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Person Trip Characteristics

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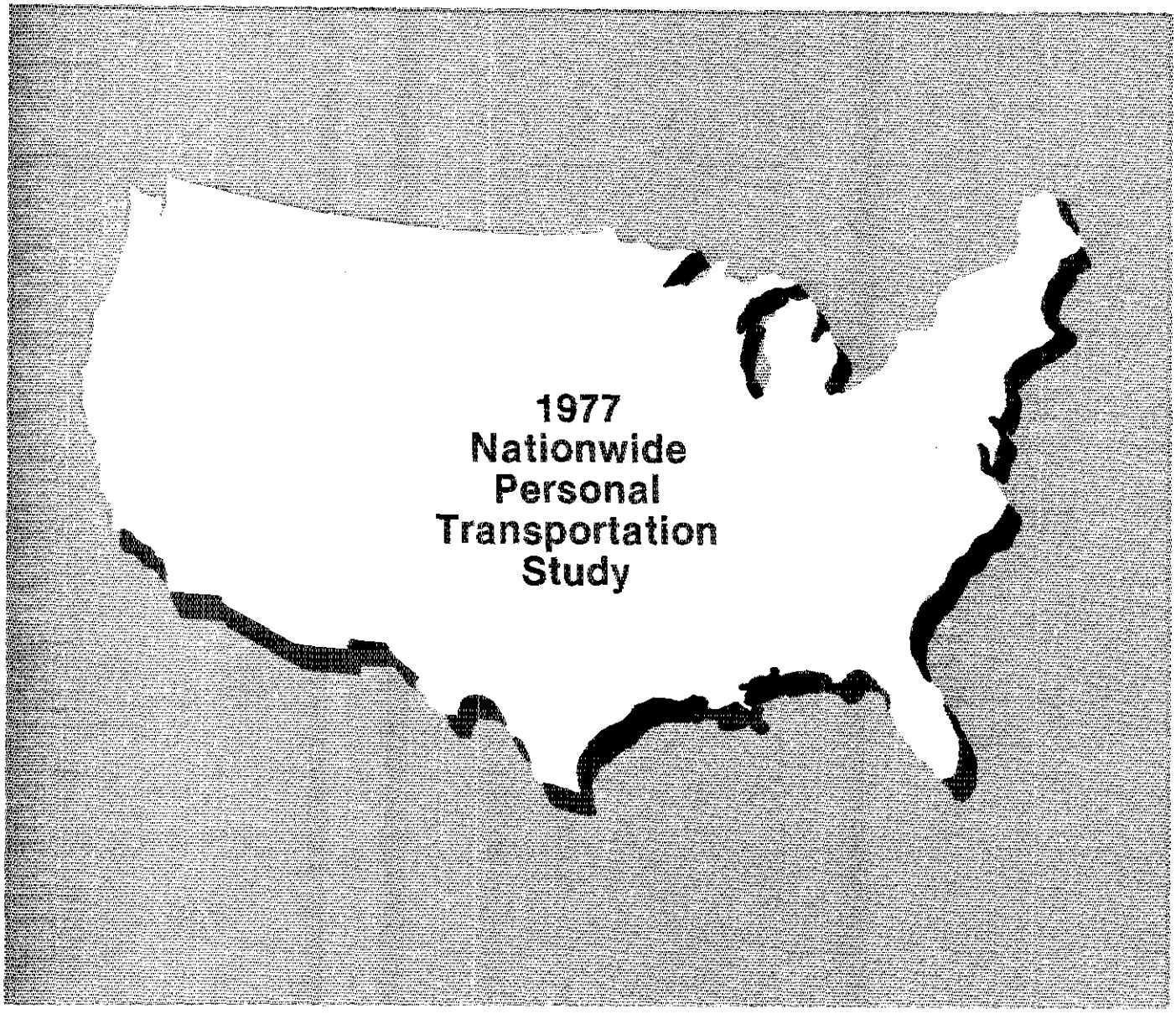

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16. Abstract

This is the last report in a series that provides findings from the 1977 Nationwide Personal Transportation Study (NPTS). Data related to person trip characteristics are divided into four major areas. The first examines the use of different modes by personal characteristics of the tripmaker, including age and sex. The second examines the use of different means of transportation by household characteristics, including income, vehicle ownership and residential location. The third examines the characteristics of trips and travel by means of transportation and includes trip purposes, average trip time, trip length, etc. Finally, the relationship between characteristics of the person/household and characteristics of the trip is examined. In addition, comparisons are made with data from the 1969 NPTS to evaluate trends in person trips and travel by age, sex, race and mode of transportation.

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1977 NATIONWIDE PERSONAL TRANSPORTATION STUDY

PERSON TRIP CHARACTERISTICS

REPORT 11

December 1983

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
WASHINGTON, D.C. 20590

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I. HIGHLIGHTS

Residents of households average 2.7 person trips daily and travel 24.1 person miles of travel daily.

Starting with age 50, women make a greater percent of their trips by public transportation than men.

More than two-thirds of all person trips made by public transportation are made by persons 5-39 years of age and an additional 8.0 percent made by persons 65 years of age and older.

As household income increases, the percent of person trips made by private vehicles increases; the percent of person trips made by public transportation decreases.

On the whole, two-vehicle households make about one and one-half as many total person trips as one and three-or-more-vehicle households. One-vehicle households make twice as many public transportation trips as two-vehicle households and three times as many as three-or-more-vehicle households. In addition, one-vehicle households make almost one and one-half times more walking trips than two- or three-or-more-vehicle households.

Approximately two-thirds of all person trips are made inside SMSA's and one-third are made outside SMSA's.

Compared to other SMSA population size groups, residents of households in SMSA's of 3,000,000 and over make the smallest percent of person trips by private vehicle (72.6) and the greatest percent of trips by public transportation (7.7) and other modes (19.7), such as walking (16.1).

Residents of households in the Northeast make at least 50 percent more trips by public transportation than households in all other regions of the United States.

Residents of households in single-family attached housing structures (e.g., townhouses, rowhouses) make 7.8 percent of all trips by public transportation compared to the average of 2.6 percent for residents of households in all housing structures.

Of all trips made by public transportation, 34.5 percent are made for work purposes and 65.5 percent are made for nonwork purposes.

Residents of households located outside an SMSA make a greater percent of private vehicle trips and a smaller percent of transit trips (due to limited or nonexistent facilities) than those households located inside an SMSA. Inside the SMSA, residents of households located inside the central city make a smaller percent of vehicle trips and a larger percent of transit trips and walking trips than households located outside the central city.

Approximately 23.1 percent of all person trips are for earning a living, 31.1 percent for family and personal business, 12.1 percent for civic, education and religious, 24.4 percent for social and recreation and 9.3 percent for other purposes.

The average trip time for all person trips by all modes as well as by private vehicle is 17.7 minutes. Trip times are almost twice as long by public transportation, averaging 34.8 minutes.

The average trip length for all person trips regardless of mode is 8.9 miles. The average trip length by private vehicle and public transportation shows little difference (9.2 and 9.3 miles, respectively).

On Mondays through Fridays, person trips to work constitute almost one-fifth (17.4 percent) of all trips. Of all work trips made by private vehicle, 90 percent are made on weekdays. Of all work trips made by public transportation, 94.2 percent are made on Mondays through Fridays.

Work trips are very concentrated and occur largely during certain specified hours, while nonwork trips, except for the hours from 12:00 midnight to 5:59 a.m. occur pretty much all day.

Approximately 64.6 percent of all person trips are 5 miles and less and these trips constitute 13.9 percent of all miles traveled. On the other hand, trips of over 100 miles constitute less than 1 percent of all person trips, but 22.3 percent of all person miles traveled.

Within each income category, the percent of trips made in a private vehicle for discretionary purposes increases as income increases. The percent of trips for work purposes shows no particular pattern, peaking in the $15,000-24,999 income group (19.6 percent).

The average person trip length for work by private vehicle generally increases as income increases from 7.4 miles for households under $5,000 to 10.1 miles for households with incomes from $35,000 to $49,999. The average trip length then decreases to 8.8 miles for households with incomes of $50,000 and over. Work trip lengths by public transportation show the same trends.

As vehicle ownership increases, the percent of work trips made by all modes combined increases and the percent of trips made for nonwork purposes decreases. Trips by private vehicles for work as well as nonwork purposes increase as vehicle ownership increases; with the greatest percent increase in trips taking place between one- and two-vehicle households. Trips by public transportation decrease as vehicle ownership increases.

Within each income category, the percent of trips made by public transportation for work purposes is highest for households with incomes of less than $5,000 (1.8 percent of total trips) and lowest for households with incomes of $50,000 and over (0.5 percent of total trips), although some variation occurs in the intermediate income groups. For nonwork purposes, there is a steady decline in the percent of trips made by public transportation, from 3.8 percent to 0.6 percent respectively of total trips as income increases.

II. INTRODUCTION

A. Purpose of Report

This report presents findings from the 1977 Nationwide Personal Transportation Study (NPTS), pertaining to characteristics of person trips. A person trip is defined as a unit of one-way person travel. When two or more persons travel together in the same vehicle, each person is counted as making one person trip.

In this report, person trips are related to person characteristics, household characteristics and trip characteristics by means of transportation. Person characteristics include age, sex, and primary activity of the tripmaker. Household characteristics include income, vehicle ownership, housing type and geographic location--outside/inside SMSA's by population size groups and inside/outside central city. Trip characteristics include trip purpose as related to hour of day the trip started, trip length and day of the week. In addition, the relationships of person/household characteristics and trip characteristics are discussed.

B. Organization of Findings

The analysis of characteristics of person trips is divided into four major areas. The first examines the use of different modes by person characteristics of the tripmaker, such as age, sex and primary activity, i.e., working, going to school, housekeeping, etc. The second examines the use of different means of transportation by characteristics of the tripmaker's household, such as income, vehicle ownership, residential location, selected housing types and availability of public transportation. The third examines the characteristics of trips and travel by means of transportation and includes trip time, trip length, day of the week and time of day. The fourth examines the relationship of person/household characteristics and trip characteristics in terms of age of tripmaker and trip purpose, household income and average trip length, household vehicle ownership and trip purpose, and residential location as related to trip length and trip time. Finally, in addition, a comparison of changes in person trips and person miles of travel that have occurred from 1969 to 1977 is also included. The report concludes with a summary of the most important findings.

III. SUMMARY OF FINDINGS: PERSON TRIP CHARACTERISTICS

A. *Person Characteristics*

More than 211.8 billion person trips were made in the United States from April 1977 to March 30, 1978. This translates to 992 person trips per person annually or 2.7 person trips per day. As shown in Table 1, more than four-fifths (83.7 percent) of all person trips were made in a private vehicle, 2.6 percent were made by some form of public transportation and 13.7 percent were made by some other means of transportation, such as walking, bicycling, airplane, etc.

1. Age

The distribution of person trips by age of tripmaker indicates that trips in a private vehicle hovered between 80-90 percent for all ages, except for school children, ages 5-15 years, and teenagers, 16-19 years of age. (Table 1)

The percent distribution of person trips by public transportation for persons showed about a 1 percent variation, from 2.0 percent for persons 40-49 years of age to 3.3 percent for persons 65 years and older. In effect, the percent of trips by public transportation decreases until ages 40-49 years, and then increases. The increased use of public transportation facilities by the older persons reflects retirements, those who can no longer drive, and/or those who find a private vehicle too expensive to own/operate.

School children from 5-15 years of age make one-third of all their person trips by walking (15.9 percent) and school bus (15.6 percent); walking is also an important mode for 16-19 years olds (15.0 percent) as well as persons 65 years and older (14.2 percent).

2. Sex

The modal distribution by sex of the tripmaker (Tables 2 and 3) indicates that both men and women prefer private vehicles for tripmaking. Overall the percent distribution of person trips made in private vehicles by men and women shows little difference; although men make a slightly greater percent of trips by private vehicle beginning with age 40. Men also make a larger percent of person trips by pickup trucks than do women. Women make a slightly greater percent of their person trips by public transportation, (2.8 percent for women and 2.3 percent for men) specifically, streetcar and bus, especially beginning with age 50. In addition, women age 60 and older make more walking trips than men in the same age groups.

Tables 4, 5, and 6 indicate that persons between the ages of 20-49 years make more than half (53.4 percent) of all private vehicle person trips. More than two-thirds (66.9 percent) of all person trips made by public transportation are made by persons from 5-39 years of age, of which children from ages 5-15 years make 19.6 percent. An additional 8.0 percent of all person trips made by public transportation are made by persons 65 years of age and older. Approximately 68.5 percent of all person trips made by other means, especially bicycling, walking and school bus are made by persons 5-29 years. The modal split by age of tripmaker does not change appreciably for men and women, however, women ages 60 and older make a greater percent of trips by public transportation (14.2) than do men (9.2).

TABLE 1. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND AGE OF TRIPMAKER

(By Age of Trip Maker)

ALL PERSONS

Means of Transportation	Age of Tripmaker (Years) Under 5	5-15	16-19	20-29	30-39	40-49	50-59	60-64	65 & Over	All Persons
Private Vehicles										
Auto, Vanbus, Minibus	83.8	57.6	69.8	77.0	79.0	80.2	79.1	79.6	75.4	74.5
Pickup	7.7	4.6	4.9	8.9	10.1	10.1	9.6	7.7	5.4	8.0
Other Private Vehicles	1.0	0.6	1.3	1.9	1.6	0.9	1.3	0.7	0.5	1.2
Subtotal-Private	92.5	62.8	76.0	87.8	90.7	91.2	90.0	88.0	81.3	83.7
Public Transportation										
Bus, Streetcar	0.8	3.2	2.8	1.7	1.4	1.2	1.9	2.2	3.2	2.1
Train	*	*	0.1	0.3	0.3	0.4	0.4	0.3	*	0.2
Subway, Elevated Rail	0.1	0.1	0.1	0.6	0.5	0.4	0.2	0.3	0.1	0.3
Subtotal-Public	0.9	3.3	3.0	2.6	2.2	2.0	2.5	2.8	3.3	2.6
Other Means										
Walk	5.6	15.9	15.0	8.0	5.7	5.8	6.4	8.1	14.2	9.3
Bike	0.2	1.9	1.4	0.5	0.3	0.1	0.1	0.2	0.2	0.7
School Bus	0.2	15.6	4.0	0.2	*	0.1	0.0	0.0	*	2.9
Airplane	0.1	*	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Other	0.5	0.5	0.6	0.8	1.0	0.7	0.9	0.8	0.9	0.7
Subtotal-Other	6.6	33.9	21.0	9.6	7.1	6.8	7.5	9.2	15.4	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Distribution of Trips	4.7	15.4	9.7	21.8	16.3	11.9	10.5	3.6	6.1	100.0 1/

1/ 211,768,900,000 person trips from April 1, 1977, to March 30, 1978.
*Less than 0.1 percent.

TABLE 2. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND AGE AND SEX OF TRIPMAKER

(By Age of Tripmaker)

MALES

Means of Transportation	Age of Tripmaker (Years)									
	Under 5	5-15	16-19	20-29	30-39	40-49	50-59	60-64	65 & Over	All Males
Private Vehicles										
Auto, Vanbus, Minibus	83.6	54.5	65.9	72.2	71.9	74.0	73.4	76.2	74.4	70.0
Pickup	7.9	5.6	6.4	12.8	16.0	15.9	15.0	12.5	8.8	16.7
Other Private Vehicle	1.3	0.7	1.9	2.6	2.6	1.5	1.8	1.0	0.7	1.8
Subtotal-Private	92.8	60.8	74.2	87.6	90.5	91.4	90.2	89.7	83.9	83.5
Public Transportation										
Bus, Streetcar	0.7	2.8	2.7	1.5	1.1	1.1	1.4	1.2	2.3	1.7
Train	*	0.1	*	0.3	0.4	0.4	0.5	0.3	*	0.3
Subway, Elevated Rail	*	0.1	0.1	0.6	0.6	0.3	0.3	0.4	0.1	0.3
Subtotal-Public	0.7	3.0	2.8	2.4	2.1	1.8	2.2	1.9	2.4	2.3
Other Means										
Walk	5.4	16.9	16.4	7.8	5.4	5.5	5.8	7.1	12.8	9.3
Bike	0.3	3.1	1.9	0.8	0.3	0.1	0.2	0.2	0.3	1.0
School Bus	0.3	15.6	3.7	0.2	*	0.1	0.0	0.0	*	2.8
Airplane	*	*	0.0	0.1	0.1	0.1	0.2	0.2	0.1	0.1
Other	0.5	0.6	1.0	1.1	1.6	1.0	1.4	0.9	0.5	1.0
Subtotal-Other	6.5	36.2	23.0	10.0	7.4	6.8	7.6	8.4	13.7	14.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Distribution of Trips	4.6	15.4	9.8	21.9	16.0	11.9	10.8	3.7	5.9	100.0[1/]

1/ 107,594,800,000 trips.
*Less than 0.1 percent.

TABLE 3. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND AGE AND SEX OF TRIPMAKER

(By Age of Tripmaker)

FEMALES

Means of Transportation	Age of Tripmaker (Years) Under 5	5-15	16-19	20-29	30-39	40-49	50-59	60-64	65 & Over	All Females
Private Vehicles										
Auto, Vanbus, Minibus	83.9	60.8	73.9	82.0	86.2	86.7	85.4	83.4	76.4	79.4
Pickup	7.5	3.6	3.4	4.7	4.3	4.1	3.8	2.3	2.2	4.0
Other Private Vehicle	0.7	0.5	0.7	1.2	0.6	0.3	0.6	0.3	0.2	0.7
Subtotal-Private	92.1	64.9	78.0	87.9	91.1	91.1	89.8	86.0	78.8	84.1
Public Transportation										
Bus, Streetcar	1.1	3.4	2.9	1.9	1.7	1.4	2.4	3.3	4.1	2.3
Train	0.0	*	0.1	0.2	0.2	0.3	0.2	0.3	*	0.2
Subway, Elevated Rail	0.1	0.1	0.1	0.7	0.3	0.4	0.2	0.2	0.1	0.3
Subtotal-Public	1.2	3.5	3.1	2.9	2.2	2.1	2.8	3.8	4.2	2.8
Other Means										
Walk	5.9	14.8	13.5	8.3	5.9	6.1	7.0	9.4	15.6	9.4
Bike	0.1	0.7	1.0	0.2	0.2	0.1	*	0.1	*	0.3
School Bus	0.1	15.6	4.2	0.2	0.1	0.1	0.0	0.0	0.1	2.9
Airplane	0.1	*	0.0	0.1	0.1	*	0.1	*	0.1	0.1
Other	0.5	0.5	0.2	0.4	0.4	0.5	0.3	0.7	1.2	0.4
Subtotal-Other	6.7	31.6	18.9	9.2	6.7	6.8	7.4	10.2	17.0	13.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Distribution of Trips	4.8	15.5	9.6	21.6	16.6	11.9	10.2	3.4	6.4	100.0[1/]

[1/] 104,174,100,000 trips.
*Less than 0.1 percent.

TABLE 4. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND AGE OF TRIPMAKER

(By Means of Transportation)

ALL PERSONS

Means of Transportation	Age of Tripmaker (Years)									
	Under 5	5-15	16-19	20-29	30-39	40-49	50-59	60-64	65 & Over	All Persons
Private Vehicles										
Auto, Vanbus, Minibus	5.2	11.9	9.1	22.5	17.3	12.8	11.2	3.8	6.2	100.0
Pickup	4.5	9.0	6.0	24.3	20.7	15.1	12.7	3.5	4.2	100.0
Other Private Vehicle	3.7	7.3	10.4	33.8	20.8	9.0	10.6	1.9	2.5	100.0
Subtotal-Private	5.2	11.6	8.8	22.8	17.6	13.0	11.3	3.8	5.9	100.0
Public Transportation										
Bus, Streetcar	1.9	24.0	13.3	18.8	11.0	7.3	9.9	4.0	9.8	100.0
Train	0.4	3.6	3.1	29.2	23.4	18.4	16.1	4.8	1.0	100.0
Subway, Elevated Rail	1.6	5.4	4.2	38.9	23.5	12.7	8.6	3.0	2.1	100.0
Subtotal-Public	1.7	19.6	11.2	22.3	13.8	9.1	10.3	4.0	8.0	100.0
Other Means										
Walk	2.7	26.2	15.6	18.6	9.8	7.4	7.2	3.1	9.4	100.0
Bike	1.5	45.6	22.2	17.2	7.3	2.0	1.5	1.0	1.7	100.0
School Bus	0.3	83.9	13.4	1.5	0.4	0.4	*	0.0	0.1	100.0
Airplane	2.5	3.8	0.0	31.2	20.2	11.5	17.2	6.1	7.5	100.0
Other	2.9	10.9	7.8	22.2	21.6	11.6	12.2	3.8	7.0	100.0
Subtotal-Other	2.2	38.3	14.9	15.3	8.4	5.9	5.7	2.4	6.9	100.0
Total	4.7	15.4	9.7	21.8	16.3	11.9	10.5	3.6	6.1	100.0 1/

1/ 211,768,900,000 person trips.
*Less than 0.1 percent.

TABLE 5. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND AGE AND SEX OF TRIPMAKER

(By Means of Transportation)

MALES

Means of Transportation	Age of Tripmaker (Years)									
	Under 5	5-15	16-19	20-29	30-39	40-49	50-59	60-64	65 & Over	All Males
Private Vehicles										
Auto, Vanbus, Minibus	5.5	12.0	9.3	22.6	16.4	12.5	11.3	4.1	6.3	100.0
Pickup	3.0	7.4	5.4	24.0	21.8	16.1	13.8	4.1	4.4	100.0
Other Private Vehicle	3.2	6.0	10.2	32.1	22.5	10.3	11.1	2.1	2.5	100.0
Subtotal-Private	5.1	11.2	8.7	23.0	17.3	13.0	11.7	4.1	5.9	100.0
Public Transportation										
Bus, Streetcar	1.7	25.6	15.8	19.3	10.7	7.5	9.0	2.8	7.6	100.0
Train	0.7	4.9	0.4	25.9	25.1	18.4	19.4	4.3	0.9	100.0
Subway, Elevated Rail	0.0	5.2	2.8	35.9	27.6	12.6	9.5	4.2	2.2	100.0
Subtotal-Public	1.4	20.2	12.1	22.5	14.8	9.5	10.3	3.2	6.0	100.0
Other Means										
Walk	2.6	27.9	17.2	18.3	9.2	7.0	6.8	2.9	8.1	100.0
Bike	1.4	49.3	19.9	17.8	5.7	1.3	1.8	0.8	2.0	100.0
School Bus	0.4	84.5	12.8	1.8	0.1	0.4	0.0	0.0	*	100.0
Airplane	2.0	2.1	0.0	26.6	19.4	17.1	18.4	8.7	5.7	100.0
Other	2.1	8.9	9.7	23.7	24.2	11.1	14.4	3.3	2.6	100.0
Subtotal-Other	2.0	39.0	15.9	15.4	8.4	5.7	5.7	2.2	5.7	100.0
Total	4.6	15.4	9.8	21.9	16.0	11.9	10.8	3.7	5.9	100.0 1/

1/ 107,594,800,000 trips
*Less than 0.1 percent.

TABLE 6. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND AGE AND SEX OF TRIPMAKER

(By Means of Transportation)

FEMALES

Means of Transportation	Age of Tripmaker (Years) Under 5	5-15	16-19	20-29	30-39	40-49	50-59	60-64	65 & Over	All Females
Private Vehicles										
Auto, Vanbus, Minibus	5.1	11.9	8.9	22.3	18.0	13.0	11.0	3.6	6.2	100.0
Pickup	8.8	13.8	8.0	25.1	17.5	12.0	9.5	1.9	3.4	100.0
Other Private Vehicle	5.2	11.0	10.9	38.9	15.9	5.2	9.1	1.5	2.3	100.0
Subtotal-Private	5.2	11.9	8.9	22.6	18.1	12.9	10.9	3.5	6.0	100.0
Public Transportation										
Bus, Streetcar	2.0	22.7	11.5	18.2	11.3	7.2	10.6	5.0	11.5	100.0
Train	0.0	1.8	6.8	33.6	21.1	18.5	11.8	5.4	1.0	100.0
Subway, Elevated Rail	3.4	5.7	5.6	42.1	19.2	12.9	7.5	1.7	1.9	100.0
Subtotal-Public	2.0	19.2	10.5	22.2	12.9	8.7	10.3	4.6	9.6	100.0
Other Means										
Walk	2.9	24.4	13.9	19.0	10.3	7.7	7.6	3.5	10.7	100.0
Bike	2.1	34.6	29.0	15.3	11.8	4.0	1.0	1.5	0.7	100.0
School Bus	0.2	83.4	14.1	1.2	0.6	0.4	*	0.0	0.1	100.0
Airplane	3.1	6.1	0.0	37.5	21.3	3.9	15.5	2.6	10.0	100.0
Other	5.1	15.8	3.3	18.5	15.3	12.7	6.9	5.0	17.4	100.0
Subtotal-Other	2.4	37.3	13.9	15.1	8.4	6.2	5.7	2.7	8.3	100.0
Total	4.8	15.5	9.6	21.6	16.6	11.9	10.2	3.4	6.4	100.0[1/]

1/ 104,174,100,000 trips

*Less than 0.1 percent.

3. Primary Activity

Respondents were asked to indicate what they were doing, i.e., primary activity, for the week prior to enumeration. Trips by different modes used were tabulated according to the primary activity of the respondent. As shown in Table 7, more than half of all person trips were made by persons who reported their primary activity as working. In addition, workers age 16 years and older made the largest percent of their trips by private vehicle. However, regardless of the primary activity, the private vehicle continues to be the major means of transportation. Students and persons looking for work make the largest percent of trips by public transportation, 4.5 and 4.0 percent respectively. Students and retired persons make 18.7 and 11.7 percent of their trips respectively by walking.

Workers are the greatest users of all means of transportation (Table 8). They make more than half (53.6 percent) of all person trips made by private vehicle and public transportation (50.6 percent) and almost 30 percent (28.6) of all person trips made by other modes, such as walking, airplane, etc. Students make almost 13 percent (12.9) of all trips made by public transportation, and approximately 15 percent or more of all trips made by walking, bicycling and school bus.

B. Household Characteristics

1. Income

As household income increases, the percent of person trips made by private vehicle increases from 69.9 percent of total trips for households with incomes under $5,000 to 90.7 percent for households with incomes of $50,000 and over. The percent of trips made by public transportation shows the reverse trend (Table 9). Households with incomes of less than $5,000 make almost 5 percent (4.6) of their person trips by public transportation, compared to 1.1 percent for households with incomes of $50,000 and over.

The percent of person trips made by other means, especially walking, also decreases as household income increases. For example, walking trips for the lowest income households constitute more than one-fifth (21.0 percent) of all trips compared to 4.7 percent for the highest income households

2. Vehicle Ownership

Table 10 indicates that two-vehicle households make about one and one-half as many person trips (42.5 percent) as one (26.8 percent) and three-or-more-vehicle households (24.7 percent). Households without a vehicle make only 6.0 percent of total person trips.

The percent of person trips made in private vehicles by two-vehicle households (88.5) is 6.4 percentage points higher than for one-vehicle households, due largely to the 5 percent increase in person trips by pickup truck. The distribution of person trips by private vehicle levels off for households with three or more vehicles (89.6 percent).

The opposite trend is observed in person trips by public transportation and other means of transportation. One-vehicle households make twice as many person trips by public transportation than two-vehicle households, three times as many as three-or-more vehicle households. In addition, one-vehicle households make about twice as many trips by walking than two- and three-or-more-vehicle households. Households without a vehicle make almost half of all their trips (44.8 percent) by walking.

TABLE 7. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND PRIMARY ACTIVITY
(By Primary Activity)

Means of Transportation	Persons Under 16	Primary Activity of Persons 16 Years of Age and Older						All Persons
		Working	Looking for Work	Keeping House	Student	Retired	Other[2/]	
Private Vehicles								
Auto, Vanbus, Minibus	82.4	77.6	70.3	83.4	64.1	76.1	59.1	74.5
Pickup	7.4	10.3	8.7	5.3	3.2	7.8	5.5	8.0
Other Private Vehicle	0.9	1.7	0.9	0.7	0.6	0.9	0.8	1.2
Subtotal-Private	90.7	89.6	79.9	89.4	67.9	84.8	65.4	83.7
Public Transportation								
Bus, Streetcar	0.9	1.7	3.7	1.3	4.0	2.4	2.7	2.1
Train	*	0.4	0.1	0.1	0.2	*	0.1	0.2
Subway, Elevated Rail	0.3	0.5	0.2	0.1	0.3	0.1	0.2	0.3
Subtotal-Public	1.2	2.6	4.0	1.5	4.5	2.5	3.0	2.6
Other Means								
Walk	5.8	6.3	15.2	8.3	18.7	11.7	15.9	9.3
Bike	0.2	0.4	0.6	0.2	1.6	0.2	1.8	0.7
School Bus	1.5	0.1	0.0	*	6.9	0.0	13.2	2.9
Airplane	0.1	0.1	0.0	0.1	0.1	0.1	0.1	0.1
Other	0.5	0.9	0.3	0.5	0.3	0.7	0.6	0.7
Subtotal-Other	8.1	7.8	16.1	9.1	27.6	12.7	31.6	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[1/]
Distribution of Person Trips	6.6	50.1	1.3	14.6	7.3	3.6	16.5	100.0

*Less than 0.1 percent

[1/] 211,768,900,000 person trips.
[2/] Includes persons unable to work as well as those who indicated their primary activity as "other."

TABLE 8. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND PRIMARY ACTIVITY
(By Means of Transportation)

Means of Transportation	Persons Under 16	Primary Activity of Persons 16 Years of Age and Older						All Persons
		Working	Looking for Work	Keeping House	Student	Retired	Other[2/]	
Private Vehicles								
Auto, Vanbus, Minibus	7.3	52.2	1.2	16.3	6.3	3.6	13.1	100.0
Pickup	6.1	64.9	1.4	9.7	3.0	3.5	11.4	100.0
Other Private Vehicle	4.7	69.9	1.0	7.7	3.7	2.5	10.5	100.0
Subtotal-Private	7.2	53.6	1.3	15.5	5.9	3.6	12.9	100.0
Public Transportation								
Bus, Streetcar	3.2	43.7	2.4	9.3	4.2	14.7	22.5	100.0
Train	1.8	80.3	0.7	6.4	5.4	0.4	5.0	100.0
Subway, Elevated Rail	4.8	71.1	0.7	5.6	1.5	7.2	9.1	100.0
Subtotal-Public	3.3	50.6	2.0	8.5	12.9	3.6	19.1	100.0
Other Means								
Walk	4.1	33.5	2.1	12.9	14.7	4.5	28.2	100.0
Bike	2.1	27.5	1.2	4.4	18.4	1.2	45.2	100.0
School Bus	3.4	2.4	0.0	0.1	17.7	0.0	76.4	100.0
Airplane	4.9	64.8	0.0	8.8	4.8	2.7	14.0	100.0
Other	4.5	63.6	0.5	10.3	3.6	3.1	14.4	100.0
Subtotal-Other	3.9	28.6	1.5	9.7	14.8	3.3	38.2	100.0
Distribution of Person Trips	6.6	50.1	1.3	14.6	7.3	3.6	16.5	100.0[1/]

[1/] 211,768,900,000 person trips.
[2/] Includes persons unable to work as well as those who indicated their primary activity as "other."

TABLE 9. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND HOUSEHOLD INCOME

Means of Transportation	Household Income							
	Under $5,000	$5000-$9,999	$10,000-$14,999	$15,000-$24,999	$25,000-$34,999	$35,000-$49,999	$50,000 & Over	All Households
Private Vehicles								
Auto, Vanbus, Minibus	62.0	71.1	75.0	76.8	79.3	82.5	83.3	74.5
Pickup	7.1	8.0	9.3	8.5	5.9	5.1	6.1	8.0
Other Private Vehicle	0.8	1.4	1.2	1.4	1.3	0.7	1.3	1.2
Subtotal-Private	69.9	80.5	85.5	86.7	86.5	88.3	90.7	83.7
Public Transportation								
Bus, Streetcar	4.0	2.9	1.9	1.4	1.2	1.4	0.7	2.1
Train	0.2	0.1	0.1	0.3	0.4	0.5	0.2	0.2
Subway, Elevated Rail	0.4	0.4	0.4	0.1	0.4	0.1	0.2	0.3
Subtotal-Public	4.6	3.4	2.4	1.8	2.0	2.0	1.1	2.6
Other Means								
Walk	21.0	11.4	8.4	6.8	7.0	6.1	4.7	9.3
Bike	0.5	0.7	0.6	0.7	0.7	0.7	0.3	0.7
School Bus	2.9	3.0	2.4	3.2	3.2	2.1	1.5	2.9
Airplane	0.1	0.0	0.1	0.1	0.1	0.2	0.3	0.1
Other	1.0	1.0	0.6	0.7	0.5	0.6	1.4	0.7
Subtotal-Other	25.5	16.1	12.1	11.5	11.5	9.7	8.2	13.7
All Means	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[1/]
Distribution of Person Trips	10.0	18.1	22.1	31.8	11.5	4.5	2.0	100.0
Distribution of Households	19.7	21.8	21.3	24.8	7.9	3.0	1.5	100.0
Average Vehicles per Household	0.73	1.27	1.67	2.06	2.37	2.49	2.61	1.59

[1/] 211,768,900,000 person trips.

TABLE 10. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND HOUSEHOLD VEHICLE OWNERSHIP

Means of Transportation	Household Vehicle Ownership					All Households
	One	Two	Three or More	Subtotal	None	
Private Vehicles						
Auto, Vanbus, Minibus	76.7	77.9	76.9	77.3	31.0	74.5
Pickup	4.7	9.4	10.6	8.4	1.3	8.0
Other Private Vehicle	0.7	1.2	2.1	1.3	0.3	1.2
Subtotal-Private	82.1	88.5	89.6	87.0	32.6	83.7
Public Transportation						
Bus, Streetcar	2.1	1.0	0.6	1.3	13.1	2.1
Train	0.3	0.2	0.2	0.2	0.5	0.2
Subway, Elevated Rail	0.4	0.2	0.1	0.2	2.8	0.3
Subtotal-Public	2.8	1.4	0.9	1.7	16.4	2.6
Other Means						
Walk	11.1	5.6	5.2	7.1	44.8	9.3
Bike	0.8	0.6	0.6	0.6	0.6	0.7
School Bus	2.5	3.1	2.9	2.8	3.2	2.9
Airplane	0.1	0.1	0.1	0.1	0.1	0.1
Other	0.6	0.7	0.7	0.7	2.3	0.7
Subtotal-Other	15.1	10.1	9.5	11.3	51.0	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0[1/]
Percent of Trips	26.8	42.5	24.7	94.0	6.0	100.0
Percent of Households	34.6	34.4	15.7	84.7	15.3	100.0

1/ 211,768,900,000 person trips.

3. Location

a. SMSA's by Population Size Groups

Approximately two-thirds (67.4 percent) of all person trips are made by residents of households inside SMSA's and 32.6 percent are made by residents of households outside the SMSA's (Table 11). Person trips in private vehicles follow the split of all trips made in SMSA population size groups, and more than one-third (34.4 percent) are made in SMSA's of 1,000,000 and over. Person trips by public transportation are greatest in SMSA's of 1,000,000 and over, accounting for 69.6 percent of all trips made by these modes, with trips in SMSA's of 3,000,000 and over alone totaling 44.8 percent. Public transportation facilities are almost nonexistent outside SMSA's and total less than 10 percent of all trips. Residents in SMSA's of 1,000,000 and over make almost half (49.5 percent) of all walking trips and about one-third of all bike and school bus trips.

Excluding residents of households in SMSA's of 3,000,000 and greater, all other residents of households in an SMSA make more than four-fifths of their person trips in a private vehicle, from 1.5 to 3.0 percent of their trips by public transportation and from 11.1 to 14.3 percent by other transportation modes (Table 12). Residents of households in SMSA's of 3,000,000 and over make the smallest percent of person trips by private vehicle (72.6) and the greatest percent of trips by public transportation (7.7) and other modes (19.7) such as walking (16.1 percent).

Residents of households outside an SMSA make the largest percent of person trips by private vehicle (87.0), due largely to the use of pickups. These households also make the smallest percent of trips by public transportation (0.8) due to the lack of facilities. Trips by all other modes total 12.2 percent, of which walking trips account for 7.1 percent.

b. Inside/Outside SMSA'S

Inside an SMSA, residents of households located inside the central city make a smaller percent of vehicle trips and a larger percent of public transportation trips and walking trips than residents of households located outside the central city (Table 13).

Of all person trips made by private vehicles, the greatest percent (35.6) are made by persons residing inside an SMSA, but outside the central city (Table 14). The percent of trips made by private vehicles by residents outside an SMSA show minor differences in places lesser/greater than 5,000 population, except for trips by pickup, which are 10 percent higher in places of less than 5,000.

Approximately 90.1 percent of all trips made by public transportation are made by residents of households inside an SMSA, with approximately two-thirds (62.9 percent) being made by persons living inside the central city. Less than 10 percent (9.9) of all trips by public transportation are made by residents of households located outside SMSA's. More than 70 percent (70.9) of trips made by other means of transportation are made by households inside an SMSA, with residents of households inside the central city making the greatest percent (45.1) of all walking trips. Outside SMSA's, the percent of trips made by residents of persons by other means of transportation is almost equally divided between places less/greater than 5,000, except for trips by school bus, where 27.9 percent of total trips made by this mode are made by residents in places less than 5,000, compared to 15.3 percent in places of greater than 5,000.

TABLE 11. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND HOUSEHOLD LOCATION OUTSIDE/INSIDE SMSA POPULATION SIZE GROUPS

(By Means of Transportation)

Means of Transportation	Outside SMSA's	SMSA Population Size-Groups Under 250,000	250,000-499,999	500,000-999,999	1,000,000-2,999,999	3,000,000 & Over	All SMSA's	Total
Private Vehicles								
Auto, Vanbus, Minibus	31.8	8.8	11.4	12.0	22.3	13.7	68.2	100.0
Pickup	53.0	9.1	9.9	8.8	14.3	4.9	47.0	100.0
Other Private Vehicle	38.2	5.1	13.1	14.1	19.2	10.3	61.8	100.0
Subtotal-Private	33.9	8.8	11.2	11.7	21.6	12.8	66.1	100.0
Public Transportation								
Bus, Streetcar	11.0	6.6	7.7	10.4	28.3	36.0	89.0	100.0
Train	5.2	1.6	2.1	0.9	11.5	78.7	94.8	100.0
Subway, Elevated Rail	4.7	1.5	2.5	3.2	13.2	74.9	95.3	100.0
Subtotal-Public	9.9	5.4	6.5	8.6	24.8	44.8	90.1	100.0
Other Means								
Walk	24.7	7.6	8.0	10.2	23.9	25.6	75.3	100.0
Bike	29.6	10.9	12.8	12.3	22.1	12.3	70.4	100.0
School Bus	43.2	8.4	9.3	8.1	20.5	10.5	56.8	100.0
Airplane	20.4	12.7	7.1	11.2	33.9	14.7	79.6	100.0
Other	30.5	11.3	12.0	10.7	17.7	17.8	69.5	100.0
Subtotal-Other	29.1	8.2	8.7	9.9	22.9	21.2	70.9	100.0
Total	32.6	8.7	10.8	11.4	21.7	14.8	67.4	100.0 1/
Percent of Households	32.7	8.3	10.3	10.5	21.3	16.9	67.3	100.0 2/

1/ 211,768,900,000 person trips.

2/ 75,412,000 households.

TABLE 12. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND HOUSEHOLD LOCATION OUTSIDE SMSA'S AND INSIDE SMSA'S BY POPULATION SIZE GROUPS

(By Population Size-Groups)

Means of Transportation	Outside SMSA's	SMSA Population Size Groups: Under 250,000	250,000-499,999	500,000-999,999	1,000,000-2,999,999	3,000,000 and Over	All SMSA's	All Households
Private Vehicles								
Auto, Vanbus, Minibus	72.6	76.3	78.6	78.5	76.4	69.0	75.5	74.5
Pickup	12.9	8.4	7.3	6.2	5.2	2.7	5.6	8.0
Other Private Vehicle	1.5	0.8	1.5	1.5	1.1	0.9	1.1	1.2
Subtotal-Private	87.0	85.5	87.4	86.2	82.7	72.6	82.2	83.7
Public Transportation								
Bus, Streetcar	0.8	1.5	1.4	1.5	2.6	4.8	2.6	2.0
Train	0.0	*	*	*	0.1	1.2	0.3	0.2
Subway, Elevated Rail	0.0	0.1	0.1	0.4	0.3	1.7	0.5	0.4
Subtotal-Public	0.8	1.6	1.5	1.9	3.0	7.7	3.4	2.6
Other Means								
Walk	7.1	8.2	7.0	8.4	10.3	16.1	10.4	9.3
Bike	0.6	0.8	0.8	0.7	0.7	0.6	0.7	0.7
School Bus	3.8	2.8	2.5	2.0	2.7	2.0	2.4	2.9
Airplane	0.0	0.1	*	0.1	0.1	0.1	0.1	0.1
Other	0.7	1.0	0.8	0.7	0.5	0.9	0.8	0.7
Subtotal-Other	12.2	12.9	11.1	11.9	14.3	19.7	14.4	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0 1/
Distribution of Trips	32.6	8.7	10.8	11.4	21.7	14.8	67.4	100.0

1/ 211,768,900,000 person trips.
*Less than 0.1 percent

TABLE 13. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND HOUSEHOLD LOCATION INSIDE SMSA'S (INSIDE/OUTSIDE CENTRAL CITY), OUTSIDE SMSA'S (PLACES GREATER/LESS THAN 5,000 POPULATION)

(By Household Location)

Means of Transportation	Inside SMSA			Outside SMSA			All House-Holds
	Within Central City	Outside Central City	Subtotal	Greater Than 5,000	Less Than 5,000	Subtotal	
Private Vehicle							
Auto, Vanbus, Minibus	72.9	77.8	75.5	70.1	75.3	72.6	74.5
Pickup	5.0	6.1	5.6	15.4	10.5	12.9	8.0
Other Private Vehicle	1.0	1.3	1.1	1.4	1.5	1.5	1.2
Subtotal-Private	78.9	85.2	82.2	86.9	87.3	87.0	83.7
Public Transportation							
Bus, Streetcar	3.9	1.4	2.6	0.6	0.8	0.8	2.1
Train	0.2	0.4	0.3	*	*	*	0.2
Subway, Elevated Rail	0.9	0.2	0.5	*	*	*	0.3
Subtotal-Public	5.0	2.0	3.4	0.6	0.8	0.8	2.6
Other Means							
Walk	13.0	8.1	10.4	6.4	7.8	7.1	9.3
Bike	0.6	0.7	0.7	0.4	0.7	0.6	0.7
School Bus	1.6	3.2	2.4	4.9	2.7	3.8	2.9
Airplane	0.1	0.1	0.1	0.1	*	0.0	0.1
Other	0.8	0.7	0.8	0.7	0.7	0.7	0.7
Subtotal-Other	16.1	12.8	14.4	12.5	11.9	12.2	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Distribution of Trips	32.4	35.0	67.4	16.3	16.3	32.6	100.0[1/]

1/ 211,768,900,000 trips.
*Less than 0.1 percent

TABLE 14. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND HOUSEHOLD LOCATION INSIDE SMSA (INSIDE/OUTSIDE CENTRAL CITY),OUTSIDE SMSA'S (PLACES GREATER/LESS THAN 5,000 POPULATION)

(By Means of Transportation)

Means of Transportation	Inside SMSA Within Central City	Inside SMSA Outside Central City	Inside SMSA Subtotal	Outside SMSA Greater Than 5,000	Outside SMSA Less Than 5,000	Outside SMSA Subtotal	Total
Private Vehicle							
Auto, Vanbus, Minibus	31.7	36.5	68.2	16.5	15.3	31.8	100.0
Pickup	20.1	26.9	47.0	21.4	31.6	53.0	100.0
Other Private Vehicle	26.6	35.2	61.8	19.7	18.5	38.2	100.0
Subtotal-Private	30.5	35.6	66.1	17.0	16.9	33.9	100.0
Public Transportation							
Bus, Streetcar	64.3	24.7	89.0	6.1	4.9	11.0	100.0
Train	32.5	62.3	94.8	1.2	4.0	5.2	100.0
Subway, Elevated Rail	75.9	17.5	93.4	3.4	3.2	6.6	100.0
Subtotal-Public	62.9	27.2	90.1	5.3	4.6	9.9	100.0
Other Means							
Walk	45.1	30.2	75.3	13.6	11.1	24.7	100.0
Bike	30.7	39.7	70.4	17.8	11.8	29.6	100.0
School Bus	18.4	38.4	56.8	15.3	27.9	43.2	100.0
Airplane	38.7	40.9	79.6	7.5	12.9	20.4	100.0
Other	35.5	34.0	69.5	15.4	15.1	30.5	100.0
Subtotal-Other	38.2	32.7	70.9	14.2	14.9	29.1	100.0
Distribution of Trips	32.4	35.0	67.4	16.3	16.3	32.6	100.0[1/]
Distribution of Households	34.9	32.4	67.3	16.0	16.7	32.7	100.0[2/]

[1/] 211,768,000 person trips
[2/] 75,412,000 households

c. Census Region

More than half of all person trips are made by residents of the South (30.3 percent) and North Central (27.3) Regions. The South has the greatest percent of trips made in a private vehicle (86.5) while the Northeast has the lowest (75.9). The percent of trips made in the Northeast by public transportation (4.9) and walking (14.5) exceed those made in any other region (Table 15).

4. Location of Selected Housing Types

a. Nationwide

Almost three-fourths (72.8 percent) of all person trips are made by residents of households in detached single family units; an additional 6.7 percent are made by residents of households in attached single family units and trailers, and 16.5 percent are made by residents of households in multi-family units (Table 16).

The modal distribution of person trips is similar for households in trailers and detached single-family units. Households in these housing structures make from 86.9 to 90.6 percent of their person trips in a private vehicle; trips by public transportation are less than 2 percent, and trips by other means constitute from 8.5 to 11.6 percent. Households in attached single-family units follow the same modal preference as households in multi-family dwelling units. Households in these structures make a smaller percent of their person trips in a private vehicle (from 71.7 to 74.5) and a greater percent of trips by public transportation and other means, with walking trips comprising from 15.9 to 18.8 percent of their total person trips. Households in single-family attached housing structures make 7.8 percent of all trips by public transportation compared to the average of 2.6 percent for all housing types.

b. SMSA Population Size Groups

Regardless of housing type and household location inside/outside an SMSA, residents of households in SMSA's of 3,000,000 and over make the smallest percent of trips in a private vehicle, and the largest percent of trips by public transportation and walking than all other households. In addition, as the number of family units increases from single to multi-family dwellings, the percent of person trips made by residents in SMSA's of 3,000,000 and over in a private vehicle decreases, while the percent of trips made by public transportation and walking increases (Table 17).

c. Inside/Outside SMSA'S

Table 18 indicates that there is very little difference in the modal split for SMSA residents of households in detached single family dwellings by household location, i.e. inside/outside central city. However, there is a modal difference when it comes to residents of households in multi-family dwelling units and household location. These residents of households situated outside the central city make a greater percent of their trips by private vehicle than those residents living within a central city, and the percent of trips made by private vehicle increases as the size of the multi-family dwelling increases. The reverse situation is true for SMSA households in multi-family dwellings within a central city. In addition, residents of these households make a greater percent of

TABLE 15. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND HOUSEHOLD LOCATION WITHIN CENSUS REGION

Means of Transportation	Census Region North-East	North Central	South	West	Total U.S.
Private Vehicle					
Auto, Vanbus, Minibus	71.3	76.6	75.8	73.6	74.5
Pickup	3.9	7.2	9.4	10.6	8.0
Other Private Vehicle	0.7	1.2	1.3	1.9	1.2
Subtotal-Private	75.9	85.0	86.5	86.1	83.7
Public Transportation					
Bus, Streetcar	3.0	1.8	1.6	2.0	2.1
Train	0.7	0.2	*	0.1	0.2
Subway, Elevated Rail	1.2	0.2	0.1	0.1	0.3
Subtotal-Public	4.9	2.2	1.7	2.2	2.6
Other Means					
Walk	14.5	8.6	7.0	8.4	9.3
Bike	0.5	0.7	0.5	1.0	0.7
School Bus	3.4	2.7	3.4	1.4	2.9
Airplane	*	0.1	0.1	0.1	0.1
Other	0.8	0.7	0.8	0.8	0.7
Subtotal-Other	19.2	12.8	11.8	11.7	13.7
Total	100.0	100.0	100.0	100.0	100.0
Distribution of Person Trips**	20.8	27.3	30.3	17.8	100.0 1/
Distribution of Households***	21.8	26.2	30.3	18.0	100.0 2/

* Less than 0.1 percent
** Excludes 3.8 percent of person trips, N.E.C.
*** Excludes 3.7 percent of households, N.E.C.
1/ 211,768,900,000 person trips.
2/ 75,412,000 households

TABLE 16. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND HOUSING STRUCTURE

Means of Transportation	Housing Structure					All Housing Units
	Single Family			Multi-Family		
	Detached	Attached	Trailer	2-4 Units	Over 4 Units	
Private Vehicle						
Auto, Vanbus, Minibus	76.5	66.6	75.9	69.3	67.3	74.5
Pickup	9.1	4.1	12.3	4.0	2.8	8.0
Other Private Vehicle	1.3	1.0	2.4	1.2	0.9	1.2
Subtotal-Private	86.9	71.7	90.6	74.5	71.0	83.7
Public Transportation						
Bus, Streetcar	1.2	6.2	0.9	4.4	5.0	2.0
Train	0.2	0.9	0.0	0.5	0.4	0.2
Subway, Elevated Rail	0.1	0.7	*	0.8	1.9	0.4
Subtotal-Public	1.5	7.8	0.9	5.7	7.3	2.6
Other Means						
Walk	6.9	15.9	4.1	17.3	18.8	9.3
Bike	0.7	1.0	0.4	0.3	0.6	0.7
School Bus	3.2	3.1	3.0	1.4	0.9	2.9
Airplane	0.1	*	*	0.1	0.2	0.1
Other	0.7	0.5	1.0	0.7	1.2	0.7
Subtotal-Other	11.6	20.5	8.5	19.8	21.7	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0[1]
Percent of Trips	72.8	3.3	3.4	7.8	8.7	100.0[2]
Percent of Households	64.4	3.9	4.1	10.2	12.5	100.0[3]

*Less than 0.1 percent

1/211,768,900,000 person trips.
2/Excludes 0.9 percent specified as "other" and 3.1 percent as NA.
3/Excludes an additional 4.9 percent specified as "other" or "not reported."

TABLE 17. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION, SMSA POPULATION SIZE GROUPS AND SELECTED HOUSING TYPES

	SMSA Population Size Groups							
	Under 250,000	250,000-499,999	500,000-999,999	1,000,000-2,999,999	Over 3,000,000	All SMSA Households	Outside SMSA's	All House-Holds
Single Family, Detached								
Private	88.5	89.9	88.4	85.6	81.5	86.5	87.8	86.9
Public	1.5	1.0	1.3	2.0	3.6	1.9	0.7	1.5
Walk	5.2	5.0	6.3	7.9	10.7	7.3	6.1	6.9
Other	4.8	4.1	4.0	4.5	4.2	4.3	5.4	4.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Multi-Family, 2-4 Units								
Private	80.3	85.0	77.1	72.7	62.0	72.7	83.1	74.5
Public	1.4	2.1	5.5	6.1	12.4	6.8	0.4	5.7
Walk	15.2	11.7	15.9	18.6	22.6	18.1	13.8	17.3
Other	3.1	1.2	1.5	2.6	3.0	2.4	2.7	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Multi-Family Over 4 Units								
Private	80.1	72.2	80.8	79.6	51.5	69.9	79.9	71.1
Public	4.5	3.8	2.9	4.8	16.2	8.1	1.3	7.3
Walk	10.5	20.0	13.8	13.1	29.8	19.2	16.0	18.8
Other	4.9	4.0	2.5	2.5	2.5	2.8	2.8	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All Households								
Private	85.5	87.4	86.2	82.7	72.6	82.2	87.0	83.7
Public	1.6	1.5	1.9	2.9	7.7	3.4	0.8	2.6
Walk	8.2	6.9	8.4	10.3	16.1	10.4	7.1	9.3
Other	4.7	4.2	3.5	4.1	3.6	4.0	5.1	4.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1/ 211,768,900,000 person trips

TABLE 18. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION, HOUSEHOLD LOCATION (INSIDE/OUTSIDE SMSA), AND SELECTED HOUSING TYPES

Mode of Transportation By Selected Housing Types	Inside SMSA			Outside SMSA			
	Outside Central City	Within Central City	Sub-total	Less than 5,000	Greater Than 5,000	Sub-total	All Households
Single Family, Detached							
Private	86.4	86.4	86.4	87.1	88.4	87.8	86.9
Public	1.6	2.4	1.9	0.7	0.8	0.7	1.5
Walk	6.8	7.9	7.3	6.1	6.1	6.1	6.9
Other	5.2	3.3	4.4	6.1	4.7	5.4	4.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Multi-Family, 2-4 Units							
Private	79.7	69.2	72.7	78.0	85.1	83.1	74.5
Public	3.9	8.3	6.8	0.9	0.2	0.4	5.7
Walk	14.4	19.9	18.1	17.3	12.4	13.8	17.3
Other	2.0	2.6	2.4	3.8	2.3	2.7	2.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Multi-Family, Over 4 Units							
Private	83.3	60.3	69.9	81.1	79.5	79.9	71.1
Public	3.3	11.5	8.1	3.3	0.7	1.3	7.3
Walk	10.8	25.3	19.2	11.8	17.2	16.0	18.8
Other	2.6	2.9	2.8	3.8	2.6	2.8	2.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
All Households							
Private	85.2	78.9	82.2	86.8	87.3	87.0	83.7
Public	2.0	5.0	3.4	0.7	0.8	0.8	2.6
Walk	8.1	13.0	10.4	6.4	7.8	7.1	9.3
Other	4.7	3.1	4.0	6.1	4.1	5.1	4.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Distribution of Trips	32.4	35.0	67.4	16.3	16.3	32.6	100.0[1/]
Distribution of Households	32.4	34.9	67.3	16.7	16.0	32.7	100.0

1/ 211,768,900,000 person trips.

trips by public transportation and walking, as the size of the multi-family unit increases. Walking trips constitute almost one-fifth (19.9 percent) of all trips made by households in 2-4 multi-family dwelling units and over one-fourth (25.3 percent) of all trips for households in multi-family dwellings comprised of over four units.

Residents of detached single-family unit households located outside of SMSA's show no appreciable differences in modal split; however, this is not true for residents of households in multi-family units. Residents of households in 2-4 unit multi-family dwellings located in places of over 5,000 population make a greater percent of their trips by private vehicles and a smaller percent of walking trips than households in places of less than 5,000. For multi-family dwellings of more than 4 units, residents of households located in places of over 5,000 make a slightly lesser percent of their trips by private vehicle but a larger percent of walking trips than residents of households in places of less than 5,000.

5. *Availability of Public Transportation*

Table 19 indicates that 59.0 percent of all person trips were made by households which have some form of public transportation available within 2 miles of their homes. These households also made 56.7 percent of all person trips made in a private vehicle, 90.2 percent of all trips made by public transportation, and 75.9 percent of all walk trips.

Table 20 indicates that households which indicated that public transportation was not available to them made 88.6 percent of their trips in a private vehicle, less than 1 percent (0.6) of their trips by public transportation and 10.8 percent by other means such as walking (5.4 percent).

C. *Trips and Travel Characteristics by Means of Transportation*

1. Trip Purpose

As shown in Table 21, the greatest percent of trips is for family and personal business (31.1), followed by social and recreation (24.4) and earning a living (23.1). Trips for civic, education and religious purposes (12.1 percent) and other purposes (9.3) comprise the remainder. Table 22 indicates that the largest percent of miles traveled are for social and recreation purposes (30.1), followed by earning a living (27.0 percent), family and personal business (21.9 percent), other (14.8 percent), and civic, education and religious trip purposes (6.2 percent). If we subtract the trips and travel for work related purposes from earning a living, 19.5 percent of all trips and 19.9 percent of all miles are for work purposes and the remaining 80.5 percent of trips and 80.1 percent of miles are for nonwork purposes.

The modal distribution indicates that person trips and travel made by private vehicles closely follows the trip purpose distribution. Specifically, approximately one-fifth of all person trips and person miles traveled in a private vehicle are for work purposes and four-fifths for nonwork purposes. However, this is not true for person trips and travel made by public transportation for different trip purposes. Of all trips and travel made by public transportation, approximately one-third are for work purposes, and approximately two-thirds are for nonwork purposes (Table 22).

TABLE 19. DISTRIBUTION OF PERSON TRIPS[1/] BY MEANS OF TRANSPORTATION AND THE AVAILABILITY OF PUBLIC TRANSPORTATION

(By Means of Transportation)

Means of Transportation	Availability of Public Transportation			
	Yes	No	Other	Total
Private Vehicles				
Auto, Vanbus, Minibus	58.6	38.4	3.0	100.0
Pickup	38.9	59.2	1.9	100.0
Other Private Vehicle	53.6	43.1	3.3	100.0
Subtotal-Private	56.7	40.4	2.9	100.0
Public Transportation				
Bus, Streetcar	89.8	9.5	0.7	100.0
Train	87.8	11.5	0.7	100.0
Subway, Elevated Rail	93.9	6.1	0.0	100.0
Subtotal-Public	90.2	9.2	0.6	100.0
Other Means				
Walk	75.9	21.9	2.2	100.0
Bike	66.9	31.7	1.4	100.0
School Bus	41.9	54.0	3.1	100.0
Airplane	70.4	21.5	8.1	100.0
Other	59.1	39.0	1.9	100.0
Subtotal-Other	67.4	30.2	2.4	100.0
All	59.0	38.2	2.8	100.0

1/ 211,768,900,000 person trips

TABLE 20. DISTRIBUTION OF PERSON TRIPS[1/] BY MEANS OF TRANSPORTATION AND THE AVAILABILITY OF PUBLIC TRANSPORTATION

(By Availability of Public Transportation)

Means of Transportation	Availability of Public Transportation		
	Yes	No	Other
Private Vehicles			
Auto, Vanbus, Minibus	74.1	74.9	80.9
Pickup	5.2	12.3	5.5
Other Private Vehicle	1.1	1.4	1.5
Subtotal-Private	80.4	88.6	87.9
Public Transportation			
Bus, Streetcar	3.0	0.5	0.5
Train	0.4	0.1	0.1
Subway, Elevated Rail	0.5	*	0.0
Subtotal-Public	3.9	0.6	0.6
Other Means			
Walk	12.0	5.4	7.3
Bike	0.7	0.5	0.3
School Bus	2.0	4.1	3.1
Airplane	0.1	*	0.3
Other	0.8	0.8	0.5
Subtotal-Other	15.6	10.8	11.5
Total	100.0	100.0	100.0
Distribution of Trips	59.0	38.2	2.8

*Less than 0.1 percent.
1/211,768,900,000 person trips.

TABLE 21. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND TRIP PURPOSE

(By Means of Transportation)

Means of Transportation	Earning a Living			Family and Personal Business			Total Family and Personal Business	Total Civic Education And Religious
	To Work	Work Related	Total Earning A Living	Shopping	Other Family And Personal Business	Medical Dental		
Private Vehicles								
Auto, Vanbus, Minibus	20.1	3.3	23.4	18.8	12.6	1.6	33.0	8.3
Pickup	26.1	8.0	34.1	13.8	17.7	0.5	32.0	4.5
Other Private Vehicle	30.6	3.9	34.5	12.0	15.9	0.2	28.1	4.2
Subtotal-Private	20.8	3.8	24.6	18.2	13.1	1.5	32.8	7.9
Public Transportation								
Bus, Streetcar	31.0	1.5	32.5	8.8	5.6	2.8	16.4	28.4
Train	45.6	1.8	47.4	4.6	1.8	1.8	7.4	4.0
Subway, Elevated Rail	47.1	2.9	50.0	4.0	3.3	1.6	8.9	9.0
Subtotal-Public	34.5	1.7	36.2	7.8	5.0	1.8	14.6	23.6
Other Means								
Walk	9.7	2.0	11.7	15.1	15.5	0.3	30.9	23.8
Bike	17.5	2.5	20.0	10.7	7.6	0.0	18.3	19.6
School Bus	0.8	0.5	1.3	0.0	0.1	1.1	1.2	93.0
Airplane	*	39.9	39.9	5.8	3.9	0.5	10.2	1.6
Other	17.9	18.6	36.5	6.5	13.6	2.0	22.1	4.9
Subtotal-Other	8.6	2.9	11.5	11.2	12.0	0.3	23.6	36.3
Distribution of Trips	19.5	3.6	23.1	17.1	12.7	1.3	31.1	12.1

	Social and Recreation							
	Vacation	Visiting Friends and Relatives	Pleasure Driving	Other Social and Recreation	Total Social and Recreation	Other	Subtotal Non-Work[1]	All
Private Vehicles								
Auto, Vanbus, Minibus	0.1	10.2	0.6	14.5	25.4	10.0	79.9	100.0
Pickup	0.1	9.6	1.1	11.0	21.8	7.6	73.9	100.0
Other Private Vehicle	0.1	11.8	2.8	12.2	26.9	6.3	69.4	100.0
Subtotal-Private	0.1	10.2	0.7	14.0	25.0	9.7	79.2	100.0
Public Transportation								
Bus, Streetcar[3]	0.0	5.4	0.0	6.1	11.5	11.2	69.0	100.0
Train	0.0	5.3	0.0	4.4	9.7	31.5	54.4	100.0
Subway, Elevated Rail	0.0	3.7	0.0	10.4	14.1	18.0	52.9	100.0
Subtotal-Public	0.0	5.2	0.0	6.5	11.7	13.9	65.5	100.0
Other Means								
Walk	0.1	11.8	0.0	15.9	27.8	5.8	90.3	100.0
Bike	0.0	15.7	0.0	25.0	40.7	1.4	82.5	100.0
School Bus	0.0	0.0	0.0	0.1	0.1	4.4	99.2	100.0
Airplane	3.4	2.1	0.0	3.1	8.6	39.7	100.0	100.0
Other	0.1	6.4	0.0	18.6	25.2	11.3	82.1	100.0
Subtotal-Other	0.1	9.1	0.6	13.5	22.8	5.8	91.4	100.0
Distribution of Trips	0.1	9.9	0.6	13.7	24.4	9.3	80.5	100.0[2]

*Less than 0.1 percent.
1/Includes all trip purposes except "to work."
2/211,768,900,000 person trips.
3/Includes intercity bus trips

TABLE 22. DISTRIBUTION OF PERSON MILES OF TRAVEL BY MEANS OF TRANSPORTATION AND TRIP PURPOSE

(By Means of Transportation)

Means of Transportation	Earning a Living			Family and Personal Business			Total Family and Personal Business	Total Civic Education And Religious
	To Work	Work Related	Total Earning A Living	Shopping	Other Family And Personal Business	Medical Dental		
Private Vehicles								
Auto, Vanbus, Minibus	20.3	4.5	24.8	11.6	11.1	2.0	24.7	5.2
Pickup	26.1	10.2	36.3	8.3	15.6	1.0	24.9	1.7
Other Private Vehicle	30.2	4.5	34.7	5.1	12.5	0.3	17.9	1.4
Subtotal-Private	21.2	5.1	26.3	11.2	11.6	1.8	24.6	4.8
Public Transportation								
Bus, Streetcar	29.6	2.2	31.8	4.3	4.0	1.7	10.0	21.2
Train	37.1	1.5	38.6	1.1	0.8	0.8	2.7	2.2
Subway, Elevated Rail	55.6	1.8	57.4	2.1	2.2	0.3	4.6	8.4
Subtotal-Public	34.6	2.0	36.6	3.1	2.9	1.3	7.3	14.5
Other Means								
Walk	14.8	3.1	17.9	12.2	11.6	0.4	24.2	24.0
Bike	7.8	0.7	8.5	2.6	1.6	0.0	4.2	7.0
School Bus	4.1	3.9	8.0	0.0	1.1	0.1	1.2	81.4
Airplane	3.5	32.1	35.6	*	4.4	0.3	4.7	*
Other	12.9	31.3	44.2	1.3	4.3	0.8	6.4	3.5
Subtotal-Other	6.7	23.9	30.6	0.6	4.0	0.2	4.8	14.8
Distribution of Miles	19.9	7.1	27.0	9.8	10.5	1.6	21.9	6.2

	Social and Recreation							
	Vacation	Visiting Friends and Relatives	Pleasure Driving	Other Social and Recreation	Total Social and Recreation	Other	Subtotal Non-Work[1]	All
Private Vehicles								
Auto, Vanbus, Minibus	1.5	14.7	1.1	15.8	33.1	12.2	79.7	100.0
Pickup	0.8	10.9	2.5	11.3	25.5	11.6	73.9	100.0
Other Private Vehicle	*	13.1	4.0	12.2	29.3	16.7	69.8	100.0
Subtotal-Private	1.5	14.3	1.2	15.2	32.2	12.1	78.8	100.0
Public Transportation								
Bus, Streetcar[3]	2.1	5.6	0.0	18.8	24.4	12.7	70.4	100.0
Train	0.0	12.2	0.0	3.3	15.5	41.1	62.9	100.0
Subway, Elevated Rail	0.0	3.1	0.0	9.4	12.5	17.1	44.4	100.0
Subtotal-Public	0.0	7.1	0.0	13.5	20.6	21.0	65.4	100.0
Other Means								
Walk	0.0	10.4	0.0	16.7	27.1	6.8	85.2	100.0
Bike	0.0	5.1	0.0	9.8	14.9	65.4	92.2	100.0
School Bus	0.0	0.0	0.0	4.1	4.1	5.3	95.9	100.0
Airplane	3.2	9.1	0.0	3.8	16.1	43.6	96.5	100.0
Other	*	10.6	0.0	14.5	25.1	20.8	87.1	100.0
Subtotal-Other	2.2	7.6	0.0	5.9	15.7	34.4	93.3	100.0
Distribution of Miles	1.5	13.4	1.1	14.1	30.1	14.8	80.1	100.0[2]

*Less than 0.1 percent.
[1] Includes all trip purposes except "to work."
[2] 1,890,898,000,000 person miles of travel.
[3] Includes intercity bus trips

As shown in Tables 23 and 24, approximately 90 percent of all person trips and 91.6 percent of all person miles to work are made by private vehicles compared to 82.4 percent of all trips and 84.8 percent of person miles for nonwork purposes. The greatest percent of person trips and person miles traveled for nonwork purposes by private vehicles is for family and personal business, 88.4 percent and 96.6 percent respectively. The smallest percent of person trips and miles traveled by private vehicles is for civic, education and religious trip purposes, 54.2 percent and 66.9 percent respectively, because of the predominance of trips by the school bus. The percent of trips made to work by public transportation is over twice (4.5 percent) that made for nonwork purposes (2.1 percent); person miles of travel show no appreciable differences. However, 15.5 percent of all person trips made for nonwork purposes are made by other means such as walking (10.5 percent) and school bus (3.5 percent), compared to 5.5 percent for work purposes. The percent of person miles traveled by other means is four times higher for nonwork purposes than for work purposes because of miles traveled by airplane.

2. Trip Purpose and Average Trip Time

The average trip time for all person trips, regardless of trip purpose and mode, is 17.7 minutes (Table 25). Person trips for family and personal business have the shortest trip time (14.1 minutes) while social and recreation trips have the longest trip time (20.2 minutes). The average trip time for nonwork purposes (19.4 minutes) is 2 minutes shorter than for work purposes.

The average trip time by private vehicle is 17.7 minutes. Trip times are almost twice as long by public transportation (34.8 minutes) as by private vehicle. Trips by other means average 14.8 minutes because of the short duration of walking (9.6 minutes) and bicycle trips (13.1 minutes).

3. Trip Length (Miles)

The average trip length for all trips, regardless of means of transportation is 8.9 miles (Table 26). The shortest trip length is for civic, education and religious (4.5 miles) and the longest trips length, excluding vacation travel is for work related trips (17.5 miles). Work and nonwork trips both average 8.9 miles. The average trip length by private vehicle and public transportation shows little difference (9.2 and 9.3 miles respectively). Trip lengths by other means of transportation average 4.3 miles and are the shortest due to the preponderance of walking and bicycling trips.

4. Trip Length Categories

Tables 27 and 28 indicate that approximately 64.4 percent of all trips are 5 miles and less and these trips constitute 13.9 percent of all person miles traveled. On the other hand, trips of over 100 miles constitute less than 1 percent (0.7) of all person trips and 22.3 percent of all miles traveled. Trips by private vehicles follow the same pattern.

More than half (57.1 percent) of all person trips made by public transportation are 5 miles and less and these trips constitute only 16.3 percent of miles traveled, indicating the short but frequent trips. Similar to person trips by private vehicle, trips of over 100 miles constitute less than 1 percent (0.7) of all trips but 16.3 percent of all miles. Of all public

TABLE 23. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND TRIP PURPOSE

(By Trip Purpose)

Means of Transportation	Earning a Living: To Work	Earning a Living: Work Related	Earning a Living: Total Earning A Living	Family and Personal Business: Shopping	Family and Personal Business: Other Family And Personal Business	Family and Personal Business: Medical Dental	Total Family and Personal Business	Total Civic Education And Religious
Private Vehicles								
Auto, Vanbus, Minibus	77.4	69.2	75.6	82.5	73.5	89.6	79.1	50.9
Pickup	10.7	17.4	11.7	6.4	11.0	3.1	8.2	2.9
Other Private Vehicles	1.9	1.3	1.9	0.9	1.6	0.2	1.1	0.4
Subtotal-Private	90.0	87.9	89.2	89.8	86.1	92.9	88.4	54.2
Public Transportation								
Bus, Streetcar	3.2	0.8	2.8	1.0	0.9	3.0	1.1	4.6
Train	0.5	0.1	0.5	0.1	*	0.2	0.1	0.1
Subway, Elevated Rail	0.8	0.3	0.7	0.1	0.1	0.4	0.1	0.3
Subtotal-Public	4.5	1.2	4.0	1.2	1.0	3.6	1.3	5.0
Other Means								
Walk	4.6	5.3	4.7	8.3	11.5	2.2	9.3	18.3
Bike	0.6	0.5	0.6	0.4	0.4	NA	0.4	1.0
School Bus	0.1	*	*	0.0	0.0	0.0	0.0	21.2
Airplane	*	0.8	0.2	*	*	*	*	*
Other	0.3	3.9	1.2	0.3	1.0	1.3	0.6	0.3
Subtotal-Other	5.5	10.9	6.8	9.0	12.9	3.5	10.3	40.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Distribution of Trips	19.5	3.6	23.1	17.1	12.7	1.3	31.1	12.1

Means of Transportation	Social and Recreation: Vacation	Social and Recreation: Visiting Friends and Relatives	Social and Recreation: Pleasure Driving	Social and Recreation: Other Social and Recreation	Social and Recreation: Total Social and Recreation	Other	Subtotal Non-Work[1]	All
Private Vehicles								
Auto, Vanbus, Minibus	76.8	77.0	78.9	78.1	77.5	80.0	74.0	74.5
Pickup	6.9	7.6	15.2	6.4	7.1	6.6	7.3	8.0
Other Private Vehicle	0.7	1.5	5.9	1.0	1.4	0.9	1.1	1.2
Subtotal-Private	84.4	86.1	100.0	85.5	86.0	87.5	82.4	83.7
Public Transportation								
Bus, Streetcar[3]	2.9	1.1	0.0	0.8	0.9	2.4	1.7	2.1
Train	0.0	0.1	0.0	0.1	0.1	0.8	0.2	0.2
Subway, Elevated Rail	0.0	0.1	0.1	0.3	0.2	0.6	0.2	0.3
Subtotal-Public	2.9	1.3	0.0	1.2	1.2	3.8	2.1	2.6
Other Means								
Walk	5.7	11.1	0.0	10.8	10.7	5.9	10.5	9.3
Bike	0.0	1.0	0.0	1.1	1.1	0.1	0.7	0.7
School Bus	0.0	0.0	0.0	0.4	0.2	1.4	3.5	2.7
Airplane	0.0	*	0.0	*	*	0.4	*	0.1
Other	4.5	0.5	0.0	1.4	1.0	0.9	0.8	0.7
Subtotal-Other	12.7	12.6	0.0	13.3	12.8	8.7	15.5	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Distribution of Trips	0.1	9.9	0.6	13.7	24.4	9.3	80.5	100.0[2]

*Less than 0.1 percent.
1/ Includes all trip purposes except "to work."
2/ 211,768,900,000 person trips.
3/ Includes intercity bus trips.

TABLE 24. DISTRIBUTION OF PERSON MILES OF TRAVEL BY MEANS OF TRANSPORTATION AND TRIP PURPOSE

(By Trip Purpose)

Means of Transportation	Earning a Living			Family and Personal Business			Total Family and Personal Business	Total Civic Education And Religious
	To Work	Work Related	Total Earning A Living	Shopping	Other Family And Personal Business	Medical Dental		
Private Vehicles								
Auto, Vanbus, Minibus	77.1	47.6	69.2	89.8	89.9	79.4	84.8	64.0
Pickup	12.2	13.2	12.5	7.9	5.7	13.8	13.6	2.5
Other Private Vehicle	2.3	1.0	2.0	0.8	0.3	1.9	1.2	0.4
Subtotal-Private	91.6	61.8	83.7	98.5	95.9	95.1	96.6	66.9
Public Transportation								
Bus, Streetcar	2.8	0.5	2.0	0.7	1.7	0.6	0.7	5.6
Train	1.5	0.1	1.0	0.1	0.4	*	0.1	0.2
Subway, Elevated Rail	0.9	0.1	0.6	0.1	*	0.1	0.1	0.4
Subtotal-Public	6.2	0.7	3.6	0.9	2.1	0.7	0.9	6.2
Other Means								
Walk	0.2	0.1	0.2	0.4	0.1	0.4	0.4	1.3
Bike	0.1	*	0.1	0.1	0.0	*	0.1	0.3
School Bus	*	1.0	0.6	*	0.2	0.2	0.1	24.7
Airplane	2.4	31.5	10.0	*	1.2	3.2	1.6	*
Other	0.4	4.9	1.8	0.1	0.5	0.4	0.3	0.6
Subtotal-Other	3.1	37.5	12.7	0.6	2.0	4.2	2.5	26.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Distribution of Miles	19.9	7.1	27.0	9.8	1.6	10.5	21.9	6.2

	Social and Recreation							
	Vacation	Visiting Friends and Relatives	Pleasure Driving	Other Social and Recreation	Total Social and Recreation	Other	Subtotal Non-Work[1]	All
Private Vehicles								
Auto, Vanbus, Minibus	77.3	83.0	73.7	84.3	82.9	61.6	74.9	75.3
Pickup	4.7	7.6	20.6	7.5	7.9	7.3	8.6	9.2
Other Private Vehicle	*	1.5	5.7	1.4	1.5	1.7	1.3	1.6
Subtotal-Private	82.0	92.1	100.0	93.2	92.3	70.6	84.8	86.1
Public Transportation								
Bus, Streetcar[3]	2.2	0.7	0.0	1.8	1.3	1.4	1.4	1.7
Train	0.0	0.7	0.0	0.2	0.4	2.1	0.6	0.7
Subway, Elevated Rail	0.0	*	0.0	0.1	0.1	0.3	0.2	0.3
Subtotal-Public	2.2	1.4	0.0	2.1	1.8	3.8	2.2	2.7
Other Means								
Walk	0.0	0.3	0.0	0.4	0.3	0.2	0.3	0.3
Bike	0.0	0.1	0.0	0.2	0.1	1.2	0.3	0.3
School Bus	0.0	0.0	0.0	0.5	0.3	0.7	2.3	1.9
Airplane	15.8	5.2	0.0	2.1	4.1	22.4	8.9	7.6
Other	*	0.9	0.0	1.5	1.1	1.1	1.2	1.0
Subtotal-Other	15.8	6.5	0.0	4.7	5.9	25.6	13.0	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[2]
Distribution of Miles	1.5	13.4	1.1	14.1	30.1	14.8	80.1	100.0

*Less than 0.1 percent.
[1] Includes all trip purposes except "To Work."
[2] 1,890,898,000,000 person miles of travel.
[3] Includes intercity bus trips.

TABLE 25. AVERAGE PERSON TRIP TIME (MINUTES) BY MEANS OF TRANSPORTATION AND TRIP PURPOSE

Means of Transportation	Work	Work Related	Family and Personal Business	Civic Education Religious	Social and Recreation	Non-Work[1/]	Other	All Purposes
Private Vehicle								
Auto, Vanbus, Minibus	18.8	20.9	14.3	13.3	20.9	17.2	19.1	17.5
Pickup	19.0	23.4	16.0	10.2	20.4	18.6	24.2	18.7
Other Private Vehicle	20.9	24.6	13.8	13.4	25.5	22.2	50.7	21.8
Subtotal-Private	18.8	21.4	14.4	13.1	21.0	17.4	19.8	17.7
Public Transportation								
Bus, Streetcar	36.6	40.3	28.7	26.6	39.7	29.9	28.4	31.9
Train	53.5	49.2	42.2	54.4	76.0	59.4	59.6	56.7
Subway, Elevated Rail	43.5	45.9	17.8	40.6	29.3	30.0	28.6	36.4
Subtotal-Public	39.9	42.4	28.4	27.7	40.8	32.1	34.9	34.8
Other Means								
Walk	8.5	9.5	8.9	10.7	9.8	9.7	9.4	9.6
Bike	12.8	21.1	8.9	11.2	12.7	13.1	57.0	13.1
School Bus	23.9	55.5	22.9	23.7	22.9	23.7	22.4	23.9
Airplane	164.4	120.0	68.2	*	273.2	133.0	135.1	135.1
Other	28.9	39.0	16.3	31.3	43.2	32.6	31.5	31.9
Subtotal-Other	12.8	30.7	9.6	17.6	13.1	15.0	20.2	14.8
Total	19.5	22.7	14.1	15.7	20.2	17.3	20.4	17.7

*Too few observations to arrive at a meaningful trip time.
1/Includes all trip purposes except "To Work."

TABLE 26. AVERAGE PERSON TRIP LENGTH (MILES) BY TRIP PURPOSE AND MEANS OF TRANSPORTATION

Means of Transportation	Earning a Living: To Work	Earning a Living: Work Related	Earning a Living: Total Earning A Living	Family and Personal Business: Shopping	Family and Personal Business: Other Family And Personal Business	Family and Personal Business: Medical Dental	Total Family and Personal Business	Civic Education And Religious	Vacation	Social and Recreation: Visiting Friends and Relatives	Social and Recreation: Pleasure Driving	Social and Recreation: Other Social and Recreation	Social and Recreation: Total Social and Recreation	Subtotal Non-Work[1]	All
Private Vehicles															
Auto, Vanbus, Minibus	9.2	12.0	9.6	5.6	8.0	11.1	6.8	5.7	122.3	13.0	15.9	9.9	11.8	9.8	9.8
Pickup	10.6	13.3	11.1	6.3	9.2	20.1	8.1	3.9	82.1	11.9	23.0	10.7	12.2	10.4	10.4
Other Private Vehicle	11.2	13.3	11.5	4.8	9.0	13.9	7.3	3.8	*	12.6	16.3	11.5	12.5	11.4	11.4
Subtotal-Private	9.4	12.3	9.8	5.6	8.1	11.5	6.9	5.6	118.0	12.9	17.0	10.0	11.8	9.2	9.2
Public Transportation															
Bus, Streetcar	7.2	10.5	7.3	3.5	5.3	6.0	4.4	5.5	92.8[2]	7.9	NA	19.5	15.5	7.6	7.4
Train	24.2	23.0	22.7	6.4	12.3	22.8	10.1	15.1	NA	20.8	44.7	32.3	27.9		
Subway, Elevated Rail	9.7	4.9	8.9	4.0	5.1	1.5	3.9	7.2	NA	6.5	NA	7.0	6.8	5.8	7.7
Subtotal-Public	9.3	10.5	9.4	3.7	5.5	6.3	4.7	5.7	92.8	12.7	NA	16.9	16.3	9.3	9.3
Other Means															
Walk	0.5	0.5	0.5	0.3	0.2	0.5	0.2	0.3	-	0.3	NA	0.3	0.5	0.3	0.3
Bike	1.7	1.0	1.6	0.9	0.8	NA	0.8	1.3	NA	1.2	NA	1.5	1.3	4.1	3.7
School Bus	*	*	*	NA	*	*	5.9	5.3	-	NA	NA	11.6	10.3	5.7	5.9
Airplane	*	670.8	672.6	*	846.1	400.0	345.8	*	697.5	*	NA	932.6	*	758.7	753.5
Other	9.2	21.5	15.9	2.2	4.1	5.1	3.6	9.1	*	*	NA	14.1	16.7	13.9	13.8
Subtotal-Other	3.7	60.2	19.4	0.4	2.4	6.3	1.5	3.0	152.0	6.2	NA	3.2	5.1	7.5	4.5
Average	9.2	17.5	10.4	5.1	7.4	11.1	6.3	4.5	121.6	12.0	16.9	9.1	11.0	8.9	8.9

*Too few observations to arrive at a meaningful trip length.

1/ Includes all trip purposes except "to work."
2/ Includes intercity bus trips.

TABLE 27. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND TRIP LENGTH (MILES) CATEGORIES

(By Means of Transportation)

Means of Transportation	Trip Length (Miles) Under 3	3-5	6-10	11-20	21-30	31-50	51-100	Over 100	Not Reported	Total
Private Vehicle										
Auto, Vanbus, Minibus	36.6	24.4	17.7	12.5	4.0	2.5	1.2	0.7	0.4	100.0
Pickup	33.2	22.6	19.3	14.0	4.6	3.5	1.5	0.9	0.4	100.0
Other Private Vehicle	30.1	24.8	19.5	13.2	4.3	4.6	1.3	1.3	0.9	100.0
Subtotal-Private	36.1	24.2	17.9	12.7	4.1	2.6	1.3	0.7	0.4	100.0
Public Transportation										
Bus, Streetcar	32.8	31.9	18.0	8.8	2.5	1.3	0.7	0.6	3.4	100.0
Train	2.8	7.6	15.1	22.5	16.2	16.7	9.4	2.6	7.1	100.0
Subway, Elevated Rail	16.0	28.2	31.5	18.9	1.0	0.8	NA	NA	3.6	100.0
Subtotal-Public	27.9	29.2	19.5	11.3	3.6	2.6	1.4	0.7	3.8	100.0
Other Means										
Walk	97.8	1.2	0.3	*	*	*	*	*	0.7	100.0
Bike	85.9	10.0	1.2	0.2	NA	0.3	NA	*	2.4	100.0
School Bus	34.9	35.2	17.2	7.9	1.4	0.7	*	*	2.7	100.0
Airplane	NA	NA	NA	NA	NA	0.7	1.8	77.8	19.7	100.0
Other	37.6	21.9	14.5	9.7	4.3	5.4	3.6	1.5	1.5	100.0
Subtotal-Other	80.2	9.8	4.6	2.2	0.5	0.5	0.3	0.7	1.2	100.0
Distribution of Trips	42.0	22.4	16.1	11.2	3.6	2.3	1.1	0.7	0.6	100.0[1/]

*Less than 0.1 percent

1/ 211,768,900,000 person trips.

TABLE 28. DISTRIBUTION OF PERSON MILES OF TRAVEL BY MEANS OF TRANSPORTATION AND TRIP LENGTH (MILES) CATEGORIES

(By Means of Transportation)

Means of Transportation	Trip Length (Miles) Under 3	3-5	6-10	11-20	21-30	31-50	51-100	Over 100	Total
Private Vehicle									
Auto, Vanbus, Minibus	4.4	10.6	15.7	21.3	11.6	11.2	9.8	15.4	100.0
Pickup	3.4	8.4	14.8	20.4	11.7	13.5	10.7	17.1	100.0
Other Private Vehicle	3.0	8.3	14.2	17.9	9.9	16.6	7.4	22.7	100.0
Subtotal-Private	4.2	10.3	15.5	21.5	11.6	11.5	9.7	15.7	100.0
Public Transportation									
Bus, Streetcar[2/]	6.2	16.6	19.5	18.1	8.8	6.9	7.2	16.7	100.0
Train	0.1	1.2	4.4	12.4	14.8	22.7	22.5	21.9	100.0
Subway, Elevated Rail	2.4	15.5	36.3	38.3	3.3	4.2	NA	NA	100.0
Subtotal-Public	4.1	12.2	17.2	18.8	9.9	10.9	10.6	16.3	100.0
Other Means									
Walk	69.8	13.5	6.3	0.9	0.6	3.1	4.8	1.0	100.0
Bike	59.0	31.9	6.8	2.3	*	*	*	*	100.0
School Bus	9.9	25.7	25.9	23.2	6.8	5.4	2.8	0.3	100.0
Airplane	0.0	0.0	0.0	0.0	0.0	0.1	0.2	99.7	100.0
Other	2.5	6.7	8.2	11.8	8.8	16.5	20.8	24.7	100.0
Subtotal-Other	4.2	5.2	4.9	4.7	1.9	2.6	2.7	73.8	100.0
Distribution of Miles	4.1	9.8	14.4	19.3	10.5	10.5	9.1	22.3	100.0[1/]

*Less than 0.1 percent

1/ 1,890,898,042,000 person miles of travel

2/ Includes intercity bus trips.

transportation modes, trips by train are the longest. Approximately 89.6 percent of train trips are more than 5 miles and these trips comprise 98.7 percent of miles traveled. Approximately 91.0 percent of trips made by other modes are 5 miles and less due to the preponderance of walking and bicycle trips and these trips constitute only 9.4 percent of miles traveled. Trips of over 100 miles comprise 0.7 percent of all trips by other modes and 73.8 percent of person miles traveled due to airplane trips and travel.

Tables 29 and 30 indicate that the percent of person trips and travel by private vehicles increase as trip distance increases up to 30 miles, and then shows a slight decrease as distance increases. For trips and travel over 100 miles, 10.1 percent of all trips and 34.1 percent of all miles are made by airplane.

5. For Work/Nonwork Purposes and Day of the Week

During a full week, work trips constitute almost one-fifth (19.5 percent) of all trips, and the remaining 80.5 percent are nonwork trips (Table 31). Almost three-fourths (72.8 percent) of all trips are made on Mondays through Fridays, of which work trips constitute 17.4 percent of all trips and nonwork trips, 55.4 percent. Approximately 27.2 percent of all trips are made on weekends and work trips drop to a minimum of 2.1 percent and nonwork trips to almost half of the weekday percent to 25.1.

Work trips constitute 20.8 percent of all person trips made in a private vehicle during the full week and 18.6 of the 20.8 percent, or 90 percent, of these trips take place on Monday through Friday. Work trips comprise 34.5 percent of all person trips made by public transportation during a 7-day period and 32.5 percent of the 34.5 percent or 94.2 percent are made on weekdays. Weekdays also predominate for work trips by other means of transportation when 88.4 percent (or 7.6 percent of the total 8.6 percent) of all trips by these modes are made.

6. For Work/Nonwork Purposes and Time of Day

Table 32 indicates that during the week, more than two-thirds (67.5 percent) of all trips are made from 12:00N-11:59 PM and 32.1 percent are made from 12:00M-5:59 AM. Work trips are concentrated during the hours of 6:00-8:59 AM and 4:00-6:59 PM when approximately 62.5 percent of all work trips are made. An additional 16.1 percent of all work trips are made from 12:00N-3:59 PM. Nonwork trips predominate from 9:00-11:59 AM (17.9 percent) and then continue for the remainder of the day when an additional 70.6 percent of all trips are made.

Of all work trips made in a private vehicle, approximately 62.3 percent are made from 6:00-8:59 AM and 4:00-6:59 PM. Likewise, of all work trips made by public transportation, 75.3 percent occur during these hours.

Of all nonwork trips made in a private vehicle, 72.1 percent take place between 12:00N-11:59 PM. Of all nonwork trips made by public transportation, approximately 63.0 percent also occur during these hours. Trips by other modes peak from 9:00-11:59 AM and again from 12:00N-3:59 PM due largely to the preponderance of nonwork trips.

As shown in Table 33, the distribution and peaking of all trips, as well as work and nonwork trips, on weekdays does not change appreciably from that taking place during the

TABLE 29. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION AND TRIP LENGTH CATEGORIES

(By Trip Length)

Means of Transportation	Trip Length (Miles) Under 3	3-5	6-10	11-20	21-30	31-50	51-100	Over 100	Total
Private Vehicle									
Auto, Vanbus, Minibus	64.9	81.3	81.9	83.3	83.6	79.8	81.3	71.8	74.5
Pickup	6.3	8.0	9.6	9.9	10.3	12.1	10.9	10.2	8.0
Other Private Vehicle	0.9	1.4	1.5	1.5	1.5	2.5	1.4	2.2	1.2
Subtotal-Private	72.1	90.7	93.0	94.7	95.4	94.4	93.6	84.2	83.7
Public Transportation									
Bus, Streetcar	1.6	2.8	2.2	1.6	1.4	1.1	1.2	1.6	2.1
Train	*	0.1	0.2	0.4	1.1	1.7	2.0	0.8	0.2
Subway, Elevated Rail	0.1	0.4	0.7	0.6	0.1	0.1	NA	NA	0.3
Subtotal-Public	1.7	3.3	3.1	2.6	2.6	2.9	3.2	2.4	2.6
Other Means									
Walk	21.8	0.5	0.1	*	*	*	0.2	0.2	9.3
Bike	1.3	0.3	*	*	NA	0.1	NA	0.1	0.7
School Bus	2.4	4.5	3.1	2.0	1.1	0.8	0.5	1.5	2.9
Airplane	NA	NA	NA	NA	NA	*	0.1	10.0	0.1
Other	0.7	0.7	0.7	0.7	0.9	1.8	2.4	1.6	0.7
Subtotal-Other	26.2	6.0	3.9	2.7	2.0	2.7	3.2	13.4	13.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Distribution of Trips	42.0	32.4	16.1	1.2	3.6	2.3	1.1	0.7	100.0[1/]

*Less than 0.1 percent

1/Includes 0.6 percent trips where trip length was not reported.

TABLE 30. DISTRIBUTION OF PERSON MILES OF TRAVEL BY MEANS OF TRANSPORTATION AND TRIP LENGTH CATEGORIES

(By Trip Length)

Means of Transportation	Trip Length (Miles) Under 3	3-5	6-10	11-20	21-30	31-50	51-100	Over 100	All
Private Vehicle									
Auto, Vanbus, Minibus	78.2	81.4	81.9	83.3	83.7	80.0	81.3	52.2	75.3
Pickup	7.3	8.0	9.6	9.8	10.3	12.0	11.0	7.1	9.2
Other Private Vehicle	1.1	1.3	1.5	1.5	1.5	2.4	1.2	1.6	1.6
Subtotal-Private	86.6	90.7	93.0	94.6	95.5	94.4	93.5	60.9	86.1
Public Transportation									
Bus, Streetcar	2.4	2.8	2.3	1.5	1.4	1.1	1.3	1.3	1.7
Train	*	*	0.2	0.5	1.0	1.6	1.8	0.7	0.7
Subway, Elevated Rail	0.2	0.5	0.7	0.6	0.1	0.1	NA	NA	0.3
Subtotal-Public	2.6	3.3	3.2	2.6	2.5	2.8	3.1	2.0	2.7
Other Means									
Walk	5.1	0.4	0.1	*	*	0.1	0.2	0.1	0.3
Bike	1.2	0.3	*	*	NA	0.1	NA	0.7	0.3
School Bus	3.9	4.5	3.1	2.1	1.1	0.9	0.5	0.9	1.9
Airplane	NA	NA	NA	NA	NA	*	0.2	34.1	7.6
Other	0.6	0.8	0.6	0.7	0.9	1.7	2.5	1.2	1.1
Subtotal-Other	10.8	6.0	3.8	2.8	2.0	2.8	3.4	37.1	11.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[1/]
Distribution of Miles	4.1	9.8	14.4	19.3	10.5	10.5	9.1	22.3	100.0

*Less than 0.1 percent

[1/] 1,890,898,042,000 person miles of travel.

TABLE 31. DISTRIBUTION OF PERSON TRIPS BY MAJOR MEANS OF TRANSPORTATION FOR WORK/NONWORK PURPOSES BY DAY OF THE WEEK

Major Means of Transportation	Weekday			Weekend			All Days		
	Work	Nonwork	Total	Work	Nonwork	Total	Work	Nonwork	Total
Private	18.6	52.1	70.7	2.2	27.1	29.3	20.8	79.2	100.0
Public	32.5	55.1	87.6	1.9	10.4	12.3	34.5	65.5	100.0
Other	7.6	75.3	82.9	1.0	16.1	17.1	8.6	91.4	100.0
All	17.4	55.4	72.8	2.1	25.1	27.2	19.5	80.5	100.0 1/

1/ 211,768,900,000 person trips.

TABLE 32. DISTRIBUTION OF PERSON TRIPS FOR WORK/NON-WORK PURPOSES BY TIME OF DAY AND MAJOR MEANS OF TRANSPORTATION

(By Time of Day)

Time of Day	Major Mode of Transportation					
	Private[1]	Other Vehicle[2]	Subtotal	Public[3]	Nonhighway[4]	Total
			Work			
AM						
12M-5:59	5.4	4.1	5.4	4.4	3.2	5.3
6:00-8:59	33.7	32.1	33.7	45.0	26.5	33.8
9:00-11:59	5.9	7.3	5.9	4.5	9.8	6.1
Subtotal	45.0	43.5	45.0	54.9	39.5	45.2
PM						
12:00N-3:59	16.1	17.1	16.1	10.5	20.7	16.1
4:00-6:59	28.6	24.8	28.5	30.3	29.9	28.7
7:00-11:59	10.0	14.6	10.1	3.7	9.4	9.7
Subtotal	54.7	56.5	54.7	44.5	60.0	54.5
NA	0.3	1.0	0.3	0.6	0.5	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0[5]
			Non-Work			
AM						
12M-5:59	2.3	0.6	2.2	0.9	1.2	2.0
6:00-8:59	6.7	42.6	8.3	19.7	11.8	9.0
9:00-11:59	18.4	5.3	17.8	16.0	18.6	17.9
Subtotal	27.4	48.5	28.4	36.6	31.6	28.9
PM						
12N-3:59	29.9	44.4	30.5	33.8	39.0	31.6
4:00-6:59	22.1	4.4	21.3	22.4	17.1	20.8
7:00-11:59	20.1	2.3	19.3	6.8	11.7	18.2
Subtotal	72.1	51.1	71.2	63.0	67.8	70.6
NA	0.5	0.4	0.4	0.4	0.4	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0[6]
			All Purposes			
AM						
12M-5:59	3.0	0.7	2.9	2.1	1.4	2.7
6:00-8:59	12.3	42.2	13.4	28.4	13.3	13.8
9:00-11:59	15.8	5.6	15.4	12.4	17.6	15.6
Subtotal	31.1	48.5	31.7	42.9	32.3	32.1
PM						
12N-3:59	27.0	43.3	27.6	25.8	37.1	28.6
4:00-6:59	23.4	5.2	22.8	25.1	18.5	22.3
7:00-11:59	18.1	2.8	17.5	5.8	11.4	16.6
Subtotal	68.5	51.3	67.9	56.7	67.0	67.5
NA	0.4	0.2	0.4	0.4	0.7	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0[7]

[1] Auto, pickup
[2] Taxi, truck (commercial), school bus
[3] Bus, train, streetcar, el and subway
[4] Airplane, bicycle, walk and other means not reported
[5] 41,230,400,000 person work trips.
[6] 170,538,500,000 person nonwork trips.
[7] 211,768,900,000 total trips.

TABLE 33. DISTRIBUTION OF WEEKDAY PERSON TRIPS FOR WORK/NONWORK PURPOSES BY TIME OF DAY AND MAJOR MEANS OF TRANSPORTATION

(By Means of Transportation)

Time of Day	Major Mode of Transportation by Trip Purpose					
	Private[1]	Other Vehicle[2]	Subtotal	Public[3]	Nonhighway[4]	Total
			Work			
AM						
12M-5:59	5.2	3.3	5.2	4.6	3.2	5.1
6:00-8:59	35.1	32.3	35.1	46.1	26.3	35.1
9:00-11:59	5.1	6.7	5.1	4.5	9.4	5.3
Subtotal	45.4	42.3	45.4	55.2	38.9	45.5
PM						
12:00N-3:59	15.3	17.0	15.3	10.1	21.2	15.4
4:00-6:59	29.5	25.4	29.4	30.6	30.9	29.6
7:00-11:59	9.5	15.3	9.6	3.7	8.4	9.2
Subtotal	54.3	57.7	54.3	44.4	60.5	54.2
NA	0.3	0.0	0.3	0.4	0.6	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
			Non-Work			
AM						
12M-5:59	2.0	0.5	1.9	0.8	0.9	1.8
6:00-8:59	8.0	43.7	10.3	21.8	13.7	11.1
9:00-11:59	16.8	5.0	16.0	14.2	16.6	16.0
Subtotal	26.8	49.2	28.2	37.8	31.2	28.9
PM						
12N-3:59	29.2	45.1	30.3	34.2	40.8	31.7
4:00-6:59	22.5	4.2	21.3	23.0	16.7	20.8
7:00-11:59	21.0	1.3	19.7	5.6	10.6	18.2
Subtotal	72.7	50.6	71.3	62.8	68.1	70.7
NA	0.5	0.2	0.5	0.4	0.7	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
			All Purposes			
AM						
12M-5:59	2.9	0.6	2.8	2.2	1.2	2.5
6:00-8:59	15.1	43.4	16.5	30.8	15.1	16.8
9:00-11:59	13.7	5.0	13.3	10.6	15.8	13.5
Subtotal	31.7	49.0	32.6	43.6	32.1	32.8
PM						
12N-3:59	25.6	44.1	26.5	25.2	38.5	27.8
4:00-6:59	24.3	4.9	23.4	25.8	18.4	22.9
7:00-11:59	18.0	1.8	17.2	4.9	10.4	16.0
Subtotal	67.9	50.8	67.1	55.9	67.3	66.7
NA	0.4	0.2	0.3	0.5	0.6	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0

1/Auto, pickup
2/Taxi, truck (commercial), school bus
3/Bus, train, streetcar, el and subway
4/Airplane, bicycle, walk and other means not reported

week. Neither does the modal split. Table 33 clearly indicates that work trips are very concentrated and occur largely during certain specified hours; while nonwork trips, except for the hours from 12:00 M-5:59 a.m., occur pretty much all day.

As Table 34 indicates, the private vehicle is the major mode used for work and nonwork purposes from Monday through Friday, and accounts for 81.4 percent of all trips. Other transportation modes, such as walking and bicycling account for 11.2 percent, and are used predominantly for nonwork trips. Other vehicles such as commercial taxi and truck account for 4.4 percent and are also used primarily for nonwork purposes. Trips by public transportation account for 3.0 percent, of which 1.9 percent of the 3.0 percent are used for nonwork purposes.

D. Relationship of Person/Household Characteristics and Trip Characteristics

1. Age and Trip Purpose

Regardless of age of tripmaker, almost one-fifth (19.5 percent) are made for work purposes and the remaining four-fifths (80.5 percent) for nonwork purposes (Table 35). Persons in the 20-64 year-age group make a greater percent of their trips for work (25.7), while persons 65 and older make only 7.2 percent of their trips for work purposes. Understandably, persons under 16 years of age make the smallest percent of their trips for work (5.2) and 94.8 percent of their trips for nonwork.

Beginning with age 16 and to age 64, the percent of trips made for work purposes increases, and the percent made for nonwork purposes decreases. Beginning at age 65, the percent of work trips decreases due to retirement, while nonwork trips increase to 92.8 percent of all trips.

The percent of trips made for work and nonwork purposes by private and public modes follows the same trend. The percent of trips made by other modes such as walking and bicycling peak at ages 16-19 and then decreases as age of tripmaker increases.

Males follow the same modal split by age of tripmaker. Females tend to make a somewhat greater percent of their trips by public transportation facilities and other modes, especially for nonwork purposes. This is true for all age groups.

2. Income and Trip Purpose

Regardless of income, the greatest percent of all trips are made by private vehicles. In addition, as income increases, the percent of trips made by private vehicles increases (Table 36). As previously indicated, the percent of trips made by public transportation decreases, although some levelling off is seen by households with incomes from $15,000-$49,999. The percent of trips made by other modes (heavily predominated by walking) also decreases with the largest percent decrease occuring between households of incomes of less than $5,000 and those with incomes from $5,000-$9,999.

As previously indicated, the percent of trips made by private vehicle increases as income increases. It can be noted that within each income category, the percent of work trips made in a private vehicle shows no particular pattern. Households in the $15,000-$24,999 bracket make the largest percent (19.6) of work trips in a private vehicle, compared to

TABLE 34. DISTRIBUTION OF WEEKDAY PERSON TRIPS FOR WORK/ NON-WORK TRIP PURPOSES BY TIME OF THE DAY AND MEANS OF TRANSPORTATION

(By Time of the Day)

Hour of the day	Trip Purpose				
	Work				
	Private[1]	Other Vehicles[2]	Public[3]	Non-Highway[4]	Total
AM					
12:00M-5:59	1.1	*	0.1	*	1.2
6:00-8:59	7.6	0.1	0.5	0.3	8.5
9:00-11:59	1.1	*	0.1	0.1	1.3
Subtotal	9.8	0.1	0.7	0.4	11.1
PM					
12:00N-3:59	3.3	*	0.1	0.3	3.7
4:00-6:59	6.4	0.1	0.3	0.4	7.2
7:00-11:59	2.0	*	*	0.1	2.1
Subtotal	11.7	0.1	0.4	0.8	13.0
All Hours	21.5	0.2	1.1	1.2	24.0
	Non-Work				
AM					
12:00M-5:59	1.2	*	*	0.1	1.3
6:00-8:59	4.7	1.8	0.4	1.4	8.3
9:00-11:59	10.2	0.2	0.3	1.7	12.4
Subtotal	16.1	2.0	0.7	3.2	22.0
PM					
12:00N-3:59	17.6	1.9	0.7	4.0	24.2
4:00-6:59	13.6	0.2	0.4	1.7	15.9
7:00-11:59	12.6	0.1	0.1	1.1	13.9
Subtotal	43.8	2.2	1.2	6.8	54.0
All Hours	59.9	4.2	1.9	10.0	76.0
	All Purposes				
AM					
12:00M-5:59	2.3	*	0.1	0.1	2.5
6:00-8:59	12.3	1.9	0.9	1.7	16.8
9:00-11:59	11.3	0.2	0.4	1.8	13.7
Subtotal	25.9	2.1	1.4	3.6	33.0
PM					
12:00N-3:59	20.9	1.9	0.8	4.3	27.9
4:00-6:59	20.0	0.3	0.7	2.1	23.1
7:00-11:59	14.6	0.1	0.1	1.2	16.0
Subtotal	55.5	2.3	1.6	7.6	67.0
All Hours	81.4	4.4	3.0	11.2	100.0

[1] Auto, pickup
[2] Taxi, truck (commercial), school bus
[3] Bus, train, streetcar, el and subway
[4] Airplane, bicycle, walk, and other means not reported
*Less than 0.1 percent

TABLE 35. DISTRIBUTION OF PERSON TRIPS BY AGE AND SEX OF TRIPMAKER AND SUMMARY MODES OF TRANSPORTATION USED

Summary Modes of Transportation by Age of Tripmaker	All Persons			Males			Females		
	Work	Non-Work	All Purposes	Work	Non-Work	All Purposes	Work	Non-Work	All Purposes
Under 16 Years									
Private	4.7	65.1	69.8	4.5	63.7	68.2	4.9	66.5	71.4
Public	*	2.7	2.7	*	2.5	2.5	*	2.9	2.9
Other	0.5	27.0	27.5	0.6	28.7	29.3	0.4	25.3	25.7
All Means	5.2	94.8	100.0	5.1	94.9	100.0	5.3	94.7	100.0
16-19 Years									
Private	13.1	63.0	76.1	13.5	60.7	74.2	12.8	65.2	78.0
Public	0.5	2.4	2.9	0.5	2.3	2.8	0.6	2.5	3.1
Other	1.9	19.1	21.0	2.3	20.7	23.0	1.4	17.5	18.9
All Means	15.5	84.5	100.0	16.3	83.7	100.0	14.8	85.2	100.0
20-64 Years									
Private	23.2	66.4	89.6	28.0	61.5	89.5	18.2	71.4	89.6
Public	1.2	1.2	2.4	1.2	1.0	2.2	1.2	1.4	2.6
Other	1.3	6.7	8.0	1.5	6.8	8.3	1.1	6.7	7.8
All Means	25.7	74.3	100.0	30.7	69.3	100.0	20.5	79.5	100.0
65 Years and Older									
Private	5.8	75.4	81.2	7.3	76.6	83.9	4.4	74.3	78.7
Public	0.6	2.7	3.3	0.7	1.7	2.4	0.6	3.6	4.2
Other	0.8	14.7	15.5	1.0	12.7	13.7	0.5	16.6	17.1
All Means	7.2	92.8	100.0	9.0	91.0	100.0	5.5	94.5	100.0
All Persons									
Private	17.4	66.3	83.7	20.6	62.8	83.4	14.0	70.1	84.1
Public	0.9	1.7	2.6	0.9	1.4	2.3	0.9	1.9	2.8
Other	1.2	12.5	13.7	1.4	12.9	14.3	1.0	12.1	13.1
All Means	19.5	80.5	100.0[1]	22.9	77.1	100.0[2]	15.9	84.1	100.0[3]

*Less than 0.1 percent.
[1] 211,768,900,000 person trips.
[2] 107,594,800,000 person trips.
[3] 104,174,100,000 person trips.

TABLE 36. DISTRIBUTION OF PERSON TRIPS FOR WORK/NON-WORK PURPOSES, HOUSEHOLD INCOME GROUPS, AND SUMMARY MODES OF TRANSPORTATION

Major Trip Purpose Categories by Summary Modes of Transportation	Household Income Groups							
	Under $5,000	$5,000-$9,999	$10,000-$14,999	$15,000-$24,999	$25,000-$34,9999	$35,000-$49,9999	$50,000 and Over	All Households
Private								
Work	9.6	15.6	18.8	19.6	18.2	17.8	16.7	17.4
Non-Work	60.4	64.9	66.7	67.0	68.3	70.5	74.1	66.3
All Purposes	70.0	80.5	85.5	86.6	86.5	88.3	90.8	83.7
Public								
Work	0.8	1.3	0.9	0.7	0.8	0.9	0.5	0.9
Non-Work	3.8	2.1	1.5	1.3	1.2	1.1	0.6	1.7
All Purposes	4.6	3.4	2.4	2.0	2.0	2.0	1.1	2.6
Other								
Work	1.9	1.6	1.3	0.8	0.9	0.8	0.9	1.2
Non-Work	23.5	14.5	10.8	10.6	10.6	8.9	7.2	12.5
All Purposes	25.4	16.1	12.1	11.4	11.5	9.7	8.1	13.7
All Modes								
Work	12.3	18.5	21.0	21.1	19.9	19.5	18.1	19.5
Non-Work	87.7	81.5	79.0	78.9	80.1	80.5	81.9	80.5
All Purposes	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[1/]

1/ 211,768,900,000 person trips.

16.7 percent for households in the $50,000 and over bracket, 15.6 percent for households in the $5,000-$9,999 bracket and 9.6 percent for households with incomes of under $5,000. The relatively small percent of private vehicle trips for work purposes made by households in the highest income categories is probably due to their large percent (74.1) of nonwork trips including discretionary travel. However, as Table 36 indicates, within each income category, the percent of trips made in a private vehicle for nonwork purposes increases as income increases. As previously indicated, as vehicle ownership and income increase, the percent of travel for discretionary purposes increases. Work trips by public transportation and other modes show no particular pattern, although households in the highest income bracket make the smallest percent of these trips. The same pattern can be observed for nonwork purposes. The percent of trips made by private vehicles increases as income increases, and trips by public transportation decreases.

3. Income and Average Trip Length

The average person trip length for all purposes and by all modes of transportation is 8.9 miles (Table 37). It increases slightly by private and public modes to 9.2 and 9.3 respectively, but is more than 2 miles shorter (7.3 miles) by all other modes, which include walking and bicycling. The average person trip length for work is 9.1 miles. It does not change significantly by private modes (9.4 miles) or public modes (9.3 miles); the trip length by other modes is 5.7. Trips for nonwork purposes, which average 8.9 miles follow the same pattern.

The average person trip length for work by private vehicle generally increases as income increases from 7.4 miles (households under $5,000), to 10.1 miles (households earning from $35,000-$49,999) and then decreases to 8.8 miles for households with incomes of $50,000 and over. Work trips by public transportation follow the same trend, from 6.6 miles for households with incomes under $5,000, to 15.3 miles for households with incomes of $25,000-$34,999 and then decrease significantly to 6.5 miles for the highest income groups. The average person work trip by other modes shows no significant pattern; however, households with incomes from $25,000-$34,999 have the highest average trip length to work--14.9 miles.

4. Vehicle Ownership and Trip Purpose

As vehicle ownership increases, the percent of trips made by all transportation modes for work increases, the percent of trips made for nonwork purposes decreases (Table 38). Households without a vehicle make the smallest percent of trips for work purposes (16.0) and the largest percent (84.0) for nonwork purposes.

The private vehicle is the major mode for vehicle-owning households and the percent of trips made by private vehicle for work and nonwork purposes increases as vehicle ownership increases, with the greatest percent increase in trips taking place between one- and two-vehicle households. The percent of trips for three-or-more-vehicle households does not increase significantly and could even decrease if vehicle ownership was more infinitely delineated. Understandably, households without a vehicle make less than one-third (32.6 percent) of their trips in a private vehicle compared to 82.1 to 89.7 percent for vehicle-owning households. As to be expected, trips by public transportation decrease as vehicle ownership increases. Households without a vehicle make almost twice as many trips by public transportation for nonwork purposes (10.6 percent) compared to work

TABLE 37. AVERAGE PERSON TRIP LENGTH (MILES) FOR WORK/NON-WORK PURPOSES BY HOUSEHOLD INCOME GROUPS AND SUMMARY MODES OF TRANSPORTATION

Major Trip Purpose Categories by Summary Modes of Transportation	Household Income Groups							
	Under $5,000	$5,000-$9,999	$10,000-$14,999	$15,000-$24,999	$25,000-$34,9999	$35,000-$49,9999	$50,000 and Over	All Households
Private								
Work	7.4	8.6	9.4	9.8	9.6	10.1	8.8	9.4
Non-Work	9.1	8.9	8.8	9.3	9.7	9.3	8.7	9.1
All Purposes	8.9	8.9	9.0	9.4	9.7	9.5	8.7	9.2
Public								
Work	6.6	7.1	7.1	11.7	15.3	14.3	6.5	9.3
Non-Work	7.9	9.1	6.4	10.5	14.4	15.1	10.7	9.3
All Purposes	7.7	8.3	6.7	10.9	14.7	14.8	8.8	9.3
Other Means								
Work	1.3	7.3	2.3	7.7	14.9	0.9	6.3	5.7
Non-Work	2.2	4.5	8.1	9.0	10.2	20.6	42.1	7.5
All Purposes	2.2	4.8	7.5	8.9	10.6	18.9	38.2	7.3
All Modes								
Work	6.4	8.4	8.8	9.8	10.1	9.9	8.6	9.1
Non-Work	7.2	8.1	8.7	9.3	9.8	10.7	11.6	8.9
All Purposes	7.1	8.2	8.7	9.4	9.9	10.5	11.0	8.9

TABLE 38. DISTRIBUTION OF PERSON TRIPS BY HOUSEHOLD VEHICLE OWNERSHIP, MAJOR TRIP PURPOSE CATEGORIES AND SUMMARY MODES OF TRANSPORTATION

Major Trip Purpose Categories by Summary Modes of Transportation	Households with Vehicles				
	One	Two	Three or More	None	All House-Holds
Private					
Work	15.7	18.8	19.8	5.3	17.4
Non-work	66.4	69.7	69.9	27.3	66.3
All Purposes	82.1	88.5	89.7	32.6	83.7
Public					
Work	1.1	0.4	0.2	5.9	0.9
Non-work	1.7	1.0	0.7	10.6	1.7
All Purposes	2.8	1.4	0.9	16.5	2.6
Other					
Work	1.5	0.8	0.7	4.8	1.2
Non-work	13.6	9.3	8.7	46.1	12.5
All Purposes	15.1	10.1	9.4	50.9	13.7
All Modes					
Work	18.3	20.0	20.7	16.0	19.5
Non-work	81.7	80.0	79.3	84.0	80.5
All Purposes	100.0	100.0	100.0	100.0	100.0[1/]

[1/] 211,768,900,000 person trips.

purposes (5.9 percent). Trips by other modes, including walking and bicycling show the same trends; however, trips by these modes comprise 50.9 percent of all trips for non-vehicle-owning households, of which 46.1 percent is for nonwork purposes. For vehicle-owning households, trips by other means comprise from 15.1 to 9.4 percent of all trips, decreasing as vehicle ownership increases.

5. Household Location Inside/Outside SMSA and Trip Length

The average person trip length is 8.9 miles, decreasing to 7.8 miles inside the central city of an SMSA, and increasing outside the central city (9.6 miles) and outside an SMSA (9.3 miles) (Table 39). With some minor exceptions, trip lengths are usually shortest inside the central city of an SMSA for all trip purposes and by all transportation modes.

Trip lengths for work and family business by private vehicles show the greatest amount of variation by household location. Trip lengths for all trip purposes by public transportation are from 2-3 times longer outside an SMSA than inside the central city of an SMSA. Trip lengths for all trip purposes by other modes are usually the shortest, regardless of household location because of the preponderance of walk and bicycle trips.

6. Household Location Inside/Outside SMSA and Average Person Trip Time (Minutes)

The average person trip time is 17.7 minutes by all modes, and by private vehicle as well (Table 40). It is almost 3 minutes shorter (14.8 minutes) by other modes due to the preponderance of walking and bicycle trips. The trip length by public transportation is at least twice as long (34.8 minutes). Again, trip times, like trip lengths, are usually shortest inside the central city of an SMSA.

The average person work trip time is 20.4 minutes by all modes. It varies from 12.8 minutes by other modes such as walking and bicycling and increases to 39.9 minutes by public transportation. Here too, trip times are usually shortest inside the central city of an SMSA where public transportation facilities are geared to move riders quickly.

The average trip time for nonwork purposes is 17.3 minutes, more than 3 minutes shorter than the trip time for the work trip and follows the same pattern as for work trips.

7. Household Location in SMSA Population Size-Groups Inside/Outside Central City and Summary Modes of Transportation

Approximately 82.2 percent of all person trips in SMSA's are made in a private vehicle (Table 41). This is slightly more than the 78.9 percent of person trips made in a private vehicle inside the central city and slightly less than the 85.2 percent of trips made in a private vehicle outside the central city, where public transportation facilities are not readily available. In SMSA's of 3,000,000 and over, households make the smallest percent of person trips by private vehicle, and the largest percent of trips by public transportation and walking.

TABLE 39. AVERAGE PERSON TRIP LENGTH (MILES) BY HOUSEHOLD LOCATION INSIDE/OUTSIDE SMSA, SUMMARY MODES OF TRANSPORTATION AND TRIP PURPOSE

Location of Households Inside/ Outside SMSA by Summary Modes of Transportation	Trip Purpose					
	Work	Family and Personal Business	Civic, Education and Religious	Social and Recreation	Non-Work[1/]	All Purposes
Private						
Inside SMSA						
In Central City	7.8	5.4	4.9	10.9	9.2	8.1
Outside Central City	10.8	6.9	6.3	12.4	9.5	9.8
Outside SMSA	9.2	8.1	5.5	11.9	9.7	9.6
Average	9.4	6.9	5.6	11.8	9.2	9.2
Public						
Inside SMSA						
In Central City	7.1	3.7	4.6	11.6	7.2	7.1
Outside Central City	13.7	5.8	5.7	19.0	12.4	12.8
Outside SMSA	*	*	*	*	*	*
Average	9.3	4.7	5.7	16.3	9.3	9.3
Other						
Inside SMSA						
In Central City	3.6	2.1	1.4	5.1	6.9	6.6
Outside Central City	10.2	1.2	3.1	3.1	8.1	8.3
Outside SMSA	3.9	2.8	4.4	8.2	7.4	7.1
Average	5.7	1.5	3.0	5.1	7.5	7.3
All Modes						
Inside SMSA						
In Central City	7.5	4.9	3.4	11.0	7.9	7.8
Outside Central City	10.9	6.4	4.9	12.7	8.3	9.6
Outside SMSA	8.9	7.5	5.2	12.1	9.4	9.3
Average	9.2	6.3	4.5	11.0	8.9	8.9

1/Includes all trip purposes except "work."
*Too few observations to arrive at a meaningful trip length.

TABLE 40. AVERAGE PERSON TRIP TIME (MINUTES) BY HOUSEHOLD LOCATION INSIDE/OUTSIDE SMSA, SUMMARY MODES OF TRANSPORTATION AND TRIP PURPOSE

Location of Households Inside/ Outside SMSA by Summary Modes of Transportation	Trip Purpose					
	Work	Family and Personal Business	Civic, Education and Religious	Social and Recreation	Non-Work[1/]	All Purposes
Private						
Inside SMSA						
In Central City	18.5	13.6	13.1	20.3	17.0	17.3
Outside Central City	20.8	14.3	13.7	21.2	17.6	18.3
Outside SMSA	17.0	15.2	12.7	20.3	17.4	17.3
Average	18.8	14.4	13.1	20.6	17.4	17.7
Public						
Inside SMSA						
In Central City	38.5	29.8	27.6	35.6	31.6	34.3
Outside Central City	42.6	23.9	26.4	40.1	33.0	36.4
Outside SMSA	46.8	28.7	29.3	40.8	32.5	33.8
Average	39.9	28.4	27.7	37.6	32.1	34.8
Other						
Inside SMSA						
In Central City	12.2	9.6	14.6	13.9	13.4	13.2
Outside Central City	13.9	9.4	18.0	14.3	15.2	15.1
Outside SMSA	12.3	9.8	20.1	15.7	16.9	16.4
Average	12.8	9.6	17.6	14.5	15.0	14.8
All Modes						
Inside SMSA						
In Central City	19.9	13.5	14.9	19.9	16.9	17.5
Outside Central City	21.2	13.9	16.0	20.8	17.5	18.2
Outside SMSA	16.8	14.8	16.1	20.0	17.5	17.3
Average	20.4	14.1	15.7	20.2	17.3	17.7

1/ Includes all trip purposes except "work."

TABLE 41. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION, PLACE OF RESIDENCE IN SMSA's (INSIDE/OUTSIDE CENTRAL CITY) AND SMSA POPULATION SIZE GROUPS

Major Mode of Transportation by Place of Residence in SMSA's, Inside/Outside Central City	SMSA Population Size Group					
	Under 250,000	250,000-499,999	500,000-999,999	1,000,000-2,999,999	3,000,000 and Over	SMSA Households
Inside Central City						
Private	85.4	85.7	85.0	79.1	55.7	78.9
Public	1.8	2.0	2.7	4.3	15.7	5.0
Walk	9.0	8.6	9.6	13.1	26.6	13.0
Other	3.8	3.7	2.7	3.5	2.0	3.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Outside Central City						
Private	85.6	90.0	87.5	84.8	82.2	85.2
Public	1.0	0.9	1.0	2.1	3.2	2.0
Walk	6.0	4.4	7.0	8.6	10.1	8.1
Other	7.4	4.7	4.5	4.5	4.5	4.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
All SMSA Households						
Private	85.5	87.4	86.2	82.7	72.6	82.2
Public	1.6	1.5	1.9	2.9	7.7	3.4
Walk	8.2	6.9	8.4	10.3	16.1	10.4
Other	4.7	4.2	3.5	4.1	3.6	4.0
Total	100.0	100.0	100.0	100.0	100.0	100.0 1/

1/ 99,410,800,000 person trips.

IV. TRENDS OVER TIME - 1977 vs. 1969

This section compares changes in person trips and person miles of travel that have occurred from 1969 to 1977. These changes are limited to comparable information from the 1969 and 1977 NPTS, and include person trips and person miles of travel, person characteristics of the trip makers, including age, sex, race and mode of transportation used.

In comparing results from the 1977 NPTS with those of the 1969 NPTS, there are several important differences between the two surveys that must be considered. These differences affect the 1977 estimates of person trips and person miles of travel, as shown in this section of the report. First, in the 1969 NPTS, trips made by walking and bicycle on the travel day were not collected as part of the survey. In the 1977 NPTS, the definition of modes of transportation used on the travel day was expanded to include trips by bicycle and walking. However, for purposes of comparing person trips and travel data from the two surveys, 1977 data in this section of the report does not include persons trips and travel by bicycle or walking.

Second, the 1969 NPTS collected trips and travel information only for persons 5 years of age and older. In the 1977 NPTS, trips and travel information were collected for all persons regardless of age. Again, for purposes of comparing person trips and person travel data from the two surveys, the 1977 data, as shown in this section of the report includes data only for persons 5 years of age and older.

Therefore, the 1977 estimate of person trips and person miles of travel as shown in this part of the report differs from those shown elsehwere. Only the 1977 data as presented in the Trends Over Time section can be compared directly to the 1969 estimate of trips and travel.

A. Summary of Changes Between 1977 and 1969

Table 42 points up some interesting demographic and travel changes in the United States from 1969 to 1977.

Population in the United States during this period increased by only 8.1 percent. At the same time, however, the number of households increased by 20.7 percent due to the increase in single person households. The average size of a household decreased from 3.16 persons in 1969 to 2.83 persons in 1977. Household automobile ownership increased by 35.2 percent.

Person trips and person miles of travel showed significant increases: 24.9 and 29.1 percent respectively. The increase in the percent of person trips made by women specifically was largely responsible for the increase in person trips.

Person trips by automobile, which comprised 85.1 percent of total trips in 1969 and 82.5 percent in 1977, increased 21.0 percent during this period. Person miles of travel by automobile increased by 18.7 percent.

The average person made a total of 736 trips in 1969 compared to 850 trips in 1977, or an increase of 15.4 percent. Person trips by automobile increased from 626 in 1969 to 702 trips in 1977. Person miles traveled increased from 5,780 miles to 6,347 miles per year.

TABLE 42. SUMMARY OF CHANGES FOR SELECTED DEMOGRAPHIC AND TRAVEL INDICATORS IN 1969 and 1977**

Selected Demographic and Travel Indicators	1969 NPTS (000)	1977 NPTS (000)	Percent Change
Persons	197,213	213,141	+8.1
Households	62,504	75,412	+20.7
Household Autos***	72,500	98,000	+35.2
Person Trips	145,146,000	181,330,000	+24.9
Males	77,109,000	91,921,000	+19.2
Females	68,036,000	89,409,000	+31.4
Person Miles of Travel	1,404,137,000	1,797,300,000	+29.1
Person Trips by Auto	123,519,000	149,560,000	+21.0
Person Miles of Travel by Auto	1,139,869,000	1,352,900,000	+18.7
Per Person			
Annual Person Trips	736	850	+15.4
Annual Person Miles of Travel	7,120	8,432	+18.4
Annual Person Trips by Auto	626	702	+12.0
Annual Person Miles by Auto	5,779	6,347	+9.8
Per Household			
Annual Person Trips	2,322	2,404	+3.5
Annual Person Miles of Travel	22,464	23,833	+6.1
Annual Person Trips by Auto	1,976	1,983	*
Annual Person Miles by Auto	18,237	17,940	-1.6

*Less than 0.1 percent.
**Data derived from 1969 and 1977 NPTS
***Auto defined as auto, vanbus/minibus and personal-use taxi.

The average household made a total of 2,322 person trips in 1969 compared to 2,404 trips in 1977, and traveled 22,465 person miles in 1969 compared to 23,833 person miles in 1977. Person trips by automobile showed no measurable increase during this period for the average household, while person miles of travel in an automobile decreased by 1.6 percent, from 18,237 to 17,940 miles respectively.

B. Person Trips by Race of Tripmaker and Mode of Transportation Used

Table 43 indicates that the percent of person trips by automobile from 1969 to 1977 decreased from 85.1 percent in 1969 to 82.5 in 1977. However, while person trips by automobile decreased, person trips by truck increased by more than 4 percent to 9.7 percent in 1977. The percent of trips by school bus, bus/streetcar, and subway/el decreased.

The modal distribution of trips for whites showed the same trends. However, for nonwhites, a major difference is noted. The percent of trips by automobile increased by 11.8 percent during this period, probably due to increased ownership. Tables 44 and 45 give a breakdown of modal distribution by age and race of tripmaker.

C. Person Trips by Sex of Tripmaker and Mode of Transportation Used

As shown in Table 46, males were largely responsible for the decrease in person trips by auto--decreasing from 82.7 percent in 1969 to 77.4 percent in 1977. Offsetting this decrease was the increase in the percent of person trips by truck--increasing by 6.1 percent to 14.7 percent of all trips in 1977. Trips by public transportation by males, on the whole, showed a minor decrease. The percent of trips made by automobile by women remained about the same during this period; person trips by truck showed a 2.6 percent increase. Trips by public transportation by women showed some decreases.

D. Person Trips by Specified Age Groups and Mode of Transportation Used

Table 47 indicates that there was no substantial change in the percent distribution of trips made by each age group from 1969 to 1977 except for person in ages 40-49. This group showed the largest percent decrease of all trips made by automobile (3.5 percent), truck (8.4 percent), bus/streetcar (7.6 percent), and airplane (15.6 percent).

As shown in table 48, the percent of trips made by automobile decreased for almost all age groups from 1969-1977, except for the 60-64 year olds. However, the percent of trips made by truck increased for almost every age group. In almost every age group, except for persons from 5-15 years, the percent of trips made by public transportation facilities also showed a decline during this period.

TABLE 43. DISTRIBUTION OF TRIPS BY MEANS OF TRANSPORTATION AND RACE OF TRIPMAKER IN 1977 and 1969

Means of Transportation	Survey Years by Race of Tripmaker: Whites 1977	Whites 1969	Black & Other Races 1977	Black & Other Races 1969	All 1977	All 1969
Auto[3]	82.7	86.5	80.4	68.6	82.5	85.1
Taxi	0.2	0.2	0.6	0.8	0.2	0.3
Motorcycle	0.6	0.2	0.5	0.0	0.6	0.2
Truck	10.3	5.6	4.6	5.2	9.7	5.6
School Bus	3.2	4.6	4.8	9.2	3.3	4.9
Bus, Streetcar	1.7	2.0	7.4	12.8	2.3	2.7
Subway, El	0.3	0.5	1.0	2.6	0.4	0.7
Train	0.3	0.2	0.3	0.0	0.3	0.2
Airplane	0.1	0.1	*	0.1	0.1	0.1
Other	0.6	0.1	0.4	0.7	0.6	0.2
All	100.0	100.0	100.0	100.0	100.0[1]	100.0[2]

[1]181,330,000,000 person trips in 1977. (211,768,900,000 person trips less 9,303,000,000 trips by persons under 5 years of age, 19,762,100,000 walking trips, and 1,373,800,000 bike trips.)

[2]145,146,000,000 person trips in 1969.

[3]Includes auto, vanbus/minibus and personal-use taxi.

TABLE 44. DISTRIBUTION OF PERSON TRIPS BY AGE AND RACE OF TRIPMAKER AND MEANS OF TRANSPORTATION IN 1977 AND 1969. WHITES

(BY AGE GROUPS)

MEANS OF TRANSPORTATION	AGE OF TRIPMAKER											
	5-13	14-15	16-20	21-25	26-29	30-39	40-49	50-59	60-64	65-69	70 OR MORE	DISTRIBUTION OF TRIPS
AUTO												
1977	72.3	66.8	84.3	84.0	84.3	83.7	85.0	84.7	87.1	86.9	90.2	82.8
1969	74.5	71.2	87.9	92.3	91.4	90.1	88.7	87.7	84.4	87.4	92.3	86.5
TAXI												
1977	0.1	0.0	0.1	0.2	0.2	0.2	0.2	0.1	0.3	0.2	0.4	0.1
1969	0.2	0.1	0.0	0.2	0.1	0.2	0.2	0.3	0.8	0.8	0.5	0.2
MOTORCYCLE												
1977	0.1	0.3	1.4	1.3	0.6	0.5	0.5	0.5	0.2	0.4	0.2	0.6
1969	0.0	0.5	0.7	0.6	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2
TRUCK												
1977	6.4	6.1	7.6	11.8	11.9	12.7	12.1	11.7	9.4	8.7	5.0	10.3
1969	3.2	4.1	2.7	4.0	5.3	7.6	7.6	7.6	7.5	6.7	1.6	5.6
SCHOOL BUS												
1977	17.9	20.0	3.7	0.1	0.2	0.1	0.1	0.0	0.0	*	0.1	3.2
1969	20.8	20.2	5.1	0.5	0.3	0.5	0.6	0.3	0.4	0.6	0.7	4.6
BUS, STREETCAR												
1977	2.4	5.3	2.0	1.4	1.2	1.1	1.0	1.5	1.8	2.9	2.9	1.7
1969	1.1	3.4	2.5	1.5	1.7	1.0	1.6	2.5	4.6	4.2	3.7	2.0
SUBWAY, EL												
1977	0.1	0.1	0.2	0.3	0.8	0.5	0.2	0.3	0.3	0.2	0.1	0.3
1969	0.1	0.1	0.8	0.5	0.9	0.2	0.7	1.0	1.4	0.0	0.5	0.5
TRAIN												
1977	0.1	0.0	0.1	0.4	0.2	0.4	0.4	0.4	0.4	0.1	*	0.3
1969	0.0	0.0	0.2	0.2	0.0	0.1	0.3	0.3	0.6	0.0	0.2	0.2
AIRPLANE												
1977	*	*	*	0.1	0.2	0.1	0.1	0.2	0.2	*	0.2	0.1
1969	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.3	0.1
OTHER												
1977	0.6	1.4	0.6	0.4	0.4	0.7	0.4	0.6	0.3	0.6	0.9	0.6
1969	0.1	0.4	0.1	0.2	0.1	0.2	0.1	0.2	0.3	0.2	0.2	0.1
ALL PERSONS												
1977	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[1]
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[2]
DISTRIBUTION OF TRIPS												
1977	11.2	3.3	11.9	11.8	8.8	18.0	13.1	11.6	4.0	2.9	3.4	100.0[1]
1969	14.4	3.6	10.8	9.9	6.8	16.6	16.6	11.6	4.5	2.3	2.9	100.0[2]

[1] 163,664,000,000 person trips in 1977.
[2] 134,535,000,000 person trips in 1969.
*Less than 0.1 percent.

TABLE 45. DISTRIBUTION OF PERSON TRIPS BY AGE AND RACE OF TRIPMAKER AND MEANS OF TRANSPORTATION IN 1977 AND 1969. BLACK AND OTHER RACES

(BY AGE GROUPS)

MEANS OF TRANSPORTATION	AGE OF TRIPMAKER											
	5-13	14-15	16-20	21-25	26-29	30-39	40-49	50-59	60-64	65-69	70 OR MORE	DISTRIBUTION OF TRIPS
AUTO												
1977	63.4	60.2	74.8	88.5	84.5	86.8	87.8	83.2	82.9	80.3	79.6	80.4
1969	44.3	29.2	58.5	80.2	79.9	78.4	71.0	81.9	84.7	76.4	77.0	68.6
TAXI												
1977	0.7	0.3	0.1	0.4	0.5	0.6	0.7	0.5	3.1	0.0	0.4	0.6
1969	0.3	1.2	0.3	0.6	2.6	2.0	0.4	0.3	0.0	0.0	0.0	0.8
MOTORCYCLE												
1977	0.2	0.0	0.2	0.9	0.8	0.4	0.0	1.2	0.0	0.7	0.0	0.5
1969	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TRUCK												
1977	3.6	1.2	4.6	2.7	5.5	5.7	5.4	6.3	3.2	3.7	4.1	4.6
1969	5.4	4.3	3.3	1.6	0.9	3.5	12.6	3.7	5.2	0.0	14.7	5.2
SCHOOL BUS												
1977	23.5	22.2	6.0	0.1	0.2	0.0	0.0	0.0	0.0	0.0	0.0	4.8
1969	38.3	33.0	10.4	1.9	0.9	0.3	0.0	3.1	0.0	0.0	0.0	9.2
BUS, STREETCAR												
1977	7.3	15.2	12.5	5.1	6.2	4.4	4.3	7.4	9.1	15.1	14.8	7.4
1969	7.6	24.8	24.9	13.6	12.5	10.9	13.9	9.1	4.7	12.1	7.3	12.8
SUBWAY, EL												
1977	0.4	0.2	1.1	1.7	2.1	1.0	0.9	0.6	0.0	0.6	0.7	1.0
1969	0.9	5.7	2.6	2.1	2.4	4.1	2.1	1.3	5.4	11.5	0.0	2.6
TRAIN												
1977	0.2	0.0	0.5	0.2	0.2	0.4	0.5	0.1	0.0	0.0	0.0	0.2
1969	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0
AIRPLANE												
1977	*	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	*
1969	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
OTHER												
1977	0.7	0.7	0.2	0.4	0.0	0.7	0.4	0.6	1.7	0.2	0.4	0.5
1969	3.1	1.8	0.0	0.0	0.8	0.3	0.0	0.6	0.0	0.0	1.0	0.7
ALL PERSONS												
1977	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[1/]
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[2/]
DISTRIBUTION OF TRIPS												
1977	13.5	4.0	12.4	12.3	9.9	17.4	10.0	13.1	3.3	2.5	1.6	100.0[1/]
1969	16.0	4.0	9.9	12.3	7.8	15.7	16.1	10.0	3.6	1.7	2.9	100.0[2/]

[1/] 17,669,300,000 person trips in 1977.
[2/] 10,610,000,000 person trips in 1969.
*Less than 0.1 percent.

TABLE 46. DISTRIBUTION OF PERSON TRIPS BY MEANS OF TRANSPORTATION SEX OF TRIPMAKER IN 1977 and 1969

Means of Transportation	Sex of Tripmaker: Males 1977	Males 1969	Females 1977	Females 1969
Auto[5]	77.4	82.7	87.8	88.0
Taxi	0.2	0.2	0.2	0.4
Motorcycle	1.0	0.3	0.2	0.0
Truck	14.7	8.6	4.7	2.1
School Bus	3.3	4.7	3.4	5.2
Bus, Streetcar	2.0	2.2	2.6	3.4
Subway, El	0.4	0.7	0.4	0.7
Train	0.3	0.2	0.2	0.1
Airplane	*	0.1	0.1	*
Other	0.7	0.3	0.4	0.1
All	100.0[1]	100.0[2]	100.0[3]	100.0[4]

[1]/91,924,300,000 person trips.

[2]/77,109,000,000 person trips.

[3]/89,405,700 person trips.

[4]/68,036,000,000 person trips.

[5]/Includes auto, vanbus/minibus, and personal-use taxi.

TABLE 47. DISTRIBUTION OF PERSON TRIPS BY AGE OF TRIPMAKER AND MEANS OF TRANSPORTATION IN 1977 AND 1969

(BY MEANS OF TRANSPORTATION)

MEANS OF TRANSPORTATION	Age of Tripmaker												
	5-13	14-15	16-20	21-25	26-29	30-39	40-49	50-59	60-64	65-69	70 OR MORE	ALL PERSONS	DISTRIBUTION OF TRIPS
AUTO													
1977	9.9	2.7	12.1	12.2	9.1	18.2	13.5	11.8	4.0	3.0	3.5	100.0	82.5
1969	12.2	2.9	10.8	10.8	7.3	17.3	17.0	11.8	4.4	2.3	3.2	100.0	85.1
TAXI													
1977	9.0	0.7	3.5	12.6	10.5	19.7	15.0	8.3	10.1	3.0	7.6	100.0	0.2
1969	11.5	2.8	0.9	10.4	8.6	17.7	13.5	12.9	11.1	5.9	4.7	100.0	0.3
MOTORCYCLE													
1977	2.2	1.6	24.1	24.5	9.1	14.8	8.8	10.6	1.5	2.0	0.8	100.0	0.6
1969	2.6	9.3	41.4	32.7	5.4	1.3	7.3	0.0	0.0	0.0	0.0	100.0	0.2
TRUCK													
1977	7.2	1.9	9.0	13.3	10.3	22.2	15.3	13.3	3.5	2.5	1.5	100.0	9.7
1969	8.8	2.7	5.2	6.9	6.2	21.6	23.7	15.2	5.8	2.5	1.4	100.0	5.6
SCHOOL BUS													
1977	63.9	20.2	14.1	0.4	0.5	0.4	0.4	0.0	0.0	0.0	0.1	100.0	3.3
1969	65.3	15.6	11.9	1.2	0.4	1.6	1.8	1.2	0.3	0.3	0.4	100.0	4.9
BUS, STREETCAR													
1977	15.0	9.4	16.2	9.5	7.0	11.2	7.5	10.1	4.1	5.1	4.9	100.0	2.3
1969	8.7	6.9	15.6	9.4	6.6	10.3	15.1	12.1	7.4	3.7	4.2	100.0	2.7
SUBWAY, EL													
1977	4.5	1.1	8.5	14.4	20.8	23.9	13.0	8.7	3.1	1.0	1.0	100.0	0.4
1969	2.5	3.0	14.9	9.4	9.8	11.3	18.2	16.3	10.7	2.0	1.9	100.0	0.7
TRAIN													
1977	3.6	0.0	7.7	17.7	7.1	23.5	18.5	16.2	4.8	0.4	0.5	100.0	0.3
1969	2.1	0.0	11.7	9.7	0.0	13.7	25.0	17.6	16.0	0.0	4.2	100.0	0.2
AIRPLANE													
1977	3.2	0.7	2.6	10.9	18.5	20.7	11.8	17.6	6.3	1.7	6.0	100.0	0.1
1969	0.0	0.0	5.0	0.0	9.8	33.6	27.4	9.8	1.6	3.0	9.8	100.0	0.1
OTHER													
1977	11.7	7.6	11.8	8.2	5.6	22.8	9.6	12.4	2.7	2.7	4.9	100.0	0.6
1969	24.4	8.5	3.7	10.7	4.9	14.5	7.6	13.2	6.6	2.1	3.8	100.0	0.2
DISTRIBUTION OF TRIPS													
1977	11.5	3.3	11.9	11.9	8.9	17.9	13.1	11.5	3.9	2.9	3.2	100.0	100.0[1/]
1969	14.5	3.6	10.7	10.1	6.9	16.5	16.6	11.5	4.4	2.2	3.0	100.0	100.0[2/]

*Less than 0.1 percent

1/181,330,000,000 person trips. (211,768,900,000 person trips less 9,303,000,000 trips by persons under 5 years of age, 19,762,100,000 walking trips, and 1,373,800,000 bike trips.)

2/145,146,000,000 person trips.

TABLE 48. DISTRIBUTION OF PERSON TRIPS BY AGE OF TRIPMAKER AND MEANS OF TRANSPORTATION IN 1977 AND 1969

(BY AGE GROUPS)

MEANS OF TRANSPORTATION	Age of Tripmaker											
	5-13	14-15	16-20	21-25	26-29	30-39	40-49	50-59	60-64	65-69	70 OR MORE	ALL PERSONS
AUTO												
1977	71.2	66.6	83.3	84.3	84.3	84.0	85.3	84.6	86.8	86.4	89.7	82.5
1969	72.0	67.8	85.9	91.2	90.4	89.3	87.5	87.4	84.3	86.8	91.2	85.1
TAXI												
1977	0.2	*	0.1	0.2	0.2	0.2	0.2	0.1	0.5	0.2	0.4	0.2
1969	0.2	0.2	0.0	0.3	0.4	0.3	0.2	0.3	0.7	0.8	0.4	0.3
MOTORCYCLE												
1977	0.1	0.3	1.2	1.3	0.6	0.5	0.4	0.6	0.2	0.4	0.2	0.6
1969	0.0	0.4	0.6	0.5	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.2
TRUCK												
1977	6.1	5.5	7.3	10.0	11.2	12.1	11.4	11.2	8.9	8.2	4.9	9.7
1969	3.4	4.1	2.7	3.8	5.0	7.3	8.0	7.4	7.4	6.4	2.6	5.6
SCHOOL BUS												
1977	18.6	20.3	3.9	0.1	0.2	0.1	0.1	0.0	0.0	*	0.1	3.3
1969	22.3	21.2	5.5	0.6	0.3	0.5	0.5	0.5	0.4	0.5	0.7	4.9
BUS, STREETCAR												
1977	3.0	6.4	3.1	1.8	1.8	1.4	1.3	2.0	2.4	4.0	3.5	2.3
1969	1.6	5.2	4.0	2.6	2.6	1.7	2.5	2.9	4.6	4.6	4.0	2.7
ELEVATED OR SUBWAY												
1977	0.1	0.1	0.3	0.5	0.9	0.5	0.4	0.3	0.3	0.1	0.1	0.4
1969	0.1	0.6	1.0	0.6	1.0	0.5	0.8	1.0	1.7	0.6	0.5	0.7
TRAIN												
1977	0.1	0.0	0.2	0.4	0.2	0.4	0.4	0.4	0.3	0.1	*	0.3
1969	0.0	0.0	0.2	0.2	0.0	0.1	0.2	0.2	0.6	0.0	0.2	0.2
AIRPLANE												
1977	*	*	*	1.0	0.2	0.1	0.1	0.2	0.2	0.1	0.2	0.1
1969	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.0	0.1	0.2	0.1
OTHER												
1977	0.5	0.8	0.6	0.4	0.4	0.7	0.4	0.6	0.4	0.5	0.9	0.6
1969	0.4	0.5	0.1	0.2	0.1	0.2	0.1	0.2	0.3	0.2	0.2	0.2
TOTAL												
1977	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[1/]
1969	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0[2/]

*Less than 0.1 percent.

1/ 181,330,000,000 person trips. (211,768,900,000 person trips less 9,303,000,000 trips by persons under 5 years of age, 19,762,100,000 walking trips, and 1,373,800,000 bike trips.)

2/ 145,146,000,000 person trips.

V. SUMMARY

The average person makes 992 person trips annually or 2.7 person trips daily. Approximately 83.7 percent are made by private vehicle, 2.6 percent are made by some form of public transportation and 13.7 percent are made by other means of transportation such as walking, bicycling, airplane, etc.

The percent of trips in a private vehicle hovers between 80-90 percent for all ages, except school children, 5-15 years and teenagers, 16-19 years of age. Percent of trips by public transportation decreases until ages 40-49 years and then increases. School children from 5-15 years of age make one-third of all their person trips by walking (15.9 percent) and school bus (15.6 percent); walking is also an important mode for 16 to 19 year olds (15.0 percent) and person 65 years and older (14.2 percent).

Women make a slightly greater percent of person trips by public transportation: 2.8 percent for women vs. 2.3 percent for men. In addition, women age 60 and older make more walking trips than men in the same age group. More than two-thirds (66.9 percent) of all person trips made by public transportation are made by persons from 5-39 years of age and an additional 8.0 percent made by persons 65 years and older.

As household income increases, the percent of person trips made by private vehicles increases from 69.9 percent (households with incomes under $5,000) to 90.7 percent (households with incomes of $50,000 and over). Percent of trips by public transportation shows the reverse trends, decreasing from 4.6 percent to 1.1 percent respectively.

Two-vehicle households make about one and one-half as many trips (42.5 percent) as one-vehicle (26.8 percent) and three-or-more-vehicle households (24.7 percent). For trips made in a private vehicle, two-vehicle households make 6.4 percentage points higher (88.5 percent) than one-vehicle households, leveling off for households with three-or-more vehicles to 89.6 percent. For trips by public transportation, one-vehicle households make twice as many trips as two-vehicle households, three times as many as three-or-more-vehicle households. In addition, one-vehicle households make about one and one-half times more walking trips than two- and three-or-more-vehicle households. Households without a vehicle make almost half of all their trips (44.8 percent) by walking.

Residents of households in SMSA's of 3,000,000 and over make the smallest percent of person trips by private vehicle (72.6) and the greatest percent of trips by public transportation (7.7) and other modes such as walking (16.1 percent), compared to residents of households in other SMSA population size groups. Residents of households outside an SMSA make the largest percent of trips by private vehicle (87.0) and the smallest percent of trips by public transportation (0.8) due to the lack of facilities. As expected, residents of households located inside the central city of an SMSA make a smaller percent of private vehicle trips and a larger percent of public transportation trips and walking trips than residents of households located outside the central city.

Residents of households in the Northeastern U.S. make at least twice as many trips by public transportation as residents of households in any other region.

Of all trips and travel made by public transportation, approximately one-third are for work purposes and approximately two-thirds are for nonwork purposes.

The average trip time for all person trips, regardless of trip purpose and mode is 17.7 minutes. This does not vary for trips made in a private vehicle. Trip times, however, are almost twice as long by public transportation (34.8 minutes).

The average trip length for all trips, regardless of mode is 8.9 miles. The shortest trip length is for civic, education and religious (4.5 miles) and the longest trip lengths, excluding vacation travel, is for work related trips (17.5 miles). Work and nonwork trips each average 8.9 miles. The average trip length by private vehicle and public transportation shows little difference (9.2 and 9.3 miles respectively).

The private vehicle is the major mode used for work and nonwork purposes and accounts for 81.4 percent of all trips. Non-highway modes, such as walking and bicycling account for 11.2 percent and are used predominantly for nonwork trips. Other vehicles such as commercial taxi and truck account for 4.4 percent and are also used primarily for nonwork purposes. Trips by public transportation account for 3.0 percent, of which 1.9 percent are used for nonwork purposes.

Work trips are very concentrated and occur largely during certain specified hours, while nonwork trips, except for the hours from 12:00M-5:59 a.m., occur pretty much all day.

Approximately 64.4 percent of all trips are 5 miles and less and these trips constitute 13.9 percent of all person miles traveled. On the other hand, trips of over 100 miles constitute less than 1 percent (0.7) of all trips, and 22.3 percent of all miles traveled.

Within each income category, the percent of trips made in a private vehicle for work purposes shows no particular pattern, highest in the $15,000-24,999 income group (19.6 percent), and lowest in the under $5,000 (9.6 percent) and $25,000-34,999 (10.2 percent) income groups. However, the percent of trips made in a private vehicle for nonwork purposes increases as income increases.

The average person trip length for work purposes by private vehicle generally increases as income increases from 7.4 miles (households under $5,000) to 10.1 miles (households earning from $35,000-49,999) and then decreases to 8.8 miles for households with incomes of $50,000 an over. Work trips by public transportation show the same trend.

As vehicle ownership increases, the percent of trips made by all modes for work increases; the percent of trips made for nonwork purposes decreases.

APPENDIXES

APPENDIX A

SURVEY PROCEDURES AND DATA PROCESSING

Background

The 1977 NPTS was conducted by the Bureau of the Census under the joint sponsorship of the Federal Highway Administration, and the National Highway Traffic Safety Administration of the Department of Transportation (DOT), as part of the expanded Census of Transportation, which is conducted every 5 years by the Bureau of the Census and includes the National Travel Survey (NTS). In 1977, the National Travel Program also included the 1977 NPTS and provided profiles of the volume and characteristics of travel by civilian population.

Sample Design

The 1977 NPTS was based on a national probability sample of 24,466 households selected from each of the 50 States and the District of Columbia and representing the total civilian noninstitutional population of the United States. Of the 24,466 households, 3,433 units were found to be vacant, demolished, converted to nonresidential use, or otherwide ineligible for the survey. Some 3,084 households were not interviewed because the occupants were not at home after repeated calls, refused to participate in the survey, or were unavailable for some other reason.

All of the sample units consisted of households that had previously been interviewed for the Current Population Survey (CPS). The CPS is a stratified cluster sample. In the first stage, the United States was divided into 1,030 primary sampling units (PSU's) consisting of counties, groups of counties, or independent cities, which were grouped into 376 strata. Among these strata, 156 consisted of a single PSU, designated as self-representing (SR) areas, and generally contained the larger metropolitan areas. The remaining 220, contained one or more PSU's that are relatively homogeneous according to socioeconomic characteristics. Fom each stratum, a single PSU was selected for the sample with a probability proportionate to its 1970 census population; these PSU's are referred to as non-self-representing (NSR). The CPS portion of the NPTS was selected from these 376 PSU's (156 SR and 220 NSR).

Methodology

As indicated previously, the 1977 NPTS was conducted as part of the expanded scope of the National Travel Program which also included the National Travel Survey (NTS). The NTS/NPTS included a common sample of 13,365 households interviewed from April-November 1977 and January 1978; these households were referred to as the basic sample, and were intervieed four times for NTS data and once for NPTS data. An additional 4,584 addresses, referred to as the supplemental sample, were divided into three equal parts and were interviewed in December 1977, February 1978, and March 1978. This arrangement spread the total NPTS data collection over a 12-month period from April 1977-March 1978, with approximately 1,500 households to be interviewed each month.

The households within each monthly sample were divided into 14 equal parts, with each part assigned to one of the first 14 days of the interview month. The assigned day was referred to as the designated travel day. In addition, each household was interviewed for trips of 75 miles and longer for the 14 days preceding the travel day; this was referred to as the 14-day travel period. Thus each houeshold was interviewed for trips and travel during a 15-day period.

Subject Areas Planned for 1977 NPTS Reports

The following is a list of subject areas for which 1977 NPTS reports have been published/being prepared. This will give transportation researchers and planners a general indication of the variety and scope which the 1977 NPTS data encompasses. Report number 11 should be available in a few months.

CHARACTERISTICS OF 1977 LICENSED DRIVERS AND THEIR TRAVEL
(Report 1, October 1980)
HOUSEHOLD VEHICLE OWNERSHIP
(Report 2, December 1980)
PURPOSES OF VEHICLE TRIPS AND TRAVEL
(Report 3, December 1980)
HOME-TO-WORK TRIPS AND TRAVEL
(Report 4, December 1980)
HOUSEHOLD VEHICLE UTILIZATION
(Report 5, April 1981)
VEHICLE OCCUPANCY
(Report 6, April 1981)
A LIFE CYCLE OF TRAVEL BY THE AMERICAN FAMILY
(Report 7, July 1981)
URBAN/RURAL SPLIT OF TRAVEL
(Report 8, June 1982)
HOUSEHOLD TRAVEL
(Report 9, July 1982)
ESTIMATES OF VARIANCES
(Report 10, December 1982)
PERSON TRIP CHARACTERISTICS
(Report 11, December 1983)

Special Tabulations

There are some applications that require the use of data items on the Census file, such as those related to place of residence of individual respondents, that cannot be included on the public use tape without possible disclosure of the individual respondents. If disclosure can be avoided, the Bureau of the Census will undertake special tabulations in accordance with its policy that "Special tabulation or transcriptions of data in the files of the Bureau of the Census will be undertaken on a cost basis, insofar as Bureau facilities are available. Those requesting special tabulations should understand that the data are based on surveys paid for by public funds and, therefore, are public property. The purpose for which such tabulations are obtained must not be contrary to the public interest, or be used to give unfair commercial or other advantage to any person or group."

Requests for special tabulations should be addressed to: Chief, Demographic Surveys Division, Bureau of the Census, Washington, D.C. 20233.

Survey Questionnaire

Copies of the NPTS Survey Questionnaire are available upon written request from the Office of Highway Planning (HHP-44), Federal Highway Administration, Washington, D.C. 20590.

APPENDIX B

GLOSSARY OF TERMS USED IN NPTS

This glossary is provided to assist the user in the interpretation of the data.

Airport: A commercial facility that services regularly scheduled airlines.

Carpool: A regularly scheduled traveling arrangement whereby two or more persons ride together in the same vehicle, sharing the driving and/or the cost of the trip, or simply riding together regularly with one or more persons doing the driving. If two or more household members regularly ride to work in the same vehicle, it is also considered a carpool.

Central City: A city of 50,000 inhabitants or more in the 1970 Census or twin cities i.e., cities with contiguous boundaries and constituting, for general social and economic purposes, a single community with a combined population of at least 50,000, and with the smaller of the twin cities having a population of at least 15,000.

Destination: For travel period trips, the destination is the farthest point of travel from the point of origin of a one-way trip of 75 miles or more.

In travel day trips, the destination is the point at which there is a break in travel.

Driver: 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. If one or more household members share the driving, the percent of driving done by each household member is recorded separately. If nonhousehold members share the driving, the total percent of driving done by all nonhousehold members is recorded.

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 is that which advances a person toward an elementary or high school diploma, or a college, university or professional school degree.

Employed: A person is considered employed if there is a definite arrangement for regular full-time or part-time work for pay every week or every month. A formal, definite arrangement with one or more employers to work a specified number of hours a week, or days a month, but on an irregular schedule during the work month is also considered employment. A person who is on call to work whenever there is a need for his (her) services, is not considered employed.

Family Income: The money income of all persons in a household, including those temporarily absent. Includes wages and salary (before deductions), commissions, tips, cash bonuses; net income from a person's own (unincorporated) business, professional practice, or farm (gross receipts minus business expenses); 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. Excludes income in kind, such as room and board, insurance payments, lump-sum inheritances, occasional gifts of money from persons not living in the same household, money received from selling one's house, car, or other personal property, withdrawal of savings from banks, and tax refunds.

Federal-aid rural area: Any area outside of federal-aid urban areas.

Federal-aid urban area: An urban place of 5,000 or more population as determined by the Bureau of the Census.

Freeway, tollway, or expressway: A divided arterial highway for through traffic with full or partial control of access and grade separations at major intersections.

Head of household: The one person who is regarded as the head by the members of the household. In most cases the husband is the head, if living in the household. In some cases, the head may be a parent of the chief wage earner or the only adult member of the household. An Armed Forces member is considered as the head only if he lives at home and is a household member. Only one head is designated for each household.

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 noninstitutionalized population.

Household trip: One or more household members traveling together.

Household vehicle: A motorized vehicle that is owned, leased, rented or company owned and left at home to be regularly used by household members during the reference period. Includes vehicles used solely for business purposes if kept at home, e.g., taxicabs, police cars, etc., which may be owned by, or assigned to, household members for their regular use. Includes vehicles brought home by a car sales person or auto mechanic, only if the vehicle was available for use by him (her) during the entire reference period. Includes all vehicles that were owned or available for use by members of the household during the reference period even though a vehicle may have been sold before the interview. Excludes vehicles that were not working and not expected to be working within 60 days, and vehicles that were purchased or received after the designated travel day.

Licensed driver: Any person who holds a valid driver's license from any State.

Means of transportation: A personal mode used for going from one place (origin) to another (destination). Includes private and public motorized modes, as well as walking. For all travel day trips, each change of mode constitutes a separate trip. The following personal transportation modes are included:

-- Automobile: A privately owned and/or operated licensed motorized vehicle including cars, jeeps, dune buggies, and stationwagons. Also includes leased and rented cars if they are privately operated and not picking up passengers in return for fare.

-- Vanbus/Minibus: Privately owned and/or operated vans and buses designed to carry from 5-13 passengers.

-- Pickup truck/other van: A small open-body motorized vehicle, privately owned and/or operated, with four to six tires, built on a chassis comparable to that of a passenger car. Accommodates fewer than five passengers. Includes travel trucks (service trucks) when they are not being used for commercial purposes.

-- Other truck (personal use): The private use, either as a passenger or driver, of all other types of trucks, i.e., dump trucks, trailer trucks, etc., when they are not being used for commercial purposes.

-- Motorcycle: Includes large, medium and small motorcycles. Does not include minibikes, etc., which can not be licensed for highway use.

-- Self-contained recreational vehicle: Includes recreational vehicles that are operated as a self-contained unit without being hitched to another vehicle: for example, a motor home.

-- Taxi (personal use): The use of a passenger vehicle either by a driver or a passenger, which does not involve the duties of a professional driver for the payment of a fare by a passenger.

-- Bus: Includes intercity buses, etc.; mass transit systems and shuttle buses that are available to the general public. Also includes senior citizen buses or similar bus services that are available to the public. Does not include shuttle buses operated by a government agency or private industry for the convenience of employees, contracted or chartered buses or school buses. These latter types are included in "other."

-- Train: Includes commuter trains and passenger trains other than elevated trains and subways.

-- Streetcar: Includes trolleys, streetcars, and cable cars.

-- Elevated rail or subway: Includes elevated train and subway trains.

-- Airplane: Includes 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."

-- Taxi (commercial use): The use of a taxicab by a driver for hire or by a passenger for fare. Also includes airport limousines. Does not include rental cars if they are privately operated and not picking up passengers in return for fare.

-- Truck (commercial use): Includes the commercial use, either as a driver or a passenger, of pickups, dump trucks and trailer trucks being operated for business-related purposes.

-- Bicycles: Includes bicycles of all speeds and sizes and minibikes.

-- Walk: Includes jogging, walking etc., provided the origin and destination are not the same.

-- Schoolbus: Includes county school buses, private school buses, and buses chartered from private companies for the express purpose of carrying students to or from school and/or school-related activities. Does not include school buses chartered or reserved for other trips, such as church outings; these are included under "other."

-- Motorized bicycle/(often called a Moped): Includes bicycles equipped with both pedals and a small engine, typically a horsepower or less.

-- Other: Includes any types of transportation not included above.

Motorized vehicle: Includes all vehicles that are licensed for highway driving. Specifically excluded are snowmobiles, minibikes, etc.

Origin: Starting point of a trip.

Owned vehicle: Includes all vehicles that one or more household members have purchased for private use regardless if paid for in full, or a gift or legacy to a household member for private use.

Passenger: For a specific trip, any occupant of a motorized vehicle other than the driver.

Person (household member): All people, whether present or temporarily absent, whose usual place of residence is the sample unit, or people staying in the sample unit who have no other usual place of residence elsewhere.

Person miles: A measure of person travel. When one person travels one mile, one person mile of travel results. Where two 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 five miles in the same vehicle, make 4 times 5 vehicle miles or twenty person miles.

Person nights: The number of nights spent by each person away from home on a travel period trip. For example, two persons on a trip spending 5 nights away from home would result in ten person nights.

Person trip: A unit of person travel. When two or more persons travel together in the same vehicle, each person is counted as making one person trip.

Rural area: Any area outside of an urban place.

Standard Metropolitan Statistical Area (SMSA): Except in the New England States, a standard 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 SMSA if, according to certain criteria, they are socially and

economically integrated with the central city. In the New England States, SMSA's consist of towns and cities instead of counties.

Station wagon: A passenger vehicle, having an enclosed body of paneled design with two or more seats, where the rear seats can be removed or folded down to create larger luggage or freight compartments.

Stop: For travel period trips, a break in travel other than for gasoline, rest, and food. For travel day trips, each stop is treated as a separate trip.

Train station: A depot where regularly scheduled trains may be boarded for travel to cities at least 30 miles away.

Travel day: A 24-hour period from 4:00 a.m. to 3:59 a.m. designated by the Bureau of the Census as the reference period for studying trips and travel of a particular household.

Travel period: The 14 days immediately preceding the travel day of a household.

Traveler: A person reporting a travel day and/or travel period trip(s).

Traveling houshold: A household reporting at least one travel day and/or travel period trip.

Trip(travel day): A travel day trip is defined as any one-way travel from one address (place) to another by private motor vehicle, public transportation, bicycle, or walking. Jogging and walking for exercise are excluded. When travel is to more than one destination, a separate trip exists each time one or both of the following criteria is satisfied:

a. The traveltime between two destinations exceeds 5 minutes.

b. The purpose for travel to one destination is different from the purpose for travel to another.

The one exception is travel within a shopping center or mall. It is to be considered travel to one destination, regardless of the number of stores visited.

Trip(travel period): A travel period trip is one-way to a destination which is 75 miles or more from place of origin.

Trip duration: For travel period trips, the number of nights spent away from home on a single trip, including time (nights) spent enroute and at the destination. For travel day trips, usually measured in minutes.

Trip purpose: The main reason that motivated the trip. For purposes of this survey, there are 21 trip reasons. If there are more reasons than one, 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. The 21 trip reasons are defined as follows:

-- To place of work: Includes travel to a place where one reports for work. It does not include any other work-related travel.

-- Work-related business: Trips related to business activities except to the place of work; for example, a plumber drives to a wholesale dealer to purchase supplies for his business.

-- Convention: Trips made to attend business, professional, special interest, and other types of conventions.

-- Civic/Education/Religious: Trips to political rallies, legislative hearings, voting places, etc.; to school, college, or university for class(es), PTA meetings, seminars, etc.; to church services or to participate in other religious activities. Social activities that take place at a church or school are not classified as religious or educational.

-- Eat meal: Trips taken to eat a meal in a public place. Trips taken to a friend's house for dinner are classified "visit friends or relatives."

-- Doctor or dentist: Trips made for medical, dental or psychiatric treatment, or other related professional services.

-- Shopping: Includes "window shopping" and purchases of commodities such as groceries, furniture, textiles, etc., for use or consumption elsewhere.

-- Family or personal business: Trips taken to attend organized functions of the family or friends, such as weddings, graduations, reunions, etc. Includes purchase of services such as cleaning garments, beauty parlor treatments, servicing of an auto, etc.

-- Visit friends or relatives: Trips made to visit friends or relatives but not prompted by organized family affairs or an emergency.

-- Pleasure driving: Includes driving trips made with no other purpose listed here but to "go for a drive" with no destination in mind: for example, a Sunday drive in the country.

-- Sightseeing: Trips taken to sightsee or tour with a particular place planned to visit. This distinguishes "sightseeing" from "pleasure driving."

-- Entertainment: Trips taken to go to a movie, the theatre, opera, concert, discotheque, cabaret, spectator sports, such as a ball game, races, track meet, or an amusement park.

-- Recreation (participant): Trips taken to participate in sporting or outdoor activities, such as fishing, hunting, golf, swimming, picnicking, skiing, skating, bowling, basketball, etc.

-- Vacation: Trips reported by the respondent as "vacation."

-- Change of vehicle: Trips made specifically to change from one vehicle to another within the same "means of transportation" category. (For example, transferring from one bus to another, one plane to another, or from one passenger car to another.)

-- Pick up or leave off passenger: Trips that are made to serve a passenger. For example, a trip by Mrs. Columbo to pick up her mother and drive her to the store on travel day would be reported as two trips: the trip to her mother's home for the purpose of picking up a passenger and the trip to the store for the purpose of shopping. If Mr. Hersholt drives from Washington to Chicago during the 14-day travel period and stops in Baltimore to pick up his son, the purpose of his first stop on his trip to Chicago will be reported in Part B of Section VI as "picking up a passenger."

-- Return home: The trip made to the residence of the respondent at the time of the trip. In the case of a college student who lives on campus and is interviewed at school, trips to the dormitory or other living quarters on campus are considered "return home."

-- Lodging: Trips made for the purpose of taking overnight accommodations. This category is also used in lieu of "return home" when return trips are to this lodging.

-- Social: Trips taken to enjoy some form of social activity involving friends or acquaintances, such as a party, playing cards, dancing, etc.

-- Other: Any purpose for a trip that does not fit into one of the above categories.

Type Z noninterview: A person in an interviewed household for which trip information is incomplete but certain demographic information is available.

Urban place: Defined by the Bureau of the Census as follows:

a. A place of 2,500 inhabitants or more incorporated as a city, borough, village, or town, (except towns in New England, New York, and Wisconsin);

b. The densely settled fringe, whether incorporated or not, of urbanized areas;

c. Towns in New England and townships in New Jersey and Pennsylvania that contain no incorporated municipalities as subdivisions and have either 25,000 inhabitants or more, or a population of 2,500 to 25,000 and a density of 1,500 persons or more per square mile;

d. Counties in States other than the New England States, New Jersey, and Pennsylvania that have no incorporated municipalities within their boundaries and have a density of 1,500 persons or more per square mile; or

e. Unincorporated places of 2,500 inhabitants or more.

Urbanized area: Defined by the Bureau of the Census as:

1. Any area made up of:

a. A central city of 50,000 inhabitants or more in 1960, or in a special census conducted by the Census Bureau since 1960, or in the 1970 census; or

b. Twin cities, i.e. cities with contiguous boundaries and consistuting for general social, and economic purposes, a single community with a combined population of at least 50,000 and with the smaller of the twin cities having a population of at least 15,000.

2. Surrounding closely settled territory, including the following (but excluding the rural portions of extended cities):

a. Incorporated places of 2,500 inhabitants or more.

b. Incorporated places with fewer than 2,500 inhabitants provided that each has a closely settled area of 100 housing units or more.

c. Small parcels of land, normally less than one square mile in area, having a population density of 1,000 inhabitants or more per square mile. The areas of large nonresidential tracts devoted to such urban land uses as railroad yards, airports, factories, parks, golf courses, and cemeteries are excluded in computing the population density.

d. Other similar small areas in unincorporated territory with lower population density provided that they serve

- to eliminate enclaves, or
- to close indentations in the urbanized areas of one mile or less across the open end, or
- to link outlying enumeration districts of qualifying density that are not more than 1½ miles from the main body of the urbanized area.

Vehicle mile: A unit to measure vehicle travel made by a household vehicle: automobile, vanbus/minibus, pickup truck/other van, other truck (personal use), motorcycle, self-contained recreational vehicle, and taxi (personal use).

Vehicle occupancy: The number of persons, including driver and passenger(s) in a vehicle; also includes persons who did not complete a whole trip.

Vehicle trip: For purposes of this study, a vehicle trip is a trip made in a private vehicle regardless of the number of persons in the vehicle.

Vehicle type: For purposes of the study, one of the 12 vehicle types used for coding purposes in the household motorized vehicle record of the NTS-2 Questionnaire.

APPENDIX C

NPTS PUBLIC USE TAPE REQUEST

Single copies of the tapes are available through the Federal Highway Administration (FHWA).

For governmental agencies and educational institutions, there no charge for tape copying. If no tapes are furnished with the request, there is a $25 charge for each tape provided by FHWA.

For private individuals and all nongovernment or noneducation organizations, there is a $36 charge per tape copied. In addition, if no tapes are forwarded with the request, there is an added charge of $25 for each tape provided by FHWA.

All tapes provided to FHWA should be 9-track.

Appropriate user documentation will be provided with each request.

All orders should be documented on the attached form and should clearly indicate:

1. Which (or all) of the four (4) quarters of data that are desired.
2. Name and/or title of the individual or organization making the request.
3. Number of tapes, if any, included with the request (or being shipped separately).
4. Amount of payment enclosed if applicable.

All checks or money orders should be made payable to Federal Highway Administration. Request and payment should be forwarded to:

Federal Highway Administration
Highway Statistics Division
HHP-44 (NPTS)
400 Seventh Street, SW
Washington, D.C. 20590

NPTS Public Use Tape Request

1. Data desired

   Tape 1 - First Quarter ( )
   Tape 2 - Second Quarter ( )
   Tape 3 - Third Quarter ( )
   Tape 4 - Fourth Quarter ( )
   Tapes 1-4 - All Quarters ( )

2. Number of tapes submitted

   None (tape payment included) ( ); 1 tape ( ); 2 tapes ( ); 3 tapes ( ); 4 tapes ( )

3. Method of tape submittal

   With order ( )
   Under separate cover ( )

4. Type of tape labeling desire

   Standard IBM labels ( )
   No labels ( )

5. Recording density (9-track)

   800 BPI ( )
   1600 BPI ( )

6. Type of organization, Name and Address

   Educational ( ) Government ( )
   Private Organization ( ) Private Individual ( )
   Other (specify) ( )

Name _____
Title _____
Organization _____
Address _____
City, State, Zip _____

7. Total fee enclosed

   Tape copy on user furnished tape(s),_____quarters @ $36 per quarter $_____

   Tape copy on FHWA furnished tape(s),_____quarters @ $61 per quarter $_____

8. Payment enclosed as

   Money order ( )

   Check ( )

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