145
İ	(92.2%)	(1.2%)	(0.1%)	(0.3%)	(5.7%)	(0.6%)	(100.0%)
TOTAL	2,706,091	33,926	3,244	12,786	133,208	16,574	2,907,071
	(93.1%)	(1.2%)	(0.1%)	(0.4%)	(4.6%)	(0.6%)	(100.0%)

NUMBER OF TRAVEL PERIOD PERSON MILES OF TRAVEL BY HOUSEHOLD INCOME AND MODE OF TRANSPORTATION 1990 NPTS (MILLIONS)

Income	Private Vehicle	Bus	Commuter Train	Amtrak	Airplane	Other	TOTAL
Under \$10,000	32,024	1,463	14	643	11,875	215	46,258
	(69.2%)	(3.2%)	(0.0%)	(1.4%)	(25.7%)	(0.5%)	(100.0%)
\$10,000 - \$19,999	61,300	1,309	7	77	15,141	120	77,953
	(78.6%)	(1.7%)	(0.0%)	(0.1%)	(19.4%)	(0.2%)	(100.0%)
\$20,000 - \$29,999	73,061	896	**	78	24,992	431	99,459
	(73.5%)	(0.9%)	(0.0%)	(0.1%)	(25.1%)	(0.4%)	(100.0%)
\$30,000 - \$39,999	108,229	1,194	133	373	18,132	952	129,042
	(83.9%)	(0.9%)	(0.1%)	(0.3%)	(14.1%)	(0.7%)	(100.0%)
\$40,000 or More	234,046	1,594	223	4,065	124,452	2,167	366,659
	(63.8%)	(0.4%)	(0.1%)	(1.1%)	(33.9%)	(0.6%)	(100.0%)
Unreported	115,740	1,481	40	316	47,607	1,215	166,865
	(69.4%)	(0.9%)	(0.0%)	(0.2%)	(28.5%)	(0.7%)	(100.0%)
TOTAL	624,400	7,937	416	5,552	242,198	5,100	886,235
	(70.5%)	(0.9%)	(0.0%)	(0.6%)	(27.3%)	(0.6%)	(100.0%)

FIGURE 8.4

DISTRIBUTION OF TRAVEL PERIOD PERSON TRAVEL AND HOUSEHOLDS BY HOUSEHOLD INCOME 1990 NPTS

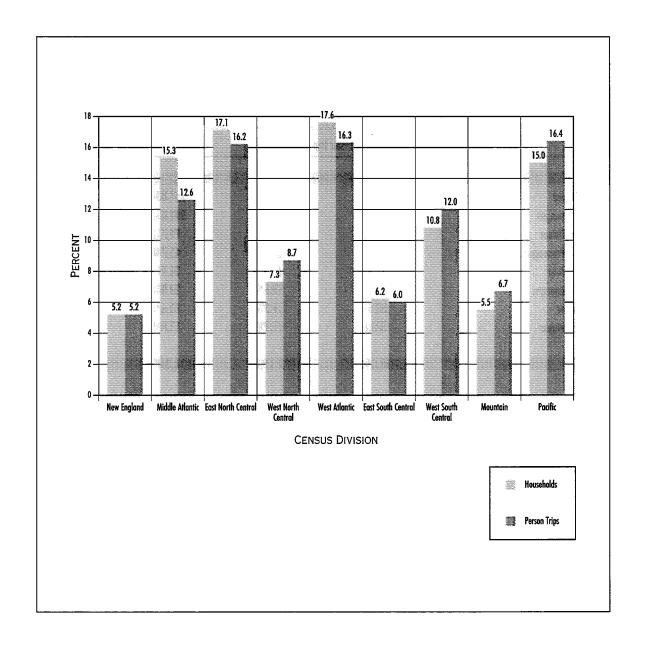


SUMMARY STATISTICS ON TRAVEL PERIOD TRIPS BY CENSUS DIVISION¹ 1990 NPTS

New England	Middle Atlantic	East North Central	West North Central	South Atlantic	East South Central	West South Central	Mountain	Pacific	TOTAL
Number of	Households (000)							
4,826	14,301	15, 96 1	6,799	16,428	5,777	10,057	5,160	14,038	93,347
(5.2%)	(15.3%)	(17.1%)	(7.3%)	(17.6%)	(6.2%)	(10.8%)	(5.5%)	(15.0%)	(100.0%)
Number of	Person Trips	(000)							
152,362	366,530	469,919	251,359	472,526	174,454	349,895	193,558	476,468	2,907,071
(5.2%)	(12.6%)	(16.2%)	(8.7%)	(16.3%)	(6.0%)	(12.0)	(6.7%)	(16.4%)	(100.0%)
Person Mile	s of Travel [000,000)							
36,009	108,722	142,382	59,436	152,969	39,160	99,354	61,415	186,788	886,235
(4.1%)	(12.3%)	(16.1%)	(6.7%)	(17.3%)	(4.4%)	(11.2%)	(6.9%)	(21.1%)	(100.0%)
Number of	Vehide Trips	(000)							
83,313	185,811	249,379	129,429	252,637	101,635	191,944	99,189	241,927	1,535,265
(5.4%)	(12.1%)	(16.2%)	(8.4%)	(16.5%)	(6.6%)	(12.5%)	(6.5%)	(15.8%)	(100.0%)
Vehide Mil	s of Travel (000,000)							
14,624	37,772	57,810	26,511	62,957	19,412	42,861	22,944	52,441	337,332
(4.3%)	(11.2%)	(17.1%)	<i>(7.9%)</i>	(18.7%)	(5.8%)	(12.7%)	(6.8%)	(15.5%)	(100.0%)
¹ See Glossar	y for a listing of	states in each Ce	nsus Division.						

FIGURE 8.5

DISTRIBUTION OF HOUSEHOLDS AND TRAVEL PERIOD PERSON TRIPS BY CENSUS DIVISION 1990 NPTS



Most travel period trips were taken by private vehicles. Considering only person trips taken by private vehicle, 56.7% were taken as the drivers of these trips; and the remaining 43.3% were taken as passengers. Although the trips taken by private vehicles amounted

to 93% of the total travel period person trips, they only accounted for 70% of the total miles of travel. This difference was accounted for by trips taken by airplane, which comprised 4.6% of the total number of trips and yet 27.3% of the total mileage.

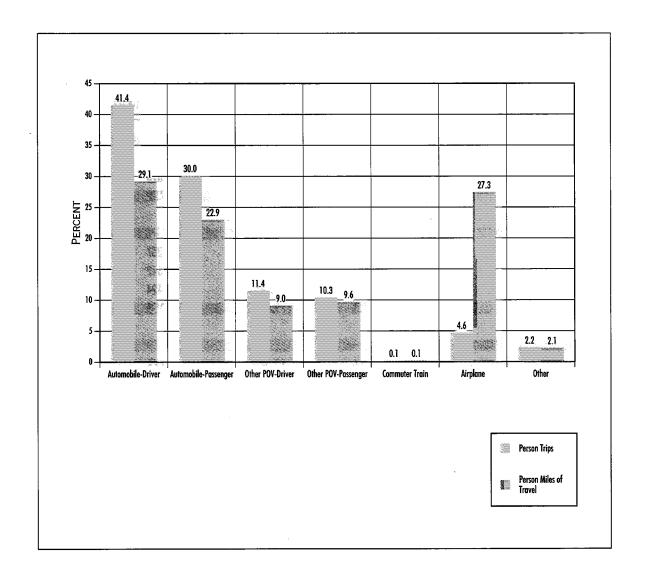
TABLE 8.11

NUMBER OF TRAVEL PERIOD PERSON TRIPS AND TRAVEL PERIOD PERSON MILES OF TRAVEL BY MODE OF TRANSPORTATION 1990 NPTS

Mode	Person	Trip (000)	Person Miles o	of Travel (000,000)
Private Vehicle) 1986.	. W		
Automobile-Driver	1,204,043	(41.4%)	257,834	(29.1%)
Automobile-Passenger	872,137	(30.0%)	202,637	(22.9%)
Passenger Van-Driver	101,323	(3.5%)	29,712	(3.4%)
Passenger Van-Passenger	156,604	(5.4%)	45,740	(5.2%)
Pickup Truck-Driver	191,352	(6.6%)	36,110	(4.1%)
Pickup Truck-Passenger	104,222	(3.6%)	20,842	(2.4%)
Other POV-Driver	38,548	(1.3%)	13,676	(1.5%)
Other POV-Passenger	37,863	(1.3%)	17,848	(2.0%)
Subtotal	2,706,092	(93.1%)	624,399	(70.5%)
Other Means				
Bus	33,926	(1.2%)	7,937 .	(0.9%)
Commuter Train	3,244	(0.1%)	416	(0.05%)
Amtrak	12,786	(0.4%)	5,552	(0.6%)
Airplane	133,208	(4.6%)	242,198	(27.3%)
School Bus	7,817	(0.3%)	877	(0.1%)
Taxi	148	(0.01%)	44	(0.01%)
Bicycle	51	(0.00%)	4	(0.00%)
Other	8,557	(0.3%)	4,174	(0.5%)
Subtotal	199,737	(6.9%)	261,202	(29.5%)
Unreported Mode				
Subtotal	1,243	(0.04%)	633	(0.07%)
TOTAL	2,907,071	(100.0%)	886,235	(100.0%)

FIGURE 8.6

DISTRIBUTION OF TRAVEL PERIOD PERSON TRAVEL BY MODE OF TRANSPORTATION 1990 NPTS



Unlike daily travel which was usually for work- or family and personal-related business, the great majority of long-distance trips, 70.2%, were for social and recreational purposes. Visiting friends and relatives was the most common purpose of social and recreational trips.

TABLE 8.12

NUMBER OF TRAVEL PERIOD PERSON TRIPS AND TRAVEL PERIOD PERSON MILES OF TRAVEL BY TRIP PURPOSE 1990 NPTS

		<i>n</i> Trips 00)	Person Miles of Travel (000,000)		
EARNING A LIVING					
To or from Work	50,855	(1.7%)	6,124	(0.7%)	
Work-Related Business	173,453	(6.0%)	74,628	(8.4%)	
Subtotal	224,308	(7.7%)	80,752	(9.1%)	
FAMILY & PERSONAL BUSINESS					
Family/Personal Related	423,446	(14.6%)	112,287	(12.7%)	
Shopping	93,957	(3.2%)	11,342	(1.3%)	
Doctor/Dentist	45,325	(1.6%)	5,424	(0.6%)	
Subtotal	562,728	(19.4%)	129,053	(14.6%)	
OVIC, EDUCATIONAL, & RELIGIOUS	Sept Sept. As	2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 2 - 2 -	Maryana eri		
Subtotal	45,434	(1.6%)	7,227	(0.8%)	
SOCIAL & RECREATIONAL					
Vacation	370,948	(12.8%)	218,567	(24.7%)	
Visiting Friends/Relatives	934,704	(32.2%)	267,865	(30.2%)	
Pleasure Driving	71,931	(2.5%)	12,105	(1.3%)	
Other Social/Recreational	662,779	(22.8%)	161,894	(18.3%)	
Subtotal	2,040,362	(70.2%)	660,431	(74.5%)	
OTHER!					
Subtotal	34,239	(1.2%)	8,772	(1.0%)	
TOTAL	2,907,071	(100.0%)	886,235	(100.0%)	

¹ Includes trips and miles of travel where trip purpose was unreported.

FIGURE 8.7

DISTRIBUTION OF TRAVEL PERIOD PERSON TRAVEL BY TRIP PURPOSE 1990 NPTS

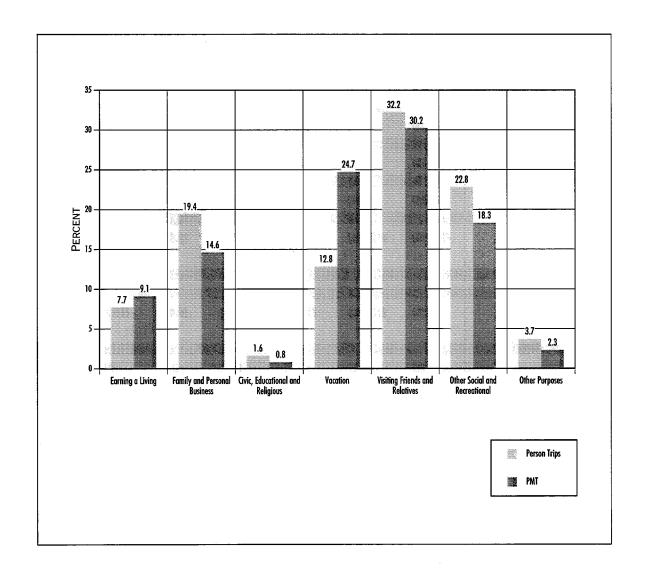


TABLE 8.13

NUMBER OF TRAVEL PERIOD PERSON TRIPS BY TRIP PURPOSE AND MODE OF TRANSPORTATION 1990 NPTS (THOUSANDS)

	Private Vehicle	Bus	Commuter Train	Amtrak	Airplane	Other	TOTAL
FARNING A LIVING						-	
To or From Work	48,101	**	1,302	1,453	••	••	50,855
	(1.8%)	(0.0%)	(40.1%)	(11.4%)	(0.0%)	(0.0%)	(1.7%)
Work-Related Business	134,788	892	67	1,494	34,495	1,561	173,453
	(5.0%)	(2.6%)	(2.1%)	(11.7%)	(25.9%)	(9.4%)	(6.0%)
Subtotal	182,889	892	1,369	2,947	34,495	1,561	224,308
	(6.8%)	(2.6%)	(42.2%)	(23.1%)	(25.9%)	(9.4%)	(7.7%)
FAMILY AND PERSONAL BUSINESS				•			
Shopping	93,800	16	8	**	132	••	93,957
	(3.5%)	(0.0%)	(0.2%)	(0.0%)	(0.1%)	(0.0%)	(3.2%)
Doctor/Dentist	44,512	805	8	••	••		45,325
	(1.6%)	(2.4%)	(0.2%)	(0.0%)	(0.0%)	(0.0%)	(1.6%)
Other Family or Personal Business	405,189	3,340	27	1,217	12,872	802	423,446
,	(15.0%)	(9.8%)	(0.8%)	(9.5%)	(9.7%)	(4.8%)	(14.6%)
Subtotal	543,501 (20.1%)	4,161 (12.2%)	43 (1.3%)	1,217 (9.5%)	13,004 (9.8%)	802 (4.8%)	562,728 (19.4%)
CIVIC EDUCATIONAL AND RELIGIOUS	a dama	-26-A		×			
Subtotal	39,215	4,465	41	**	15	1,698	45,434
e de la companya de l	(1.4%)	(13.2%)	(1.3%)	(0.0%)	(0.0%)	(10.2%)	(1.6%)
SOCIAL AND RECREATIONAL	E 1		, E			- ,	
Vacation	322,336	3,887	69	2,106	40,048	2,047	370,948
	(11.9%)	(11.5%)	(2.1%)	(16.5%)	(30.1%)	(12.4%)	(12.8%)
Visiting Friends/Relatives	893,207	5,948	1,267	4,780	28,739	230	934,704
	(33.0%)	(17.5%)	(39.1%)	(37.4%)	(21.6%)	(1.4%)	(32.2%)
Pleasure Driving	71,931	**	**		••	••	71,931
	(2.7%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(2.5%)
Other Social/Recreational	622,458	14,077	455	1,736	15,425	8,530	662,779
	(23.0%)	(41.5%)	(14.0%)	(13.6%)	(11.6%)	(51.5%)	(22.8%)
Subtotal	1,909,932	23,912	1,791	8,622	84,212	10,807	2,040,362
	(70.6%)	(70.5%)	(55.2%)	(67.4%)	(63.3%)	(65.3%)	(70.3%)
OTHER						*	
Subtotal	28,430 (1.1%)	496 (1.5%)	(0.0%)	(0.0%)	1,482 (1.1%)	1,706 (10.3%)	32,115 (1.1%)
		(1. <i>370)</i>	(<i>U.U 70)</i>	(V.V 70)	(1.170)	(1 V.3 70)	(1.170)
TOTAL	2,706,091 (100.0%)	33,926 (100.0%)	3,244	12,786	133,208	16,574	2,907,071
	[[100.070]	[100.070]	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

TARLE 8 14

NUMBER OF TRAVEL PERIOD PERSON MILES OF TRAVEL BY TRIP PURPOSE AND MODE OF TRANSPORTATION 1990 NPTS
(MILLIONS)

	Private Vehicle	Bus	Commuter Train	Amtrak	Airplane	Other:	TOTAL
EARNING A LIVING	X. (1)3 A27 3 198	inder Frank in de	272 - 152 2 - 239 22 X-143 2 - 239 22		- 1. (v) - 1. (v) - 1. (v)		
To or From Work	5,875	**	104	145	•	••	6,124
	(0.9%)	(0.0%)	(24.9%)	(2.6%)	(0.0%)	(0.0%)	(0.7%)
Work-Related Business	23,777	281	5	540	49,655	355	74,628
	(3.8%)	(3.5%)	(1.3%)	(9.7%)	(20.5%)	(7.0%)	(8.4%)
Subtotal	29,652 (4.7%)	281 (3.5%)	109 (26.2%)	686 (12.3%)	49,655 (20.5%)	355 (7.0%)	80,752 (9.1%)
FAMILY AND PERSONAL BUSINESS.							
Shopping	10,943	2	1	**	397	••	11,342
	(1.8%)	(0.0%)	(0.1%)	(0.0%)	(0.2%)	(0.0%)	(1.3%
Doctor/Dentist	5,359	64	1	**		**	5,424
<u>(2001), n. v. 1200, n. v. v. 1000,</u> (n. n. n. n. n. 1200 (n. 1. n. n. 1200 (n. 1. n. n. 1200 (n.	(0.9%)	(0.8%)	(0.1%)	(0.0%)	(0.0%)	(0.0%)	(0.6%
Other Family or Personal Business	85,018	444	3	247	26,454	122	112,287
■ # 2270200 # 2	(13.6%)	(5.6%)	(0.7%)	(4.4%)	(10.9%)	(2.4%)	(12.7%
Subtotal	101,320 (16.3%)	510 (6.4%)	(0.9%)	247 (4.4%)	26,851 (11.1%)	122 (2.4%)	129,05 (14.6%
CIVIC EDUCATIONAL AND RELIGIOUS	''15. L		W EUC SOSS				
Subtotal	6,265	722	3	**	59	178	7,22
	(1.0%)	(9.1%)	(0.7%)	(0.0%)	(0.0%)	(3.5%)	(0.8%
SOCIAL AND RECREATIONAL Vacation	130,984	975	14	2,325	82,002	1,758	218,56
YUCUNON	(21.0%)	(12.3%)	(3.3%)	(41.9%)	(33.9%)	(34.5%)	(24.7%
Visiting Friends/Relatives	216,323	1,996	201	1,774	47,230	263	267,86
sisting (stoiles) roleintes	(34.6%)	(25.1%)	(48.3%)	(31.9%)	(19.5%)	(5.2%)	(30.2%
Pleasure Driving	12,105	**	**	••	**		12,10
	(1.9%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(0.0%)	(1.4%
						2,162	161,894
Other Social/Recreational	121,238	3,377	86	521	34,480	2,102	
Other Social/Recreational		3,377 (42.5%)	86 (20.5%)	521 (9.4%)	34,480 (14.2%)	(42.4%)	
	121,238				•	•	(18.3%
	121,238 (19.4%)	(42.5%)	(20.5%)	(9.4%)	(14.2%)	(42.4%)	(18.3% 660,43
Subtotal OTHER	121,238 (19.4%) 480,650 (76.9%)	(42.5%) 6,348 (79.9%)	(20.5%) 300 (72.1%)	(9.4%) 4,620 (83.2%)	(14.2%) 163,712 (67.6%)	(42.4%) 4,183 (82.1%)	(18.3% 660,43 (74.6%
Subtotal OTHER	121,238 (19.4%) 480,650	(42.5%) 6,348	(20.5%) 300	(9.4%) 4,620	(14.2%) 163,712	(42.4%) 4,183	(18.3%) 660,431 (74.6%) 8,382
Other Social/Recreational Subtotal OTHER Subtotal	121,238 (19.4%) 480,650 (76.9%)	(42.5%) 6,348 (79.9%)	(20.5%) 300 (72.1%)	(9.4%) 4,620 (83.2%)	(14.2%) 163,712 (67.6%)	(42.4%) 4,183 (82.1%)	(18.3%) 660,43) (74.6%) 8,385 (0.9%) 886,235 (100.0%)

⁸⁻²³

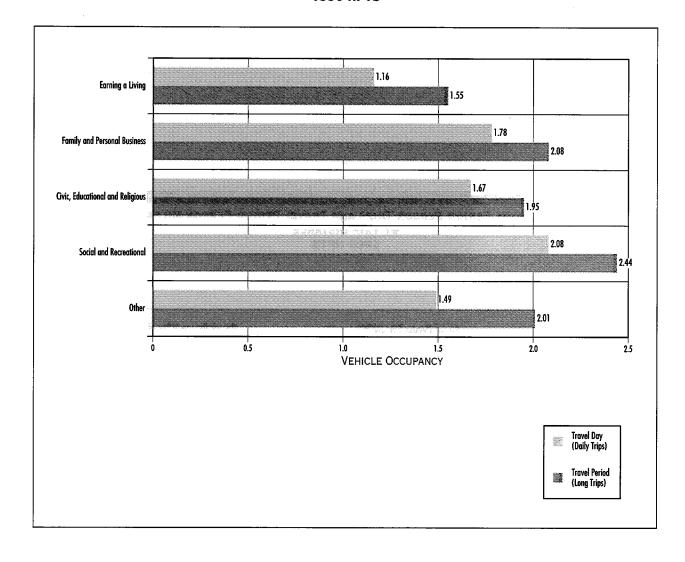
Regardless of vehicle type or trip purpose, vehicle occupancy rate was significantly higher for longer trips compared to typical daily trips.

VEHICLE OCCUPANCY OF AN AVERAGE LONG TRIP BY TRIP PURPOSE AND VEHICLE TYPE
(PERSON MILES PER VEHICLE MILE)
1990 NPTS

						ALL PURPOSES		
Mode	Earning a Living	Family & Personal Business	Civic, Educational & Religious	Social & Recreational	Other	Longer Trips (Travel Period)	Daily Trips (Travel Day)	
Auto	1.47	2.08	1.94	2.29	1.86	2.19	1.62	
Passenger Van	2.89	2.44	3.19	3.12	3.60	3.02	2.55	
Cargo Van	*	*	**	*	*	*	1.24	
Pickup Truck	1.40	1.92	1.08	2.30	1.70	2.09	1.47	
Other Truck	1.73	1.53	*	2.76	**	1.93	1.41	
RV/Motor Home	**	*	**	2.76	**	2.76	2.55	
Motorcycle	**	1.58	**	1.64	*	1.63	1.37	
ALL	1.55	2.08	1.95	2.44	2.01	2.30	1.64	
* Indicates insuffi	cient data availabl	e.		" Indicates no data	available.			

FIGURE 8.8

COMPARISON OF AVERAGE VEHICLE OCCUPANCY BETWEEN TRAVEL DAY AND TRAVEL PERIOD TRIPS BY TRIP PURPOSE 1990 NPTS



Thirty-four percent of the long-distance trips were to destinations less than 100 miles away from home, and almost an equal number of trips were to places between 100 and 200 miles from home. As expected, the num-

ber of trips declined when the distance away from home increased. In 1990, 4.5% of the estimated long trips were to places 1,000 miles away from home, but these trips accounted for 36% of person miles of travel.

TABLE 8.16

NUMBER OF TRAVEL PERIOD PERSON TRIPS AND TRAVEL PERIOD PERSON MILES OF TRAVEL BY TRIP DISTANCE 1990 NPTS

Trip Distance	No. of <i>Perso</i>	on Trips (000)	No. of <i>Person</i> Miles of Travel (000,000)		
75-100 miles	1,001,131	(34.4%)	86,549	(9.8%)	
101-200 miles	981,945	(33.8%)	146,230	(16.5%)	
201-400 miles	514, 297	(17.7%)	150,524	(17.0%)	
401-600 miles	148,409	(5.1%)	75,750	(8.5%)	
601-800 miles	78,713	(2.7%)	56,645	(6.4%)	
801-1,000 miles	50,729	(1.7%)	47,955	(5.4%)	
1,001-2,500 miles	100,291	(3.4%)	160,493	(18.1%)	
> 2,500 miles	31,556	(1.1%)	162,090	(18.3%)	
TOTAL	2,907,071	(100.0%)	886,235	(100.0%)	

NUMBER OF TRAVEL PERIOD PERSON TRIPS BY TRIP DISTANCE AND MODE OF TRANSPORTATION 1990 NPTS (THOUSANDS)

Private Vehicle	Bus	Commuter Train	Amtrak	Airplane	Other	TOTAL
975,408	10,158	2,325	5,276	1,307	6,190	1,001,131
(36.0%)	(29.9%)	(71.7%)	(41.3%)	(1.0%)	(37.3%)	(34.4%)
959,564	11,666	341	2,431	3,111	4,819	981,945
(35.5%)	(34.4%)	(10.5%)	(19.0%)	(2.3%)	(29.1%)	(33.8%)
485,995	9,673	578	1,960	13,230	2,372	514,297
(18.0%)	(28.5%)	(17.8%)	(15.3%)	(9.9%)	(14.3%)	(17.7%)
134,813	1,094	**	512	11,502	487	148,409
(5.0%)	(3.2%)	(0.0%)	(4.0%)	(8.6%)	(2.9%)	(5.1%)
65,677	690	**	837	10,693	817	78,713
(2.4%)	(2.0%)	(0.0%)	(6.5%)	(8.0%)	(4.9%)	(2.7%)
34,131	160	**	240	14,870	1,328	50,729
(1.3%)	(0.5%)	(0.0%)	(1.9%)	(11.2%)	(8.0%)	(1.7%)
42,919	466	**	1,269	54,887	477	100,291
(1.6%)	(1.4%)	(0.0%)	(9.9%)	(41.2%)	(2.9%)	(3.4%)
7,584	18	••	262	23,607	84	31,556
(0.3%)	(0.1%)	(0.0%)	(2.1%)	(17.7%)	(0.5%)	(1.1%)
2,706,091	33,926	3,244	12,786	133,208	16,574	2,907,071
(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
• Hilling Comment of the comment of	975,408 (36.0%) 959,564 (35.5%) 485,995 (18.0%) 134,813 (5.0%) 65,677 (2.4%) 34,131 (1.3%) 42,919 (1.6%) 7,584 (0.3%)	975,408 10,158 (36.0%) (29.9%) 959,564 11,666 (35.5%) (34.4%) 485,995 9,673 (18.0%) (28.5%) 134,813 1,094 (5.0%) (3.2%) 65,677 690 (2.4%) (2.0%) 34,131 160 (1.3%) (0.5%) 42,919 466 (1.6%) (1.4%) 7,584 18 (0.3%) (0.1%)	975,408 10,158 2,325 (36.0%) (29.9%) (71.7%) 959,564 11,666 341 (35.5%) (34.4%) (10.5%) 485,995 9,673 578 (18.0%) (28.5%) (17.8%) 134,813 1,094 ** (5.0%) (3.2%) (0.0%) 65,677 690 ** (2.4%) (2.0%) (0.0%) 34,131 160 ** (1.3%) (0.5%) (0.0%) 42,919 466 ** (1.6%) (1.4%) (0.0%) 7,584 18 ** (0.3%) (0.1%) (0.0%)	975,408 10,158 2,325 5,276 (36.0%) (29.9%) (71.7%) (41.3%) 959,564 11,666 341 2,431 (35.5%) (34.4%) (10.5%) (19.0%) 485,995 9,673 578 1,960 (18.0%) (28.5%) (17.8%) (15.3%) 134,813 1,094 ** 512 (5.0%) (3.2%) (0.0%) (4.0%) 65,677 690 ** 837 (2.4%) (2.0%) (0.0%) (6.5%) 34,131 160 ** 240 (1.3%) (0.5%) (0.0%) (1.9%) 42,919 466 ** 1,269 (1.6%) (1.4%) (0.0%) (9.9%) 7,584 18 ** 262 (0.3%) (0.1%) (0.0%) (2.1%)	975,408 10,158 2,325 5,276 1,307 (36.0%) (29.9%) (71.7%) (41.3%) (1.0%) 959,564 11,666 341 2,431 3,111 (35.5%) (34.4%) (10.5%) (19.0%) (2.3%) 485,995 9,673 578 1,960 13,230 (18.0%) (28.5%) (17.8%) (15.3%) (9.9%) 134,813 1,094 ** 512 11,502 (5.0%) (3.2%) (0.0%) (4.0%) (8.6%) 65,677 690 ** 837 10,693 (2.4%) (2.0%) (0.0%) (6.5%) (8.0%) 34,131 160 ** 240 14,870 (1.3%) (0.5%) (0.0%) (1.9%) (11.2%) 42,919 466 ** 1,269 54,887 (1.6%) (1.4%) (0.0%) (9.9%) (41.2%) 7,584 18 ** 262 23,607 (0.3%) (0.1%) (0.0%) (2.1%) (17.7%)	975,408 10,158 2,325 5,276 1,307 6,190 (36.0%) (29.9%) (71.7%) (41.3%) (1.0%) (37.3%) 959,564 11,666 341 2,431 3,111 4,819 (35.5%) (34.4%) (10.5%) (19.0%) (2.3%) (29.1%) 485,995 9,673 578 1,960 13,230 2,372 (18.0%) (28.5%) (17.8%) (15.3%) (9.9%) (14.3%) 134,813 1,094 ** 512 11,502 487 (5.0%) (3.2%) (0.0%) (4.0%) (8.6%) (2.9%) 65,677 690 ** 837 10,693 817 (2.4%) (2.0%) (0.0%) (6.5%) (8.0%) (4.9%) 34,131 160 ** 240 14,870 1,328 (1.3%) (0.5%) (0.0%) (1.9%) (11.2%) (8.0%) 42,919 466 ** 1,269 54,887 477 (1.6%) (1.4%) (0.0%) (9.9%) (41.2%) (2.9%) 7,584 18 ** 262 23,607 84 (0.3%) (0.1%) (0.0%) (2.1%) (17.7%) (0.5%) 2,706,091 33,926 3,244 12,786 133,208 16,574

¹ Includes trips where mode of transportation was unreported.

^{**} Indicates no data reported.

Table 8.18

DISTRIBUTION OF TRAVEL PERIOD PERSON TRIPS BY TRIP DISTANCE AND MODE OF TRANSPORTATION 1990 NPTS (PERCENT)

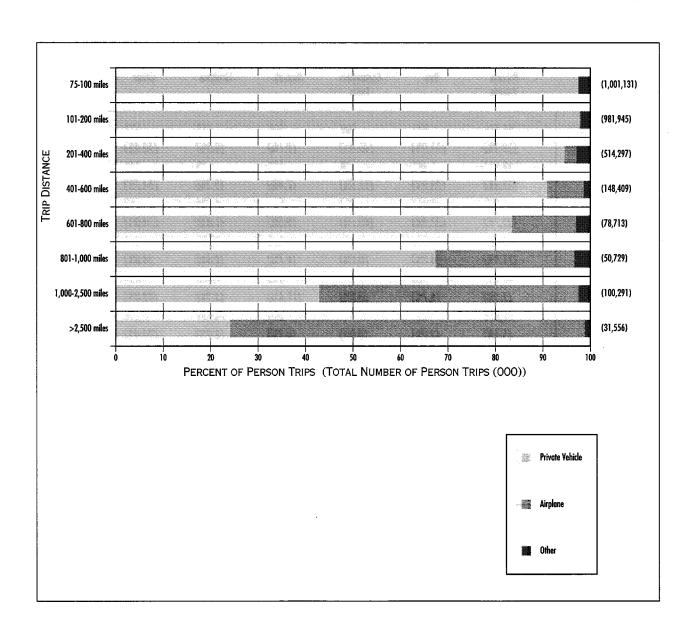
Trip Distance	Private Vehicle	Bus	Commuter Train	Amtrak	Airplane	Other	TOTAL
75-100 miles	97.4%	1.0%	0.2%	0.5%	0.1%	0.6%	100.0%
101-200 miles	<i>97.7%</i>	1.2%	0.0%	0.2%	0.3%	0.5%	100.0%
201-400 miles	94.5%	1.9%	0.1%	0.4%	2.6%	0.5%	100.0%
401-600 miles	90.8%	0.7%	**	0.3%	7.8%	0.3%	100.0%
601-800 miles	<i>83.4%</i>	0.9%	**	1.1%	13.6%	1.0%	100.0%
801-1,000 miles	67.3%	0.3%	**	0.5%	29.3%	2.6%	100.0%
1,000-2,500 miles	42.8%	0.5%	**	1.3%	<i>54.7%</i>	0.5%	100.0%
>2,500 miles	24.0%	0.1%	**	0.8%	74.8%	0.3%	100.0%
TOTAL	93.1%	1.2%	0.1%	0.4%	4.6%	0.6%	100.0%

¹ Includes trips where mode of transportation was unreported.

^{**} Indicates no data reported.

FIGURE 8.9

DISTRIBUTION OF TRAVEL PERIOD PERSON TRIPS BY TRIP DISTANCE AND MODE OF TRANSPORTATION 1990 NPTS (WITHIN TRIP DISTANCE)



Number of Travel Period *Person* Miles of Travel by Trip Distance and Mode of Transportation 1990 NPTS
(MILLIONS)

Trip Distance	Private Vehicle	Bus	Commuter Train	Amtrak	Airplane	Other	TOTAL
75-100 miles	84,299	873	189	507	113	528	86,549
5 275 T 2400040 /4	(13.5%)	(11.0%)	(45.4%)	(9.1%)	(0.0%)	(10.4%)	(9.8%)
101-200 miles	142,597	1,898	48	412	525	749	146,230
1 Wash - 1 71: use	(22.8%)	(23.9%)	(11.5%)	(7.4%)	(0.2%)	(14.7%)	(16.5%)
201-400 miles	141,692	2,945	179	544	4,324	712	150,524
	(22.7%)	(37.1%)	(43.1%)	(9.8%)	(1.8%)	(14.0%)	(17.0%)
401-600 miles	68,522	541	**	262	6,181	244	75,750
	(11.0%)	(6.8%)	(0.0%)	(4.7%)	(2.6%)	(4.8%)	(8.5%)
601-800 miles	46,956	528	**	643	7,865	654	56,645
	(7.5%)	(6.7%)	(0.0%)	(11.6%)	(3.2%)	(12.8%)	(6.4%)
801-1,000 miles	31,822	158	**	240	14,489	1,246	47,955
	(5.1%)	(2.0%)	(0.0%)	(4.3%)	(6.0%)	(24.4%)	(5.4%)
1,000-2,500 miles	61,384	940	••	2,156	94,815	732	160,493
	(9.8%)	(11.8%)	(0.0%)	(38.8%)	(39.1%)	(14.4%)	(18.1%)
>2,500 miles	47,129	5 5	**	787	113,885	235	162,090
	(7.5%)	(0.7%)	(0.0%)	(14.2%)	(47.0%)	(4.6%)	(18.3%)
TOTAL	624,400	7,937	416	5,552	242,198	5,100	886,235
. *	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes miles of travel where mode of transportation was unreported.

^{**} Indicates no data reported.

DISTRIBUTION OF TRAVEL PERIOD PERSON MILES OF TRAVEL BY TRIP DISTANCE AND MODE OF TRANSPORTATION 1990 NPTS (PERCENT)

Trip Distance	Private Vehicle	Bus	Commuter Train	Amtrak	Airplane	Other	TOTAL
75-100 miles	97.4%	1.0%	0.2%	0.6%	0.1%	0.6%	100.0%
101-200 miles	97.5%	1.3%	0.0%	0.3%	0.4%	0.5%	100.0%
201-400 miles	94.1%	2.0%	0.1%	0.4%	2.9%	0.5%	100.0%
401-600 miles	90.5%	0.7%	**	0.3%	8.2 %	0.3%	100.0%
601-800 miles	<i>82.9%</i>	0.9%	**	1.1%	13.9%	1.2%	100.0%
801-1,000 miles	66.4%	0.3%	**	0.5%	<i>30.2%</i>	2.6%	100.0%
1,000-2,500 miles	<i>38.2%</i>	0.6%	**	1.3%	<i>59.1%</i>	0.5%	100.0%
>2,500 miles	29.1%	0.0%	**	0.5%	70.3 %	0.1%	100.0%
TOTAL	70.5%	0.9%	0.0%	0.6%	27.3%	0.6%	100.0%

¹ Includes miles of travel where mode of transportation was unreported.

^{**} Indicates no data reported.

FIGURE 8.10

DISTRIBUTION OF TRAVEL PERIOD PERSON TRAVEL BY TRIP DISTANCE 1990 NPTS

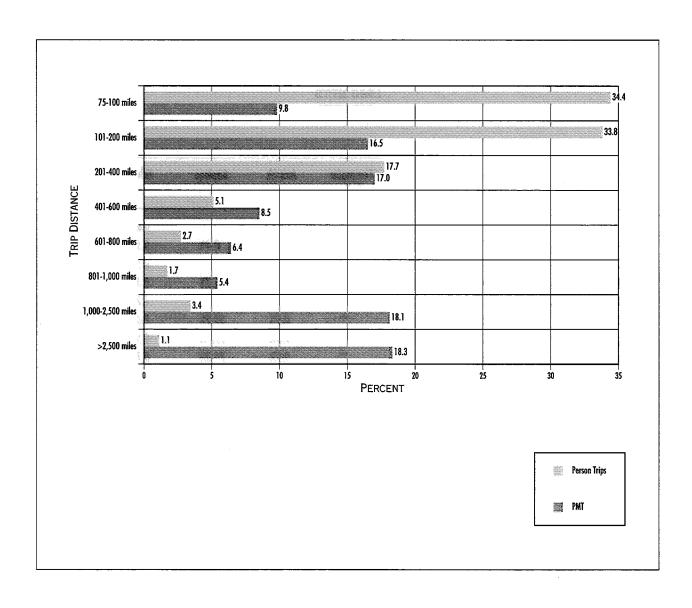
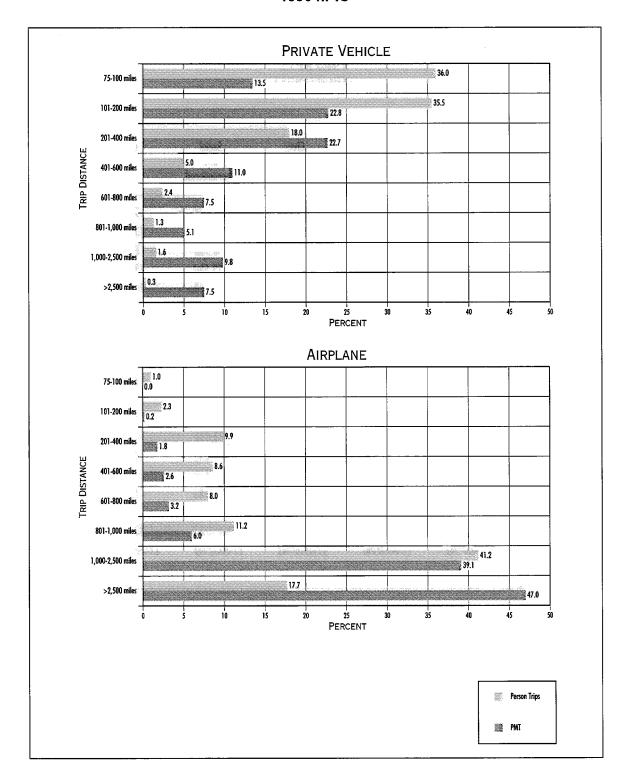


FIGURE 8.11

DISTRIBUTION OF TRAVEL PERIOD PERSON TRAVEL FOR PRIVATE VEHICLE AND AIRPLANE BY TRIP DISTANCE 1990 NPTS



NUMBER OF TRAVEL PERIOD PERSON TRIPS BY TRIP DISTANCE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

7,882 9.2%) 9,603 11.0%) 0,273 3.5%) 1,525 5.1%) 4,366	231,589 (41.2%) 204,170 (36.3%) 72,739 (12.9%) 23,137 (4.1%) 15,479	24,482 (53.9%) 12,782 (28.1%) 5,621 (12.4%) 898 (2.0%)	645,737 (31.6%) 682,565 (33.5%) 401,563 (19.7%) 109,842 (5.4%) 56,286	11,223 (34.9%) 11,623 (36.2%) 3,399 (10.6%) 3,008 (9.4%)	1,001,131 (34.4%) 981,945 (33.8%) 514,297 (17.7%) 148,409 (5.1%)
9,603 (7.0%) 0,273 (3.5%) 1,525 (5.1%) 4,366	204,170 (36.3%) 72,739 (12.9%) 23,137 (4.1%)	12,782 (28.1%) 5,621 (12.4%) 898 (2.0%)	682,565 (33.5%) 401,563 (19.7%) 109,842 (5.4%)	11,623 (36.2%) 3,399 (10.6%) 3,008 (9.4%)	981,945 (33.8%) 514,297 (17.7%) 148,409 (5.1%)
11.0%) 0,273 3.5%) 1,525 5.1%) 4,366	(36.3%) 72,739 (12.9%) 23,137 (4.1%)	(28.1%) 5,621 (12.4%) 898 (2.0%)	(33.5%) 401,563 (19.7%) 109,842 (5.4%)	(36.2%) 3,399 (10.6%) 3,008 (9.4%)	(33.8%) 514,297 (17.7%) 148,409 (5.1%)
0,273 3.5%) 1,525 5.1%) 4,366	72,739 (12.9%) 23,137 (4.1%)	5,621 (12.4%) 898 (2.0%)	401,563 (19.7%) 109,842 (5.4%)	3,399 (10.6%) 3,008 (9.4%)	514,297 (17.7%) 148,409 (5.1%)
3.5%) 1,525 5.1%) 4,366	(12.9%) 23,137 (4.1%)	(12.4%) 898 (2.0%)	(19.7%) 109,842 (5.4%)	(10.6%) 3,008 (9.4%)	(17.7%) 148,409 (5.1%)
1,525 5.1%) 4,366	23,137 (4.1%)	898 (2.0%)	109,842 (5.4%)	3,008 (9.4%)	148,409 (5.1%)
5.1%) 4,366	(4.1%)	(2.0%)	(5.4%)	(9.4%)	(5.1%)
4,366		36.85			= =
. x	15,479	1.510	786.72	1 079	
1 9%}			JU,200	1,073	78,713
1.7/07	(2.8%)	(3.3%)	(2.8%)	(3.3%)	(2.7%)
4,383	3,242	64	42,543	498	50,729
2.0%)	(0.6%)	(0.1%)	(2.1%)	(1.6%)	(1.7%)
1,417	9,101	64	78,418	1,291	100,291
5.1%)	(1.6%)	(0.1%)	(3.8%)	(4.0%)	(3.4%)
4,859	3,272	15	23,410	**	31,556
2.2%)	(0.6%)	(0.0%)	(1.1%)	(0.0%)	(1.1%)
,308	562,728	45,434	2,040,363	32,115	2,907,071
.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
	4,859 2.2%) ,308	4,859 3,272 2.2%) (0.6%) ,308 562,728	4,859 3,272 15 2.2%) (0.6%) (0.0%) ,308 562,728 45,434	4,859 3,272 15 23,410 2.2%) (0.6%) (0.0%) (1.1%) ,308 562,728 45,434 2,040,363	4,859 3,272 15 23,410 ** 2.2%) (0.6%) (0.0%) (1.1%) (0.0%) ,308 562,728 45,434 2,040,363 32,115

¹ Includes trips where trip purpose was unreported.

^{**} Indicates no data reported.

FIGURE 8.12

DISTRIBUTION OF TRAVEL PERIOD PERSON TRIPS BY SELECTED TRIP DISTANCES AND TRIP PURPOSE 1990 NPTS

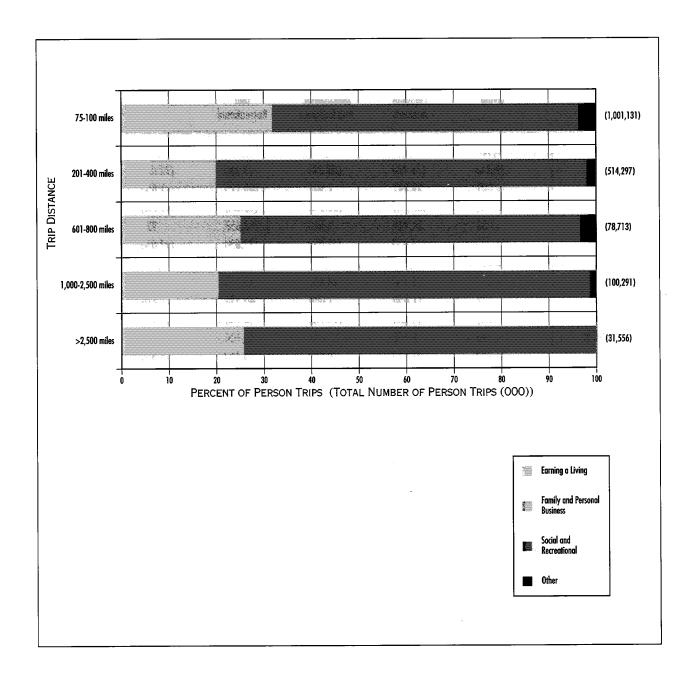


TABLE 8.22

NUMBER OF TRAVEL PERIOD PERSON MILES OF TRAVEL BY TRIP DISTANCE AND TRIP PURPOSE 1990 NPTS (MILLIONS)

Trip Distance	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL
75-100 miles	7,408	19,910	2,035	56,170	1,004	86,549
	(9.2%)	(15.4%)	(28.2%)	(8.5%)	(12.0%)	(9.8%)
101-200 miles	10,089	29,242	1,901	103,175	1,650	146,230
	(12.5%)	(22.7%)	(26.3%)	(15.6%)	(19.7%)	(16.5%)
201-400 miles	9,083	21,149	1,518	117,657	922	150,524
	(11.2%)	(16.4%)	(21.0%)	(17. 8 %)	(11.0%)	(17.0%)
401-600 miles	6,021	11,787	463	55,934	1,544	75,750
	(7.5%)	(9.1%)	(6.4%)	(8.5%)	(18.4%)	(8.5%)
601-800 miles	3,202	11,056	1,080	40,534	774	56,645
	(4.0%)	(8.6%)	(14.9%)	(6.1%)	(9.2%)	(6.4%)
801-1,000 miles	4,190	3,147	57	40,104	457	47,955
	(5.2%)	(2.4%)	(0.8%)	(6.1%)	(5.5%)	(5.4%)
1,000-2,500 miles	18,182	13,999	114	126,167	2,030	160,493
	(22.5%)	(10.8%)	(1.6%)	(19.1%)	(24.2%)	(18.1%)
>2,500 miles	22,577	18,762	59	120,692	**	162,090
	(28.0%)	(14.5%)	(0.8%)	(18.3%)	(0.0%)	(18.3%)
TOTAL	80,752	129,053	7,227	660,431	8,382	886,235
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes miles of travel where trip purpose was unreported.

^{**} Indicates no data reported.

Seventy-eight percent of the long-distance trips were taken by automobiles, and 12.5% by pickup trucks. Passenger vans were used for a disproportionately high percent of long-distance trips. The average length of a long-distance vehicle trip was 220 miles in 1990.

TABLE 8.23

NUMBER OF TRAVEL PERIOD VEHICLE TRIPS AND TRAVEL PERIOD VEHICLE MILES OF TRAVEL BY VEHICLE TYPE 1990 NPTS

Vehicle Type	<i>Vehicle</i> Trips (000)	Vehicle Miles of Travel (000,000)	Average Trip Length (miles)	Percent of Household Vehicles
Automobile	1,204,043	257,834	214.1	74.7
	(78.4%)	(76.4%)		
Passenger Van	101,323	29,712	293.2	4.8
	(6.6%)	(8.8%)		
Pickup Truck	191,352	36,110	18 8.7	17.2
• 20 294 19 3 3040	(12.5%)	(10.7%)	2.44.	
RV/Motor Home	11,748	6,002	510.9	0.5
	(0.8%)	(1.8%)		
Motorcycle	9,833	1,458	148.3	1.3
1	(0.6%)	(0.4%)		
Other ¹	16,966	6,216	366.4	1.3
	(1.1%)	(1.8%)		
TOTAL	1,535,265	337,332	219.7	100.0
	(100.0%)	(100.0%)		

¹ Includes cargo van, other truck and moped.

Two thirds of the long-distance vehicle trips were for social and recreational purposes, 21.2% were for family and personal business, and less than 10% were for work-related purposes. The most common reason for taking a

long trip within the social and recreational category was for visiting friends or relatives, accounting for 33% of total long-distance vehicle trips.

TABLE 8.24

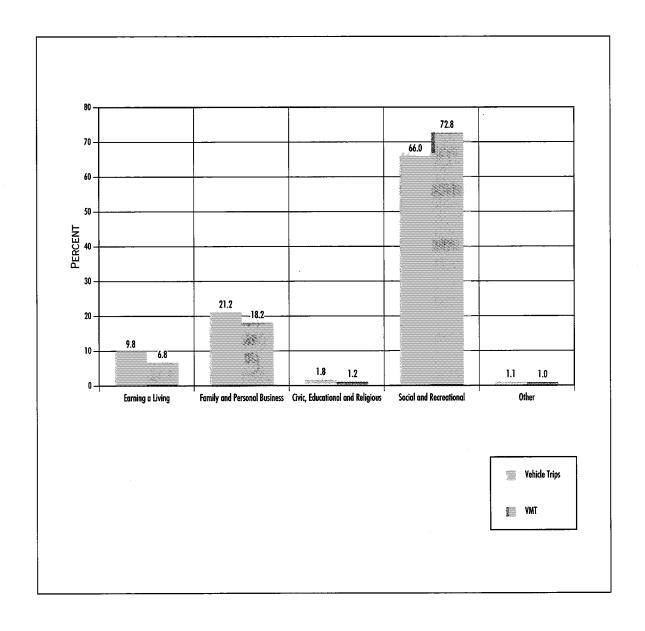
NUMBER OF TRAVEL PERIOD VEHICLE TRIPS AND TRAVEL PERIOD VEHICLE MILES OF TRAVEL BY TRIP PURPOSE 1990 NPTS

, 		<i>Vehicle</i> Trips (000)		<i>Vehicle</i> Miles of Travel (000,000)	
EARNING A LIVING					
To or from Work	42,352	(2.8%)	5,206	(1.5%)	122.9
Work Related Business	108,168	(7.0%)	17,802	(5.3%)	164.6
Subtotal	150,520	(9.8%)	23,008	(6.8%)	152.9
FAMILY & PERSONAL BUSINESS	7. 1. 2. CA.	e ways is			
Family/Personal Related	249,726	(16.3%)	52,449	(15.5%)	210.0
Shopping	52,448	(3.4%)	6,092	(1.8%)	116.2
Doctor/Dentist	23,698	(1.5%)	2,741	(0.8%)	115.7
Subtotal	325,872	(21.2%)	61,283	(18.2%)	188.1
CIVIC, EDUCATIONAL, & RELIGIO	¥	te sasa			
Subtotal	27,598	(1.8%)	4,141	(1.2%)	150.1
SOCIAL & RECREATIONAL			2.5.7 		- Varion
Vacation	152,696	(9.9%)	57,237	(17.0%)	374.8
Visiting Friends/Relatives	498,897	(32.5%)	119,358	(35.4%)	239.2
Pleasure Driving	37,945	(2.5%)	6,905	(2.0%)	182.0
Other	324,419	(21.1%)	61,993	(18.4%)	191.1
Subtotal	1,013,957	(66.0%)	245,493	(72.8%)	242.1
OTTER		7 - WAS 1.			
Subtotal	16,178	(1.1%)	3,226	(1.0%)	199.4
TOTAL	1,535,265	(100.0%)	337,332	(100.0%)	219.7

¹ Includes trips and miles of travel where trip purpose was unreported.

FIGURE 8.13

DISTRIBUTION OF TRAVEL PERIOD VEHICLE TRAVEL BY TRIP PURPOSE 1990 NPTS



NUMBER OF TRAVEL PERIOD VEHICLE TRIPS AND TRAVEL PERIOD VEHICLE MILES OF TRAVEL BY VEHICLE TYPE AND TRIP PURPOSE 1990 NPTS

Vehicle Type	<i>Vehicle</i> Trips (000)	<i>Vehicle</i> Miles of Travel (000,000)	Average Trip Length (miles)
AUTOMOBILE			
Earning a Living	110,936	16,201	146.0
	(9.2%)	(6.3%)	
Family & Personal Business	250,890	47,351	188.7
	(20.8%)	(18.4%)	
Social & Recreational	807,895	188,212	233.0
	(67.1%)	(73.0%)	
All Other	33,511	5,930	177.0
	(2.8%)	(2.3%)	
Subtotal ¹	1,204,043	257,834	214.1
	(100.0%)	(100.0%)	
VAN	A CHARGE SPOKE FAIR	5	
Earning a Living	10,374	1,565	150.9
	(9.8%)	(4.8%)	
Family & Personal Business	23,859	4,371	183.2
	(22.5%)	(13.3%)	
Social & Recreational	69 ,55 8	26,323	378.4
	(65.6%)	(80.3%)	ACERCA CONTROL OF
All Other	2,204	530	240.4
	(2.1%)	(1.6%)	
Subtotal ¹	105,996	32,789	309.3
	(100.0%)	(100.0%)	
PICKUP TRUCK			
Earning a Living	26,448	3,969	150.1
	(13.8%)	(11.0%)	
Family & Personal Business	46,409	8,350	179.9
	(24.3%)	(23.1%)	
Social & Recreational	110,478	22,876	207.1
	(57.7%)	(63.4%)	
All Other	7,689	874	113.6
	(4.0%)	(2.4%)	
Subtotal	191,352	36,110	188.7
	(100.0%)	(100.0%)	

⁸⁻⁴⁰

NUMBER OF TRAVEL PERIOD VEHICLE TRIPS BY VEHICLE TYPE AND TRIP PURPOSE 1990 NPTS (THOUSANDS)

	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL
Auto	110,936	250,890	21,863	807,895	11,648	1,204,043
	(73.7%)	(77.0%)	(79.2%)	(79.7%)	(72.0%)	(78.4%)
Passenger Van	8,480	22,800	1,438	68,145	460	101,323
-	(5.6%)	(7.0%)	(5.2%)	(6.7%)	(2.8%)	(6.6%)
Pickup Truck	26,448	46,409	4,149	110,478	3,540	191,352
****	(17.6%)	(14.2%)	(15.0%)	(10.9%)	(21.9%)	(12.5%)
RV/Motor Home	**	72	**	11,676	**	11,748
Vo. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2. 2.	(0.0%)	(0.0%)	(0.0%)	(1.2%)	(0.0%)	(0.8%)
Motorcycle	**	1,198	**	8,412	224	9,833
• '	(0.0%)	(0.4%)	(0.0%)	(0.8%)	(1.4%)	(0.6%)
Other ²	4,657	4,504	148	7,351	306	16,966
	(3.1%)	(1.4%)	(0.5%)	(0.7%)	(1.9%)	(1.1%)
TOTAL	150,520	325,872	27,598	1,013,957	16,178	1,535,265
N N 11 W 1	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes trips where trip purpose was unreported.

² Includes cargo van, other truck and moped.

^{**} Indicates no data reported.

1ABLE 8.2/

NUMBER OF TRAVEL PERIOD VEHICLE MILES OF TRAVEL BY VEHICLE TYPE AND TRIP PURPOSE 1990 NPTS (MILLIONS)

	Earning a Living	Family and Personal Business	Civic, Educational, and Religious	Social and Recreational	Other	TOTAL
Auto	16,201	47,351	3,539	188,212	2,392	257,834
	(70.4%)	(77.3%)	(85.5%)	(76.7%)	(74.1%)	(76.4%)
Passenger Van	1,241	4,162	261	23,850	198	29,712
	(5.4%)	(6.8%)	(6.3%)	(9.7%)	(6.1%)	(8.8%)
Pickup Truck	3,969	8,350	331	22,876	543	36,110
	(17.2%)	(13.6%)	(8.0%)	(9.3%)	(16.8%)	(10.7%)
RV/Motor Home	**	50	**	5,952	**	6,002
	(0.0%)	(0.1%)	(0.0%)	(2.4%)	(0.0%)	(1.8%)
Motorcycle	**	158	**	1,278	22	1,458
	(0.0%)	(0.3%)	(0.0%)	(0.5%)	(0.7%)	(0.4%)
Other ²	1,596	1,212	11	3,325	72	6,216
	(6.9%)	(2.0%)	(0.3%)	(1.3%)	(2.2%)	(1.8%)
TOTAL	23,008	61,283	4,141	245,493	3,226	337,332
,	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

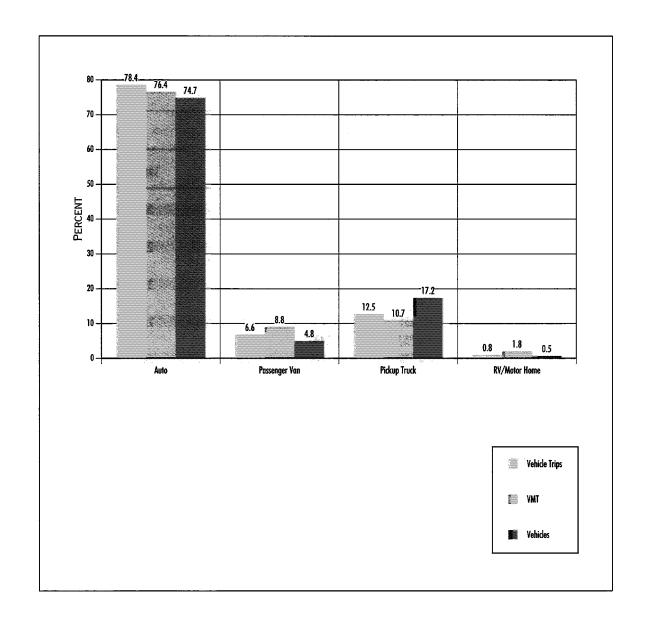
¹ Includes miles of travel where trip purpose was unreported.

^{**} Indicates no data reported.

² Includes cargo van, other truck and moped.

FIGURE 8.14

DISTRIBUTION OF TRAVEL PERIOD VEHICLE TRAVEL AND VEHICLES BY VEHICLE TYPE 1990 NPTS



NUMBER OF TRAVEL PERIOD PERSON TRIPS AND TRAVEL PERIOD PERSON MILES OF TRAVEL BY SEASON' 1983 AND 1990 NPTS²

	<i>Person</i> Trips (000)		Person Miles of Travel (000,000)		Average Trip Length	
	1983	1990	1983	1990	1983	1990
Winter	428,736	543,826	155,367	147,814	362	272
	(20.3%)	(18.7%)	(24.3%)	(16.7%)		
Spring	523,776	698,765	144,498	256,084	276	366
	(24.8%)	(24.0%)	(22.6%)	(28.9%)		
Summer	618,816	846,347	195,009	250,275	315	296
	(29.3%)	(29.1%)	(30.5%)	(28.2%)		
Fall	534,336	703,661	143,219	206,599	218	294
	(25.3%)	(24.2%)	(22.4%)	(23.3%)		
Unknown	6,336	114,473	1,279	25,463	241	222
	(0.3%)	(3.9%)	(0.2%)	(2.9%)	A	
TOTAL	2,112,000	2,907,071	639,372	886,235	303	305
	(100.0%)	(100.0%)	(100.0%)	(100.0%)		

¹ Season: Spring = Mar-May, Summer = June-Aug, Fall = Sept-Nov, Winter = Dec-Feb.

² For information on comparing 1983 and 1990 NPTS survey data, see Section 4 of Chapter 1.

NUMBER OF TRAVEL PERIOD VEHICLE TRIPS BY TRIP PURPOSE AND SEASON¹ 1990 NPTS (THOUSANDS)

	Spring	Summer	Fall	Winter	Unreported	TOTAL
EARNING A LIVING						
To or from Work	8,622	6,165	19,270	6,096	2,198	42,352
Work Related Business	33,764	21,938	25,390	21,016	6,060	108,168
Subtotal	42,386	28,103	44,660	27,112	8,259	150,520
FAMILY & PERSONAL BUSINESS						
Other Family/Personal Business	66,147	61,945	62,238	49,104	10,292	249,726
Shopping	13,720	8,761	12,766	13,147	4,054	52,448
Doctor/Dentist	6,243	4,706	5,092	6,342	1,315	23,698
Subtotal	86,110	75,411	80,096	68,593	15,661	325,872
CIVIC, EDUCATIONAL, & RELIGIOU	S					
Subtotal	7,911	8,610	5,858	3,969	1,251	27,598
SOCIAL & RECREATIONAL						
Vacation	30,048	75,258	31,067	10,940	5,383	152,696
Visiting Friends/Relatives	112,967	119,037	128,008	115,456	23,429	498,897
Pleasure Driving	10,802	14,453	7,503	3,257	1,930	37,945
Other Social/Recreational	68,848	100,221	81,889	59,677	13,783	324,419
Subtotal	222,665	308,969	248,466	189,330	44,525	1,013,957
OTHER						
Subtotal	4,944	4,668	3,500	2,660	406	16,178
TOTAL ²	364,179	425,762	382,580	292,479	70,264	1,535,265
	(23.7%)	(27.7%)	(24.9%)	(19.1%)	(4.6%)	(100.0%)

¹ Season: Spring = Mar-May, Summer = June-Aug, Fall = Sept-Nov,

² Includes trips where trip purpose was unreported.

graphic information on the destination and origin of long-distance trips.

Instead, it contains information on the sizes of the destination (e.g., MSA or non-MSA) and the name of the foreign country if travelling abroad. If the destination was MSA's with a population greater than one million, then the specific name of the MSA was given. The outgoing trips were assumed to be homebased, and the return trips were assumed to be from the destinations of the outgoing trips. Based on this limited information on the origins and destinations of long-distance trips, the following five tables present approx-

imate estimates of long-distance passenger flow. A conservative estimate suggests that 84% of long-distance trips were intercity or international travel. This estimate was derived by subtracting from the total number of long-distance person trips (1) 301.236 thousand trips for which one cannot distinguish whether the origin and the destination were within the same area, and (2) 170,992 thousand trips for which the destinations were the same MSA's from which the trips were originated (Table 8.31).

NUMBER OF TRAVEL PERIOD PERSON TRIPS BY TYPE OF ORIGIN AND DESTINATION 1990 NPTS (THOUSANDS)

		Trip Destination	·		
Trip Origin	20 Largest MSA's	Remainder of MSA's with a population of 1,000,000 +	MSA's with a population less than 1,000,000 or Non-MSA	Foreign Country	TOTAL
20 Largest MSA's	293,082	275, 29 5	219,015	15,700	803,092
	(36.5%)	(34.3%)	(27.3%)	(2.0%)	(100.0%)
Remainder of MSA's with a	276,178	440,131	411,530	9,870	1,137,708
population of 1,000,000+	(24.3%)	(38.7%)	(36.2%)	(0.9%)	(100.0%)
MSA's with a population	219,018	411,535	301,236	4,416	936,204 (100.0%)
less than 1,000,000 or Non-MSA	(23.4%)	(44.0%)	(32.2%)	(0.5%)	(100.0%)
Foreign Country	15,672	9,978	4,416	**	30,066
	(52.1%)	(33.2%)	(14.7%)	(0.0%)	(100.0%)
TOTAL	803,951	1,136,939	936,196	29,986	2,907,071
ĺ	(27.7%)	(39.1%)	(32.2%)	(1.0%)	(100.0%)

On average, about 90% of the long-distance trips that originated in MSA's with a population greater than one million were to places outside the originating metropolitan areas. However, passenger-flow patterns were different depending on the sizes of the origins. About 20% of the long-distance trips that

were originated in the twenty largest MSA's were to destinations within the originating MSA. However, only 2.3% of the trips that were originated from the remaining MSA's with a population greater than one million travelled within the same MSA.

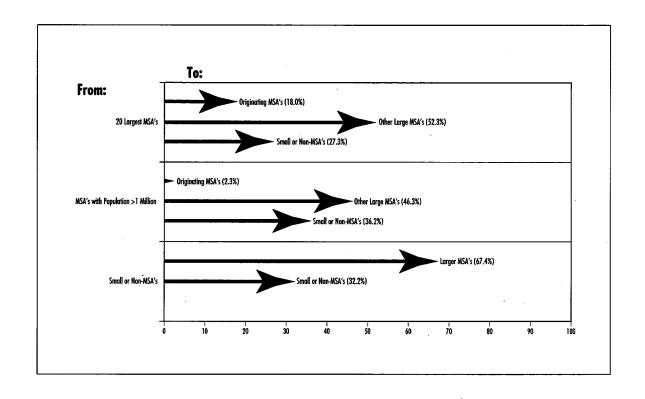
TABLE 8.31

Number of Travel Period Person Trips Originated from an MSA with a Population Greater than One Million by Whether Travelled to Another MSA 1990 NPTS (THOUSANDS)

•	Trip Des		
Trip Origin	Within Originating MSA	Outside Originating MSA	TOTAL
Top 20 MSA's	144,265	658,827	803,092
* ***	(18.0%)	(82.0%)	(100.0%)
Remaining MSA's that are 1,000,000+	26,727	1,110,981	1,137,708
	(2.3%)	(97.7%)	(100.0%)

FIGURE 8.15

DISTRIBUTION OF TRAVEL PERIOD PERSON TRIPS BY TYPE OF ORIGIN AND DESTINATION 1990 NPTS



This table shows the percentages of long-distance trips by privately owned vehicles from a particular type of origin to a particular type of destination. For example, 86.9% of all long-distance person trips from the twenty largest MSA's to the twenty largest MSA's were by privately owned vehicles - 254,586 thousand trips out of a total of 293,082 thou-

sand trips (Table 8.30). In general, trips to MSA's with a population less than one million or to non-MSA's were taken by privately owned vehicles more frequently than trips to larger MSA's or to foreign countries. This pattern might reflect shorter-distance trips to smaller places or the destinations not being conveniently served by airports (Table 8.33).

TABLE 8.32

NUMBER OF TRAVEL PERIOD PERSON TRIPS TAKEN BY A PRIVATE VEHICLE BY TYPE OF ORIGIN AND DESTINATION 1990 NPTS (THOUSANDS)

Trip Origin	20 Largest MSA's	Remainder of MSA's with a population of 1,000,000 +	MSA's with a population less than 1,000,000 or Non-MSA	Foreign Country	TOTAL
20 Largest MSA's	254,586	241,367	207,394	11,410	714,757
Remainder of MSA's with a population of 1,000,000+	243,194	411,357	401,270	5,862	1,061,683
MSA's with a population less than 1,000,000 or Non-MSA	206,539	401,893	296,658	3,572	908,662
Foreign Country	11,555	5,862	3,572	•	20,989
TOTAL	715,874	1,060,479	908,894	20,844	2,706,091
** Indicates no data available.					

TABLE 8.33

PERCENT' OF TRAVEL PERIOD PERSON TRIPS TAKEN BY A PRIVATE VEHICLE BY TYPE OF ORIGIN AND DESTINATION 1990 NPTS (PERCENT)

		Trip De	stination		
Trip Origin	20 Largest MSA's	Remainder of MSA's with a population of 1,000,000 +	MSA's with a popu- lation less than 1,000,000 or Non-MSA	Foreign Country	TOTAL
20 Largest MSA's	86.9%	87.7%	94.7%	72.7%	89.0%
Remainder of MSA's with a population of 1,000,000+	88.1%	93.5%	97.5%	59.4%	93.3%
MSA's with a population less than 1,000,000 or Non-MSA	94.3%	97.7%	98.5%	80.9%	97.1%
Foreign Country	73.7%	58.7%	80.9%	**	69.8%
TOTAL	89.0%	93.3%	97.1%	69.5%	93.1%

¹ These numbers are percentages of all *person* trips from a particular type of origin to a particular type of destination that were taken by a private vehicle.

TABLE 8.34

NUMBER OF TRAVEL PERIOD PERSON TRIPS TAKEN BY AN AIRPLANE BY TYPE OF ORIGIN AND DESTINATION 1990 NPTS (THOUSANDS)

		Trip De	stination		
Trip Origin	20 Largest MSA's	Remainder of MSA's with a population of 1,000,000 +	MSA's with a popu- lation less than 1,000,000 or Non-MSA	Foreign Country	TOTAL
20 Largest MSA's	27,226	23,660	6,417	3,853	61,156
Remainder of MSA's with a population of 1,000,000+	22,808	20,809	4,536	3,109	51,262
MSA's with a population less than 1,000,000 or Non-MSA	7,029	4,090	1,109	844	13,072
Foreign Country	3,680	3,194	844	**	7,718
TOTAL	60,743	51,754	12,906	7,806	133,208
** Indicates no data available.					

PERCENT' OF TRAVEL PERIOD PERSON TRIPS TAKEN BY AN AIRPLANE BY TYPE OF ORIGIN AND DESTINATION 1990 NPTS (PERCENT)

		Trip De	stination	****	
Trip Origin	20 Largest MSA's	Remainder of MSA's with a population of 1,000,000 +	MSA's with a population less than 1,000,000 or Non-MSA	Foreign Country	TOTAL
20 Largest MSA's	9.3%	8.6%	2.9%	24.5%	7.6%
Remainder of MSA's with a population of 1,000,000+	8.3%	4.7%	1.1%	31.5%	4.5%
MSA's with a population less than 1,000,000 or Non-MSA	3.2%	1.0%	0.4%	19.1%	1.4%
Foreign Country	23.5%	32.0%	19.1%	**	25.7%
TOTAL	7.6%	4.6%	1.4%	26.0%	4.6%

airplane.

TABLE 8.36

NUMBER OF TRAVEL PERIOD VEHICLE TRIPS BY TYPE OF ORIGIN AND DESTINATION 1990 NPTS (THOUSANDS)

		tination			
Trip Origin	20 Largest MSA's	Remainder of MSA's with a population of 1,000,000 +	MSA's with a popu- lation less than 1,000,000 or Non-MSA	Foreign Country	TOTAL
20 Largest MSA's	154,576	144,560	106,529	4,060	409,725
	(37.7%)	(35.3%)	(26.0%)	(1.0%)	(100.0%)
Remainder of MSA's with a	147,558	246,794	222,651	2,380	619,383
population of 1,000,000+	(23.8%)	(39.8%)	(35.9%)	(0.4%)	(100.0%)
MSA's with a population	107,009	224,061	167,162	761	498,994
less than 1,000,000 or Non-MSA	(21.4%)	(44.9%)	(33.5%)	(0.2%)	(100.0%)
Foreign Country	4,135	2,386	643	**	7,163
	(57.7%)	(33.3%)	(9.0%)	(0.0%)	(100.0%)
TOTAL	413,278	617,801	496,985	7,201	1,535,265
	(26.9%)	(40.2%)	(32.4%)	(0.5%)	(100.0%)

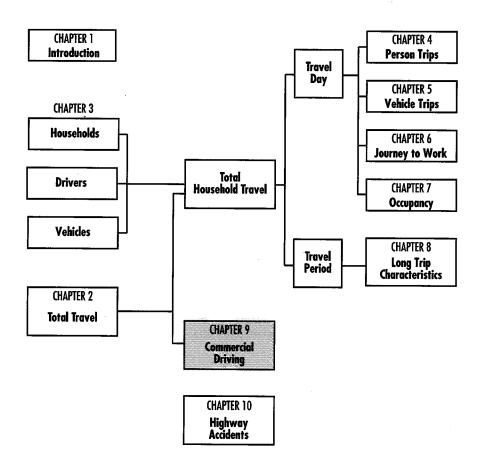
Similar to the patterns of long-distance person trips, only about 10% of long-distance vehicle trips that were originated in MSA's with a population greater than one million were travelling within the originating MSA.

Also, traffic-flow patterns differ depending on the sizes of the origins - trips that originated in a smaller MSA (with a population less than one million) were considerably more likely to go to larger MSA's.

TABLE 8.37

Number of Travel Period Vehicle Trips Originated from an MSA WITH A POPULATION GREATER THAN ONE MILLION BY WHETHER TRAVELLED TO ANOTHER MSA 1990 NPTS (THOUSANDS)

	Trip Desi	ination	
Trip Origin	Within Originating MSA	Outside Originating MSA	TOTAL
Top 20 MSA's	81,822	327,903	409,725
	(20.0%)	(80.0%)	(100.0%)
Remaining MSA's that are 1,000,000+	17,276	602,107	619,383
,	(2.8%)	(97.2%)	(100.0%)



CHAPTER 9

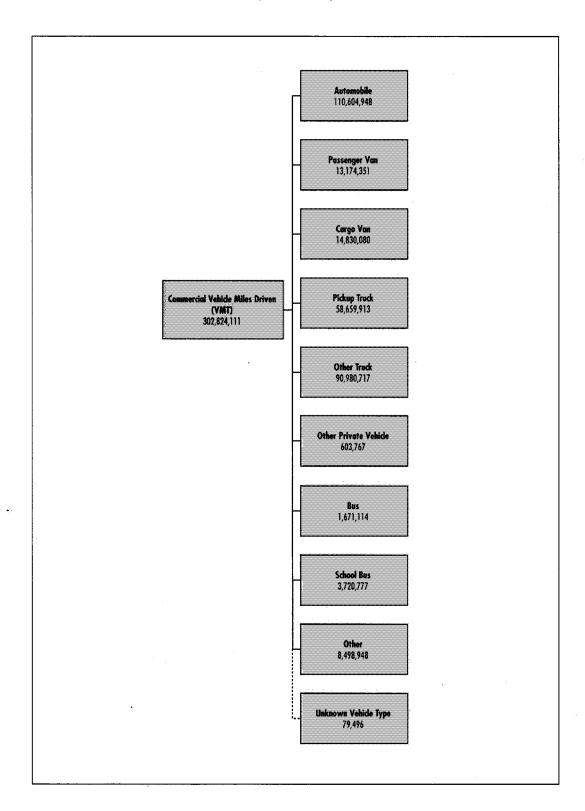
COMMERCIAL TRAVEL



- Of the 4,800 respondents who classified themselves as "commercial drivers", an estimated 15-20% probably do not drive enough for their work to be qualified as such.
- NPTS data show that commercial driving constitutes almost 16% of all vehicle miles of travel collected in the survey.
- About 27% of all male workers viewed themselves as commercial drivers, while only 6% of working women considered themselves in this group.
- Approximately half of all commercial miles were driven in pickups or other types of trucks.

1990 NPTS COMMERCIAL VEHICLE MILES DRIVEN BY VEHICLE TYPE

(THOUSANDS)



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CHAPTER 9 COMMERCIAL DRIVING

As mentioned in Chapter 2, three different aggregate estimates of driving were collected in the 1990 NPTS. They are:

- estimate of annual miles driven by each licensed driver.
- estimate of annual miles driven in each household vehicle, and
- · commercial driving.

These estimates were collected in addition to the data on individual trips collected in the travel day and travel period sections of the survey. For individuals who drove as an essential part of their work (e.g., truck drivers, bus drivers, delivery persons, and police assigned to patrol duty), they were asked to estimate total miles driven as part of their work during an average week. This type of driving is referred to as "commercial driving" in this publication.

If the NPTS was limited to collecting data on trips taken on travel days, total vehicle miles of travel (VMT) would be 1,409,600 million miles. However, with the inclusion of travel period trips and commercial driving, total VMT reaches 1,916,000 million miles (Table 9.1). The impact of including commercial driving on the overall VMT is especially noticeable for total truck travel. Note that trucks used in travel day travel or travel period travel were probably mainly pickup trucks while trucks used for commercial driving were more likely to be heavier trucks, those with a gross vehicle weight over 10,000 pounds.

REASONS FOR INCLUDING COMMERCIAL DRIVING-RELATED QUESTIONS IN NPTS

The questions about commercial driving were included in the 1990 NPTS primarily to alert the interviewer that a respondent, for whom driving is an essential part of his work, may have a very large number of trips on the travel day. Because so many commercial drivers are virtually behind

the wheel all day, it would be impossible for them to list and describe each individual trip made on the travel day. Even if it were possible, the interview could take between 1 to 2 hours to complete, and thus become unworkable.

Therefore, the data user must bear in mind that the basic intent of including commercial driving-related questions was so that commercial drivers can continue to participate in the NPTS without spending 1 to 2 hours on the telephone interview, and that the basic intent was not necessarily to produce statistically robust estimates of commercial travel. Had the intent been to collect representative data to reflect commercial driving, the entire survey would have been recast as an establishment survey — collecting data from companies, individual proprietors, and public entities that move goods or perform services in which driving is a critical element.

COMMERCIAL DRIVING-RELATED QUESTIONS

The question asked of all persons identified as both workers and licensed drivers was:

"Except for getting to or from work, do you drive a licensed motorized vehicle on a daily or regular basis as an essential part of your work?"

If there was any confusion on the part of the respondent, the interviewer added:

"We mean people such as cab drivers, truck drivers and delivery people who must drive to perform their work."

If the respondents classified themselves as "commercial drivers", they were asked to report an estimate of miles driven weekly for this type of driving, the number of days a week commercial driving is typically done, and the type of vehicle used.

ISSUES IN COLLECTING DATA ON COMMERCIAL DRIVING

In terms of NPTS classifications of travel, commercial driving is actually a subset of work-related travel. Work-related travel is defined as all travel done for one's job, EXCEPT travel between one's home and place of work. The problem faced in collecting commercial driving data in the NPTS was one of defining both the <u>degree</u> and the <u>nature</u> of the respondent's work-related travel. To assist the interviewers in better identifying commercial drivers, work-related travel was further divided into:

- 1. Vehicle operators such as bus drivers, cab drivers, truck drivers, couriers, and mail and package delivery people;
- People for whom driving is central to the performance of their work, but for whom their work is not driving, such as police on patrol and certain salespersons;
- People who make regular daily trips as part of their work, such as a store manager who makes a daily cash deposit at a bank; and
- People who make occasional trips as part of their work, such as an office worker who attends meetings across town about once a week.

In the context of the NPTS, "commercial driving" should only include driving done by people who fit the first two categories. but not by those who fit the third and the fourth. There is no definitive way to determine if that was accomplished. However, some evidence suggests that some respondents who fit the third and the fourth categories erroneously classified themselves as "commercial drivers" and their workrelated travel as commercial driving. Table 9.2 and Figure 9.1 examine this phenomenon. Table 9.2 shows that over one-third of respondents who considered themselves "commercial drivers" drove less than 5,000 miles annually as an essential part of their work. One explanation is that

some of these drivers might be working part-time, which could lead to a relatively low mileage. However, the more plausible explanation is that, while the respondents considered their work-related driving as "essential", their travel fell into the third and fourth categories above, which was not termed "essential" for the NPTS classification purposes.

Another telling indication of who was captured in the "commercial driving" net is shown on Table 9.3 and Figure 9.2, which give the relationship between the driver's commercial miles and his/her total annual miles driven. Table 9.3 shows that 16 percent of the men and 22 percent of the women commercial drivers drove less than 10 percent of their annual miles for their work-related travel. This group, who drove less than 10 percent of their miles for work-related purposes, probably should not be classified as commercial drivers.

Table 9.4 provides yet another look at who chose to define themselves as commercial drivers. In that table, the great majority of drivers drove at least five days a week for their work. However, 19 percent of all commercial drivers drove three or fewer days a week for their work. This group probably includes part-time workers, or persons whose duties rotate, such as a police officer who spends three days a week on patrol in a car and another two behind a desk. But, there is a strong suspicion that this group includes drivers who should not be considered as commercial drivers.

CAVEATS REGARDING THE COMMERCIAL DRIVING DATA

Given the situation described above, the data on commercial driving should be viewed with caution because:

They probably include driving by persons who drove too little for work-related purposes to be labelled "commercial drivers", and

2. The number of respondents in the sample that were considered commercial drivers is not large enough to support any robust analysis. The following illustrates the numbers of respondents in the sample:

Of the 48,385 persons interviewed for the 1990 NPTS,

- 39,306 persons were adults, of which
- 35,152 persons were drivers, and
- 25,520 persons were workers, of which
- 4,789 persons were commercial drivers.

Despite these caveats, a small number of tables are presented on the commercial driving data collected in the NPTS. These tables provide NPTS data on the characteristics of commercial drivers, the total miles reported as commercial driving, and the types of vehicles used.

COMMERCIAL DRIVERS

There were an estimated 22 million workers in 1990 (or about 19 percent of all workers) who reported driving as an essential part of their work. Of those workers, 22 percent were women. Females workers who drove as an essential part of their work only accounted for 9 percent of the total female labor force while the corresponding percentage for males was 27 percent. Participation in occupations where driving is required decreased with workers' age.

ANNUAL COMMERCIAL MILES DRIVEN PER WORKER

Not only were men more likely than women to be in occupations where driving was required, they also drove significantly more job-related miles than their female counterparts - 16,838 annual miles for males vs. 8,189 miles for females. For both men and women, the amount of driving as part of work decreased with age.

About 38% of all respondents who classified themselves as "commercial drivers" drove less than 5,000 miles a year as an essential part of their work. This is probably due to the inclusion of some workers as commercial drivers when, if more were known about their work-related travel, they probably would not have been considered commercial drivers. More than half of the female workers drove less than 5,000 miles a year as part of their work, while the corresponding percentage for male workers was less than one third (Table 9.2). At the other extreme, more than one quarter of the male workers drove 20,000 miles or more a year as part of their work while only 10 percent of the female workers drove that much in their job.

The majority of workers for whom driving is an essential part of their work reported that it contributed half of their total annual driving. Less than 10 percent of the workers reported that 90 percent of their overall driving was for their work (Table 9.3). Female workers reported a smaller proportion of their overall driving as part of their work than male workers.

VEHICLE TYPE

The types of vehicles used for commercial driving largely depend on the nature of commercial driving (e.g., passenger transport, freight transport or service type functions such as messenger services or pizza delivery). Although data on the nature of commercial driving were not collected in the 1990 NPTS, the amount of commercial driving by vehicle type in a year gives some indication of the type of commercial driving. Cars and pickup trucks were more commonly used for service-type functions while heavier trucks were more frequently used for freight transport. Female workers tended to use cars, passenger vans, and pickup trucks, while males used cargo vans, pickups, and heavier trucks.

TABLE 9.

ESTIMATES OF ANNUAL VEHICLE MILES DRIVEN BASED ON VARIOUS DATA SOURCES 1990 NPTS (MILLIONS)

Mode	Travel Day Section Adjusted ¹	Travel Period Section	Commercial Driving Section	TOTAL
Auto	988,445	257,834	110,605	1,356,884
	(102,408)			
Van	68,578	32,789	28,004	129,371
	(12,597)			
Truck	211,506	39,225	149,641	400,372
	(16,899)			
Other POV	7,024	7,484	604	15,112
	(1,880)			
Other ²			13,891	13,891
TOTAL ³	1,275,792	337,332	302,824	1,915,948
	(133,784)			· · · · · · · · · · · · · · · · · · ·
Percent	66.6%	17.6%	15.8%	100.0%

¹ The number in the parentheses is the travel estimated for overlapping trips (recorded in both the travel day section and the travel period section). This estimate is excluded from the travel day estimate to avoid double-counting. Travel day estimates without overlapping trips are referred to as the "Travel Day Section Adjusted".

² Includes bus, school bus and other. Information on vehicle miles of travel by bus, school bus and other is not collected in the travel day or travel period section. The reason is that there is no attempt to track total travel by these vehicles on travel day or travel period.

³ Includes miles of travel where mode of transportation was unreported.

More than half of the female workers drove less than 5,000 miles a year as part of their work while the corresponding percentage for male workers was less than one third. However, these data need to be considered in light of respondents' possible misclassifica-

tion of themselves as commercial drivers. More than one quarter of the male workers drove 20,000 miles or more a year as part of their work while only 10% of the female workers drove that much on their jobs.

TABLE 9.2

Number of Commercial Drivers by Drivers' Sex and Annual Commercial Miles Driven per Driver 1990 NPTS (THOUSANDS)

Annual Commercial Miles Driven per Driver	Male Driver	Female Driver	TOTAL'
Less than 1,000	1,437	880	2,317
	(8.3%)	(17.9%)	(10.4%)
1,000 - 2,999	2,089	1,183	3,271
***************************************	(12.0%)	(24.1%)	(14.7%)
3,000 - 4,999	2,153	657	2,817
	(12.4%)	(13.4%)	(12.7%)
5,000 - 6,999	262	137	399
	(1.5%)	(2.8%)	(1.8%)
7,000 - 9,999	2,176	630	2,806
·	(12.6%)	(12.8%)	(12.6%)
10,000 - 14,999	1,892	459	2,352
·	(10.9%)	(9.4%)	(10.6%)
15,000 - 19,999	1,096	211	1,307
	(6.3%)	(4.3%)	(5.9%)
20,000 - 29,999	2,101	257	2,358
	(12.1%)	(5.2%)	(10.6%)
30,000 - 49,999	2,053	204	2,257
	(11.8%)	(4.2%)	(10.1%)
50,000 or more	47.0	18	487
	(2.7%)	(0.4%)	(2.2%)
TOTAL'	17,336	4,905	22,248
	(100.0%)	(100.0%)	(100.0%)

¹ Includes commercial drivers where annual miles per driver, driver's sex or both were unreported.

FIGURE 9.1

DISTRIBUTION OF COMMERCIAL DRIVERS BY DRIVERS' SEX AND ANNUAL COMMERCIAL MILES DRIVEN PER DRIVER 1990 NPTS

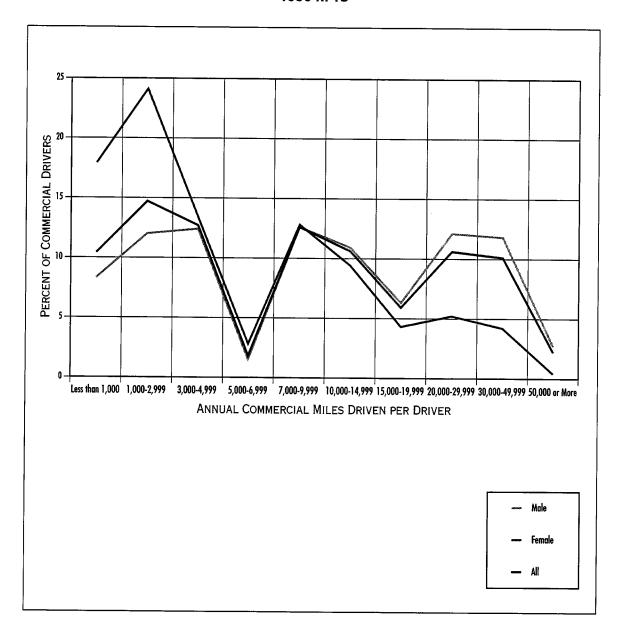


TABLE 9.3

Number of Commercial Drivers by Drivers' Age, Sex and Ratio of Commercial Miles Driven to Total Annual Miles Driven' 1990 NPTS (THOUSANDS)

% Commercial Miles Driven of Total Annual Miles Driven	16 - 19 years	20-29 years	30-39 years	40-49 years	50-59 years	60-64 years	65 years or older	TOTAL ²
MALE								
Less than 10%	112	529	682	466	169	34	38	2,030
	(47.3%)	(19.2%)	(16.8%)	(15.4%)	(10.4%)	(6.8%)	(18.5%)	(16.3%)
10%-49%	74	1,286	1,660	1,270	705	203	58	5,258
•	(31.2%)	(46.6%)	(40.9%)	(41.9%)	(43.3%)	(40.6%)	(28.6%)	(42.3%)
50%-89%	42	638	1,402	1,048	597	225	63	4,014
ĺ	(17.5%)	(23.1%)	(34.5%)	(34.6%)	(36.6%)	(44.9%)	(31.0%)	(32.3%)
90% or More	9	306	314	248	158	38	45	1,118
Ì	(3.9%)	(11.1%)	(7.7%)	(8.2%)	(9.7%)	(7.6%)	(21.9%)	(9.0%)
TOTAL ²	237	2,759	4,059	3,033	1,628	500	204	12,420
*	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
FEMALE								
Less than 10%	31	292	275	152	47	**	**	798
	(37.2%)	(32.4%)	(22.6%)	(20.4%)	(10.3%)	(0.0%)	(0.0%)	(22.4%)
10%-49%	28	417	567	375	205	29	41	1,663
ĺ	(33.2%)	(46.3%)	(46.6%)	(50.3%)	(44.5%)	(41.7%)	(53.2%)	(46.8%)
50%-89%	13	159	259	158	149	32	7	778
İ	(16.0%)	(17.6%)	(21.3%)	(21.2%)	(32.2%)	(46.0%)	(9.3%)	(21.9%)
90% or More	11	33	114	61	60	9	29	317
Ĭ	(13.6%)	(3.7%)	(9.4%)	(8.1%)	(13.0%)	(12.2%)	(37.4%)	(8.9%)
TOTAL ²	84	902	1,216	746	462	70	76	3,556
İ	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ There were 13.5% or 3,008 thousand commercial drivers (weighted) whose information on the ratio of commercial miles driven to total annual miles driven was unusable. This grouprepresented 632 drivers in the sample.

Does not include commercial drivers whose age, sex and/or ratio of miles was unreported.

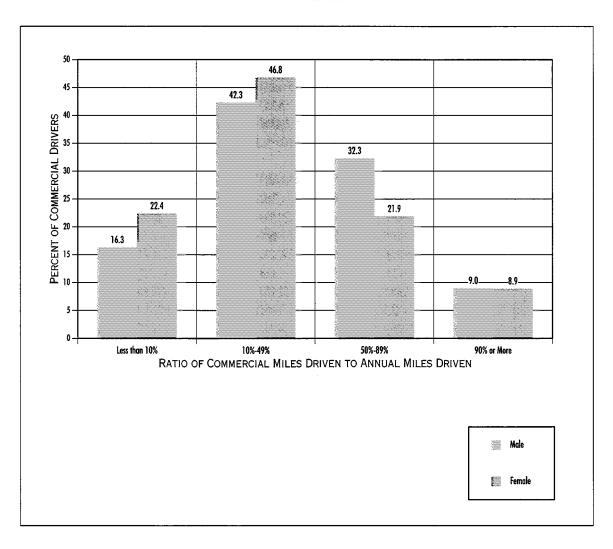
^{**} Indicates no data reported.

Table 9.3 presents the distribution of workers with driving as part of their work contributing to their overall annual driving. The majority of workers for whom driving was part of their work had half of their annual driving for work; and only less than 10% of the workers

contributed 90% of their overall driving to work. Female workers for whom driving was part of their work reported a smaller percentage of their overall driving being for their work than male workers.

FIGURE 9.2

DISTRIBUTION OF COMMERCIAL DRIVERS BY DRIVERS' SEX AND RATIO OF COMMERCIAL MILES DRIVEN TO TOTAL ANNUAL MILES DRIVEN 1990 NPTS



More than half of the workers for whom driving was an essential part of their work typically drove commercially five days in a week. Female workers for whom driving was an

essential part of their work drove fewer days during a typical week than their male counterparts.

TABLE 9.4

NUMBER OF COMMERCIAL DRIVERS BY DRIVERS' SEX AND THE NUMBER OF DAYS OF COMMERCIAL DRIVING IN A TYPICAL WEEK 1990 NPTS (THOUSANDS)

Number of Days Driving Commercially in a Typical Week	Male Driver	Female Driver	TOTAL
lnë e	443	293	737
	(2.6%)	(6.0%)	(3.3%)
iwo .	912	480	1,392
	(5.3%)	(9.8%)	(6.3%)
Three	1,361	731	2,093
j	(7.9%)	(14.9%)	(9.4%)
our	1,070	403	1,472
	(6.2%)	(8.2%)	(6.6%)
ive	9,192	2,159	11,358
	(53.0%)	(44.0%)	(51.0%)
ix	2,791	47.0	3,261
	(16.1%)	(9.6%)	(14.7%)
even	1,470	359	1,829
*	(8.5%)	(7.3%)	(8.2%)
rotal ¹	17,336	4,905	22,248
	(100.0%)	(100.0%)	(100.0%)

¹ Includes commercial drivers whose sex and number of days they do commercial driving in a typical week were unreported.

TARLE 9.5

NUMBER OF COMMERCIAL DRIVERS BY DRIVERS' AGE AND SEX 1990 NPTS (THOUSANDS)

Drivers' Age	Male	Female	TOTAL ¹
16 - 19	332	120	451
	(1.9%)	(2.4%)	(2.0%)
20 - 29	3,777	1,239	5,016
	(21.8%)	(25.3%)	(22.5%)
30 - 39	5,509	1,611	7,120
	(31.8%)	(32.8%)	(32.0%)
40 - 49	4,194	1,033	5,227
	(24.2%)	(21.1%)	(23.5%)
50 - 59	2,355	636	2,991
	(13.6%)	(13.0%)	(13.4%)
60 - 64	728	120	848
"	(4.2%)	(2.4%)	(3.8%)
65 or older	361	105	466
	(2.1%)	(2.1%)	(2.1%)
TOTAL	17,336	4,905	22,248
	(100.0%)	(100.0%)	(100.0%)
Number of Licensed Drivers	80,289	82,707	163,025
	(17,033)2	$(18,112)^2$	(35,152)2
Percentage Commercial Drivers of	21.6%	5.9%	13.6%
Total Drivers	(3,707) ³	(1,081)3	(4,789)3
Number of Workers	63,996	54,334	118,343
	(13,570) ²	(11,946) ²	(25,520) ²
Percentage Commercial Drivers of	27.1%	9.0%	18.8%
Total Workers	(3,707)3	(1,081)3	(4,789)3

¹ Includes commercial drivers whose age, sex or both were unreported.

² The number in the parenthesis is the unweighted sample size.

³ The number in the parenthesis is the unweighted sample size of commercial drivers.

On average, about 14% of all drivers and 19% of all workers were in occupations where driving was an essential part of their work. The percentage of male drivers for whom driving was an essential part of their work was

three times that of female drivers - 22% vs. 6% (Table 9.5). The likelihood of participating in occupations where driving is essential decreased with age.

FIGURE 9.3

PERCENTAGE OF COMMERCIAL DRIVERS AS TOTAL DRIVERS BY DRIVERS' AGE AND SEX 1990 NPTS

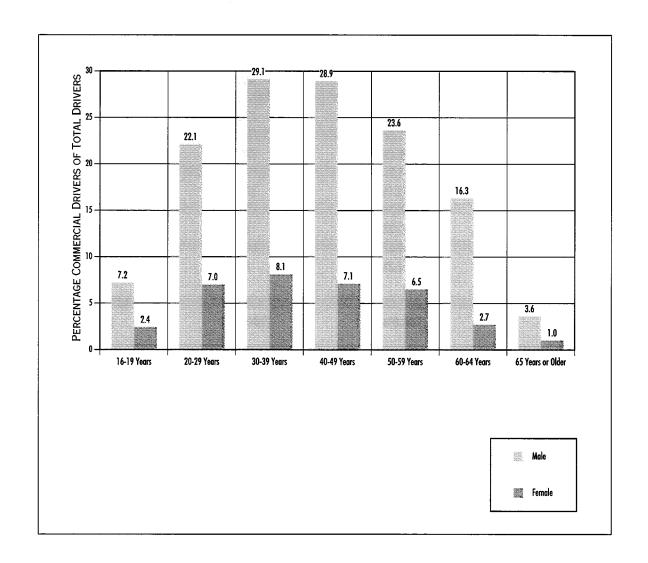


TABLE 9.6

NUMBER OF COMMERCIAL MILES DRIVEN¹ BY DRIVERS' AGE AND SEX 1990 NPTS (THOUSANDS)

Drivers' Age	Male	Female	TOTAL ²
16 - 19	1,772,393	384,546	2,156,939
	(0.7%)	(1.0%)	(0.7%)
20 - 29	47,976,809	8,637,603	56,614,411
	(18.1%)	(22.8%)	(18.7%)
30 - 39	92,792,097	13,740,770	106,532,867
	(35.0%)	(36.2%)	(35.2%)
40 - 49	68,808,280	7,778,034	76,586,314
	(26.0%)	(20.5%)	(25.3%)
50 - 59	39,019,212	5,714,423	44,733,635
	(14.7%)	(15.1%)	(14.8%)
60 - 64	10,404,715	832,748	11,237,464
	(3.9%)	(2.2%)	(3.7%)
65 or older	3,188,028	644,739	3,832,767
	(1.2%)	(1.7%)	(1.3%)
TOTAL	264,827,707	37,964,095	302,824,111
	(100.0%)	(100.0%)	(100.0%)

¹ Estimated by multiplying the number of commercial miles driven in a typical week by 48 weeks.

 $^{^{\}rm 2}$ Includes miles of travel where driver's age, sex or both were unreported.

On average, male workers for whom driving was an essential part of their work drove more than twice as much as their female counterparts. The gap in the number of miles driven as part of their work between male and female workers was the smallest in both

the youngest and the oldest age categories. Gender difference was also observed in the distribution of the number of workers categorized by the amount of driving performed as part of their work (see Table 9.2).

TABLE 9.7

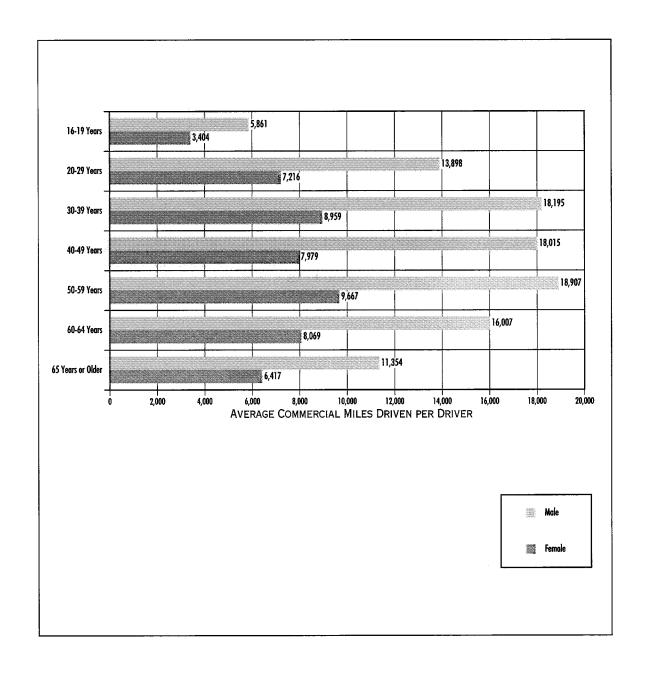
AVERAGE ANNUAL COMMERCIAL MILES DRIVEN PER DRIVER' BY DRIVERS' AGE AND SEX 1990 NPTS (THOUSANDS)

Drivers' Age	Male	Female	ALL	
16 - 19	5,861	3,404	5,193	
20 - 29	13,898	7,216	12,177	
30 - 39	18,195	8,959	16,059	
40 - 49	18,015	7,979	15,975	
50 - 59	18,907	9,667	16,850	
60 - 64	16,007	8,069	14,920	
65 or older	11,354	6,417	10,053	
ALL	16,838	8,189	14,866	

¹ Information based on observations that had valid commercial miles of travel information.

FIGURE 9.4

ESTIMATED AVERAGE ANNUAL COMMERCIAL MILES DRIVEN PER DRIVER BY DRIVERS' AGE AND SEX 1990 NPTS



About half of the total driving done as part of work was by trucks, including pickup trucks and medium and heavy trucks, and another one-third by automobiles. Workers using heavier trucks in their commercial driving drove significantly more than other workers. This probably reflects the fact that most commercial driving on heavier trucks was for long-distance hauling.

TABLE 9.8

NUMBER OF COMMERCIAL MILES DRIVEN, NUMBER OF COMMERCIAL DRIVERS AND AVERAGE COMMERCIAL MILES DRIVEN PER DRIVER BY VEHICLE TYPE 1990 NPTS

	Commercial Miles Driven (000)	Commercial Drivers (000)	Commercial Miles Driven per Driver¹
Automobile	110,604,948	10,052	11,710
	(36.5%)	(45.2%)	
Passenger Van	13,174,351	1,299	11,190
	(4.4%)	(5.8%)	
Cargo Van	14,830,080	1,127	14,000
	(4.9%)	(5.1%)	
Pickup Truck	58,659,913	5,067	12,793
	(19.4%)	(22.8%)	
Other Truck	90,980,717	3,599	28,683
	(30.0%)	(16.2%)	
Other Private Vehicle	603,767	37	16,489
,	(0.2%)	(0.2%)	
Bus	1,671,114	119	18,269
	(0.6%)	(0.5%)	
School Bus	3,720,777	298	13,993
	(1.2%)	(1.3%)	
Other	8,498,948	636	16,087
	(2.8%)	(2.9%)	
TOTAL ²	302,824,111	22,248	14,866
	(100.0%)	(100.0%)	
¹ Information based on observation travel information.	ons that had valid commercial miles of	² Includes commercial drivers and mile unreported.	es of travel where vehicle type was

⁹⁻¹⁵

FIGURE 9.5

DISTRIBUTION OF COMMERCIAL MILES DRIVEN BY VEHICLE TYPE 1990 NPTS

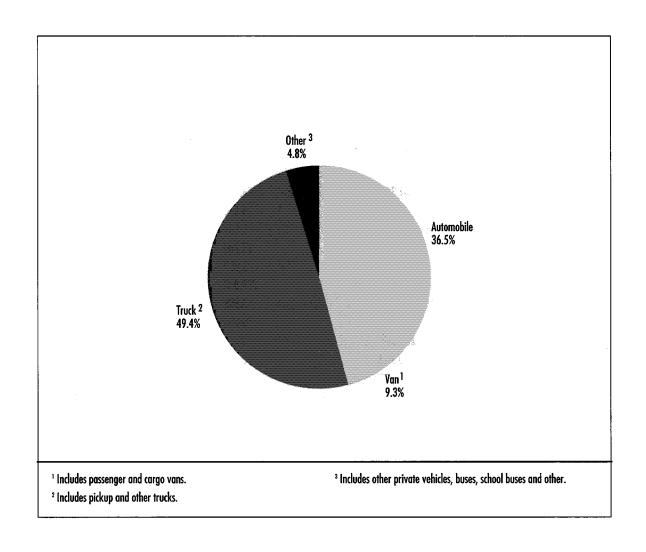


TABLE 9.9

Number of Commercial Drivers by Drivers' Sex, Annual Commercial Miles Driven and Vehicle Type 1990 NPTS (THOUSANDS)

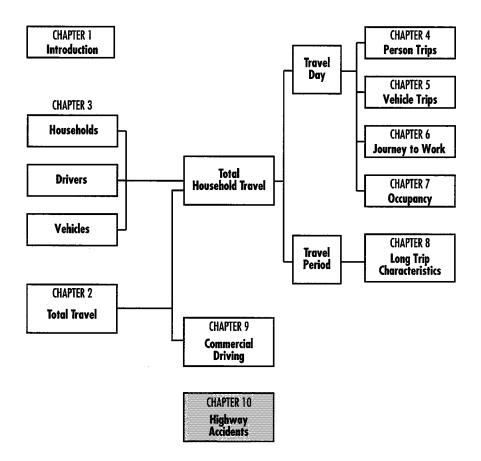
	Annual Commercial Miles Driven Per Driver								
	< 20),000	20-5	20-50,000		> 50,000		TOTAL	
	Male	Female	Male	Female	Male	Female	Male	Female	
Automobile	4,426	3,210	1,475		51	4	6,371	3,674	
	(39.9%)	(77.2%)	(35.5%)	(59.0%)	(10.8%)	(25.4%)	(36.7%)	(74.9%)	
Passenger Van	587	358	201	28	4	**	885	414	
n Assatanak (n. c. c. c. c.	(5.3%)	(8.6%)	(4.8%)	(6.0%)	(0.9%)	(0.0%)	(5.1%)	(8.4%)	
Cargo Van	784	57	192	5	20	**	1,065	63	
	(7.1%)	(1.4%)	(4.6%)	(1.1%)	(4.3%)	(0.0%)	(6.1%)	(1.3%)	
Pickup Truck	3,317	334	829	49	56	+•	4,659	408	
	(29.9%)	(8.0%)	(20.0%)	(10.7%)	(11.9%)	(0.0%)	(26.9%)	(8.3%)	
Other Truck	1,484	44	1,286	26	323	9	3,514	85	
	(13.4%)	(1.1%)	(31.0%)	(5.5%)	(68.7%)	(50.7%)	(20.3%)	(1.7%)	
Other Private Vehicle	12	8	16	••	1	**	29	8	
	(0.1%)	(0.2%)	(0.4%)	(0.0%)	(0.1%)	(0.0%)	(0.2%)	(0.2%)	
Bus	50	11	28	3	••	•••	94	24	
	(0.4%)	(0.3%)	(0.7%)	(0.6%)	(0.0%)	(0.0%)	(0.5%)	(0.5%)	
School Bus	108	95	15	44	••	4	143	155	
	(1.0%)	(2.3%)	(0.4%)	(9.6%)	(0.0%)	(23.9%)	(0.8%)	(3.2%)	
Other	332	36	111	35	15	••	565	71	
	(3.0%)	(0.%)	(2.7%)	(7.5%)	(3.2%)	(0.0%)	(3.3%)	(1.4%)	
TOTAL	11,105	4,157	4,154	461	470	18	17,336	4,905	
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%	

¹ Includes commercial drivers whose sex, annual commercial miles driven and/or vehicle type were unreported.

^{**} Indicates no data reported.

The disparity between genders was considerable in the type of vehicle used for commercial driving. The percentage of female workers for whom driving an automobile was an essential part of their work was twice of their male counterparts - 75% vs. 37%. Also, the percentage of female school bus drivers was three times that of male school bus drivers - 3.2% vs. 0.8%. On the other hand, less than 2% of female workers drove heavier trucks as part of their work, compared to 20% in male workers. The type of commercial driving (e.g., local, short-haul, long-haul) basically governed the

type of vehicle used. Cars and pickup trucks were more commonly used for short-distance hauling while heavier trucks were more frequently used for long-distance hauling. If driving was an essential part of their work, females, in general, tended to use automobiles, passenger vans and pickup trucks, while males used cargo vans and heavier trucks.



CHAPTER 10

NPTS HIGHWAY ACCIDENT DATA



- Approximately two-thirds of all highway motor vehicle accidents result in property damage only (PDO).
- Of these property damage only accidents, a police report is filed in three-quarters of the cases. The remaining quarter are considered "unreported" accidents. Most states have threshold amounts of damage before a police report is required.
- In terms of the characteristics of unreported accidents, about 77% involve two or more vehicles. Only 23% are single-vehicle accidents.

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CHAPTER 10 NPTS HIGHWAY ACCIDENT DATA

HIS chapter presents information on highway accidents that occurred during the five-year period prior to the 1990 NPTS survey. The questions in the questionnaire only refer to the most recent accident that occurred in the last 5 years. Furthermore, highway accidents in the 1990 NPTS refer only to those that involved a motor vehicle on a public highway or road, resulting in property damage and/or personal injury. Motor vehicle accidents in a parking lot, in a driveway, on a private road, or in a foreign country were excluded from the survey. Therefore, readers should be cautious when interpreting data presented in this chapter. Survey results presented in this chapter by no means represent an overall picture of all motor vehicle accidents during any time period. Consequently, one should not compare data presented in this chapter with those published in other sources.

Specifically, the emphasis of this chapter is on the estimated differences between accidents for which police reports were filed and those for which no police reports were filed. A reported-accident in this survey is one for which the respondent thinks that a police report has been filed. Every state has laws requiring accidents involving serious bodily injury or fatality to be reported, but the thresholds for reporting property damage only (PDO) accidents vary from state to state.

ACCIDENT QUESTIONS IN NPTS

The accident questions were added to the NPTS survey in an effort to obtain data on the number and characteristics of accidents for which no police report was filed. Most commonly, these are PDO accidents with damage below \$500. The U. S. Department of Transportation (DOT) is interested in unreported accidents because they are part of the measures of

safety for the highway system, the vehicle and the driver. While there are other data systems that provide information on fatal accidents and other reported highway crashes, there was no source of national data on the phenomenon of unreported accidents. These accidents certainly have economic and social costs associated with them, and it was important to attempt to define their scope and nature. Accordingly, questions on these unreported accidents were included as part of the 1990 NPTS.

CAVEATS REGARDING NPTS HIGHWAY ACCIDENT DATA

The reader should be aware of the fact that highway crash data reported in this chapter are based on information collected from a total of 6,830 accidents. Of these, respondents stated that a police report was filed in 5,400 accidents, and no police report was filed in the remaining 1,430 accidents. Throughout this chapter, tables on "unreported" accidents are based on this sample of 1,430 accidents.

Due to the small sample size, there are several concerns about the quality of the NPTS accident data. These concerns are reflected in the following aspects:

- A relatively small proportion of respondents (14 percent) reported being the driver in the most recent highway crash during the past five years.
- It appears that many of the drivers did not know whether a police report was filed. This might happen under the circumstance when the police may have been called to the scene, but did not file a report because the accident took place on private property. Or, one of the parties may have called the police later and a report was filed.

- The ratio of reported to unreported accidents was greater than initially expected. There was almost a 4 to 1 ratio of reported to unreported accidents. According to DOT's experience, this ratio was expected to be closer to 2 to 1.
- Although unreported accidents took place under adverse road conditions, they did not do so to the degree expected by the DOT.

GENERAL ESTIMATES SYSTEM DATA

Representative statistics on police-reported motor vehicle crashes are published by DOT's National Highway Traffic Safety Administration (NHTSA) in its annual publication General Estimates System. From 1988 to 1990, the number of policereported crashes dropped by 6 percent, from 6.877 thousand crashes in 1988 to 6.462 thousand in 1990. Crashes resulting in severe or fatal injuries declined by 8 percent during the period, though the number of minor or moderate injury crashes remained the same.1 Motor vehicle crashes involving more than one vehicle outnumbered single-vehicle crashes by more than two to one (Table 10.1).

NPTS ACCIDENT SUMMARY

Based on data collected in the NPTS, the majority of households were not involved in any motor-vehicle accidents during the five-year period prior to the 1990 NPTS survey. More than 80 percent of the accidents involved automobiles. Out of the 32 million accidents estimated from the survey, 78 percent were reported and 21 percent were unreported. The difference between reported and unreported accidents in terms of the type of vehicle involved in the accident is negligible.

DRIVER CHARACTERISTICS

More than half of the accidents involved male drivers — 54 percent of reported accidents and 52 percent of unreported accidents. There was no difference between male drivers and female drivers in reporting accidents. Drivers between the ages of 20 and 29 were involved in more accidents than drivers in other age groups. This is true for both male and female drivers.

ACCIDENT SEVERITY

Single-vehicle accidents were more likely to be unreported than multiple-vehicle accidents. More than three quarters of the accidents did not result in any injury or fatality. The proportion of unreported accidents that resulted in no injury was significantly greater than that of police-reported accidents. As expected, police-reported accidents resulted in a larger proportion of more serious injuries than did unreported accidents. Ninety-two percent of unreported accidents resulted in property damage only.

National Highway Traffic Safety Administration, General Estimates System, 1990, DOT HS 807 781, U.S. Department of Transportation, Washington, D.C. November 1991.

TABLE 10.1

MOTOR VEHICLE CRASHES BY CRASH TYPE AND CRASH SEVERITY (THOUSANDS)

Crash Type	Property Damage Only	Minor or Moderate Injury	Severe or Fatal Injury	TOTAL
Single Vehicle	1,235	631	176	2,043
	(60%)	(31%)	(9%)	(100%)
Multi-Vehicle	3,020	1,194	205	4,419
	(68%)	(27%)	(5%)	(100%)
TOTAL	4,255	1,825	382	6,462
	(66%)	(28%)	(6%)	(100%)

Source: National Highway Traffic Safety Administration, <u>General Estimates System, 1990</u>, DOT HS 807 781. U.S. Department of Transportation, Washington, D.C. November 1991.

During the five-year period prior to the 1990 NPTS survey, slightly more than half of accidents involved male drivers — 53.6% for reported accidents and 52.4% for unreported ones. The distributions of accidents by driver's sex were relatively similar in both reported and unreported accidents indicating

that there was no difference in the type of accidents between male and female drivers. Partially because drivers in the age group 20 to 29 drove more compared to other age groups, they were more likely to be involved in highway crashes than any other age group.

TABLE 10.2

COMPARISON OF REPORTED ACCIDENTS AND UNREPORTED ACCIDENTS BY DRIVER'S AGE AND SEX 1990 NPTS

		Reported Accident	· · · · · · · · · · · · · · · · · · ·	Unreported Accident			
Driver's Age	Male	Female	TOTAL	Male	Female	TOTAL	
16-19	830,211	694,417	1,524,628	219,250	286,830	506,080	
	(6.2%)	(6.0%)	(6.1%)	(6.3%)	(9.0%)	(7.6%)	
20-29	4,356,812	3,567,702	7,924,513	1,085,134	938,804	2,023,938	
	(32.6%)	(30.9%)	(31.8%)	(31.2%)	(29.6%)	(30.4%)	
30-39	3,383,447	2,950,819	6,334,266	946,606	978,279	1,924,885	
	(25.3%)	(25.5%)	(25.4%)	(27.3%)	(30.8%)	(29.0%)	
40-49	1,953,418	1,884,370	3,837,788	556,035	550,174	1,106,209	
***	(14.6%)	(16.3%)	(15.4%)	(16.0%)	(17.3%)	(16.6%)	
50-59	1,206,394	1,122,469	2,328,863	270,309	198,458	468,767	
``	(9.0%)	(9.7%)	(9.3%)	(7.8%)	(6.3%)	(7.1%)	
60-64	456,513	399,237	855,750	92,928	36,736	129,664	
	(3.4%)	(3.5%)	(3.4%)	(2.7%)	(1.2%)	(2.0%)	
65+	1,118,879	861,787	1,980,665	296,637	167,799	464,435	
	(8.4%)	(7.5%)	(7.9%)	(8.5%)	(5.3%)	(7.0%)	
TOTAL	13,367,069	11,550,350	24,924,151	3,472,648	3,175,140	6,647,789	
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	

¹ Includes accidents where driver's age was unreported.

Of the estimated 31 million accidents during the five-year period prior to the 1990 NPTS survey, 79% were reported and 21% unreported. Regardless of accident reporting status, about 80% of the accidents involved automobiles.

TABLE 10.3

COMPARISON OF REPORTED ACCIDENTS AND UNREPORTED ACCIDENTS BY TYPE OF VEHICLE IN ACCIDENTS 1990 NPTS

Vehicle Type ¹	Reported Accident	Unreported Accident	Dist. of Household Vehicles
Automobile	20,023,420	5,379,782	74.7%
8.50.12 .000	(80.3%)	(80.9%)	
Pickup Truck	2,733,275	727,06 5	17.2%
	(11.0%)	(10.9%)	
Van	1,029,096	304,692	5.5%
	(4.1%)	(4.6%)	
Other Truck	727,816	145,321	0.6%
	(2.9%)	(2.2%)	
Motorcycle	211,506	64,926	1.3%
	(0.8%)	(1.0%)	
Other	150,012	26,003	0.7%
	(0.6%)	(0.4%)	
TOTAL ²	24,924,151	6,647,789	100.0%
	(100.0%)	(100.0%)	

Refers to the vehicle that was driven by the household member being interviewed. The above table does not purport to display all vehicles in the accident, only the one driven by the interviewed household member who was involved in the accident.

² Includes accidents where vehicle type was unreported.

TABLE 10.4

COMPARISON OF REPORTED ACCIDENTS AND UNREPORTED ACCIDENTS BY OTHER VEHICLE INVOLVEMENT 1990 NPTS

	Single-Vehicle Accident	Multiple-Vehicle Accident	Unknown	TOTAL
Reported	2,497,798	22,372,766	53,587	24,924,151
	(10.0%)	(89.9%)	(0.2%)	(100.0%)
Unreported	1,517,530	5,130,259	0	6,647,789
	(22.8%)	(77.2%)	(0.0%)	(100.0%)
Unknown	100,057	211,926	129,564	441,547
	(22.7%)	(48.0%)	(29.3%)	(100.0%)
TOTAL	4,115,385	27,714,951	183,151	32,013,487
	(12.9%)	(86.6%)	(0.6%)	(100.0%)

Almost one-fourth of all unreported accidents were single-vehicle accidents, but only 10% of reported accidents involved one vehicle. According to the literature, a plausible rea-

son for single-vehicle accidents not being reported might be to avoid increases in insurance premiums resulting from accidents.

TARLE 105

COMPARISON OF REPORTED ACCIDENTS AND UNREPORTED ACCIDENTS BY NUMBER OF VEHICLES INVOLVED IN THE ACCIDENT 1990 NPTS

No. of Vehicles Involved	Reported Accident	Unreported Accident	Unknown	TOTAL
1	2,497,798	1,517,530	100,057	4,115,385
	(10.0%)	(22.8%)	(22.7%)	(12.9%)
2	20,584,040	5,023,468	183,445	25,790,953
	(82.6%)	(75.6%)	(41.5%)	(80.6%)
3	1,467,103	88,244	18,037	1,573,384
	(5.9%)	(1.3%)	(4.1%)	(4.9%)
4	188,723	**	10,443	199,166
	(0.8%)	(0.0%)	(2.4%)	(0.6%)
5	85,039	•		97,504
Ĭ	(0.3%)	(0.0%)	(0.0%)	(0.3%)
6+	47,862		•	53,944
	(0.2%)	(0.0%)	(0.0%)	(0.2%)
TOTAL'	24,924,151	6,647,789	441,547	32,013,487
	(100.0%)	(100.0%)	(100.0%)	(100.0%)

Includes accidents where number of vehicles involved was unreported.
Also includes records where insufficient data were reported in other cells.

^{*} Indicates insufficient data reported.

^{**} Indicates no data reported.

FIGURE 10.1

DISTRIBUTION OF ACCIDENTS BY NUMBER OF VEHICLES INVOLVED AND REPORTING STATUS 1990 NPTS

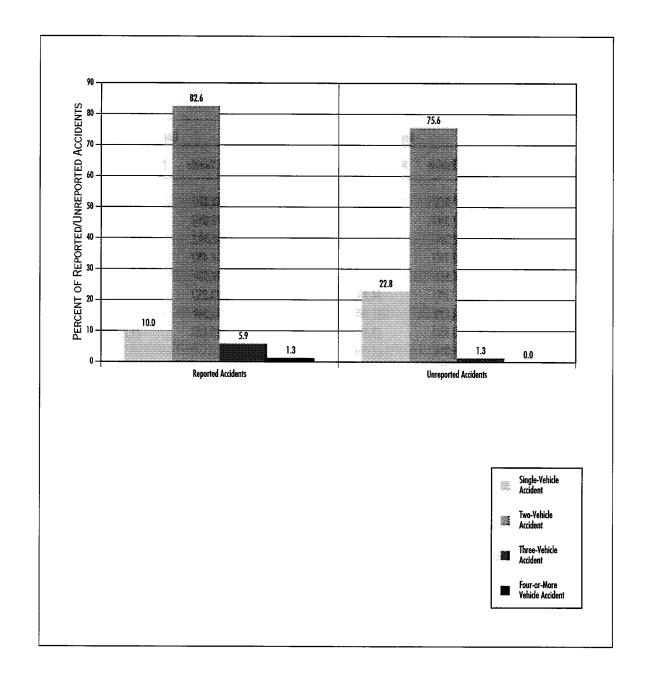


TABLE 10.6

COMPARISON OF REPORTED ACCIDENTS AND UNREPORTED ACCIDENTS BY VEHICLE TYPE AND OTHER VEHICLE INVOLVEMENT 1990 NPTS

		Reported Accident	Unreported Accident			
Vehicle Type¹	Single Vehicle	Multiple Vehicle	TOTAL ²	Single Vehicle	Multiple Vehicle	TOTAL ²
Automobile	1,930,022	18,082,927	20,023,420	1,198,370	4,181,412	5,379,782
:	(77.3%)	(80.8%)	(80.3%)	(79.0%)	(81.5%)	(80.9%)
Pickup Truck	302,891	2,430,384	2,733,275	172,342	554,723	727,065
	(12.1%)	(10.9%)	(11.0%)	(11.4%)	(10.8%)	(10.9%)
Van	96,556	932,540	1,029,096	49,589	255,103	304,692
	(3.9%)	(4.2%)	(4.1%)	(3.3%)	(5.0%)	(4.6%)
Other Truck	96,622	631,194	727,816	55,049	90,273	145,321
	(3.9%)	(2.8%)	(2.9%)	(3.6%)	(1.8%)	(2.2%)
Motorcycle	44,369	167,137	211,506		•	64,926
·	(1.8%)	(0.7%)	(0.8%)	(0.0%)	(0.0%)	(1.0%)
Other	27,338	122,674	150,012	•	23,017	26,003
	(1.1%)	(0.5%)	(0.6%)	(0.0%)	(0.4%)	(0.4%)
TOTAL ²	2,497,798	22,372,766	24,924,151	1,517,530	5,130,259	6,647,789
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ See Footnote 1 of Table 10.3.

^{*} Indicates insufficient data reported.

² Includes accidents for which information on whether other vehicles were involved in the accident, the type of vehicle involved in the accident, or both were unreported. Also includes records where insufficient data were reported in other cells.

More than three quarters of all accidents did not result in any injury or fatality. Single-vehicle accidents that did not result in any injury were more likely to go unreported than multiple-vehicle accidents that resulted in no injury. 42% vs 22%.

TABLE 10.7

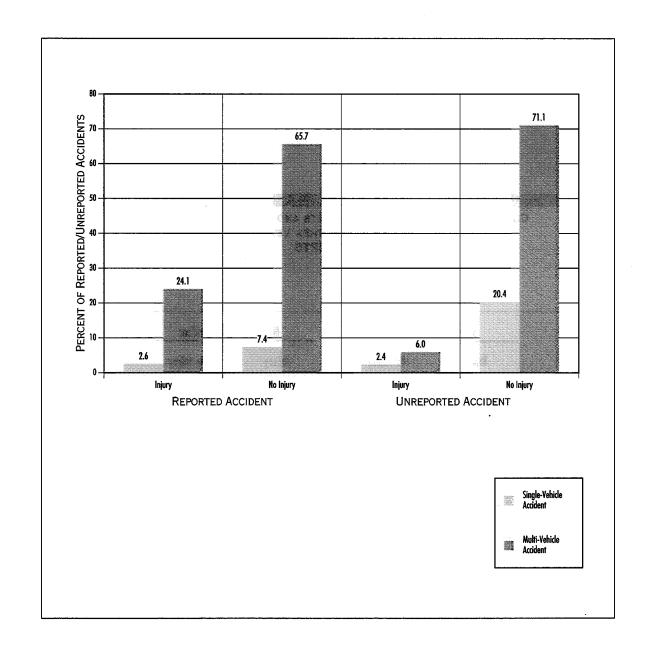
COMPARISON OF REPORTED ACCIDENTS AND UNREPORTED ACCIDENTS BY ACCIDENT SEVERITY AND OTHER VEHICLE INVOLVEMENT 1990 NPTS

	Single-Veh	Single-Vehicle Accident		Multiple-Vehicle Accident	
	Injury	No Injury	Injury	No Injury	TOTAL
Reported	652,965	1,844,833	5,996,553	16,341,753	24,924,151
	(75.6%)	(56.7%)	(92.7%)	(77.1%)	(77.9%)
Unreported	158,971	1,358,559	395,780	4,726,482	6,647,789
	(18.4%)	(41.8%)	(6.1%)	(22.3%)	(20.8%)
TOTAL ¹	863,912	3,251,473	6,466,557	21,205,638	32,013,487
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

¹ Includes accidents for which information on accident reporting status, whether other vehicles were involved in the accident and/or accident severity were unreported.

FIGURE 10.2

DISTRIBUTION OF ACCIDENTS BY REPORTING STATUS AND ACCIDENT SEVERITY 1990 NPTS



This table presents data based on the most serious injury that resulted from the accident. Police-reported accidents had a considerably larger proportion of serious injuries that required transporting to a medical facility than unreported accidents. As expected, more than 97% of unreported accidents resulted in property damage only or in minor injuries that did not require any medical attention.

TABLE 10.8

COMPARISON OF REPORTED ACCIDENTS AND UNREPORTED ACCIDENTS BY VEHICLE INVOLVEMENT AND MOST SERIOUS ACCIDENT INJURY 1990 NPTS

		Reported Acciden	<u>† </u>	Uı	nreported Acciden	ıt
Most Serious Injury	Single Vehicle	Multiple Vehicle	TOTAL	Single Vehicle	Multiple Vehicle	TOTAL
Property damage only	1,844,833	16,376,214	18,252,844	1,358,559	4,734,478	6,093,037
	(73.9%)	(73.2%)	(73.2%)	(89.5%)	(92.3%)	(91.7%)
Injury, but no transport to medical center	159,781	2,290,976	2,450,757	90,632	303,727	394,358
	(6.4%)	(10.2%)	(9.8%)	(6.0%)	(5.9%)	(5.9%)
Transport to medical center	471,758	3,592,397	4,085,943	68,339	92,054	160,393
	(18.9%)	(16.1%)	(16.4%)	(4.5%)	(1.8%)	(2.4%)
Fatal injury	*	76,115	97,542	**	**	**
	(0.0%)	(0.3%)	(0.4%)	(0.0%)	(0.0%)	(0.0%)
TOTAL	2,497,798	22,372,766	24,924,151	1,517,530	5,130,259	6,647,789
	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)	(100.0%)

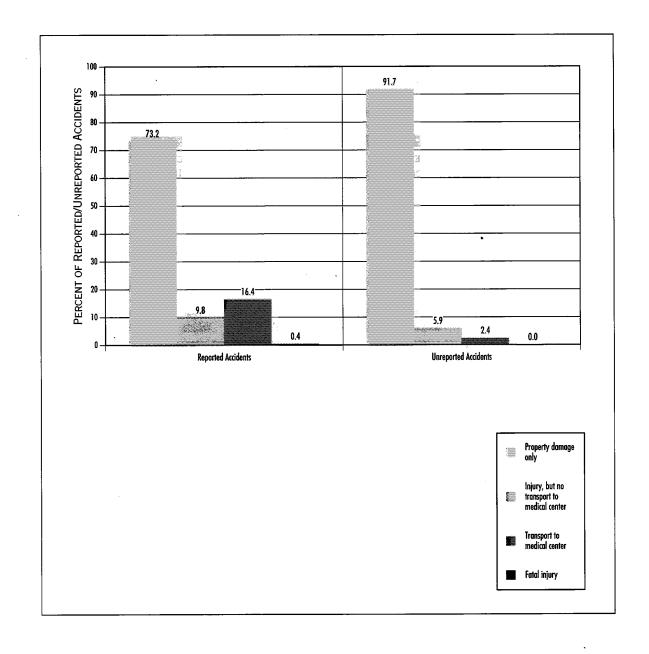
Includes accidents for which information on whether there were other vehicles involved, the most serious injury resulted or both were unreported. Also includes records where insufficient data were reported in other cells.

^{*} Indicates insufficient data reported.

^{**} Indicates no data reported.

FIGURE 10.3

DISTRIBUTION OF ACCIDENTS BY MOST SERIOUS ACCIDENT INJURY AND REPORTING STATUS 1990 NPTS



There were about three times as many crashes within cities or towns as in the open country. This estimate is in agreement with NHTSA's estimate based on data reported in

the General Estimates System. There is no difference between reported accidents and unreported accidents in terms of where the accidents occurred.

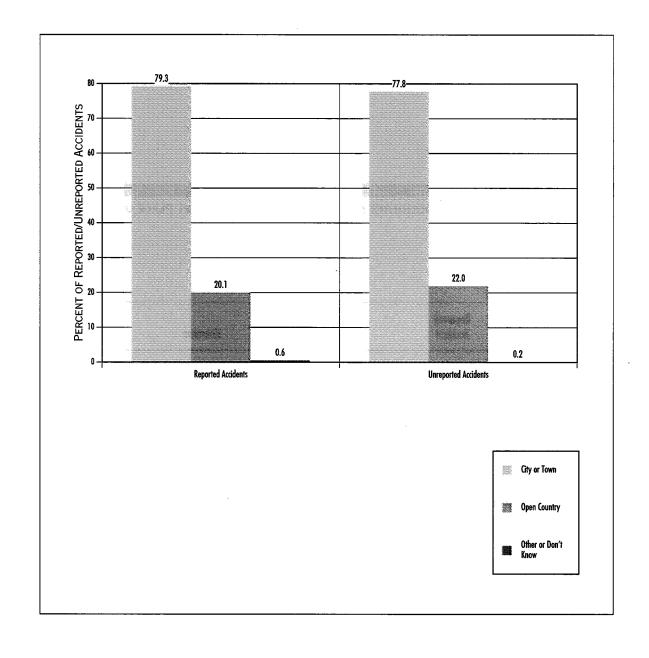
TABLE 10.9

COMPARISON OF REPORTED ACCIDENTS AND UNREPORTED ACCIDENTS BY PLACE OF ACCIDENT 1990 NPTS

Reported Accident	Unreported Accident	Unknown	TOTAL
19,774,050	5,172,298	243,206	25,189,554
(79.3%)	(77.8%)	(55.1%)	(78.7%)
5,015,924	1,459,286	68,787	6,543,997
(20.1%)	(22.0%)	(15.6%)	(20.4%)
134,177	16,205	129,555	279,936
(0.6%)	(0.2%)	(29.3%)	(0.9%)
24,924,151	6,647,789	441,548	32,013,487
(100.0%)	(100.0%)	(100.0%)	(100.0%)
	Accident 19,774,050 (79.3%) 5,015,924 (20.1%) 134,177 (0.6%)	Accident Accident 19,774,050 5,172,298 (79.3%) (77.8%) 5,015,924 1,459,286 (20.1%) (22.0%) 134,177 16,205 (0.6%) (0.2%) 24,924,151 6,647,789	Accident Accident Unknown 19,774,050 5,172,298 243,206 (79.3%) (77.8%) (55.1%) 5,015,924 1,459,286 68,787 (20.1%) (22.0%) (15.6%) 134,177 16,205 129,555 (0.6%) (0.2%) (29.3%) 24,924,151 6,647,789 441,548

FIGURE 10.4

DISTRIBUTION OF ACCIDENTS BY PLACE OF ACCIDENT AND REPORTING STATUS 1990 NPTS



According to the NHTSA's estimates, 55% of the motor vehicle crashes in 1990 occurred in daylight and normal weather. This estimate is similar to what the NPTS survey data suggest - 58% in daylight (when no headlights were required) and dry road conditions (Tables 10.10 and 10.11). Most of the reported single-vehicle accidents occurred in darkness and dry conditions, while the majority of the unreported single-vehicle accidents occurred in daytime and dry conditions.

TABLE 10.10

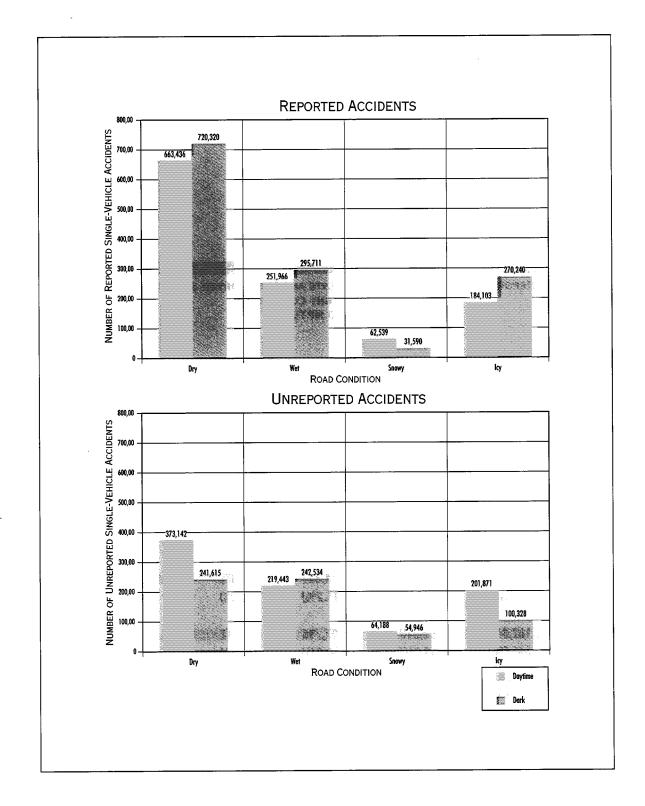
COMPARISON OF REPORTED SINGLE-VEHICLE ACCIDENTS AND UNREPORTED SINGLE-VEHICLE ACCIDENTS BY ROAD AND LIGHT CONDITION 1990 NPTS

Road Condition		Reported Accident		Unreported Accident			
	Daytime	Dark	TOTAL'	Daytime	Dark	TOTAL	
Dry	663,436	720,320	1,383,757	373,142	241,615	622,090	
	(26.6%)	(28.8%)	(55.4%)	(24.6%)	(15.9%)	(41.0%)	
Wet	251,966	295,711	554,840	219,443	242,534	461,977	
	(10.1%)	(11.8%)	(22.2%)	(14.5%)	(16.0%)	(30.4%)	
Snowy	62,539	31,590	94,128	64,188	54,946	119,134	
	(2.5%)	(1.3%)	(3.8%)	(4.2%)	(3.6%)	(7.9%)	
lcy	184,103	270,240	454,344	201,871	100,328	308,014	
	(7.4%)	(10.8%)	(18.2%)	(13.3%)	(6.6%)	(20.3%)	
TOTAL	1,162,045	1,323,213	2,497,798	858,644	641,688	1,517,530	
	(46.5%)	(53.0%)	(100.0%)	(56.6%)	(42.3%)	(100.0%)	

¹ Includes accidents where light condition, road condition or both were unreported.

FIGURE 10.5

COMPARISON OF SINGLE-VEHICLE ACCIDENTS BY REPORTING STATUS AND ROAD AND LIGHT CONDITION 1990 NPTS



Unlike single-vehicle accidents, there was no difference between reported and unreported multi-vehicle accidents in terms of the light and road conditions under which the accidents occurred. Regardless of the reporting

status, the number of multi-vehicle crashes that occurred in daylight outnumbered the number of multi-vehicle crashes that occurred in dark conditions about four to one.

TABLE 10.11

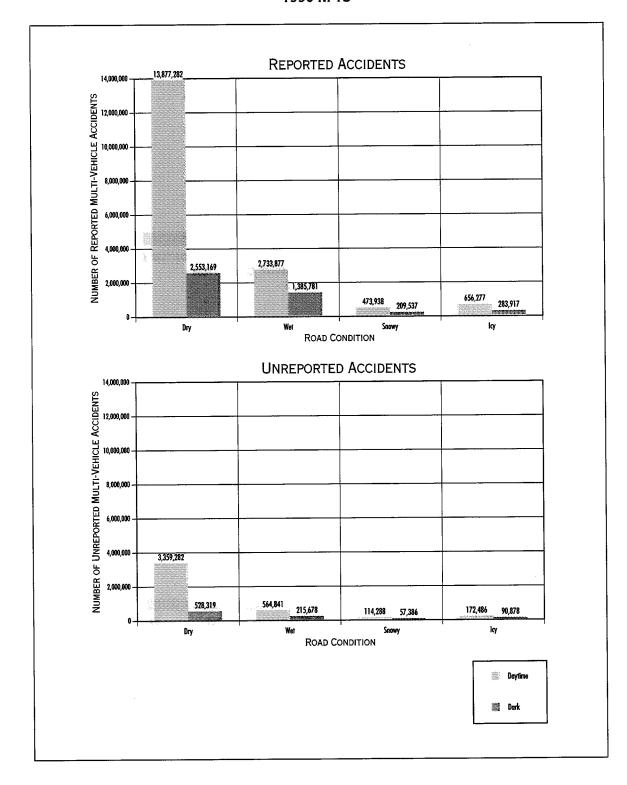
COMPARISON OF REPORTED MULTIPLE-VEHICLE ACCIDENTS AND UNREPORTED MULTIPLE-VEHICLE ACCIDENTS BY ROAD AND LIGHT CONDITION 1990 NPTS

	Reported Accident			Unreported Accident			
Road Condition	Daytime	Dark	TOTAL	Daytime	Dark	TOTAL	
Dry	13,877,282	2,553,169	16,449;636	3,359,282	528,319	3,887,601	
	(62.0%)	(11.4%)	(73.5%)	(65.5%)	(10.3%)	(75.8%)	
Wet	2,733,877	1,385,781	4,126,097	564,841	215,678	780,519	
	(12.3%)	(6.2%)	(18.4%)	(11.0%)	(4.2%)	(15.2%)	
Snowy	473,938	209,537	683,795	114,288	57,386	171,674	
	(2.1%)	(0.9%)	(3.1%)	(2.2%)	(1.1%)	(3.3%)	
lcy	656,277	283,917	948,115	172,486	90,878	263,364	
	(2.9%)	(1.3%)	(4.2%)	(3.4%)	(1.8%)	(5.1%)	
TOTAL	17,832,733	4,469,639	22,372,766	4,237,998	892,260	5,130,259	
	(79.7%)	(20.0%)	(100.0%)	(82.6%)	(17.4%)	(100.0%)	

¹ Includes accidents where light condition, road condition or both were unreported.

FIGURE 10.6

COMPARISON OF MULTIPLE-VEHICLE ACCIDENTS BY REPORTING STATUS AND ROAD AND LIGHT CONDITION 1990 NPTS



GLOSSARY OF TERMS USED IN NPTS APPENDICES

APPENDIX A

GLOSSARY OF TERMS USED IN NPTS



GLOSSARY OF TERMS USED IN NPTS APPENDICES

APPENDIX A GLOSSARY OF TERMS USED IN NPTS

HIS glossary provides the most common terms used in the NPTS and definitions of those terms. These definitions are provided to assist the user in the interpretation of the transportation data.

Census Division

The Census Bureau divides the states into the following divisions:

New England:

Connecticut

Maine

Massachusetts

New Hampshire

Rhode Island Vermont

• Middle Atlantic:

New Jersey Pennsylvania New York

• East North Central:

Illinois Michigan Indiana Ohio

Wisconsin

• West North Central:

Iowa

Kansas

Minnesota

Missouri

Nebraska

North Dakota

South Dakota

• South Atlantic:

Delaware Georgia

Florida Maryland

North Carolina

South Carolina

Virginia West Virginia

Alabama Mississippi

Kentucky Tennessee

West South Central:

• East South Central:

Arkansas

Louisiana

Oklahoma

Texas

Mountain:

Arizona Idaho Nevada

Colorado Montana

Utah

New Mexico Wyoming

• Pacific:

Alaska Hawaii California Oregon

Washington

Consolidated Metropolitan Statistical Area (CMSA)

A metropolitan complex of 1 million or more population, containing two or more component parts designated as primary metropolitan statistical areas (PMSAs).

Destination

For travel period trips, destination is the farthest point of travel from the point of origin to 75 miles or more on a one-way trip.

For travel day trips, the destination is the point at which there is a break in travel.

Driver

A driver is a person who operates a motorized vehicle. If more than one person drives on a single trip, the person who drives the most miles is classified as the principal driver.

Employed

A person is considered employed if he/she worked for pay, either full time of part time, during the week before the interview.

A person who is on call to work whenever there is a need for his/her services is not considered employed.

Education Level

The number of years of regular schooling completed in graded public, private, or parochial schools, or in colleges, universities, or professional schools, whether day school or night school. Regular schooling advances a person toward an elementary or high school diploma, or a college, university, or professional school degree.

Household

A group of persons whose usual place of residence is a specific housing unit; these persons may or may not be related to each other. The total of all U.S. households represents the total civilian non-institutionalized population.

A Household does <u>not</u> include group quarters (i.e., 10 or more persons living together, none of whom are related).

Household Income

Household income is the money earned by all family members in a household, including those temporarily absent. Annual income consisted of the income earned 12 months preceding the interview. Household income includes monies from all sources, such as wages and salary, commissions, tips, cash bonuses, income from a business or farm, pensions, dividends, interest, unemployment or workmen's compensation, social security, veterans' payments, rent received from owned property (minus the operating costs), public assistance payments, regular gifts of money from friends or relatives not living in the household, alimony, child support, and other kinds of periodic money income other than earnings.

Household income <u>excludes</u> in-kind income such as room and board, insurance payments, lump-sum inheritances, occasional gifts of money from persons not living in the same household, withdrawal of savings from banks, tax refunds, and the proceeds of the sale of one's house, car, or other personal property.

Household Members

Household members include all people, whether present or temporarily absent, whose usual place of residence is in the sample unit. Household members also include people staying in the sample unit who have no other usual place of residence elsewhere.

Household Trip

A household trip consists of one or more household members traveling together.

Household Vehicle

A household vehicle is a motorized vehicle that is owned, leased, rented or companyowned and available to be used regularly by household members during any travel period. Household vehicles are used solely for business purposes or business-owned vehicles if kept at home and used for the home to work trip, (e.g., taxicabs, police cars, etc.) which may be owned by, or assigned to, household members for their regular use. Household vehicles include all vehicles that were owned or available for use by members of the household during the travel period, even though a vehicle may have been sold before the interview.

Vehicles <u>excluded</u> from household vehicles are those which were not working and were not expected to be working within 60 days, and vehicles that were purchased or received after the designated travel day.

Interstate Highway, Freeway or Expressway

A divided arterial highway for through traffic with full or partial control of access and grade separations at major intersections.

Licensed Driver

A licensed driver is any person who holds a valid driver's license from any state.

Means of Transportation

A mode of travel used for going from one place (origin) to another (destination). A means of transportation includes private and public modes, as well as walking. For all travel day trips, each change of mode constitutes a separate trip. The following transportation modes, grouped by major mode, are included in the transportation data.

Private Vehicle

• Automobile

A privately owned and/or operated licensed motorized vehicle including cars, jeeps and station wagons. Leased and rented cars are included if they are privately operated and not used for picking up passengers in return for fare.

• Van

A privately owned and/or operated van or minivan designed to carry 5 to 13 passengers, or to haul cargo.

• Pickup Truck

A pickup truck is a motorized vehicle, privately owned and/or operated, with an enclosed cab that usually accommodates 2-3 passengers, and an open cargo area in the rear. Pickup trucks usually have the same size of wheelbase as a full-size station wagon. This category also includes pickups with campers.

• Other Trucks

This category consists of all trucks other than pickup trucks (i.e., dump trucks, trailer trucks, etc.).

• RV or Motor Home

An RV or motor home includes a selfpowered recreational vehicle that is operated as a unit without being towed by another vehicle (e.g., a Winnebago motor home).

Motorcycle

This category includes large, medium, and small motorcycles.

Minibikes are <u>excluded</u> because they cannot be licensed for highway use.

Public Transportation

• Bus

The bus category includes intercity buses, mass transit systems, and shuttle buses that are available to the general public. Also, Dial-A-Bus and Senior Citizen buses that are available to the public are included in this category.

However, shuttle buses operated by a government agency or private industry for the convenience of employees, contracted or chartered buses, or school buses are <u>excluded</u> from this category.

• Commuter Train

This category includes commuter trains and passenger trains other than elevated rail trains and subways. Commuter Train also includes local and commuter train service.

Amtrak intercity service is <u>excluded</u> from this category.

Streetcar/Trolley

This category includes trolleys, streetcars, and cable cars.

• Elevated Rail/Subway

This category includes elevated railways and subway trains in a city.

• Bus, Streetcar

This category includes both the bus and streetcar/trolley categories as described above.

• Rail/Subway

This category includes both the commuter train and elevated rail/subway categories as described above.

Other Modes

Amtrak

Amtrak is defined as the U.S. national passenger railroad service providing intercity train service.

Amtrak intrecity service is <u>excluded</u> from the commuter train data.

• Airplane

Airplanes include commercial airplanes and smaller planes that are available for use by the general public in exchange for a fare. Private planes and helicopters are included under "Other."

<u>Taxi</u>

Taxis include the use of a taxicab by a driver for hire, or by a passenger for fare, and airport limousines.

The taxi category does <u>not</u> include rental cars if they are privately operated and <u>not</u> picking up passengers in return for fare.

• Bicycles

This category includes bicycles of all speeds and sizes that do not have a motor.

Walk

This category includes jogging, walking, etc., provided the origin and destination are not the same.

School Bus

This category includes county school buses, private school buses, and buses chartered from private companies for the express purposes of carrying students to or from school and/or school-related activities.

• MOPED (Motorized Bicycle)

This category includes motorized bicycles equipped with a small engine, typically characteristic of a two horsepower motor or less. Minibikes, dirt bikes, and trail bikes are excluded from this

category. Note that a motorized bicycle may or may not be licensed for highway use.

• Other

Includes any types of transportation not previously listed.

Metropolitan Statistical Area (MSA)

Except in the New England States, a Metropolitan Statistical Area is a county or group of contiguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition, contiguous counties are included in an MSA if, according to certain criteria, they are socially and economically integrated with the central city. In the New England States, MSA's consist of towns and cities instead of counties.

Motorized Vehicle

Motorized vehicles are all vehicles that are licensed for highway driving. Snow mobiles and minibikes are specifically excluded.

Occupancy

Occupancy is the number of persons, including driver and passenger(s) in a vehicle. NPTS occupancy rates are generally calculated as person miles divided by vehicle miles.

Origin

Origin is the starting point of a trip.

Passenger

For a specific trip, a passenger is any occupant of a motorized vehicle, other than the driver.

Person Miles of Travel (PMT)

PMT is a measure of person travel. When one person travels one mile, one person mile of travel results. Where 2 or more persons travel together in the same vehicle, each person makes the same number of person miles as the vehicle miles. Therefore, four persons traveling 5 miles in the same vehicle, make 20 person miles $(4 \times 5 = 20)$.

Person Trip

A person trip is a trip by one or more persons in any mode of transportation. Each person is considered as making one person trip. For example, four persons traveling together in one auto makes four person trips.

Season

Season is defined as: Winter - December, January and February; Spring - March, April and May; Summer - June, July and August; and Fall - September, October and November.

Traffic Accident

A traffic accident is an accident that involves a motor vehicle which occurs on a public highway or road in the United States, and results in property damage or personal injury.

Traffic Accidents do <u>not</u> include accidents which occur in a parking lot, in a driveway, on a private road, or in a foreign country.

Travel Day

A travel day is a 24-hour period from 4:00 a.m. to 3:59 a.m. designated as the reference period for studying trips and travel by members of a sampled household.

Travel Period

A travel period consists of 14 days. The travel period is the 13 day period which precedes the travel day, and includes the 14th day as the travel day for a sampled household.

Travel Day Trip

A travel day trip is defined as any one-way travel from one address (place) to another by any means of transportation (e.g., private motor vehicle, public transportation, bicycle, or walking). When traveling to more than one destination, a separate trip exists each time one or both of the following criteria is satisfied:

- (a) the travel time between two destinations exceeds 5 minutes, and/or
- (b) the purpose for travel to one destination is different from the purpose for travel to another.

An <u>exception</u> to a travel day trip is travel within a shopping center or mall. It is to be considered travel to one destination, regardless of the number of stores visited.

Travel Period Trip

A travel period trip is a one-way destination which is 75 miles-or-more from home with a return home trip during the 14-day travel period. Travel to the destination is counted as one trip and travel to return home is counted as another trip. For example, a person living in Denver flies to San Francisco, stays one week, and returns to Denver during the 14-day travel period. This would be counted as two travel period trips - one outgoing and one return. The only time a travel period trip would not have a return trip collected is when the respondent moves his/her residence.

Trip Purpose

A trip purpose is the main reason that motivates a trip. For purposes of this survey, there are 11 trip reasons. For travel day trips, if there is more than one reason, and the reasons do not involve different destinations, then only the main reason is chosen. If there are two or more reasons, and they each involve different destinations, then each reason is classified as a separate trip. For travel period trips, if there is more than one reason, the primary reason is collected. The 11 trip reasons (grouped into the five major purposes) are defined as follows:

Earning a Living

- <u>To or From Work</u>
 Travel to a place where one reports for work; <u>excluding</u> work-related travel.
- Work-Related Business
 Trips related to business activities;
 excluding travel to the place of work.

Example: a plumber drives to a wholesale dealer to purchase supplies for his business, or a company executive travels from his office to another firm to attend a business meeting.

Business, out-of-town trips, and professional conventions <u>are</u> included.

Family and Personal Business

Shopping

Shopping includes "window-shopping" and purchases of commodities such as groceries, furniture, clothing, etc. for use or consumption elsewhere.

Doctor/Dentist

This category includes trips made for medical, dental, or psychiatric treatment, or other related professional services.

Other Family or Personal Business
 This category includes the purchase of services such as cleaning garments, servicing an automobile, haircuts, banking, legal services, etc.

School or Church

• School/Church

This category includes trips to school, college or university for class(es), or to PTA meetings, seminars, etc., or to church services or to participate in other religious activities.

Social activities that take place at a church or school, but cannot be classified as religious or educational are not included in this category.

Social and Recreational

Vacation

This category is for trips reported by the respondent as "vacation."

- <u>Visit Friends or Relatives</u>
 Trips which are specifically designated to visit friends or relatives.
- Pleasure Driving
 Driving trips made with no other purpose listed but to "go for a drive" with no destination in mind.
- Other Social or Recreational
 Trips taken to enjoy some form of social activity involving friends or acquaintances. This category includes trips for general entertainment or recreation (both as observer or as participant).

Other

• Other

For trips that do not fit in any of the other categories.

Urbanized Area

An approximate classification of sample households belonging or not belonging to an urbanized area. Those areas classified as an urbanized area are listed below:

- 1. In a central city of an MSA, or
- 2. In an MSA but outside the central city, and
- 3. Within a zip code area with a population density of at least 500 people per square mile in 1990.

Vehicle

In the 1969 survey, vehicle refers to autos and passenger vans owned or available to the household. In the 1977, 1983, and 1990 surveys, the term vehicle was expanded to include pickups and other light trucks, RV's, motorcycles and mopeds owned or available to the household. Estimates show that in 1969 there were an additional 7.5 million pickups and other light trucks that are not reflected in the 1969 NPTS data.

Vehicle Mile of Travel (VMT)

VMT is a unit to measure vehicle travel made by a private vehicle, such as an automobile, van, pickup truck, or motorcycle. Each mile traveled is counted as one vehicle mile regardless of the number of persons in the vehicle.

Vehicle Occupancy

Vehicle Occupancy is the number of persons, including driver and passenger(s) in a vehicle; also includes persons who did not complete a whole trip. NPTS occupancy rates are generally calculated as person miles divided by vehicle miles.

Vehicle Trip

A trip by a single vehicle regardless of the number of persons in the vehicle.

Vehicle Type

For purposes of the 1990 NPTS, one of the nine vehicle types used for coding purposes in the household motorized vehicle record. The nine types are:

- 1. Automobile (including station wagon)
- 2. Passenger
- Cargo
- 4. Pickup Truck (including pickup with camper)
- 5. Other Truck
- 6. RV or Motor Home
- 7. Motorcycle
- 8. Moped (Motorized Bicycle)
- 9. Other (Specify)

See "Means of Transportation" for definitions of these vehicle types.

Weekday

Weekday is defined as the time between 12:01 a.m. Monday and 6:00 p.m. Friday. This was done because Friday evening is considered the start of the weekend.

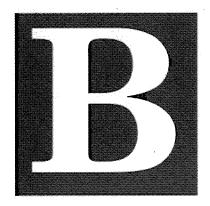
Weekend

Weekend is defined as the time between 6:01 p.m. Friday and midnight Sunday.

DIFFERENCES IN GEOGRAPHICAL BOUNDARIES APPENDICES

APPENDIX B

DIFFERENCES IN GEOGRAPHICAL BOUNDARIES BETWEEN 1983 AND 1990 NPTS



APPENDIX B DIFFERENCES IN GEOGRAPHICAL BOUNDARIES BETWEEN 1983 AND 1990 NPTS

ETWEEN 1983 and 1990, the definitions of two geographical boundaries changed. These changes complicate any comparisons of metropolitan area data from the 1983 and 1990 NPTS. One change is the definition of a Metropolitan Statistical Area (MSA). In 1983 all areas were divided into combinations of counties called Standard Metropolitan Statistical Areas (SMSAs), with the exception that SMSAs in New England consisted of cities and towns. Typically, metropolitan areas are redefined following each census, resulting in additions or subtractions of counties, New England towns, and central cities. Substantial changes were made following the 1980 Census because of considerable revisions in the standards used by the Office of Management and Budget to define the areas.

By 1990 the term "metropolitan statistical area" (MSA) replaced "standard metropolitan statistical area" (SMSA). An optional two-tiered metropolitan structure was introduced for MSAs of a million people or more. These MSAs could be subdivided into primary MSAs (PMSAs) if certain decentralization conditions were met and if the locality desired such subdivisions. If PMSA's were defined within an MSA, then the MSA became a consolidated MSA (CMSA). Table B.1 summarizes the metropolitan area changes since the 1980 Census.

Of the 318 preexisting SMSAs, 53 became PMSAs within 15 CMSAs, and 8 new PMSAs were established within these CMSAs. In addition, 5 preexisting SMSAs became CMSAs which were further subdivided into 10 PMSAs. As the result of these redefinitions, there were 20 CMSAs with 71 component PMSAs when the 1990 NPTS was conducted.

Among these 20 CMSAs, there were ten with a population of more than 3 million. These ten CMSAs were made up of 48 PMSAs, most of which did **not** by themselves have a population more than 3 million. Moreover, there was one MSA in 1990 with a population of more than 3 million.

In the 1990 NPTS, the variable MSASIZE was given a population size value based on its **MSA** or **CMSA** size. Therefore, if a household was located in an area within a PMSA of less then 3 million, but its CMSA had a population of more than 3 million, then the household was categorized as being located in an MSA of 3+ million. In 1983, however, only the SMSAs which **by themselves** had a population of more than 3 million were categorized as being "3+ million."

The implication of this definitional change on the NPTS data is that many more households were estimated by the 1990 data as being located within metropolitan areas with a population of more than 3 million than that estimated by the 1983 NPTS. The reason is that all of the 1990 households in the aforementioned 48 PMSAs and the one MSA were classified as being located within areas with a population of more than 3 million, although most of these 48 PMSAs did not by themselves have a population of more than 3 million. On the other hand, the 1983 NPTS classified households located within SMSAs which by themselves had a population of more than 3 million as being located in areas with a population of "3+ million."

The second geographic boundary change was the definition of a central city. Central cities are now defined as the largest city in population in the MSA plus any other cities of more than 25,000 (15,000 if one-third of the largest city's population) provided that

they meet certain standards which demonstrate their status as centers of employment. Prior to 1983 there could be up to three central cities, including the largest plus the next two largest, if their popula-

tion was at least one-third of the largest city's population. The number of MSA central cities is now 525 compared with only 429 SMSA central cities prior to 1983.

TABLE B.1

SUMMARY OF METROPOLITAN AREA CHANGES SINCE THE 1980 CENSUS'

Of the preexisting 318 SMSAs in the 1980 Census:

- •53 SMSAs in 1983 became PMSAs within 15 CMSAs, and 8 new PMSAs were established within these CMSAs. The 8 new PMSAs were:
- Salem-Gloucester, MA (in Boston CMSA),
- Aurora-Elgin, Joliet, and Lake City of Illinois (in Chicago CMSA),
- Middletown, CT (in Hartford CMSA),
- Brazoria, TX (in Houston CMSA),
- Pawtucket-Woonsocket-Attleboro, RI-MA (in Providence CMSA), and
- Oakland, CA (in San Francisco CMSA).
- •7 SMSAs in 1983 became CMSAs which were further divided into a total of 15 PMSAs. They were:
- Buffalo, NY
- Dallas-Fort Worth, TX
- Denver, CO
- Kansas City, MO
- Pittsburgh, PA
- Portland, OR
- St. Louis, MO
- 2 SMSAs (Kansas City and St. Louis) reverted to MSA status, eliminating their CMSAs and 5 PMSAs.
- •8 SMSAs were absorbed by adjacent areas:
- Bay City, MI by Saginaw,
- Meriden, CT by New Haven,
- Newark, OH by Columbus,
- Newport News-Hampton, VA by Norfolk,
- Petersburg-Colonial Heights-Hopewell, VA by Richmond,
- Rock Hill, SC and Salisburg-Concord, NC by Charlotte, and
- Springfield, OH by Dayton.
- 85 SMSAs became MSAs with changes in composition.
- 167 SMSAs became MSAs without any changes.
- ¹ Summarized by the U.S. Bureau of the Census.

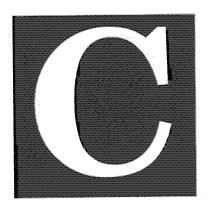
New MSAs since the 1980 Census:

- •3 MSAs were added due to the new 1983 MA definition:
 - Dothan, AL
 - Fort Pierce, FL
 - Houma-Thibodaux, LA
- 9 new MSAs were established between 1984 and 1990:
 - Naples, FL (established in 1984)
 - Santa Fe, NM (established in 1984)
 - Cheyenne, WY (established in 1985)
 - Jackson, TN (established in 1985)
 - Rapid City, SD (established in 1985)
 - Merced, CA (established in 1986)
- Decatur, AL (established in 1988)
- Jamestown-Dunkirk, NY (established in 1988)
- Yuma, AZ (established in 1990)

WEIGHTING PROCEDURES APPENDICES

APPENDIX C

WEIGHTING PROCEDURES



APPENDIX C WEIGHTING PROCEDURES

HIS section discusses the weighting procedures for the 1990 NPTS. These weighting factors are necessary in order to obtain estimated totals for the U.S. population. The weights reflect the sample design and selection probabilities, as well as adjustments to compensate for survey nonresponse and noncoverage. The weights are multiplicative factors; that is, the estimated total is obtained by multiplying each data value by the appropriate weight and summing the results.

The weight variables are included in the proper data files as follows:

- The Household and Vehicle Files (HOUSEHLD.DAT and VEHICLE.DAT) contain the variable WTHHFIN, which is the weight used to make estimates of household characteristics such as household income and the number of vehicles per household.
- The Person File (PERSON.DAT)
 includes the variable WTPERFIN, the
 weight used to make person-level esti mates such as the number of licensed
 drivers or annual miles driven.
- 3. The Travel Day Files (DAYTRIP.DAT and SEGTRIP.DAT) contain the variable WTTRDFIN, the weight used to compute estimates of travel characteristics collected for the travel day, such as the number of person trips and their distributions by mode and purpose. The DAYTRIP.DAT file also contains a second weight variable (WTTO-HFIN), which is used only for making estimates based on the data from Question 32 of the Travel Day Section, miles driven by type of highway.
- 4. The Travel Period Trip File (PERTRIP.DAT) includes the variable WTTRPFIN, which is the weight used

to make estimates for characteristics of the travel period trip, those of 75 miles or longer one-way.

Estimates of the number of vehicle trips or vehicle miles of travel should be based on only the data for the persons who drove the vehicles to avoid counting the trips or miles more than once. The variable DRVR_FLG in the Travel Day Files identifies those trips in which the respondent was the driver. In the Travel Period File, there are two such variables (TODRVFLG and RTDRVFLG) to indicate whether the respondent was the driver on the outgoing and return portions of the trip.

Because the sample units were telephone households, the first series of steps calculate the analysis weights to estimate household characteristics. All subsequent weights are based on the household analysis weights. Using the household weight, person-level weights were calculated adjusting for nonresponding members of the responding households. Travel-day and travel-period weights were then calculated based on the person-level weights.

One final weight calculation was required for the "miles-driven by type of highway" because these data were captured for a randomly selected trip for each person in the sample. This weight is based on the travel-day weight and also reflects the probability that the trip was selected.

The weight sums are:

Household level 93,347,000
 Person level 222,100,829
 Travel-day level 249,562,296,784
 Travel-period level 1,536,106,728
 Randomly-selected trip level 173,376,227,059

Source: U.S. Department of Transportation, Federal Highway Administration, 1990 Nationwide Personal Transportation Survey: User's Guide for the Public Use Tapes, pp. v1-v4, Washington, DC, December 1991.

The steps used in the weights calculations are summarized below.

The <u>household</u> <u>weights</u> were calculated as follows:

Step 1.

Calculate initial and sampling weights. Since the Mitofsky-Waksberg design was used in Quarter 1, the sampling weights are unknown but equal. The initial Quarter 1 weight ratios the sample households to the exogenous strata counts from Market Statistics. For Quarter 2, the initial weight ratioed the phone numbers in the 20,000 Nielsen sample to the Nielsen frame. This initial Quarter 2 weight was divided by the ratio of released numbers to the 20,000 Nielsen sample, yielding the sampling weight (which ratios the released numbers to the frame). For Quarters 3 and 4, the sampling weight was the initial weight calculated and ratioed the released numbers to the frame.

Step 2.

Poststratification of the sampling weights. The Quarters 2 through 4 sampling weights were post-stratified to the exogenous strata counts from Market Statistics.

Step 3.

Nonresponse and multiplicity adjustments. The Quarter 1 weight from Step 1 and the Quarters 2 through 4 weights from Step 2 were adjusted for nonresponse. The adjustment factor ratioed the responding households to the responding and nonresponding households. These weights were then adjusted for multiple phone numbers in a household.

Step 4.

<u>Combining the quarters.</u> The weights from Step 3 were prorated by the percent of the responding households in each quarter.

Step 5.

Smoothing the weights across the year. The weights from Step 4 were divided into 6 pairs based on the travel month, (i.e. January with February, etc). These weights were ratioed to 1/6 of the Market Statistics counts.

Step 6.

Poststratification to Current Population Survey estimates. The final step in calculation of the household-level weights adjusted the weights from Step 5 so that they summed to March 1990 Current Population Survey estimates for five characteristics given in Table C.1:

- Census Region
- · Household size
- MSA status
- Race (black, nonblack)
- Ethnicity (Hispanic, nonhispanic).

The <u>person weights</u> were calculated from the final household weights that resulted from Step 6, above.

Step 7.

Person-level nonresponse adjustment. The initial person-level weight (from Step 6.) was adjusted for nonresponse. The adjustment factor ratioed the sum of the weights for all responding persons to the sum of the weights for all responding and nonresponding persons.

Step 8.

Travel day and travel period weights. The travel-day and travel-period weights were calculated from the final person-level weights from Step 7, above. The travel-day weight was calculated by multiplying the final person weight, from Step 7, by 365 to expand the person travel day to an annual

TABLE C. 1

MARCH 1990 CURRENT POPULATION SURVEY HOUSEHOLD ESTIMATES

lousehold Characteristic	(CPS 3/	per of Households 90) (000)	
ensus Region			2010 000 000
lortheast (19,127	(20.5%)	
Aidwest	22,760	(24.4%)	
South .	32,261	(34.6%)	4
Vest	19,199	(20.6%)	
Household Size	A SECTION AND ADDRESS OF THE ADDRESS		
person	22,999	(24.6%)	
2 persons	30,114	(32.3%)	
3 persons	16,128	(17.3%)	
4+ persons	24,106	(25.8%)	
MSA status			
n MSA 2.5M+	29,177	(31.3%)	
in MSA 1M - 2.5 M	16,793	(18.0%)	
in MSA < 1M	26,361	(28.2%)	
not in MSA	21,016	(22.5%)	
Race of Householder			
Black	10,486	(11.2%)	
Nonblack	82,861	(88.8%)	
Ethnicity of Householder			
Hispanic	5,933	(6.4%)	
Nonhispanic	87,414	(93.6%)	
TOTAL	93,347	(100.0%)	

total. The travel-period weight was calculated by dividing the travel-day weight by 14, to reflect the 14-day travel period.

Step 9.

Nonresponse adjustment. The final travel day weight from Step 8 was adjusted by ratioing the travel respondents to the travel respondents and nonrespondents.

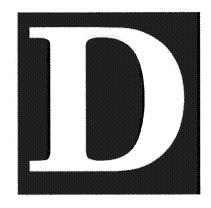
Step 10.

Randomly selected trip and type-of-high-way weights. The conditional randomly-selected-trip weight was calculated by dividing the total mileage for all eligible trips for a person by the length of the selected trip. The type-of-highway weight was calculated by multiplying the weight from Step 9 by the conditional randomly selected trip weight.

ESTIMATED STANDARD ERRORS OF KEY STATISTICS APPENDICES

APPENDIX D

ESTIMATED STANDARD ERRORS OF KEY STATISTICS



APPENDIX D ESTIMATED STANDARD ERRORS OF KEY STATISTICS

■HE final adjusted weights are used in calculating parameter estimates and their sample variances. Research Triangle Institute (RTI) uses SUDAAN for these calculations. Variance estimation for the statistics computed in the SUDAAN series of procedures for survey data analysis is based on a first-order Taylor series approximation of the deviations of estimates from their expected values. This approximation for large samples is well-known (see Kendall and Stuart, 1961, p. 231). Woodruff (1971) presented applications of this technique to sample surveys. This method yields one of the best known numerical approximations currently available in the statistical literature for ratio estimates. The general approach taken to compute variances is to first form the Taylor series linearization for a particular statistic. These linearized values are referred to as Z_i for the ith sample unit throughout this appendix. Once the linearized values are formed, they are substituted into the formula for computing the variance of a total estimate that is appropriate for the design. Estimating the total number of individuals who belong to an arbitrarily defined domain or subpopulation provides a convenient example. Denote the total in question by N_d, where d denotes the domain. Establish a domain indicator

$$I_{hijk} = \begin{cases} 1 & \text{if the } k^{th} \text{ person is in the domain} \\ 0 & \text{if the } k^{th} \text{ person is } \underline{not} \text{ in the domain} \end{cases}$$

where

h is the stratum, h=1, ..., H

i is the ith cluster, in stratum h, i=1, ..., n_h

j is the jth household in the cluster i in stratum h, j=1, ..., n_i

k is the kth person in the household; in cluster i in stratum h, $k=1, ..., n_i$

and w_{hijk} is the population weight for person k in household j in cluster i in stratum h.

Then, $Z_{hijk} = I_{hijk} \cdot W_{hijk}$

and the estimate of the domain total is

$$\hat{N}_d = \sum_{h} \sum_{i} \sum_{j} \sum_{k} Z_{hijk}$$

and the variance of this estimate is

$$Var(Z) = \sum_{h} n_h s_h^2$$

where

$$S_h^2 = \frac{\sum_{i} (z_{hi} - \bar{z}_h)^2}{n_k - 1}$$

the stratum-level sum of squares,

with

$$Z_{hi} = \sum_{j} \sum_{k} Z_{hijk'}$$

, the cluster-level sum,

and

$$\bar{Z}_h = \frac{\displaystyle\sum_i Z_{hi}}{n_h}$$

the stratum level mean.

Other methods of obtaining the variance estimates could be used instead of the first order Taylor series linearizations. Examples include such pseudorandomization techniques as balanced repeated replications (BRR), jackknifing and bootstrapping. The Taylor series linearization is preferred by many because of its computational efficiency (generally less demanding of computer time).

Specifically, standard errors for particular statistics such as the number of person trips taken by a particular mode, or by an age group, or for a particular purpose, (as given in Tables D1- D14) can be calculated using two variables in the NPTS files. These variables are PSU ID and VARSTRAT. VARSTRAT contains the h = 1, ..., H geographical stratums used while conducting the survey, while PSU ID (i =1, . . . ,n) identifies the ith cluster in stratum h. Thus, n_h is the number of clusters (PSU_ID) in stratum h (VARSTRAT), and z_{hi} is the weighted total value for cluster iin stratum h, where value pertains to the weighted total number of miles, trips, households, etc., depending on the statistic which is being evaluated.

Depending on the minimum number of stratum clusters, the standard error was defined as follows:

$$se = \begin{cases} se_1, & \text{if } n_h > 3 \\ se_2, & \text{otherwise} \end{cases}$$

$$se_1 = \sqrt{v_1}$$

$$se_2 = \sqrt{v_2}$$

where:

$$v_1 = \sum_{h=1}^H W_h - n_h$$

$$v_{2} = \frac{\sum_{h=1}^{H} \sum_{i=1}^{n_{h}} \left[Z_{h_{i}} - \frac{\sum_{h=1}^{H} \sum_{i=1}^{n_{h}} Z_{h_{i}}}{\sum_{h=1}^{H} \sum_{h=1}^{H} \sum_{i=1}^{H} Z_{h_{i}}} \right]^{2}}{\sum_{h=1}^{H} n_{h-1}}$$

 n_h = number of PSU_ID's in the h^{th} VARSTRAT

 z_{hi} = sum of weighted variable¹ for i^{th} PSU_ID in the h^{th} VARSTRAT

$$w_{h} = \frac{\sum_{i=1}^{n_{h}} \left[Z_{h_{i}} - \frac{\sum_{i=1}^{n_{h}} Z_{h_{i}}}{n_{h}} \right]^{2}}{n_{h-1}}$$

Estimated standard errors for selected statistics are presented in Tables D1-D14.

The standard errors that are shown in Tables D1- D14 reflect the sampling error and also the variation in estimates due to some nonsampling errors. Sampling error is due to variability between estimates from all other possible samples of the same size that could have been selected using the same sample design. Estimates that were derived from any of these different samples would differ from one another. This variability, along with some non-sampling error, are measured by the stan-

¹ i.e. wthhfin, wttrdfin, trpmiles *wttrdfin

dard error. The systematic biases and some additional nonsampling errors are not found in the standard error. Some examples of nonsampling errors would include nonresponse, inaccurate response, and data entry errors. Thus, the accuracy of the estimates given is dependent on the sampling error and nonsampling errors which are measured by the standard error, and also on the biases and nonsampling errors which are not measured by the standard error.

The standard error of these estimates can be used to construct an interval around specific estimates. This interval will include, with a given amount of confidence, the average result of all possible samples. About 68 percent of the intervals, created by subtracting one standard error and adding one standard error, will include the average result of all possible samples. About 95 percent of the intervals, created by subtracting two standard errors and adding two standard errors, will include the average result of all possible samples, and about 99.99 percent of the intervals, created by subtracting and adding three standard errors, will include the average result of all possible samples. Thus, one can state, with a given percent of confidence (as stated above) that the computed interval will contain the average result of all possible samples.

An example of how these standard errors could be used is as follows. One may want to know the number of vehicle trips taken by an automobile. The estimated total number of vehicle trips taken by automobiles is 127,693,762 thousand. The standard error for this estimate, as found in Table D-12, is 1,111,866 thousand. To construct an interval that would include the average about 68 percent of the time, one would calculate: $127,693,762,000 \pm (1)1,111,866,000.$ Therefore, a 68 percent confidence interval for the average result of all possible samples, as shown by this data, would be included in the interval 126,581,896 thousand to 128,805,628 thousand vehicle

trips. An interval that would include the average about 95 percent of the time would be constructed by solving: $127,693,762,000 \pm (2)1,111,866,000$. Hence, a 95 percent confidence interval for the average result of all possible samples, for the total number of vehicle trips taken in automobiles, is estimated to be in the interval from 125,470,030 thousand to 129,917,494 thousand vehicle trips.

STANDARD ERROR FOR SELECTED ESTIMATED SUMMARY STATISTICS 1990 NPTS

	Standard Error for Summary Statistics	
Total Number of Households	402,292	
Total Number of Persons	1,318,004	
Total Number of Licensed Drivers	906,298	
Total Number of Workers	79%,933	
Household Vehicles	956,682	
Household Vehicle Trips	1,250,0 1 3,000	
Household Vehicle Miles of Travel	18,678,030,000	
Person Trips	1,927,250,000	
Person Miles of Travel	43,718,160,000	
Travel Period Vehicle Trips	29,757,650	
Travel Period Vehicle Miles of Travel	12,240,800,000	
Travel Period Person Trips	50,411,100	
Travel Period Person Miles of Travel	33,790,560,000	
Total Vehicle Miles of Travel	20,964,960,000	
Total Person Miles of Travel	49,414,320,000	

STANDARD ERROR FOR ESTIMATED NUMBER OF PERSONS BY RACE 1990 NPTS

Race	Standard Error for Persons
White Black	1,141,124 665,707
Other	569,008
ALL	1,318,004

STANDARD ERRORS FOR ESTIMATED NUMBER OF PERSONS BY AGE 1990 NPTS

Age	Standard Error for Persons
5-15	478,506
16 - 19	280,742
20 - 29	573,173
30 - 39	534,884
40 - 49	325,296
50 - 59	319,800
60 - 64	190,250
65 and Over	362,950
ALL	1,318,004

STANDARD ERRORS FOR ESTIMATED NUMBER OF PERSONS, WORKERS, AND LICENSED DRIVERS BY SEX 1990 NPTS

Number of Persons	Standard Error
Male	712,026
Female	783,723
ALL	1,318,004
Number of Workers	Standard Error
Male	470,702
Female	439,921
ALE	799,933
Number of Licensed Drivers	Standard Error
Male	516,511
Female	535,357
ALL	906,298

STANDARD ERRORS FOR ESTIMATED NUMBER OF WORKERS BY AGE 1990 NPTS

Age	Standard Error for Workers
16 - 19	154,814
20 - 29	474,331
30 - 39	456,600
40 - 49	346,467
50 - 59	234,288
60 - 64	123,874
65 and Over	82,925
ALL	799,933

STANDARD ERRORS FOR ESTIMATED NUMBER OF HOUSEHOLDS BY MSA SIZE 1990 NPTS

MSA Size	Standard Error for Households
Less than 250,000	282,843
250,000 - 499,999	250,932
500,000 - 999,999	255,114
1,000,000 - 2,999,999	400,413
3,000,000 or more	457,622
Not in MSA	439,012
ALL	402,292

STANDARD ERRORS FOR ESTIMATED NUMBER OF PERSONS BY MSA SIZE 1990 NPTS

MSA Size	Standard Error for Persons
Less than 250,000	668,063
250,000 - 499,999	629,786
500,000 - 999,999	627,825
1,000,000 - 2,999,999	1,024,451
3,000,000 or More	1,237,968
Not in MSA	1,071,904
ALL	1,318,004

TARLE D.8

STANDARD ERRORS FOR ESTIMATED NUMBER OF VEHICLES BY MSA SIZE 1990 NPTS

MSA Size	Standard Error for Vehicles
Less than 250,000	533,609
250,000 - 499,999	496,689
500,000 - 999,999	508,013
1,000,000 - 2,999,999	755,050
3,000,000 or more	882,691
Not in MSA	883,832
ALL	956,682

STANDARD ERRORS FOR ESTIMATED PERSON TRIPS AND PERSON MILES OF TRAVEL BY MSA SIZE 1990 NPTS

MSA Size	Standard Error	
	Person Trips	Person Miles of Travel
Less than 250,000	997,426,600	16,560,790,000
250,000 - 499,999	854,976,400	9,124,026,000
500,000 - 999,999	897,134,100	10,954,620,000
1,000,000 - 2,999,999	1,385,446,000	23,768,680,000
3,000,000 or more	1,566,960,000	29,886,700,000
Not in MSA	1,437,063,000	20,205,500,000
ALL	1,927,250,000	43,718,160,000

STANDARD ERRORS FOR ESTIMATED VEHICLE TRIPS AND VEHICLE MILES OF TRAVEL BY MSA SIZE 1990 NPTS

MSA Size	Standard Error	
	Vehicle Trips	Vehicle Miles of Travel
Less than 250,000	633,835,600	7,351,170,000
250,000 - 499,999	543,801,200	5,513,748,000
500,000 - 999,999	573,208,000	6,522,445,000
1,000,000 - 2,999,999	921,352,300	9,735,198,000
3,000,000 or more	972,618,200	11,761,430,000
Not in MSA	922,675,400	12,130,700,000
ALL	1,250,013,000	18,678,030,000

STANDARD ERRORS FOR ESTIMATED PERSON TRIPS AND PERSON MILES OF TRAVEL BY MODE OF TRANSPORTATION 1990 NPTS

Mode	Standard Error	
	Person Trips	Person Miles of Travel
PRIVATE VEHICLE		
Auto	1,526,477,000	25,606,940,000
Passenger Van	469,521,800	10,432,040,000
Cargo Van	73,047,410	2,099,931,000
Pickup Truck	526,533,200	8,453,223,000
ther Truck	113,281,100	3,142,487,000
V/Motor Home	46,837,990	1,644,538,000
Notorcycle	47,856,580	1,111,918,000
Noped	21,894,120	455,131,900
ther POV	29,719,960	339,988,000
IBLIC TRANSPORTATION	1914 1 C	
us	124,811,900	4,706,646,000
mtrak	14,268,750	2,158,911,000
ommuter Train	37,097,430	1,524,714,000
reetcar/Trolley	9,188,660	119,399,400
evated Rail/Subway	48,920,420	813,590,000
THER MODE		
irplane	19,660,690	20,364,180,000
uxi	38,145,620	315,254,400
icycle	89,960,530	364,603,700
alk	525,762,300	429,712,900
hool Bus	178,772,400	1,634,345,000
ther	39,896,910	12,364,990,000
d u	1,927,250,000	43,718,160,000

STANDARD ERRORS FOR ESTIMATED VEHICLE TRIPS AND VEHICLE MILES OF TRAVEL BY MODE OF TRANSPORTATION 1990 NPTS

	Standard Error	
Mode	Vehicle Trips	Vehicle Miles of Travel
Auto	1,111,866,000	16,118,840,000
Passenger Van	251,058,800	4,370,449,000
Cargo Van	63,033,060	1,609,946,000
Pickup Truck	405,292,000	6,578,588,000
Other Truck	69,519,750	2,740,346,000
RV/Motor Home	48,863,300	670,972,800
Motorcycle	45,847,390	986,791,600
Moped	16,212,150	166,125,300
Other POV	27,766,250	304,218,200
ALL	1,250,013,000	18,678,030,000

STANDARD ERRORS FOR ESTIMATED NUMBER OF PERSON TRIPS AND PERSON MILES OF TRAVEL BY TRIP PURPOSE 1990 NPTS

	Standard Error	
Trip Purpose	Person Trips	Person Miles of Travel
EARNING A LIVING		
To or From Work	478,799,000	8,744,114,000
Work-Related Business	122,168,200	12,993,260,000
FAMILY AND PERSONAL BUSINESS		
Shopping	525,347,900	6,650,350,000
Doctor/Dentist	93,519,850	1,827,617,000
Other Family Business	664,388,300	17,655,540,000
CIVIC, EDUCATIONAL, & RELIGIOUS		
	480,746,100	5,957,504,000
SOCIAL & RECREATIONAL		
Vacation	67,621,560	20,521,330,000
Visiting Friends	411,233,300	11,638,720,000
Pleasure Driving	56,242,260	2,156,869,000
Other Social/Recreational	623,359,700	18,112,470,000
OTHER		
	107,887,900	2,964,184,000
ALL	1,927,250,000	43,718,160,000

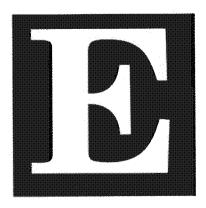
STANDARD ERRORS FOR ESTIMATED NUMBER OF VEHICLE TRIPS AND VEHICLE MILES OF TRAVEL BY TRIP PURPOSE 1990 NPTS

	Standard Error	
Trip Purpose	Vehicle Trips	Vehicle Miles of Travel
EARNING A LIVING		
To or From Work	412,421,100	7,724,612,000
Work-Related Business	103,466,000	3,723,768,000
FAMILY AND PERSONAL BUSINESS		
Shopping	348,158,300	3,610,234,000
Doctor/Dentist	66,800,150	1,200,897,000
Other Family Business	472,715,100	7,958,197,000
CIVIC, EDUCATIONAL, & RELIGIOUS		
	178,321,900	2,991,542,000
SOCIAL & RECREATIONAL		
Vacation	23,328,510	3,219,005,000
Visiting Friends	245,218,400	6,236,333,000
Pleasure Driving	31,680,220	1,487,875,000
Other Social/Recreational	318,760,900	6,710,482,000
OTHER	7/ 470 070	0.01/.00/.000
	76,473,870	2,216,324,000
ALL	1,250,013,000	18,678,030,000

PROCEDURE TO ADJUST APPENDICES

APPENDIX E

PROCEDURE TO ADJUST 1983 INCOME CATEGORIES INTO 1990 DOLLARS



APPENDIX E PROCEDURE TO ADJUST 1983 INCOME CATEGORIES INTO 1990 DOLLARS

O protect the confidentiality of NPTS respondents, their household income data were categorized and available only in income categories. To assure compatibility in comparing 1983 and 1990 survey results, the 1983 income categories needed to be adjusted to reflect monetary inflation between 1983 and 1990. The adjustment is not straightforward due to the categorical nature of the data. A cumulative polynomial fitting technique is used, consisting of three steps:

- The basic idea of this technique is to first fit a polynomial curve to the cumulative frequency distribution (of any data element).
- (2) The 1983 income is adjusted by the Consumer Price Index (CPI) to 1990 dollars.
- (3) Without altering the cumulative frequency distribution, one can then "recategorize" the cumulative frequency distribution into any desired categories.

An example of how 1983 data were adjusted is given. This example redistributes 1983 households into adjusted 1983 income categories:

Table E.1 gives the 1983 income categories, and the corresponding number of households in each category. Since the cumulative polynomial fitting technique fits a polynomial curve to the cumulative distribution based on the endpoints of the income categories and since the last income category — \$80,000 and up — has an indefinite range, it is impossible to determine the endpoint of this income category. To overcome this difficulty, this income category is divided into several categories with income intervals of equal

size. In order to determine the number of "equally-spaced" categories that should represent the last income category, the following equation is used:

 $I = \frac{\text{Total number of households earning } \$80,000 \& \text{up}}{\text{Total number of households earning } \$75,000-80,000} = \frac{1,394}{404} = 3.45$

The solution to this equation implies that the last income category should be divided into four categories (\$80,000-85,000, \$85,000-90,000, \$90,000-95,000 and \$95,000-100,000). Each of the first three categories is assumed to have the same number of households as the "\$75,000-80,000" category. That is, the categories "\$75,000-80,000", "\$80,000-85,000", "\$85,000-90,000" and "\$90,000-95,000" will each have an estimated total of 404 households. To estimate the total number of households in the last income category, "\$95,000-100,000", the following equation is used:

Total number of households in the "\$95,000-100,000" category

= Total households in the original "\$80,000 and up" category -

[(Number of new categories created - 1) x

Total households in the "\$75,000-80,000" category]

- $= 1,394 (3 \times 404)$
- = 182.

The revised 1983 income categories and the corresponding number of households in each category are shown in Table E.2.

TABLE E.1

NUMBER OF HOUSEHOLDS BY 1983 HOUSEHOLD INCOME

1983 INCOME (THOUSANDS)	TOTAL NUMBER OF HOUSEHOLDS
Less than \$5	9,475
\$5-10	12,878
\$10-15	12,602
\$15-20	10,159
\$20-25	9,708
\$25-30	8,061
\$30-35	6,117
\$35-40	4,249
\$40-45	3,504
\$45-50	1,985
\$50-55	1,852
\$55-60	1,069
\$60-65	769
\$65-70	654
\$70-75	499
\$75-80	404
\$80 and up	1,394

TABLE E.2

NUMBER OF HOUSEHOLDS AND THE ENDPOINTS OF REVISED 1983 INCOME CATEGORIES, (INCLUDING FOUR NEW INCOME CATEGORIES)

REVISED 1983 INCOME CATEGORY (THOUSANDS)	ENDPOINT OF INCOME CATEGORIES (X _{83,i})	TOTAL NUMBER OF HOUSEHOLDS IN 1983 (Y _{83,i})	CUMULATIVE TOTAL NUMBER OF HOUSEHOLDS IN 1983 (W _{83,i})
Less than SS	\$5	9,475	9,475
\$5-10	\$10	12,878	22,353
\$10-15	\$15	12,602	34,955
\$15-20	\$20	10,159	45,114
\$20-25	\$25	9,708	54,822
\$25-30	\$30	8,061	62,883
\$30-35	\$35	6,117	69,000
\$35-40	\$40	4,249	73,249
\$40-45	\$45	3,504	76,753
\$45-50	\$50	1,985	78,738
\$50-55	\$55	1,852	80,590
\$55-60	\$60	1,069	81,659
\$60-65	\$65	769	82,428
\$65-70	\$70	654	83,082
\$70-75	\$75	499	83,581
\$75-80	\$80	404	83,985
\$80-85	\$85	404	84,389
\$85-90	\$90	404	84,790
\$90-95	\$95	404	85,197
\$95-100	\$100	182	85,379

STEP 1. FIT A POLYNOMIAL MODEL.

The first step in the cumulative polynomial fitting technique is to fit a polynomial model based on the endpoints of the revised 1983 income categories. Based on the end points $X_{83,i}$ and their corresponding cumulative totals, $W_{83,i}$ (Table E.2), a_k =10 order polynomial fit was developed. To estimate the parameters a_k , k=1,2,...,10, the sum of the squares of the residuals, e_i ², is minimized.

$$W_{83,i} = a_0 + (a_1 \times (X_{83,i})) + (a_2 \times (X_{83,i}^2)) + + (a_k \times (X_{83,i}^k)) + e_i$$

where i is the ith income category, i=1, 2, ..., (16+4); and

 $X_{83,i}$ is the endpoint of i, expressed in thousands in this equation.

In fitting this curve, the following parameters for a_k were estimated:

Parameter:

 $a_0 = 2,293.86$

 $a_1 = 2,967.89$

 $a_2 = -49.3761$

 $a_3 = 2.52795$

 $a_4 = -0.105174$

 $a_5 = 0.164953E-02$

 $a_6 = 0.318930E-05$

 $a_7 = -0.438472E-06$

 $a_8 = 0.589443E-08$

 $a_9 = -0.340569E-10$

 $a_{10} = 0.754465E-13$

Figure E.1 illustrates the cumulative number of households categorized by the revised 1983 income category and the fitted polynomial curve.

STEP 2. CONVERT 1983 INCOME CATEGORIES INTO 1990 DOLLARS.

Since the 1990 NPTS household income distribution is presented in 5 income categories, the question then becomes one of grouping the 1983 households into these 5 income categories and, at the same time, of taking into account the inflation factor. First, the endpoint of each 1990 income category is converted to 1983 dollars by using an inflation factor, r, which is calculated by dividing the 1990 consumer's price index (CPI) by the 1983 CPI.

$$r = \frac{\text{CPI}_{1990}}{\text{CPI}_{1983}} = 1.312, \text{ where CPI} = \\ \text{consumer's price} \\ \text{index}$$

The rationale for this conversion is to determine the equivalent endpoints in 1983, given 1990 buying power. In other words, for households earning less than \$10,000 per year in 1990, what would have been the equivalent cutoff point for this income category in 1983? With the inflation rate of 1.312, the equivalent cutoff point for the "less then \$10,000" category in 1990 is "less than \$7,622 (=\$10,000/1.312)" in 1983. Similarly, earnings between \$10,000 and \$20,000 in 1990 are equivalent to earnings between \$7,622 and \$15,244 (=\$20,000/1.312) in 1983. Table E.3 shows the revised 1983 income categories that are in 1990 dollars.

FIGURE F 1

FITTED POLYNOMIAL CURVE AND THE CUMULATIVE NUMBER OF HOUSEHOLDS BY REVISED 1983 INCOME CATEGORY

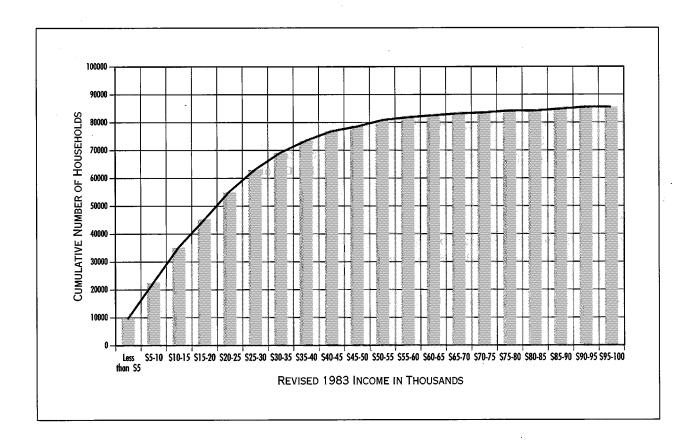


TABLE E.3

REVISED 1983 INCOME CATEGORIES

INCOME CATEGORY USED IN THE 1990 NPTS	REVISED 1983 INCOME CATEGORY IN 1990 DOLLARS
Less than \$10,000	Less than \$7,622
\$10,000 - 20,000	\$7,622 - 15,244
\$20,000 - 30,000	\$15,244 - 22,866
\$30,000 - 40,000	\$22,866 - 30,488
More than \$40,000	More than \$30,488

STEP 3. ESTIMATE 1983 HOUSEHOLD DISTRIBUTION USING THE REVISED INCOME CATEGORIES

To categorize the number of 1983 households in the revised 1983 income categories (Table E.3), the following equation is used:

$$W_{90,i} = a_0 + (a_1 \times (Z_{90,i})) + (a_2 \times (Z^2_{90,i})) + \dots + (a_{10} \times (Z^{10}_{90,i}))$$

$$= 2,294 + 2,968 \times Z_{90,i} - 49.36 \times Z^2_{90,i} + 2.53 \times Z^9_{90,i} - 0.11 \times Z^4_{90,i} + 0.002 \times Z^5_{90,i}$$

where

- W_{90, i} is the cumulative number of households in the revised 1983 income categories;
- i is the i^{th} income category, i=1, 2, 3, 4, 5; and
- Z_{90,i} = the endpoint of the revised 1983 income category i, in thousands of dollars (from Table E.3).

To calculate the number of households earning less then \$7,622 per year in 1983, $Z_{90,1}$ in the above equation was replaced by 7.622:

$$W_{90,1} = 2,294 + 2,968 \times 7.622 - 49.36 \times 7.622^2 + 2.53 \times 7.622^3 - 0.11 \times 7.622^4 + 0.002 \times 7.622^5$$
$$= 18,016.$$

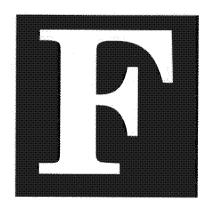
The 1983 household distribution categorized by the income categories that are in 1990 dollars is shown below.

1990 INCOME CATEGORY	REVISED 1983 INCOME CATEGORY IN 1990 DOLLARS	NUMBER OF 1983 Households (Thousands)
Less than \$10,000	Less than \$7,622	W _{90,1} =18,016
\$10,000 - 20,000	\$7,622 - 15,244	$W_{90,2}$ - $W_{90,1}$ =18,437
\$20,000 - 30,000	\$15,244 - 22,866	$W_{90,3}-W_{90,2}=15,694$
\$30,000 - 40,000	\$22,866 - 30,488	$W_{90,4}-W_{90,3}=12,065$
More than \$40,000	More than \$30,488	$W_{90.5}-W_{90.4}=21,167$

COMPARISONS OF HOUSEHOLDS APPENDICES

APPENDIX F

COMPARISONS OF HOUSEHOLDS NOT REPORTING INCOME WITH THOSE REPORTING INCOME



APPENDIX F COMPARISONS OF HOUSEHOLDS NOT REPORTING INCOME WITH THOSE REPORTING INCOME

PPENDIX F provides statistics on household characteristics by whether the household reported household income or not. These tables are presented to help determine whether there are any differences between the households who reported their household income and households who did not report their household income.

TABLE F.

Number of Households by Income Reporting Status and Head of the Household's Race 1990 NPTS

Head of the Household's Race	Income Reported	Income Not Reported	TOTAL
White	55,438	19,859	75,297
	(82.0%)	(77.1%)	(80.7%)
Black	7,223	3,086	10,309
	(10.7%)	(12.0%)	(11.0%)
Other	4,693	1,636	6,329
	(6.9%)	(6.3%)	(6.8%)
Unknown	230	1,181	1,411
	(0.3%)	(4.6%)	(1.5%)
TOTAL	67,585	25,762	93,347
	(100.0%)	(100.0%)	(100.0%)

TABLE F 2

NUMBER OF HOUSEHOLDS BY INCOME REPORTING STATUS AND HEAD OF THE HOUSEHOLD'S HISPANIC STATUS 1990 NPTS

Head of the Household's Hispanic Status	Income Reported	Income Not Reported	TOTAL
Hispanic	4,382	1,451	5,833
	(6.5%)	(5.6%)	(6.2%)
Not Hispanic	63,069	23,292	86,361
	(93.3%)	(90.4%)	(92.5%)
Unknown	134	1,019	1,153
	(0.2%)	(4.0%)	(1.2%)
TOTAL	67,585	25,762	93,347
	(100.0%)	(100.0%)	(100.0%)

TABLE F.3

NUMBER OF HOUSEHOLDS BY INCOME REPORTING STATUS AND DISTANCE TO THE NEAREST PUBLIC TRANSPORTATION 1990 NPTS

Distance to the Nearest Public Transportation	Income Reported	Income Not Reported	TOTAL
Less than 1/4 mile	23,219	9,176	32,395
	(34.4%)	(35.6%)	(34.7%)
1/4 to 1/2 mile	7,504	2,630	10,134
•	(11.1%)	(10.2%)	(10.9%)
1/2 to 1 mile	3,021	990	4,012
	(4.5%)	(3.8%)	(4.3%)
1 mile or more	4,883	1,731	6,614
	(7.2%)	(6.7%)	(7.1%)
Not available	28,072	10,881	38,954
	(41.5%)	(42.2%)	(41.7%)
Unknown	885	354	1,238
	(1.3%)	(1.4%)	(1.3%)
TOTAL	67,585	25,762	93,347
one are to a security of the desired and the desired at the security of the se	(100.0%)	(100.0%)	(100.0%)

NUMBER OF HOUSEHOLDS BY INCOME REPORTING STATUS AND MSA SIZE 1990 NPTS

MSA Size	Income Reported	Income Not Reported	TOTAL
Less than 250,000	6,917	2,084	9,001
	(10.2%)	(8.1%)	(9.6%)
250,000-499,999	6,016	1,948	7,964
W 4W3WWW #	(8.9%)	(7.6%)	(8.5%)
500,000-999,999	6,333	2,482	8,815
,	(9.4%)	(9.6%)	(9.4%)
1,000,000-2,999,999	13,182	5,001	18,183
	(19.5%)	(19.4%)	(19.5%)
3,000,000 or More	19,485	8,484	27,968
	(28.8%)	(32.9%)	(30.0%)
Not in MSA	15,652	5,763	21,415
	(23.2%)	(22.4%)	(22.9%)
TOTAL	67,585	25,762	93,347
	(100.0%)	(100.0%)	(100.0%)

NUMBER OF HOUSEHOLDS BY INCOME REPORTING STATUS AND URBANIZED AREA SIZE 1990 NPTS

Urbanized Area Size	Income Reported	Income Not Reported	TOTAL
50,000-199,999	6,152	2,036	8,188
- No. 26 - 17	(9.1%)	(7.9%)	(8.8%)
200,000-499,999	4,763	1,807	6,570
,	(7.0%)	(7.0%)	(7.0%)
500,000-999,999	4,565	1,585	6,150
	(6.8%)	(6.2%)	(6.6%)
1,000,000 or more without subway/rail	13,507 (20.0%)	4,998 (19.4%)	18,505 (19.8%)
1,000,000 or more with subway/rail	13,328 (19.7%)	6,236 (24.2%)	19,564 (21.0%)
Not in Urbanized Area	25,270	9,100	34,370
	(37.4%)	(35.3%)	(36.8%)
TOTAL	67,585	25,762	93,347
	(100.0%)	(100.0%)	(100.0%)

TABLE F.6

NUMBER OF HOUSEHOLDS BY INCOME REPORTING STATUS AND POPULATION DENSITY 1990 NPTS

34,046 (50.4%)	12,058	46,104
(50.4%)		**************************************
	(46.8%)	(49.4%)
21,408	8,332	29,740
(31.7%)	(32.3%)	(31.9%)
7,240	3,033	10,273
(10.7%)	(11.8%)	(11.0%)
3,896	1,938	5,834
(5.8%)	(7.5%)	(6.2%)
501	183	684
(0.7%)	(0.7%)	(0.7%)
	218	712
(0.7%)	(0.8%)	(0.8%)
67,585	25,762	93,347
(100.0%)	(100.0%)	(100.0%)
	(31.7%) 7,240 (10.7%) 3,896 (5.8%) 501 (0.7%) 494 (0.7%)	(31.7%) (32.3%) 7,240 3,033 (10.7%) (11.8%) 3,896 1,938 (5.8%) (7.5%) 501 183 (0.7%) (0.7%) 494 218 (0.7%) (0.8%)

¹ Population density is calculated as persons per square mile for the zip code in which the household is located.

TABLE F.7

NUMBER OF HOUSEHOLDS BY INCOME REPORTING STATUS AND WHETHER HOUSEHOLD IS LOCATED INSIDE OR OUTSIDE A CENTRAL CITY 1990 NPTS

Inside/Outside Central City Limits	Income Reported	Income Not Reported	TOTAL
Inside Central City	24,978	9,601	34,579
	(37.0%)	(37.3%)	(37.0%)
Outside Central City	26,839	10,199	37,038
	(39.7%)	(39.6%)	(39.7%)
Unknown	15,768	5,962	21,730
	(23.3%)	(23.1%)	(23.3%)
TOTAL	67,585	25,762	93,347
	(100.0%)	(100.0%)	(100.0%)

TABLE F.8

NUMBER OF HOUSEHOLDS BY INCOME REPORTING STATUS AND NUMBER OF HOUSEHOLD VEHICLES 1990 NPTS

Income Reported	Income Not Reported	TOTAL
5,460	3,113	8,573
(8.1%)	(12.1%)	(9.2%)
22,678	7,976	30,654
(33.6%)	(31.0%)	(32.8%)
26,348	9,523	35,872
(39.0%)	(37.0%)	(38.4%)
13,098	5,150	18,248
(19.4%)	(20.0%)	(19.5%)
67,585	25,762	93,347
(100.0%)	(100.0%)	(100.0%)
	Reported 5,460 (8.1%) 22,678 (33.6%) 26,348 (39.0%) 13,098 (19.4%)	Reported Not Reported 5,460 3,113 (8.1%) (12.1%) 22,678 7,976 (33.6%) (31.0%) 26,348 9,523 (39.0%) (37.0%) 13,098 5,150 (19.4%) (20.0%)

TARLEF

NUMBER OF HOUSEHOLDS BY INCOME REPORTING STATUS AND COMPARISON OF VEHICLES AND DRIVERS 1990 NPTS

Comparison of Vehicles and Drivers	Income Reported	Income Not Reported	TOTAL
# of Drivers greater than # of Vehicles	8,964	3,269	12,232
-	(13.3%)	(12.7%)	(13.1%)
# of Drivers equal to # of Vehicles	40,812	14,175	54,987
	(60.4%)	(55.0%)	(58.9%)
# of Drivers less than # of Vehicles	17,809	8,319	26,128
	(26.4%)	(32.3%)	(28.0%)
TOTAL	67,585	25,762	93,347
	(100.0%)	(100.0%)	(100.0%)

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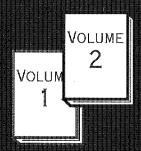
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