

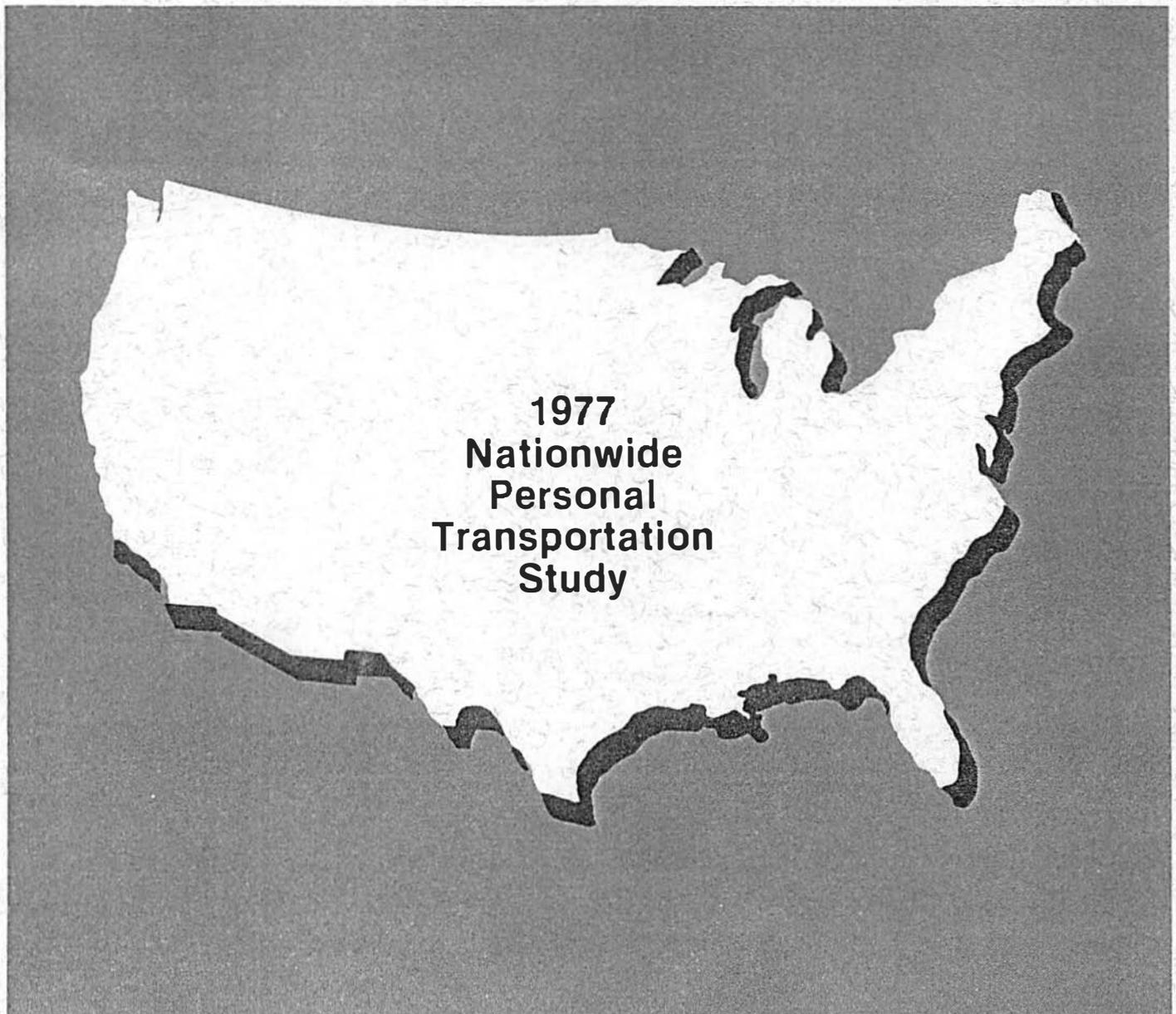


U.S. Department
of Transportation
**Federal Highway
Administration**

Urban/Rural Split of Travel

Office of Highway Planning
June 1982

Report No. 8



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1977 NATIONWIDE PERSONAL TRANSPORTATION STUDY

URBAN/RURAL SPLIT OF TRAVEL

**Highway Statistics Division
Office of Highway Planning**

June 1982

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

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TABLE OF CONTENTS

	Page
I. Highlights	1
II. Introduction	3
A. Purpose of Report	3
B. Organization of the Report	3
C. Description of the Data	4
III. Urban/Rural Split of Travel	7
A. Introduction	7
B. Distribution of Vehicle Miles of Travel by Place of Residence and Location of Travel	9
Nationwide Travel	9
a. Urban Travel	9
b. Rural Travel	12
C. Distribution of Vehicle Miles of Travel by Four Major Trip Purposes, Urban Population Size-Groups, and Location of Travel by Trip Type Codes	12
1. Four Major Trip Purposes	12
a. Earning a Living and Civic, Education and Religious Purposes	15
b. Family and Personal Business and Social and Recreation Purposes	15
2. Within Urban Area Population Size-Groups	19
a. Earning a Living and Civic, Education and Religious Purpose	19
b. Family and Personal Business and Social and Recreation Purposes	21
3. Location of Travel by Trip Type Codes	21
a. Introduction	21
b. Trips Originating in Urban Areas	23
c. Trips Originating in Rural Areas	25
D. Distribution of Trips, Vehicle Miles of Travel and Average Trip Length by Place of Residence of Traveler and Location of Travel by Trip Type	25

TABLE OF CONTENTS (Con't)

	Page
1. Location of Travel by Trip Type	25
a. Trips Originating in Urban Areas	25
b. Trips Originating in Rural Areas	27
2. By Place of Residence of Traveler	28
E. Distribution of Trips, Vehicle Miles and Average	
Trip Length by Mode of Transportation Used	30
1. By Place of Residence of Traveler	30
2. By Trip Type	33
3. By Mode of Transportation Used	35
F. Comparison of Trip Lengths - Estimated vs. Mapped	
for Selected Trip Codes	35
1. By Trip Length Class	37
2. Within Each Trip Length Class	37
IV. Summary	41
Appendixes	45

TABLE OF CONTENTS (Con't)

LIST OF TABLES

	Page
<u>Tables</u>	
1A	Percent of Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel 8
1B	Percent of Vehicle Miles of Travel by Private Modes Generated by Place of Residence and Location of Travel..... 10
2	Percent of Vehicle Miles of Travel by Private Modes by Place of Residence and Location of Travel in Urban Areas. All Purposes..... 11
3	Percent of Vehicle Miles of Travel by Private Modes, Location of Travel in Urban Areas and Place of Residence of Traveler..... 13
4	Percent of Vehicle Miles of Travel by Private Modes by Place of Residence, and Location of Travel in Rural Areas..... 14
5	Percent of Vehicle Miles of Travel by Private Modes by Place of Residence and Location of Travel for Earning a Living and Civic, Educational and Religious Purposes 17
6	Percent of Vehicle Miles of Travel by Private Modes by Place of Residence and Location of Travel for Family and Personal Business and Social and Recreation Purposes 18

TABLE OF CONTENTS (Con't)

LIST OF TABLES

<u>Tables</u>	Page
7 Percent of Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler, Location of Travel Within Each Urban Area Population Size-Group for Earning a Living and Civic, Education and Religious Trip Purposes..	20
8 Percent of Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler, Location of Travel Within Each Urban Area Population Size-Group for Family and Personal Business and Social and Recreation Trip Purposes	22
9 Percent of Vehicle Miles of Travel in Private Household Modes by Trip Purpose and Location of Travel by Trip Type..	24
10 Percent of Vehicle Miles of Travel and Average Trip Length in Private Modes by Location of Travel by Trip Type and Place of Residence of Traveler	26
11 Percent of Trips, Vehicle Miles of Travel and Average Trip Length in Private Modes by Place of Residence of Traveler and Location of Travel by Trip Type	29
12 Percent of Trips, Vehicle Miles of Travel and Average Trip Length for Selected Private Modes of Transportation and Place of Residence of Traveler	32
13 Distribution of Vehicle Miles of Travel in Private Household Modes by Location of Travel by Trip Type	34

TABLE OF CONTENTS (Con't)

LIST OF TABLES

Page

Tables

14 Comparison of Trip Lengths: Estimated vs. Mapped
for Selected Trip codes 40

LIST OF FIGURES

Figures

1 Distribution of Vehicle Miles of Travel in Private Modes
by Trip Purpose and Residents/Non-Residents 16

2 Percent of Trips and Vehicle Miles of Travel for Selected
Modes by Place of Residence of Traveler 31

3 Percent Difference Between Estimated and Mapped Values
by Trip Length 38

I. Highlights

- Approximately 59.5 percent of all vehicle miles are traveled in urban areas and 40.5 percent are traveled in rural areas. The 59.5 percent of vehicle miles traveled in urban areas include 47.6 percent that remain in the home urban areas and is generated by urban residents and 11.9 percent that occurs in urban areas but is generated by nonresidents, both urban and rural.
- Urban residents travel 75.3 percent of the total vehicle miles within their home urban area. The remaining 24.7 percent of all vehicle miles of travel made by urban residents are outside their home urban area - 5.3 percent in other urban areas and 19.4 percent in rural areas.
- Rural residents travel more than three-fourths (76.7 percent) of their vehicle miles in rural areas and only 23.3 percent are traveled in urban areas.
- Approximately 66.2 percent of the vehicle miles of travel for earning a living are traveled within urban areas, of which 54.7 percent remains in the home area. On the other hand, travel for social and recreational purposes has the smallest percent of travel generated in urban areas: 52.5 percent of which 38.3 percent remains in the home urban area.
- As the size of the urban area increases, the percent of travel generated within the home urban area increases. The percent of miles traveled outside the home area shows no particular pattern.
- Approximately 13.1 percent of the total urban vehicle miles traveled are in urban areas of under 50,000. The remaining 86.9 percent is traveled in urban areas of 50,000 and over, of which urban areas of 1,000,000 and over generate more than half (51.1 percent) of the travel.
- For each of the urban area population size-groups, the percent of vehicle miles generated by urban residents within the home urban area increases as size of area increases and the percent of travel generated by residents outside the home urban area decreases. This is true for the four major trip purposes.

- The automobile continues to be the major mode of transportation, regardless of place of residence of traveler; 86.2 percent of all private vehicle trips and 84.0 percent of total vehicle miles are made by automobile. The second most popular mode of private transportation is the pickup truck. Together, these two private modes account for 96.9 percent of all vehicle trips and 96.2 percent of all vehicle miles of travel.
- As the size of the urban area increases, the percent of vehicle trips and vehicle miles of travel by automobile increases.
- People tend to overestimate trip distances of 10 miles and less and underestimate trips greater than 10 miles.
- Within each urban area population size group, the percent of travel generated by nonresidents decreases as size of urban area increases.
- Approximately 70.3 percent of all vehicle trips and 63.2 percent of all vehicle miles of travel are made by urban residents. The remaining 29.7 percent of all trips and 36.8 percent of all vehicle miles of travel are made by rural residents. The average trip length is 8.1 miles.
- Approximately 73.5 percent of all vehicle trips and 68.7 percent of all vehicle miles originate in urban areas. About 66.1 percent of these vehicle trips and 43.6 percent of these vehicle miles of travel remain entirely in an urban area. Approximately 26.5 percent of all trips and 31.3 percent of all vehicle miles originate in rural places.

II. INTRODUCTION

A. Purpose of Report

This report presents data related to the urban/rural split of travel compiled from the 1977 Nationwide Personal Transportation Study (NPTS). In the 1969 NPTS, travel information was limited to place of residence in which the sampled households were located. It was not possible to identify the proportion of that travel that was entirely urban, rural, or a combination of urban and rural. In the 1977 update, maps were used to enable the interviewer to trace the respondent's travel routes. Through the use of this procedure the data were analyzed to determine the distribution of total travel between urban and rural areas. Thus, for residents of a particular size urban area, the amount of their travel that remained within that urban area (identified as the home urban area), as well as the portion that extended into other urban and rural areas could be estimated. Likewise, for residents of rural areas, the amount of their travel that remained in the rural area as well as the portion that extended into urban areas could also be determined.

At this point, it may be noted that in other reports in the 1977 NPTS series, data relationships have been presented in terms of SMSA size. In this report, the urban area concept has been used in order to relate travel to the traveler's place of residence. Note that SMSA and urban area are not the same, and no attempt should be made to relate the two. (See Appendix C for definition of SMSA and urban area.)

B. Organization of the Report

Section III of this report presents findings related to the urban/rural split of travel. Data are analyzed for all trips and vehicle miles of travel made in a private motor vehicle on a designated travel day by place of residence of traveler, location of travel, and trip purpose. The tables show the proportion of vehicle miles of travel generated by urban residents that remained within the boundaries of their urban area identified as the home urban area.

In addition, the tables show the percent of travel generated in the home urban areas that extends into other urban areas by population size groups, as well as the percent of travel extending into rural areas. For residents of rural areas, the tables show the percent of travel in rural areas and the percent of travel extending into urban population size groups.

Other variables relating distribution of trips and vehicle miles of travel to average trip length, mode of transportation and trip type are shown in this report. Trip type refers to the urban/rural pattern of the trip, that is, the point of origin and areas passed through to the final destination of the trip. Finally, a discussion of the estimated values vs. mapped values for varying trip lengths for trips that required mapping either at time of interview or later by FHWA personnel is presented at the end of Section III.

The Bureau of Census has defined urban to include any place of 2,500 or more inhabitants. For FHWA program purposes, an urban place is defined as an area of 5,000 or more inhabitants. FHWA considers any place from 5,000-49,999 as a small urban area. Any place of 50,000 or more in population, according to the Census definition, is defined as urbanized. For convenience, the word "urban" is used to describe both urban and urbanized in the narrative; however, the tapes do show urban and urbanized size-groups.

Information describing the NPTS survey procedures and data processing, as well as sample design, survey methodology, processing procedures, provisions for obtaining special tabulations and subject areas planned for 1977 NPTS reports, along with a copy of the NTS-2A Questionnaire, Section VII: Mapping of Private Motor Vehicle Trips, are found in Appendix B. Appendix C contains a glossary of NPTS terms used in this report. An order form for the public use tapes is found in Appendix D.

C. Description of the Data

The 1977 Nationwide Personal Transportation Study (1977 NPTS) is an update of the 1969 NPTS to provide comprehensive data on travel and transportation patterns in the United States. The 1977 NPTS collected information about all travel on the designated travel day, regardless of trip length, on the questionnaire NTS-2. A

unique feature of the 1977 NPTS was the use of mapping during the home interviews to estimate the amount of travel in urban and rural areas. A complete description of the mapping procedure is included in Appendix B.

For the 1977 NPTS, data were collected for 21 trip purposes identified below with an "o." These include the following:

1. Earning a Living

- o To place of work
- o Work-related business

2. Family and Personal Business

- o Shopping
- o Doctor or dentist
- o Other family or personal business

3. Civic, Educational or Religious

4. Social and Recreational

- o Vacation
- o Visit friends or relatives
- o Sightseeing
- o Pleasure driving
- o Eat meal
- o Recreation (participant)
- o Social
- o Entertainment

5. Return Home

6. Other

- o Change vehicle without change of mode
- o Change means (mode) of transportation
- o Pickup or leave-off passengers
- o Lodging
- o Conventions
- o Other

In some of the 1977 NPTS reports, such as Purposes of Vehicle Trips and Travel and Home-to-Work Trips and Travel, the data for the 21 trip purposes were collapsed into 11 trip purposes for comparability with the 1969 trip purpose categories. This was not possible for this report.

Discussion is limited to four major trip purposes: Earning a living, family and personal business, civic, education and religious and social and recreation. In some tabulations, where needed, data are also shown for "other" purposes, however, no attempt has been made to analyze the "other" trip purposes. In addition, where necessary, the trips and travel data collected for "return home" have been allocated among the other major trip categories.

III. Urban/Rural Split of Travel

A. Introduction

Table 1A shows that approximately 1,045,674 million miles were driven from April 1977 - March 1978. This figure represents the vehicle miles traveled in private motor vehicles as reported by respondents of sampled households during a designated travel day and expanded to an annual total. Included in the above total are trips in which household and nonhousehold members were drivers. It should be noted that the above figure does not include 58,313 million vehicle miles for trips reported in private motor vehicles for which mopping information related to the location of travel was not available. For comparative purposes, "Highway Statistics 1977," published by the U.S. Department of Transportation, Federal Highway Administration, indicates a total of 1,476,567 million miles driven in 1977. This total is shown in Table VM-1, Estimates of Motor Vehicle Travel in the United States and Related Data. The above total includes travel by all vehicle types, both household and nonhousehold, and is based on traffic counts conducted by the State highway agencies. An estimate of travel by major vehicle category at the national level is based on an analysis by FHWA. For 1977, the 1,476,567 million total, based on the aggregate of individual State estimates, was stratified into the following categories:

Passenger cars	1,118,649
Motorcycles	22,566
Buses	5,887
Single Unit Trucks (includes pickups and vans)	266,000
Combination Trucks	<u>63,465</u>
Total - all vehicle types	1,476,567 (million)

The difference between the total travel figure published in Highway Statistics and the figure included in this report is attributed to the procedures used, traffic counts vs. respondent estimate as well as the types of vehicles included in each of the estimates. Specifically, travel by private motor vehicles only were included in the Nationwide Personal Transportation Study and all vehicle types in the traffic counts.

**Table IA. Percent of Vehicle Miles of Travel by
Private Modes^{1/} by Place of Residence of Traveler
and Location of Travel***

Place of Residence	Location of Travel			Rural Areas	Total
	Within Home Urban Areas	Urban Areas Other Urban Areas	Subtotal		
Urban Areas	75.3	5.3	80.6	19.4	100.0
Rural Areas	NA	23.3	23.3	76.7	100.0
All Areas	47.6	11.9	59.5	40.5	100.0 ^{2/}

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} Includes 1,045,674,000,000 vehicle miles of travel.

* See Table A-1 for more detailed information.

B. Distribution of Vehicle Miles of Travel by Place of Residence and Location of Travel

Nationwide Travel

Table 1A presents the distribution of nationwide vehicle miles of travel by place of residence of traveler and location of travel. Approximately 59.5 percent of all vehicle miles are traveled in urban areas and 40.5 percent are traveled in rural areas. The 59.5 percent of vehicle miles traveled in urban areas includes 47.6 percent of travel by urban residents that remains in the home urban area and 11.9 percent that is generated in urban areas by nonresidents both urban and rural.

Urban residents travel 75.3 percent of their total vehicle miles within the home urban area and 5.3 percent in other urban areas. The remaining 19.4 percent of total travel takes place in rural areas.

Rural residents travel more than three-fourths (76.7 percent) of their total vehicle miles within rural areas and approximately 23.3 percent in urban areas.

As shown in Table 1B, on a nationwide basis, 63.2 percent of the total vehicle miles are generated by residents of urban areas while 36.8 percent are generated by residents of rural areas. As noted above, 59.5 percent of all vehicle miles are traveled in urban areas and 40.5 percent are traveled in rural areas.

Urban Travel

As noted in Table 1A, 59.5 percent of total vehicle miles of travel occur in urban areas. The distribution of urban travel by location of travel according to urban area size and residence of traveler is shown in Table 2. It should be noted that, place of residence outside the home urban area includes other

Table IB. Percent of Vehicle Miles of Travel by
Private Modes^{1/} Generated by Place of Residence*

Place of Residence	Percent of Travel Generated
Urban Areas	63.2
Rural Areas	36.8
All Areas	100.0 ^{2/}

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} Includes 1,045,674,000,000 vehicle miles of travel.

* See Table A-1 for more detailed information.

Table 2. Percent of Vehicle Miles of Travel by
Private Modes^{1/} by Place of Residence
and Location of Travel in Urban Areas
All Purposes

Location of Travel by Urban Area Size	Place of Residence		Total
	Home Urban Area	Outside Home Urban Area	
Urban Areas			
5,000-49,999	7.1	6.0	13.1
50,000-199,999	8.2	3.3	11.5
200,000-999,999	19.4	4.9	24.3
1,000,000 and over	45.3	5.8	51.1
All Urban Areas	80.0	20.0	100.0 ^{2/}

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} Approximately 600,945,535,000 vehicle miles of travel in urban areas. (Includes 96,870,245,000 vehicle miles of travel for "other" purposes and 222,367,130,000 vehicle miles of travel for "return home.")

urban areas as well as rural areas. Approximately 13.1 percent of all urban vehicle miles take place in urban areas under 50,000 population, while 86.9 percent occurs in urban areas of 50,000 and larger. Urban areas of 1,000,000 and over in population account for more than one-half (51.1 percent) of total urban travel. For all urban areas combined 80 percent of travel remains within the home urban areas while non-residents living in other urban and rural areas account for the remaining 20 percent of urban travel.

While the percent of vehicle miles made by residents of the home urban area increases with increasing population size, the percent of travel made by non-residents according to urban area size shows no particular pattern.

Table 3 shows the distribution of total urban travel within each urban area size-group according to place of residence of traveler. For all urban areas, regardless of population size-group, more than half of all vehicle miles remain within the home urban area. In addition, as the population of the urban area increases, the percent of travel remaining within the home urban area increases, and the percent of travel generated by residents outside the home urban area decreases.

Rural Travel

The distribution of total rural travel is shown in Table 4. Of the total travel occurring in rural areas, 69.7 percent is accounted for by rural residents and 30.3 percent is by nonresidents residing in urban areas.

C. Distribution of Vehicle Miles of Travel by Four Major Trip Purposes, Urban Population Size-Groups and Location of Travel by Trip Type Codes

I. Four Major Trip Purposes

Tables 5 and 6 present the distribution of vehicle miles of travel for the major trip purposes by place of residence of the traveler and location of travel. The four major trip purposes are earning a living, family and personal business, civic, education and religious, and social and recreation. Table 5 indicates that the pattern of urban/rural travel for earning a living and for civic, educational and religious purposes is almost identical. Table 6 indicates that the pattern for

Table 3. Percent of Vehicle Miles of Travel
by Private Modes^{1/} and Location of Travel in
Urban Areas and Place of Residence of Traveler

Location of Travel by Urban Area Size	Place of Residence		Total
	Home Urban Area	Outside Home Urban Area	
Urban Areas			
5,000-49,999	54.2	45.8	100.0
50,000-199,999	71.3	28.7	100.0
200,000-999,999	79.8	20.2	100.0
1,000,000 and over	88.6	11.4	100.0
Total	80.0	20.0	100.0 ^{2/}

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} Approximately 600,945,535,000 vehicle miles of travel. (Includes 96,870,245,000 vehicle miles of travel for "other" purposes and 222,367,130,000 vehicle miles of travel for "return home.")

Table 4. Percent of Vehicle Miles of Travel
 by Private Modes^{1/} by Place of Residence,
 and Location of Travel in Rural Areas *
 All Purposes

Location of Travel	In Rural Areas	Place of Residence Outside Rural Areas	Total
Rural Areas	69.7	30.3	100.0 ^{2/}

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} Approximately 444,729,000,000 vehicle miles of travel in rural areas. (Includes 75,761,416,000 vehicle miles of travel for "other" purposes and 173,758,460,000 vehicle miles for "return home" purposes).

* See Table A-1 for more detailed information.

family and personal business and social and recreation trip purposes shows some variation. Figure 1 shows the percent of travel made in the smallest and largest urban area size-groups by trip purpose and residents/non-residents. Information for this chart was derived from Tables A-1 through A-5 of Appendix A.

a. Earning a Living and Civic, Education and Religious Purposes

As shown in Table 5, approximately two-thirds of all vehicle miles traveled for earning a living and civic, education and religious trip purposes (66.5 and 66.9 percent respectively) are generated by residents of urban areas and one-third (33.5 and 33.1 percent respectively) are generated by residents of rural areas. In terms of location of travel, for earning a living, 54.7 percent remains in the home urban area and 11.5 percent is generated in other urban areas while the remaining 33.8 percent takes place in rural areas. By comparison, for civic, education and religious trip purposes, 57.4 percent remains in the home urban area and 10.3 percent is traveled in other urban areas and the remaining 32.3 percent takes place in rural areas.

For earning a living, urban residents travel 82.4 percent of their total vehicle miles of travel within their home urban area and 4.6 percent in other urban areas; the remaining 13.0 percent takes place in rural areas. For civic, education and religious purposes, the ratio for urban residents is 85.9 percent in home urban, 3.2 percent in other urban areas and 10.9 percent in rural areas.

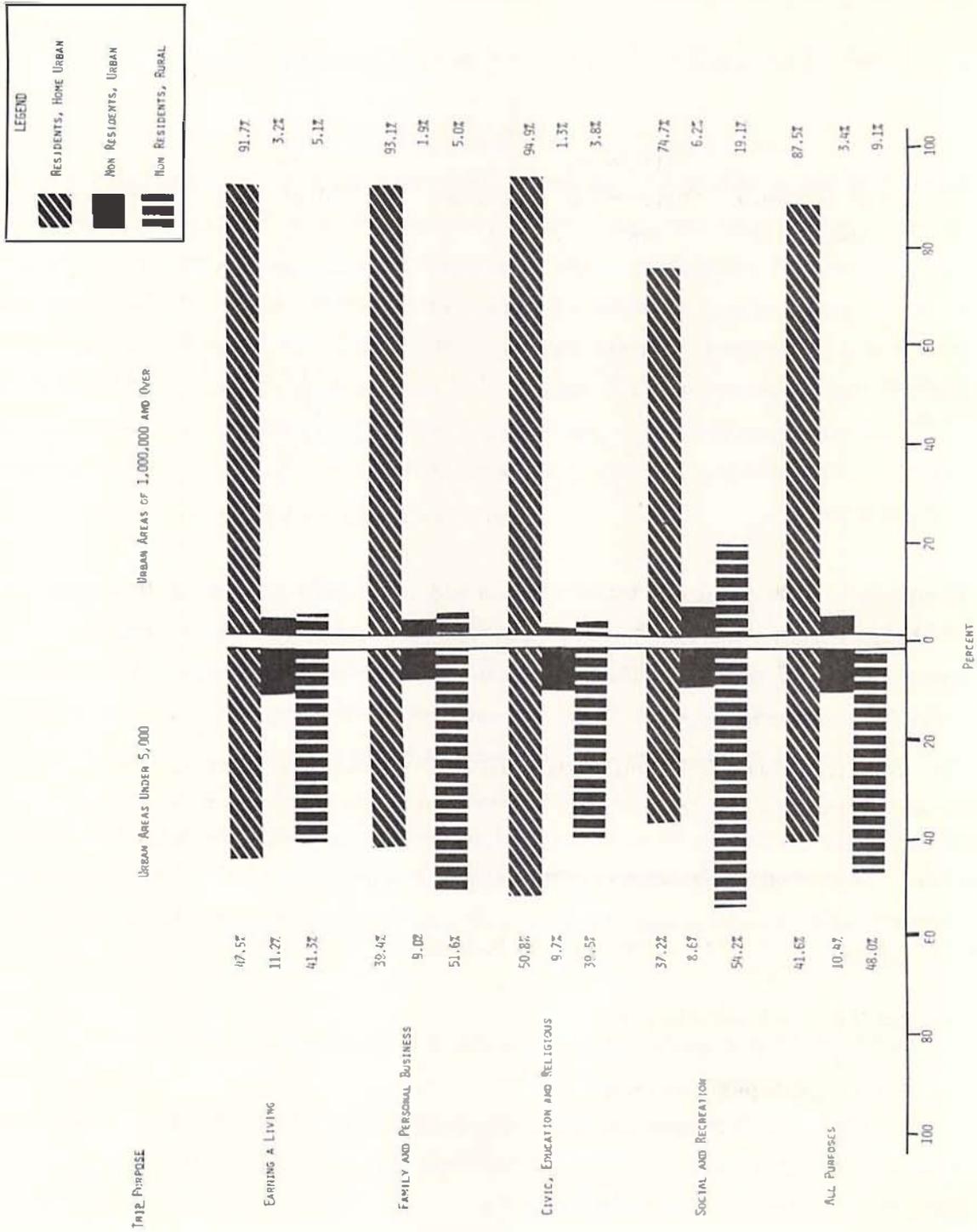
Rural residents travel three-fourths of their vehicle miles of travel for earning a living and civic, education and religious purposes, (75.0 and 75.4 percent respectively) in rural areas and 25.0 and 24.6 percent respectively in urban areas for these purposes.

b. Family and Personal Business and Social and Recreation Trip Purposes

Table 6 indicates that approximately three-fifths (59.7 percent) of all vehicle miles traveled for family and personal business are generated by urban residents and 40.3 percent are generated by rural residents.

Approximately 58.7 percent of all vehicle miles are traveled in urban areas, of which 46.2 percent remain in the home urban area. More than two-fifths (41.3 percent) of all miles are traveled in rural areas.

FIGURE 1. DISTRIBUTION OF VEHICLE MILES OF TRAVEL
IN PRIVATE MODES IN URBAN AREAS BY RESIDENTS/NONRESIDENTS



**Table 5. Percent of Vehicle Miles of Travel by
Private Modes^{1/} by Place of Residence
and Location of Travel for Earning a
Living^{2/} and Civic, Educational
and Religious Purposes^{3/}**

Place of Residence	Location of Travel				Total	Distribution of Vehicle Miles
	Within Home Urban Areas	Urban Areas Other Urban Areas	Subtotal	Rural Areas		
	Earning a Living					
Urban Areas	82.4	4.6	87.0	13.0	100.0	66.5
Rural Areas	NA	25.0	25.0	75.0	100.0	33.5
All Areas	54.7	11.5	66.2	33.8	100.0	100.0 ^{4/}
	Civic, Educational and Religious					
Urban Areas	85.9	3.2	89.1	10.9	100.0	66.9
Rural Areas	NA	24.6	24.6	75.4	100.0	33.1
All Areas	57.4	10.3	67.7	32.3	100.0	100.0 ^{5/}

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} See Table A-2, Appendix A for more detailed information.

^{3/} See Table A-3, Appendix A for more detailed information.

^{4/} 211,274,589,000 vehicle miles of travel.

^{5/} 30,036,020,000 vehicle miles of travel.

Table 6. Percent of Vehicle Miles of Travel by Private Modes^{1/} by Place of Residence and Location of Travel for Family and Personal Business^{2/} and Social and Recreation Purposes^{3/}

Place of Residence	Location of Travel				Total	Distribution of Vehicle Miles
	Within Home Urban Areas	Urban Areas Other Urban Areas	Subtotal	Rural Areas		
Family and Personal Business						
Urban Areas	77.4	4.2	81.6	18.4	100.0	59.7
Rural Areas	NA	24.8	24.8	75.2	100.0	40.3
All Areas	46.2	12.5	58.7	41.3	100.0	100.0 ^{4/}
Social and Recreational						
Urban Areas	63.2	7.4	70.6	29.4	100.0	60.5
Rural Areas	NA	24.8	24.8	75.2	100.0	39.5
All Areas	38.3	14.2	52.5	47.5	100.0	100.0 ^{5/}

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} See Table A-4, Appendix A for more detailed information.

^{3/} See Table A-5, Appendix A for more detailed information.

^{4/} 73,407,768,000 vehicle miles of travel.

^{5/} 162,198,907,000 vehicle miles of travel.

Urban residents travel 81.6 percent of their miles for this purpose in urban areas, with 77.4 percent of the urban miles remaining in the home urban area. Approximately 18.4 percent of travel by urban residents is made in rural areas. Rural residents travel three-fourths (75.2 percent) of their miles in rural areas and 24.8 percent in urban areas.

Approximately 60.5 percent of all miles for social and recreation trip purposes are traveled by urban residents and 39.5 percent by rural residents.

For social and recreational trip purposes, the percent (52.5) traveled in urban areas decreases slightly from other trip purposes and the amount traveled in rural areas increases slightly to 47.5 percent.

Travel by urban residents within their home urban area decreases to 63.2 percent while travel in other urban areas increases to 7.4 percent, as does travel in rural areas (29.4 percent). Rural residents travel slightly more than three-fourths of their travel (75.2 percent) in rural areas and 24.8 percent in urban areas.

2. Within Urban Area Population Size-Groups

a. Earning a Living and Civic, Education and Religious Purposes

More than four-fifths of the vehicle miles traveled for earning a living and civic, education and religious trip purposes (82.8 and 84.7 percent respectively) within urban areas is generated by residents of the home urban area, and it increases as size of urban area increases (Table 7).

For example, for earning a living, home urban travel increases from 59.5 percent of total travel in urban areas under 50,000 to 89.6 percent in urban areas of 1,000,000 and over. The same trend is observed for civic, education and religious trip purposes--increasing from 66.1 percent to 90.7 percent, respectively. Approximately 17.2 and 15.3 percent, respectively, is generated by residents of other urban and rural areas for earning a living and civic, education and religious purposes. The percent of travel generated by nonresidents decreases as size of urban area increases. Travel by nonresidents in urban areas of under 50,000 for

Table 7. Percent of Vehicle Miles of Travel by Private Modes^{1/} by Place of Residence of Traveler, Location of Travel Within Each Urban Area Population Size Group for Earning a Living and Civic, Education and Religious Trip Purposes

Location Of Travel	Place of Residence of Traveler		Total
	Home Urban Area	Other Urban and Rural Areas	
Earning A Living			
Urban Area Size			
5,000-49,999	59.5	40.5	100.0
50,000-199,999	70.8	29.2	100.0
200,000-999,999	83.2	16.8	100.0
1,000,000 and Over	89.6	10.4	100.0
All Urban Areas	82.8	17.2	100.0 ^{2/}
Civic, Education and Religious			
Urban Area Size			
5,000-49,999	66.1	33.9	100.0
50,000-199,999	76.4	23.6	100.0
200,000-999,999	85.8	14.2	100.0
1,000,000 and Over	90.7	10.0	100.0
All Urban Areas	84.7	15.3	100.0 ^{3/}

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} 211,274,589,000 vehicle miles of travel

^{3/} 30,036,020,000 vehicle miles of travel

earning a living comprises 40.5 percent of total, compared to 10.4 percent in urban areas of 1,000,000 and over. For civic, education and religious trip purposes travel by nonresidents decreases from 33.9 percent in urban areas of less than 50,000 to 10.0 percent in the largest urban areas of 1,000,000 and over.

b. Family and Personal Business and Social and Recreation Purposes

Approximately 78.8 percent of travel for family and personal business in urban areas is generated by residents of the home urban area, ranging from 49.7 percent in urban areas of less than 50,000 population to 91.8 percent in urban areas of 1,000,000 and over (Table 8). The percent of travel generated by nonresidents averages 21.2 percent, and it decreases from 50.3 percent in urban areas under 50,000 to 8.2 percent in urban areas of 1,000,000 and over.

Approximately 72.8 percent of vehicle miles of travel for social and recreation trip purposes in urban areas is generated by residents of the home urban area, the smallest percent of all trip purposes. On the other hand, percent of travel made by nonresidents of the area (27.2 percent) is larger than for all other trip purposes, indicating a longer trip length.

While the proportion of travel made by residents within their home urban area increases and travel by nonresidents decreases, some exceptions are noted for family and personal business and social and recreational trip purposes. For both these trip purposes, the percent of travel made in urban areas of less than 50,000 by nonhome urban area residents is more than half of total travel. Or to put it another way, the percent of travel generated by nonresidents in urban areas of less than 50,000 is greater than the percent of travel generated by home urban area residents.

3. Location of Travel by Trip Type Codes

a. Introduction

During the mapping operation, trip type was identified by place of origin, areas passed through and destination. Essentially, there were six trip types (for a more detailed explanation and examples of each trip type, see Appendix B):

Table 8. Percent of Vehicle Miles of Travel by Private Modes^{1/} by Place of Residence of Traveler, Location of Travel Within Each Urban Population Size Group for Family and Personal Business and Social and Recreation Trip Purposes

Location Of Travel	Place of Residence of Traveler		Total
	Home Urban Area	Other Urban and Rural Areas	
Family and Personal Business			
Urban Area Size			
5,000-49,999	49.7	50.3	100.0
50,000-199,999	71.3	28.7	100.0
200,000-999,999	76.7	23.3	100.0
1,000,000 and Over	91.8	8.2	100.0
All Urban Areas	78.8	21.2	100.0 ^{2/}
Social and Recreation			
Urban Area Size			
5,000-49,999	46.9	53.1	100.0
50,000-199,999	64.0	36.0	100.0
200,000-999,999	73.9	26.1	100.0
1,000,000 and Over	82.3	17.7	100.0
All Urban Areas	72.8	27.2	100.0 ^{3/}

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} 73,407,768,000 vehicle miles of travel

^{3/} 162,198,907,000 vehicle miles of travel

U-U-U:	All urban trips
U-R:	An urban trip that ended in a rural area
U-R-U:	An urban trip that went through a rural area enroute to another urban area
R-R-R:	All rural trips
R-U:	A rural trip that ended in an urban area
R-U-R:	A rural trip that went through an urban area enroute to another rural area

b. Trips Originating in Urban Areas

Approximately one-third (32.5 percent) of all vehicle miles traveled for trips originating in urban areas are for earning a living, more than one-fourth (26.2 percent) are for social and recreation, 10.4 percent for family and personal business and 4.2 percent for civic, education and religious; the remainder, 26.7 percent, are for "other" trip purposes (see Table 9).

The bottom half of Table 9 indicates that the percent of trips originating in urban areas shows little variation among the four major trip purposes (from 65.4 percent for family and personal business to 73.5 percent for social and recreation trip purposes). However, in the distribution of miles traveled by trip purpose, earning a living, family and personal business and civic, education and religious trip purposes follow the same pattern. The pattern varies for social and recreation trips. While from 50.1 to 51.9 percent of miles remain entirely in urban area (U-U-U) for the three aforementioned trip purposes, less than one-third (30.7 percent) of the miles traveled remain in an urban area for social and recreation purposes.

**Table 9. Percent of Vehicle Miles of Travel^{1/}
in Private Household Modes by Trip Purpose and
Location of Travel by Trip Type**

Trip Purpose	Location of Travel by Trip Type									
	U-U-U	Trips Originating in Urban Areas			Subtotal	R-R-R	Trips Originating in Rural Areas		Subtotal	Total
		U-R-U	U-R	R-U-R			R-U			
	By Trip Type									
Earning a Living	38.1	23.3	23.1	32.5	32.2	24.5	33.9	32.3	32.5	
Family and Personal										
Business	13.1	7.5	4.8	10.4	11.4	3.1	15.5	12.3	11.3	
Civic, Education and Religious	5.4	3.4	2.0	4.2	5.3	6.2	4.0	4.9	4.6	
Social and Recreation	18.0	38.5	40.3	26.2	23.3	44.2	20.0	23.8	25.0	
Other	25.4	27.3	29.8	26.7	27.8	22.0	26.6	26.7	26.6	
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0^{2/}	
	By Trip Purpose									
Earning a Living	50.4	10.2	9.4	70.0	13.5	3.0	13.5	30.0	100.0	
Family and Personal										
Business	50.1	9.6	5.7	65.4	13.8	3.0	17.8	34.6	100.0	
Civic, Education and Religious	51.9	10.5	4.6	67.0	15.3	4.0	13.7	33.0	100.0	
Social and Recreation	30.7	21.8	21.0	73.5	12.6	3.7	10.2	26.5	100.0	
Other	41.3	14.5	14.7	70.5	14.2	2.4	12.9	29.5	100.0	
Total^{3/}	43.0	14.3	13.2	70.5	13.6	3.0	12.9	29.5	100.0	

^{1/}Includes vehicle miles only for Travel Day trips which were made in a private vehicle.

^{2/}1,045,674,530,000 vehicle miles of travel

b. Trips Originating in Rural Areas

A similar distribution by trip purpose is noted in vehicle miles traveled for trips originating in rural areas. About one-third (32.3 percent) of all miles traveled are for earning a living, 23.8 percent for social and recreation, 12.3 percent for family and personal business, 4.9 percent for civic, education and religious and 26.7 percent for "other" purposes.

Of the trips coded entirely rural (R-R-R), the highest proportion are for earning a living (32.2 percent). Of the trip types that were R-U-R, the greatest proportion were for social and recreation (44.2 percent). On the other hand, for trips coded R-U, the distribution is similar to R-R-R.

The bottom half of Table 9 indicates that miles traveled for trips originating in rural areas range from 26.5 percent of total for social and recreation to 34.6 percent of total for family and personal business. The percent of miles traveled by trip type averages 13.6 and 12.9 percent for R-R-R and R-U trips respectively, and 3.0 percent for R-U-R trips.

D. Distribution of Trips, Vehicle Miles of Travel and Average Trip Length by Place of Residence of Traveler and Location of Travel by Trip Type

Table 10 indicates that 70.3 percent of all trips and 63.2 percent of vehicle miles are made by urban residents. The average trip length is 7.2 miles. The remaining 29.7 percent of all trips and 36.8 percent of vehicle miles are made by rural residents. The average trip length is slightly longer, 10.0 miles. The average trip length for all urban and rural residents is 8.1 .

I. Location of Travel by Trip Type

a. Trips Originating in Urban Areas

Approximately 90.7 percent of all trips and 83.1 percent of all vehicle miles of travel originating in urban areas are made by urban residents, as shown in Table 10. The remaining 9.3 percent of these trips and 16.9 percent of the vehicle miles traveled are made by rural residents. The average trip length for all trips

Table 10. Percent of Trips, Vehicle Miles of Travel and Average Trip Length in Private Modes^{1/} by Location of Travel by Trip Type and Place of Residence of Traveler

Place of of Residence Traveler	Location of Travel by Trip Type								Total
	Trips Originating In Urban Areas				Trips Originating In Rural Areas				
	U-U-U	U-R-U	U-R	Subtotal	R-R-R	R-U-R	R-U	Subtotal	
	Trips								
Urban Area Size									
5,000-49,999	15.5	35.1	15.4	16.1	*	2.8	14.5	3.8	12.6
50,000-199,999	13.3	18.1	4.9	12.8	*	2.0	4.4	1.0	9.8
200,000-999,999	23.3	16.6	5.5	21.8	*	1.4	4.6	1.1	16.9
1,000,000 and Over	43.3	18.4	5.3	40.0	*	3.3	4.9	1.2	31.0
Subtotal	95.4	88.2	31.1	90.7	*	9.5	28.4	7.1	70.3
Rural	4.6	11.8	68.9	9.3	100.0	90.5	71.6	92.9	29.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0 ^{2/}

Vehicle Miles of Travel									
Urban Area Size									
5,000-49,999	8.1	28.3	11.9	12.5	*	0.8	10.7	0.5	10.2
50,000-199,999	9.4	14.6	5.2	9.6	*	2.8	4.8	2.4	7.4
200,000-999,999	22.8	18.3	8.8	19.4	*	0.8	6.4	3.0	14.8
1,000,000 and Over	55.9	25.4	8.2	41.6	*	3.8	7.1	3.5	30.8
Subtotal	96.2	85.6	34.1	83.1	*	8.2	29.0	9.4	63.2
Rural	3.8	13.4	65.9	16.9	100.0	91.8	71.0	90.6	36.8
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0 ^{3/}

Average Trip Length (Miles)									
Urban Area Size									
5,000-49,999	2.8	37.8	15.1	5.9	2.6	7.9	14.3	13.9	6.4
50,000-199,999	3.8	37.9	20.9	5.7	0.0	39.8	20.8	21.9	6.1
200,000-999,999	5.2	51.6	30.9	6.7	0.0	17.1	27.2	22.2	7.1
1,000,000 and Over	6.9	64.9	30.0	7.9	0.8	32.6	28.2	27.3	8.1
Subtotal	5.4	46.0	21.3	6.9	1.7	24.6	19.9	21.0	7.2
Rural	4.4	53.6	18.6	13.6	6.0	29.1	19.3	8.9	10.0
Total	5.3	46.9	19.5	7.6	6.0	28.6	19.4	9.6	8.1

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} 110,191,983,000 trips

^{3/} 1,045,674,530,000 vehicle miles of travel

* less than 0.1 percent

originating in urban areas made by urban residents is 6.9 miles, while for rural residents it is almost twice as long, 13.6 miles. The average trip length for all trips is 7.6 miles.

Urban residents make 95.4 percent of all U-U-U trips and 96.2 percent of all U-U-U vehicle miles of travel. Residents of the largest urban areas of 1,000,000 and over generate almost half (43.3 percent) of these trips and more than half (55.9 percent) of the vehicle miles of travel. Their average trip length is the longest of all home urban trip lengths: 6.9 miles. When it comes to intercity trips (U-R-U), more than one-third (35.1 percent) of all trips and the largest percent of vehicle miles (28.3) are made by residents in urban areas of under 50,000. The average trip length is 37.8 miles. Residents of urban areas of 1,000,000 and over are second in intercity tripmaking (18.4 percent of all trips and 25.4 percent of vehicle miles of travel), with an average trip length of 64.9 miles. The average trip length for all U-R-U trips is 46.9 miles.

The greatest percent of U-R trips (68.9) and vehicle miles of travel (65.9) is made by residents of rural areas; the average trip length is 18.6 miles. Among the urban areas, the greatest percent of U-R trips (15.4 percent) and vehicle miles of travel (11.9 percent) are made by residents of the smallest urban areas (under 50,000). The average trip length is 15.1 miles--4.4 miles less than the average for all U-R trips. Evidently, these are "return home" portions of R-U trips.

b. Trips Originating in Rural Areas

Approximately 92.9 percent of trips originating in rural areas and 90.6 percent of the miles are made by rural residents. Their average trip length is 8.9 miles. As expected, almost all R-R-R trips are made by rural residents and average 6.0 miles in trip length.

For R-U-R trips, rural residents make 90.5 percent of all trips, travel 91.8 percent of the vehicle miles and average 29.1 miles for each trip. The longest trip length of 39.3 miles is made by residents of urban areas from 50,000-199,999. The shortest trip length of 7.9 miles is made by residents from the smallest urban areas (under 50,000). The average trip length of all R-U-R trips is 28.6 miles.

Approximately 71.6 percent of all R-U trips and 71.0 percent of vehicle miles of travel are made by rural residents; the average trip length is 19.3 miles. Of the remaining 28.4 percent of R-U trips, more than half (14.5 percent) of the trips and 10.7 percent of the vehicle miles are made by residents of the smallest urban areas (under 50,000) with an average trip length of 14.3 miles. The average trip length is 19.4 miles for all R-U trips. Again, it is important to note that all trips are one-way and that these trips must be the "return home" portions of U-R trips.

2. By Place of Residence of Traveler

Table 11 indicates that approximately 73.5 percent of all trips and 68.7 percent of all vehicle miles of travel (sum of trip types U-U-U plus U-R-U plus U-R respectively) originate in urban areas and 26.5 percent of all trips and 31.3 percent of all vehicle miles (sum of trip types R-R-R plus R-U-R plus R-U respectively) originate in rural areas.

Trips originating in urban areas account for 97.6 percent of the total trips and 93.5 percent of the total vehicle miles of travel made by urban residents. Data indicate that, as the size of the urban area increases, the percent of urban trips and vehicle miles of travel made by urban residents to total trips and travel increases, as does the average trip length. For example, residents of the smallest urban areas (5,000-49,999) make 93.6 percent of their total trips and 86.1 percent of their total vehicle miles for trips originating in urban areas. The average trip length is 5.9 miles. For residents of the largest urban areas (1,000,000 and over) it increases to 99.0 percent and 96.5 percent, respectively, with an average trip length of 7.9 miles.

The percent of trips and vehicle miles of travel to total trips and travel, which remains in the home urban area increases as size of urban area increases from 81.2 percent of total trips (for urban areas from 5,000-49,999) to 96.8 percent (for urban areas of 1,000,000 and over). Travel increases from 35.4 percent to 82.2 percent, respectively. For all other urban-based trips: U-R-U and U-R, residents in the smallest urban areas (under 50,000) make the largest percent of trips and travel, while residents of the largest urban areas make the smallest percent of trips and travel. Trip length, however, generally shows the reverse trend.

Table 11. Percent of Trips, Vehicle Miles of Travel and Average Trip Length in Private Modes^{1/} by Place of Residence of Traveler and Location of Travel by Trip Type

Place of Residence of Traveler	Location of Travel by Trip Type								Total
	Trips Originating in Urban Areas				Trips Originating in Rural Areas				
	U-U-U	U-R-U	U-R	Subtotal	R-R-R	R-U-R	R-U	Subtotal	
Trips									
Urban Area Size									
5,000-49,999	81.2	6.0	6.4	93.6	0.1	0.2	6.1	6.4	100.0
50,000-199,999	90.6	4.0	2.6	97.2	0.0	0.2	2.4	2.8	100.0
200,000-999,999	94.4	2.2	1.8	98.4	0.0	0.1	1.5	1.6	100.0
1,000,000 or Over	96.8	1.3	0.9	99.0	0.0	0.1	0.9	1.0	100.0
Subtotal	92.4	2.8	2.4	97.6	0.0	0.1	2.2	2.4	100.0
Rural	9.6	0.7	11.4	21.7	64.3	2.1	11.9	78.3	100.0
Total	66.1	2.2	5.2	73.5	20.5	0.7	5.3	26.5	100.0 ^{2/}

Vehicle Miles of Travel

Urban Area Size									
5,000-49,999	35.4	35.7	15.0	86.1	0.0	0.2	13.7	13.9	100.0
50,000-199,999	56.2	25.2	9.1	90.5	0.0	1.0	8.5	9.5	100.0
200,000-999,999	70.0	16.1	7.7	93.8	0.0	0.2	6.0	6.2	100.0
1,000,000 or Over	82.2	10.8	3.5	96.5	0.0	0.3	3.2	3.5	100.0
Subtotal	68.7	17.8	7.0	93.5	0.0	0.3	6.2	6.5	100.0
Rural	4.3	4.3	21.2	29.8	41.1	6.1	23.0	70.2	100.0
Total	43.6	12.5	12.6	68.7	16.1	2.6	12.6	31.3	100.0 ^{3/}

Average Trip Length (Miles)

Urban Area Size									
5,000-49,999	2.8	37.8	15.1	5.9	2.6	7.9	14.3	13.9	6.4
50,000-199,999	3.8	37.9	20.9	5.7	0.0	39.8	20.8	21.9	6.1
200,000-999,999	5.2	51.6	30.9	6.7	0.0	17.1	27.2	27.2	7.1
1,000,000 or Over	6.9	64.9	30.0	7.9	0.8	32.6	28.2	27.3	8.1
Subtotal	5.4	46.0	21.3	6.9	1.7	24.6	19.9	21.0	7.2
Rural	4.4	53.6	18.6	13.6	6.0	29.1	19.3	8.9	10.0
Total	5.3	46.9	19.5	7.6	6.0	28.6	19.4	9.6	8.1

^{1/} Includes automobile, vanbus/minibus, pickup truck, other van, other truck (personal use), motorcycle, self-contained recreation vehicle, taxi (personal use) and moped.

^{2/} 110,191,983,000 trips

^{3/} 1,045,674,530,000 vehicle miles of travel

Rural residents account for 78.3 percent of all trips and 70.2 percent of all vehicle miles which originate in rural areas and have a slightly shorter trip length of 8.9 miles. Of the 78.3 percent of trips made by rural residents, R-R-R trips (64.3 percent) and R-U trips (11.9 percent) total 76.2 percent, while R-U-R comprise only 2.1 percent. Of the 70.2 percent of the vehicle miles traveled by rural residents, the percent of miles traveled for R-R-R trips (41.1) and R-U trips (23.0) comprise 64.1 percent, with miles traveled for R-U-R trips comprising only 6.1 percent. The remaining 11.9 percent of all trips and 23.0 percent of vehicle miles are traveled for trips ending in urban areas. The average trip length for all rural-based trips is 8.9 miles.

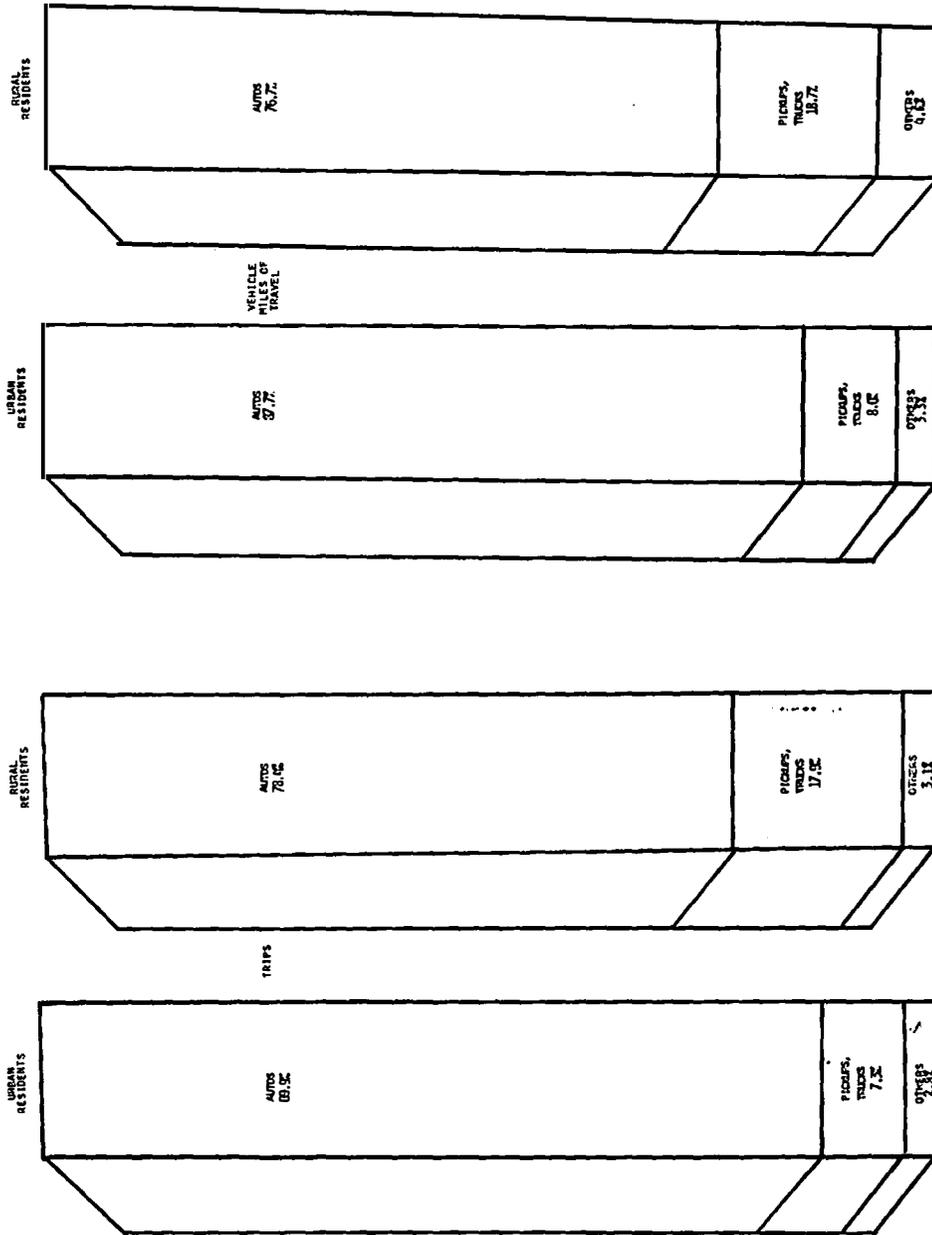
E. Distribution of Trips, Vehicle Miles of Travel and Average Trip Length by Mode of Transportation Used

I. By Place of Residence of Traveler

Table 12 indicates that the automobile continues to be the major mode of transportation, regardless of place of residence of traveler. For all urban and rural areas combined, 86.2 percent of all trips and 84.0 percent of total vehicle miles of travel are made by automobile. The second most popular mode of private transportation is the pickup truck with 10.7 percent of all trips and 12.2 percent of all vehicle miles of travel. Together, these two private modes account for 96.9 percent of all trips and 96.2 percent of all vehicle miles of travel (see Figure 2). The average trip length for each of these modes is 7.9 and 9.3 miles, respectively.

As the size of the urban area increases, the percent of trips made by automobile increases; the same is true for vehicle miles of travel. Trip length, except for a minor decrease made by urban residents of 50,000-199,999 also increases with increasing urban area size. Specifically, of all trips made by residents in urban areas of 5,000-49,999, 85.6 percent are made by auto which generate 83.1 percent of vehicle miles of travel; the average automobile trip length is 6.2 miles. On the other hand, 91.9 percent of trips are made by automobile by residents of the largest urban areas of 1,000,000 and over; these trips generate 91.2 percent of

FIGURE 2. PERCENT OF TRIPS AND VEHICLE MILES OF TRAVEL FOR SELECTED MODES// BY PLACE OF RESIDENCE OF TRAVELER



// "OTHERS" INCLUDE VARIOUS/MINIBUS, OTHER TRUCK, MOTORCYCLE, RECREATION VEHICLE AND PERSONAL TAXI.

**Table 12. Percent of Trips, Vehicle Miles of Travel
and Average Trip Length for Selected Modes of Transportation^{1/}
and Place of Residence of Traveler^{2/}**

Place of Residence of Traveler	Mode of Transportation Used			
	Auto	Pickup Trucks	All Others	Total
	Trips			
Urban Area Size				
5,000-49,999	85.6	11.6	2.8	100.0
50,000-199,999	88.7	8.7	2.6	100.0
200,000-999,999	90.1	6.6	3.3	100.0
1,000,000 or Over	91.9	5.4	2.7	100.0
Subtotal	89.9	7.3	2.8	100.0
Rural	78.4	17.9	3.7	100.0
Average	86.2	10.7	3.1	100.0

Vehicle Miles of Travel

Urban Area Size				
5,000-49,999	83.1	12.4	4.5	100.0
50,000-199,999	87.5	9.2	3.3	100.0
200,000-999,999	88.2	8.5	3.3	100.0
1,000,000 or Over	91.2	6.1	2.3	100.0
Subtotal	88.7	8.0	3.3	100.0
Rural	76.7	18.7	4.6	100.0
Average	84.0	12.2	3.8	100.0

Average Trip Length (Miles)

Urban Area Size			
5,000-49,999	6.2	6.8	6.4
50,000-199,999	6.0	6.4	6.1
200,000-999,999	6.9	9.0	7.1
1,000,000 or Over	8.0	9.2	8.1
Subtotal	7.2	8.0	7.2
Rural	9.7	10.4	10.0
Total	7.9	9.3	8.1

^{1/} Includes vanbus/minibus, other truck, motorcycle, recreation vehicle and personal taxi.

^{2/} See Table A-6 of Appendix A for more detailed information.

total vehicle miles of travel with an average vehicle trip length of 8.0 miles. For all urban areas combined, 89.9 percent of all trips are made by automobile which generate 88.7 percent of all vehicle miles of travel, with an average trip length of 7.2 miles.

The automobile is also the major mode used by rural residents. Approximately 78.4 percent of all vehicle trips made by rural residents are made by automobile. These trips generate 76.7 percent of vehicle miles of travel with an average trip length of 9.7 miles.

The percent of trips and vehicle miles of travel made by urban residents in pickup truck decreases as size of the urban area increases; average trip length shows no particular pattern. Again, residents of the smallest urban areas under 50,000 make 11.6 percent of trips and 12.4 percent of vehicle miles of travel by pickup truck; the average vehicle trip length is 6.8 miles. In contrast, residents of the largest urban areas (1,000,000 and over) make only 5.4 percent of their trips and 6.1 percent of vehicle miles of travel by pickup, with an average vehicle trip length of 9.2 miles. For urban residents, 7.3 percent of trips and 8.0 percent of vehicle miles are made by pickup truck; the average trip length is 8.0 miles.

Rural residents make 17.9 percent of their trips in a pickup, traveled 18.7 percent of their miles in a pickup, with an average trip length of 10.4 miles.

2. By Trip Type

As shown in Table 13, 70.7 percent of all vehicle miles are traveled for trips which originate in urban areas. Of the 70.7 percent, more than half, or 43.2 percent of the vehicle miles remain entirely in an urban area (U-U-U), 14.3 percent are miles traveled for U-R-U (intercity) trips and 13.2 percent are miles traveled for U-R trips.

Approximately 73.4 percent of miles traveled by automobile are for trips which originate in urban areas, of which 46.1 percent remain entirely in an urban area. More than half of the vehicle miles traveled by all other modes are for trips originating in urban areas. Of all modes, travel by pickup truck is the smallest (52.7 percent of miles) for trips originating in urban areas. As a matter of fact,

**Table 13. Distribution of Vehicle Miles of Travel
in Private Household Modes by Location of Travel by Trip Type**

Private Household Modes	Location of Travel by Trip Type							
	Trips Originating in Urban Areas			Trips Originating in Rural Areas				
	U-U-U	U-R-U	U-R	Subtotal	R-R-R	R-U-R	R-U	Subtotal
	By Trip Type							
Auto	46.1	14.9	12.4	73.4	12.0	2.4	12.2	26.6
Vanbus/Minibus	36.4	18.7	8.6	63.7	13.3	7.4	15.6	36.3
Pickup	26.2	7.4	19.1	52.7	25.4	5.0	16.9	47.3
Other Truck, Personal	23.3	11.9	24.6	59.8	21.6	1.9	16.7	40.2
Motorcycle	41.3	8.5	12.1	61.9	21.6	2.7	13.8	38.1
Recreational Vehicle	12.2	45.7	7.1	65.0	1.1	10.5	23.4	35.0
Taxi	57.3	0.0	10.7	68.0	11.6	0.0	20.4	32.0
Total	43.2	14.3	13.2	70.7	13.6	2.8	12.9	29.3
	By Mode							
Auto	90.2	88.6	79.9	88.0	74.5	71.8	79.8	76.6
Vanbus/Minibus	1.7	2.6	1.3	1.8	2.2	5.2	2.4	2.5
Pickup	6.7	5.8	16.2	8.3	20.9	19.7	14.7	18.0
Other Truck, Personal	0.4	0.7	1.5	0.7	1.1	0.5	1.1	1.1
Motorcycle	0.8	0.5	0.8	0.7	1.3	0.7	0.9	1.1
Recreational Vehicle	0.2	1.8	0.3	0.5	*	2.1	1.0	0.7
Taxi	*	*	*	*	*	0.0	0.1	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

^{1/}1,045,674,530,000 vehicle miles of travel

* less than 0.1 percent

while travel by all modes is 70.7 percent urban and 29.3 percent rural, travel by pickup is 52.7 percent urban and 47.3 percent rural.

Approximately 29.3 percent of the vehicle miles are traveled for trips which originate in rural areas. Of the 29.3 percent, 13.6 percent remain in rural areas (R-R-R), 12.9 percent are traveled from a rural area into an urban area and only 2.8 percent travel through an urban area between two rural areas.

Almost half (47.3 percent) of the miles traveled in a pickup are for trips originating in rural areas, of which approximately half (25.4 percent) remain in rural areas. For all other modes, the distribution of mileages for trips originating in rural areas ranges from a low of 26.6 percent of total miles traveled in an automobile to 47.3 percent of the miles traveled in pickup. Approximately 35.0 percent of the vehicle miles traveled in a recreation vehicle are for trips originating in rural areas and only 1.1 percent of these miles traveled remain in a rural area, (R-R-R) 10.5 percent are (R-U-R) trips and 23.4 percent are for R-U trips.

3. By Mode of Transportation Used

As shown in the bottom half of Table 13, the automobile is the major mode of transportation used, regardless of where the trips originate. Approximately 88.0 percent of miles traveled for trips originating in urban areas are made by automobile, followed by the pickup. Together, these two modes account for 91.6 percent of vehicle owned and generate 96.3 percent of the vehicle miles traveled for trips originating in urban areas.

The same modal choice is observed for trips originating in rural areas. The automobile is also the major mode of transportation used (76.6 percent) followed by the pickup (18.0 percent). These two modes account for 94.6 percent of miles traveled for trips originating in rural areas.

F. Comparison of Estimated Values vs. Mapped Values for Selected Trip Codes

As noted in the description of the mapping procedure, Appendix B, each interviewer was provided with a map of the area with urban boundaries delineated,

in which the sample household was located. Based on the trip route information given by the respondents, the interviewer determined in which of the following five categories the trip should be coded:

- Trip code 1: trip entirely on the map and wholly within an urban area;
- Trip code 2: trip entirely on the map and wholly within a rural area;
- Trip code 3: the trip was on the map and crossed the urban/rural boundary marked on the map;
- Trip code 4: the trip was partially on the map and partially off the map; and
- Trip code 5: the trip was entirely off the map.

The trips for which partial information was missing were coded 89; those trips for which complete information was missing were coded 99.

Only code 3 and code 4 trips were mapped during the interview. Although code 5 trips were not mapped during the interview, these trips were later traced on maps in the office based on routing information obtained during the interview.

A distribution of trips by trip code is shown below:

<u>Trip Code</u>	<u>Percent</u>
1	62.2
2	17.0
3	10.5
4	4.2
5	3.6
89,99	<u>2.5</u>
	100.0

Codes 3 and 4 trips, mapped during the interview, and code 5 trips, mapped later in the office, totaled 18.3 percent of total trips (77,548) recorded on a designated

travel day. The mapped distances for these trips were compared with the respondent estimates or perceived distances. The mapped routings for code 3, 4, and 5 trips were also measured in the office to determine the urban and rural components of the total trip.

Figure 3 indicates the percent difference between estimated and mapped values by trip length and trip type.

Table 14 presents a comparison of mapped versus estimated travel for trips which were coded 3, 4, and 5.

1. By Trip Length Class

The top half of Table 14 shows the percent of trips and percent difference between estimated and mapped travel by trip length class within each trip code.

For trips of less than 10 miles, which represented 43.0 percent of all trips, estimated travel exceeded the mapped travel by 3.3 percent.

For trips from 11-20 miles, which represented 27.6 percent of all trips, estimated travel was underestimated by 0.1 percent. This difference may be due to the nature of the sample.

For trips from 21-34 miles, which represented 15.5 percent of all trips, the respondents' estimates of travel were 1.2 percent less than the mapped distances.

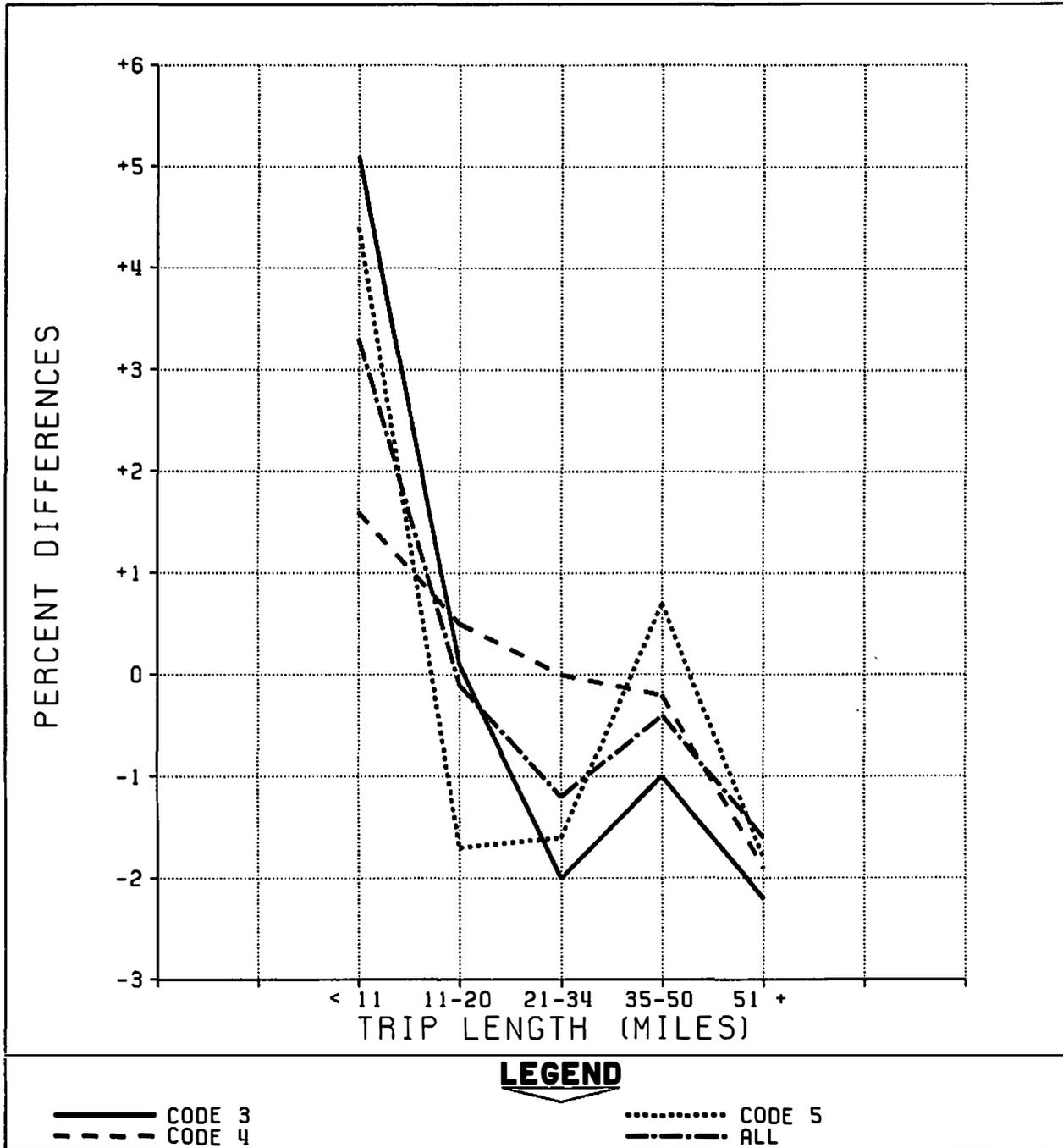
For trips from 35-50 miles, which represented 6.3 percent of all trips, estimated travel was underestimated by less than 1 percent (0.4).

For trips greater than 50 miles, which represented 7.6 percent of all trips, the estimated or perceived trip distance was 1.6 percent less than the mapped distance.

2. Within Each Trip Length Class

The bottom half of Table 14 indicates the percent of trips and the percent difference between the mapped and estimated travel within each trip length

**FIGURE 3. PERCENT DIFFERENCE
BETWEEN ESTIMATED AND MAPPED VALUES
BY TRIP LENGTH**



category by trip code. Regardless of trip length, more than half (59.7 percent) of the trips were code 3 trips, 22.4 percent were code 4 trips and the remaining 17.9 percent were code 5 trips. The data also indicate that more than half of all trips in each trip length class under 35 miles were code 3 trips, while trips greater than 35 miles were predominantly code 4 trips.

Trips of less than 10 miles which were coded 3, were underestimated by 4.4 percent; those coded 4 were overestimated by 3.5 percent, while those coded 5 were overestimated by almost 1 percent (0.9).

Trips from 11-20 miles, which were coded 3, were underestimated by 1.4 percent, code 4 trips overestimated by 1.4 percent and code 5 trips showed no difference between estimated and mapped travel.

In the 21-34 miles category, code 3 trips which totaled over 60 percent (60.7) in this particular class, the estimated travel was underestimated by 2.2 percent.

In the 35-50 miles trip category, code 4 trips represented more than half (55.9 percent) of all trips in that trip length category and the estimated travel exceeded the mapped travel by 1.3 percent.

In the 51 miles or more trip length category, more than three-fourths (76.7 percent) of all trips were coded 4, and the respondents' estimates exceeded the mapped distances by almost 1 percent (0.9).

Within each trip length class, it appears that the estimated travel exceeded the mapped travel for code 4 and 5 trips, while the reverse was true for code 3 trips.

Table 14. Comparison of Trip Lengths: Estimated Vs. Mapped Values for Selected Trip Codes

By Trip Length Class

Trip Length	Percent of Trips	CODE 3 Percent VMT			Percent of Trips	CODE 4 Percent VMT		
		Est.	Mapped	Diff .		Est.	Mapped	Diff .
10 Miles or less	45.2	23.2	18.1	+5.1	15.5	3.6	2.0	+1.6
11-20 Miles	33.8	34.5	34.4	+0.1	20.0	7.0	6.5	+0.5
21-34 Miles	15.7	26.6	28.6	-2.0	22.6	13.6	13.6	0.0
35-50 Miles	3.8	9.9	10.9	-1.0	15.9	14.5	14.7	-0.2
51 Miles or More	1.5	5.8	8.0	-2.2	26.0	61.3	63.2	-1.9
All	100.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0

Trip Length	Percent of Trips	CODE 5			Percent of Trips	All Trips		
		Est.	Mapped	Diff .		Est.	Mapped	Diff .
10 Miles or less	70.1	20.7	16.3	+4.4	43.0	13.4	10.1	+3.3
11-20 Miles	16.5	15.6	17.3	-1.7	27.6	19.0	19.1	-0.1
21-34 Miles	5.9	10.7	12.3	-1.6	15.5	18.4	19.6	-1.2
35-50 Miles	2.8	9.7	9.0	+0.7	6.3	12.1	12.5	-0.4
51 Miles or More	4.7	43.3	45.1	-1.8	7.6	37.1	38.7	-1.6
All	100.0	100.0	100.0	0.0	100.0	100.0	100.0	0.0

Within Each Trip Length Class

Trip Length	Percent of Trips	CODE 3 Percent VMT			Percent of Trips	CODE 4 Percent VMT		
		Est.	Mapped	Diff .		Est.	Mapped	Diff .
10 Miles or less	62.7	68.8	73.2	-4.4	8.1	12.8	9.3	+3.5
11-20 Miles	73.1	72.4	73.8	-1.4	16.2	17.8	16.4	+1.4
21-34 Miles	60.7	57.6	59.8	-2.2	32.5	35.5	33.4	+2.1
35-50 Miles	36.2	32.6	35.6	-3.0	55.9	57.9	56.6	+1.3
51 Miles or More	12.2	6.2	8.4	-2.2	76.7	79.8	78.9	+0.9
All	59.7	39.8	40.9	-1.1	22.4	48.3	48.2	0.1

Trip Length	Percent of Trips	CODE 5			Percent of Trips	All Trips		
		Est.	Mapped	Diff .		Est.	Mapped	Diff .
10 Miles or less	29.2	18.4	17.5	+0.9	100.0	100.0	100.0	
11-20 Miles	10.7	9.8	9.8	0.0	100.0	100.0	100.0	
21-34 Miles	6.8	6.9	6.8	+0.1	100.0	100.0	100.0	
35-50 Miles	7.9	9.5	7.8	+1.7	100.0	100.0	100.0	
51 Miles or More	11.1	14.0	12.7	+1.3	100.0	100.0	100.0	
All	17.9	11.9	10.9	+1.0	100.0	100.0	100.0	

category by trip code. Regardless of trip length, more than half (59.7 percent) of the trips were code 3 trips, 22.4 percent were code 4 trips and the remaining 17.9 percent were code 5 trips. The data also indicate that more than half of all trips in each trip length class under 35 miles were code 3 trips, while trips greater than 35 miles were predominantly code 4 trips.

Trips of less than 10 miles which were coded 3, were underestimated by 4.4 percent; those coded 4 were overestimated by 3.5 percent, while those coded 5 were overestimated by almost 1 percent (0.9).

Trips from 11-20 miles, which were coded 3, were underestimated by 1.4 percent, code 4 trips overestimated by 1.4 percent and code 5 trips showed no difference between estimated and mapped travel.

In the 21-34 miles category, code 3 trips which totaled over 60 percent (60.7) in this particular class, the estimated travel was underestimated by 2.2 percent.

In the 35-50 miles trip category, code 4 trips represented more than half (55.9 percent) of all trips in that trip length category and the estimated travel exceeded the mapped travel by 1.3 percent.

In the 51 miles or more trip length category, more than three-fourths (76.7 percent) of all trips were coded 4, and the respondents' estimates exceeded the mapped distances by almost 1 percent (0.9).

Within each trip length class, it appears that the estimated travel exceeded the mapped travel for codes 4 and 5 trips, while the reverse was true for code 3 trips.

IV. Summary

Approximately 59.5 percent of all vehicle miles of travel are generated in urban areas and 40.5 percent are generated in rural areas. The 59.5 percent of vehicle miles traveled in urban areas includes approximately 47.6 percent travel by urban residents that remain in the home urban area and 11.9 percent that is generated in urban areas by nonresidents.

As the size of the urban areas increases, the percent of travel by residents remaining within the area increases from 54.2 percent in urban areas under 50,000 to 88.6 percent in urban areas of 1,000,000 and over, and the percent of travel by nonresidents decreases.

Approximately two-thirds of all vehicle miles traveled for earning a living and civic, educational and religious trip purposes are generated in urban areas and one-third in rural areas. For both trip purposes, urban residents travel more than 80 percent (82.4 and 85.9, respectively) of their total miles of travel within their home urban areas. Rural residents travel three-fourths of their travel for these purposes within rural areas and one-fourth in urban areas.

Approximately three-fifths (58.7 percent) of all vehicle miles for family and personal business and 52.5 percent of vehicle miles for social and recreational trip purposes are traveled in urban areas, with approximately 46.2 and 38.3 percent respectively remaining within the home urban area. The percent of trips and travel made for social and recreational purposes that remains in the home urban area is the lowest of all trip purposes, indicating a longer trip length.

As the size of the urban area increases, the percent of travel by residents that remains inside the home urban area increases. The percent of miles traveled by nonresidents outside the home urban areas in other urban areas decreases. Approximately 70.3 percent of all trips are made by urban residents and the remaining 29.7 percent are made by rural residents.

The average trip length for urban residents is 7.2 miles as against 10.0 miles for rural residents and 8.1 miles for all residents.

Urban residents travel 75.3 percent of their total vehicle miles within the home urban area and 5.3 percent in other urban areas for a total of 80.6 percent in urban areas, and 19.4 percent in rural areas. Rural residents travel 76.7 percent of their total vehicle miles within rural areas and 23.3 percent in urban areas.

On a nationwide basis, 63.2 percent of total vehicle miles are generated by residents of urban areas while 36.8 percent are generated by residents of rural areas.

Approximately 73.5 percent of all trips and 68.7 percent of all vehicle miles of travel originate in urban areas, and 23.9 percent of all trips and 28.4 percent of all vehicle miles of travel originate in rural areas. As the size of the urban area increases, the percent of urban trips made by urban residents increases, vehicle miles increase and the average trip length increases. Residents living in urban areas of 1,000,000 and over make the greatest percent of home urban area trips and vehicle miles of travel. For all other trips originating in urban areas, residents in the smallest urban areas make the largest percent of trips and travel, while residents of the largest urban areas make the smallest percent of trips and travel.

The distribution of vehicle miles traveled by trip purpose indicates that from 55.4 to 70.0 percent of vehicle miles traveled are for trips originating in urban areas, with more than half (from 50.1 to 51.9 percent) remaining entirely in an urban area.

This is true for earning a living, family and personal business and civic, educational and religious trip purposes. The pattern varies for social and recreational trips. While 73.5 percent of the vehicle miles is traveled for trips originating in urban areas, less than half, 30.7 percent, remain entirely in an urban area and the percent of intercity trips (U-R-U) increases to 21.8 percent, approximately 7.5 percent above the average of 14.3 percent for all trips. In addition, while the distribution of mileage for the three previously mentioned trip purposes is between 4.6 and 7.4 percent for U-R trips as a percent of total trips in this category, it increases to 21.0 percent for social and recreational trips. This again indicates that people are willing to travel longer distances for social and recreational purposes.

Residents of urban areas make approximately 90.7 percent of all trips and 83.1 percent of all vehicle miles of travel for trips originating in urban areas. Residents of the largest urban areas (1,000,000 and over) make almost half the trips (40.0

percent) and travel (41.6 percent). Rural residents make 9.3 percent of all trips and 16.9 percent of all vehicle miles of travel for trips originating in urban areas.

Residents of the smallest urban areas of under 50,000 make more than one-third (35.1 percent) of all U-R-U (intercity) trips and travel 28.3 percent of the vehicle miles with an average trip length of 37.8 miles. Residents of the largest urban areas of 1,000,000 and over are second in intercity tripmaking (18.4 percent) and travel 25.4 percent of the vehicle miles with a longer trip length of 64.9 miles. The average intercity trip length is 46.9 miles.

Residents of rural areas make 92.9 percent of trips originating in rural areas and travel 90.6 percent of the miles with an average trip length of 8.9 miles. Rural residents make 90.5 percent of all R-U-R trips, travel 91.8 percent of the vehicle miles and average 29.1 miles for each R-U-R trip.

The automobile continues to be the major mode of transportation, regardless of place of residence of traveler. For all urban and rural areas combined, 86.2 percent of all trips and 84.0 percent of total vehicle miles are made by automobile. The second most popular mode of private transportation is the pickup truck, accounting for 10.7 percent of all trips and 12.2 percent of all vehicle miles of travel. Together these two private modes account for 96.9 percent of all trips and 96.2 percent of all vehicle miles of travel. The average trip length is 7.9 and 9.3 miles, respectively.

Approximately 73.4 percent of the miles traveled by automobile are for trips that originate in urban areas, of which 46.1 percent remain entirely in an urban area. Interestingly, approximately 47.3 percent of the miles traveled in a pickup are for trips originating in rural areas, of which 25.4 percent remain in the rural areas.

As the size of the urban area increases, the percent of trips and vehicle miles of travel by automobile increases. The automobile is also the major mode of rural residents; although residents of rural areas utilize the pickup truck to a greater extent.

For trips of 10 miles or less, people tend to overestimate their trip distances, while for trips longer than 10 miles, people tend to underestimate their trip distances.

Appendices

Appendix A - Additional Tables

- Table A-1. Percent of Trips and Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel for All Trip Purposes.
- Table A-2. Percent of Trips and Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel for Earning a Living.
- Table A-3. Percent of Trips and Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel for Civic, Education and Religious
- Table A-4. Percent of Trips and Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel for Family and Personal Business.
- Table A-5. Percent of Trips and Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel for Social and Recreation.
- Table A-6. Percent of Trips and Vehicle Miles of Travel by Place of Residence of Traveler and Type of Household Vehicle Used.

Appendix B - Survey Procedures and Data Processing

Appendix C - Glossary of NPTS Terms

Appendix D - Form NTS-2A Detailed Personal Interview (Section VII)

Appendix E - NPTS Public Use Tape Request

1950-1951

1952-1953

1954-1955

1956-1957

1958-1959

1960-1961

1962-1963

1964-1965

1966-1967

Table A-1. Percent of Trips and Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel for All Trip Purposes

Place of Residence	Within Percent of Trips	Location of Vehicle Miles of Travel			Total
		Home Urban Area	Other Urban Areas	Rural	
Within Urban Area Size Group					
Urban Area Size					
5,000-49,999	12.6	41.6	10.4	48.0	100.0
50,000-199,999	9.8	65.9	7.3	26.8	100.0
200,000-999,999	16.9	78.0	4.6	17.4	100.0
1,000,000 and Over	31.0	87.5	3.4	9.1	100.0
Subtotal	70.3	75.3	5.3	19.4	100.0
Rural	29.7	0.0	23.3	76.7	100.0
Total	100.0 ^{1/}	47.6	11.9	40.5	100.0

By Urban Area Size Group					
Urban Area Size					
5,000-49,999	12.6	8.9	8.9	12.1	10.2
50,000-199,999	9.8	10.3	4.5	4.9	7.4
200,000-999,999	16.9	24.2	5.7	6.4	14.8
1,000,000 and Over	31.0	56.6	8.9	6.9	30.8
Subtotal	70.3	100.0	28.0	30.3	63.2
Rural	29.7	0.0	72.0	69.7	36.8
Total	100.0	100.0	100.0	100.0	100.0

^{1/}98,490,126,000 trips

Table A-2. Percent of Trips and Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel for Earning a Living

Place of Residence	Within Percent of Trips	Location of Vehicle Miles of Travel			Total
		Home Urban Area	Other Urban Areas	Rural	
Within Urban Area Size Group					
Urban Area Size					
5,000-49,999	12.8	47.5	11.2	41.3	100.0
50,000-199,999	9.6	69.9	6.0	24.1	100.0
200,000-999,999	17.3	87.4	3.2	9.4	100.0
1,000,000 and Over	31.7	91.7	3.2	5.1	100.0
Subtotal	71.4	82.4	4.6	13.0	100.0
Rural	28.6	0.0	25.0	75.0	100.0
Total	100.0 ^{1/}	54.7	11.5	33.8	100.0

By Urban Area Size Group					
Urban Area Size					
5,000-49,999	12.8	7.9	9.0	11.2	9.1
50,000-199,999	9.6	9.0	3.7	5.0	7.1
200,000-999,999	17.3	23.5	4.1	4.1	14.7
1,000,000 and Over	31.7	59.6	10.1	5.3	35.6
Subtotal	71.4	100.0	26.9	25.6	66.5
Rural	28.6	0.0	73.1	74.4	33.5
Total	100.0	100.0	100.0	100.0	100.0

^{1/}20,200,523,000 trips

Table A-3. Percent of Trips and Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel for Civic, Education and Religious

Place of Residence	Within Percent of Trips	Location of Vehicle Miles of Travel			Total
		Home Urban Area	Other Urban Areas	Rural	
Within Urban Area Size Group					
Urban Area Size					
5,000-49,999	13.4	50.8	9.7	39.5	100.0
50,000-199,999	9.8	84.8	4.6	10.6	100.0
200,000-999,999	18.4	92.8	1.9	5.3	100.0
1,000,000 and Over	30.4	94.9	1.3	3.8	100.0
Subtotal	72.0	85.9	3.2	10.9	100.0
Rural	28.0	0.0	24.6	75.4	100.0
Total	100.0	57.4	10.3	32.3	100.0

By Urban Area Size Group					
Urban Area Size					
5,000-49,999	13.4	9.9	10.5	13.8	11.2
50,000-199,999	9.8	11.4	3.5	2.5	7.7
200,000-999,999	18.4	25.6	3.0	2.6	15.9
1,000,000 and Over	30.4	53.1	4.0	3.7	32.1
Subtotal	72.0	100.0	21.0	22.6	66.9
Rural	28.0	0.0	79.0	77.4	33.1
Total	100.0	100.0	100.0	100.0	100.0

1/3,647,379,000 trips

Table A-4. Percent of Trips and Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel for Family and Personal Business

Place of Residence	Within Percent of Trips	Location of Vehicle Miles of Travel			Total
		Home Urban Area	Other Urban Areas	Rural	
Within Urban Area Size Group					
Urban Area Size					
5,000-49,999	12.4	39.4	9.0	51.6	100.0
50,000-199,999	9.5	77.6	4.4	18.0	100.0
200,000-999,999	16.0	79.7	4.3	16.0	100.0
1,000,000 and Over	30.8	93.1	1.9	5.0	100.0
Subtotal	68.7	77.4	4.2	18.4	100.0
Rural	31.3	0.0	24.8	75.2	100.0
Total	100.0 ^{1/}	46.2	12.5	41.3	100.0

By Urban Area Size Group

Urban Area Size					
5,000-49,999	12.4	10.0	8.6	14.9	11.8
50,000-199,999	9.5	11.0	2.3	3.0	6.6
200,000-999,999	16.0	24.6	5.0	5.5	14.3
1,000,000 and Over	30.8	54.4	4.1	3.2	27.0
Subtotal	68.7	100.0	20.0	26.6	59.7
Rural	31.3	0.0	80.0	73.4	40.3
Total	100.0	100.0	100.0	100.0	100.0

^{1/} 17,136,522,000 trips

Table A-5. Percent of Trips and Vehicle Miles of Travel by Private Modes by Place of Residence of Traveler and Location of Travel for Social and Recreation

Place of Residence	Within Percent of Trips	Location of Vehicle Miles of Travel			Total
		Home Urban Area	Other Urban Areas	Rural	
Within Urban Area Size Group					
Urban Area Size					
5,000-49,999	12.5	37.2	8.6	54.2	100.0
50,000-199,999	9.9	56.5	10.2	33.3	100.0
200,000-999,999	16.2	61.9	7.3	30.8	100.0
1,000,000 and Over	28.6	74.7	6.2	19.1	100.0
Subtotal	67.2	63.2	7.4	29.4	100.0
Rural	32.8	0.0	24.8	75.2	100.0
Total	100.0 ^{1/}	38.3	14.2	47.5	100.0

By Urban Area Size Group					
Urban Area Size					
5,000-49,999	12.5	9.3	5.8	10.9	9.6
50,000-199,999	9.9	11.0	5.3	5.2	7.5
200,000-999,999	16.2	25.3	8.0	10.1	15.6
1,000,000 and Over	28.6	54.4	12.2	11.3	27.8
Subtotal	67.2	100.0	31.3	37.5	60.5
Rural	32.8	0.0	68.7	62.5	39.5
Total	100.0	100.0	100.0	100.0	100.0

^{1/} 13,454,005,000 trips

**Table A-6. Percent of Trips and Vehicle Miles of Travel
by Place of Residence of Traveler and Type of Household Vehicle**

Place of Residence	Mode of Transportation							Total
	Auto	Van / Minibus	Pickup Truck	Other Truck	Motor-Cycle	Rec. Vehicle	Taxi	
Trips								
Urban Area Size								
5,000-49,999	85.6	1.0	11.6	0.6	1.1	0.1	0.0	100.0
50,000-199,999	88.7	1.6	8.7	0.5	0.3	0.2	0.0	100.0
200,000-999,999	90.1	1.6	6.6	0.7	0.7	0.2	0.1	100.0
1,000,000 and Over	91.9	1.4	5.4	0.3	0.8	0.1	0.1	100.0
Subtotal	89.9	1.4	7.3	0.5	0.7	0.1	0.1	100.0
Outside Urban Areas (Rural)	78.4	1.4	17.9	1.1	1.0	0.1	0.1	100.0
Total	86.2	1.4	10.7	0.6	0.9	0.1	0.1	100.0

Vehicle Miles of Travel

Urban Area Size								
5,000-49,999	83.1	2.8	12.4	1.0	0.7	0.0	0.0	100.0
50,000-199,999	87.5	1.6	9.2	1.1	0.5	0.1	0.0	100.0
200,000-999,999	88.2	1.5	8.5	0.8	0.9	0.1	0.0	100.0
1,000,000 and Over	91.1	1.4	6.1	0.3	0.8	0.2	0.1	100.0
Subtotal	88.8	1.7	8.0	0.6	0.8	0.1	0.0	100.0
Outside Urban Areas (Rural)	76.7	1.6	18.7	1.3	1.2	0.4	0.1	100.0
Total	84.0	1.6	12.2	0.9	0.9	0.3	0.1	100.0

Average Trip Length

Urban Area Size								
5,000-49,999	6.2	17.6	6.8	10.3	4.3	3.3	2.5	6.4
50,000-199,999	6.0	6.8	6.4	13.9	11.1	4.0	0.0	6.1
200,000-999,999	6.9	6.8	9.0	7.6	8.6	6.1	5.4	7.1
1,000,000 and Over	8.0	8.3	9.2	8.2	7.9	14.1	4.5	8.1
Subtotal	7.2	8.8	8.0	9.2	7.3	8.0	4.6	7.2
Outside Urban Areas (Rural)	9.7	11.2	10.4	12.0	11.2	44.6	8.8	10.0
Total	7.9	9.6	9.3	10.6	8.8	17.7	6.8	8.1

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 scope of the National Travel Program. The National Travel Program is part of the 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 the 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 otherwise 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 multistage 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 socio-economic characteristics. From 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 nonself-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 interviewed 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 household was interviewed for trips and travel during a 15-day period.

Mapping Procedure

A unique feature of the 1977 Nationwide Personal Transportation Study was the use of mapping during the home interviews to estimate the amount of travel in urban and rural areas. Section VII of the NTS-2A questionnaire was designed to obtain information on the distribution of travel performed by the tripmaker in a private motorized vehicle so that the rural/urban split of travel could be obtained. A private motorized vehicle was defined to include: automobile, vanbus/minibus, pickup truck/other van, other truck (personal use), and taxi (personal use), motorcycle and self-contained recreation vehicle.

An NTS-2A was completed by the interviewer for each member of the household who made a trip by private motor vehicle on the designated travel day. A map of the area in which the household was located and the urban boundaries delineated, was used to determine the route of travel for each trip. Based on the route information given by the respondent, the interviewer determined in which

of the five categories the trip should be coded. The codes in turn determined whether the trip was/was not to be mapped. The trip codes, descriptions of each trip code, and the action required (i.e., whether or not the trip was to be mapped) follows:

<u>Trip Code</u>	<u>Description</u>	<u>Action Required</u>
1	Entire trip on map and wholly within an urban area.	No mapping required
2	Entire trip on map and wholly within a rural area.	No mapping required
3	Entire trip on map and crossed an urban/rural boundary marked on the map.	Mapping required
4	A portion of the trip was off the map	Mapping required by the respondent. That portion of the trip that was on the map was traced. Where the trip went off the map, the respondent supplied the main routes to point of destination as well as cities and States passed through. The interviewer recorded this information in Columns 70e and 70f of the NTS-2A.
5	Entire trip is off the map	No mapping required. All the information necessary to reconstruct this trip, from point of origin to destination, was completed by the interviewer from

information supplied by the tripmaker and entered in Columns 70e (main routes taken) and 70f (main cities and States passed through) of the NTS-2A.

In addition, for all trips, regardless of the trip code, the interviewer entered the trip distance information in Item 37 (for travel day trips) as supplied by the respondent. The NTS-2A was then sent to the FHWA (DOT) in Washington, D.C. for additional coding, analysis, and for estimating the urban/rural split of travel.

To determine the urban/rural split of travel, the following procedure was used by the FHWA personnel:

1. For trips coded 1 or 2, the respondent's trip mileage estimate was used as the measure of urban or rural travel, since these trips, by their very definition were confined either to all urban (code 1 trips) or all rural (code 2 trips) areas and were not mapped.
2. For trips coded 3, 4, and 5, the respondent's total trip distance estimate did not include the urban/rural split of travel. Therefore, for code 3 trips, the FHWA personnel carefully measured the distances from the routes traced on the map to obtain the urban/rural split of travel. For code 4 trips, the FHWA personnel traced and measured the distances for that portion of the trip that was on the map. Where the trip went off the map, the FHWA reconstructed, traced, and measured the distance for the remainder of the trip from the information supplied in Columns 70e and 70f on the NTS-2A. For code 5 trips, the FHWA personnel followed the same procedures as for that portion of code 4 trips that went off the map. The FHWA personnel then used all the trip data to obtain an estimate of mileage driven through each size of urban and rural area.

In addition to the routing information, certain items were added to the data file by FHWA personnel for each trip shown on the NTS-2A so that an expanded analyses could be made:

Location of Travel

Vehicle miles of travel for code 1 trips (entirely urban) and code 2 trips (entirely rural) as well as the urban and rural segments of travel related to codes 3, 4 and 5 trips were identified as to location according to the following categories:

Rural

Urban

Less than 50,000

50,000-199,999

200,000-999,999

1,000,000 and over

Population Size of Home Urban Area

The population size of the area of residence of the respondent (home urban area) was identified. The following population size categories were used:

<u>Population Size of Home Urban Area</u>	<u>Code</u>
5,000-49,999	1
50,000-199,999	2
200,000-999,999	3
1,000,000 and over	4

Trip Type Codes

A code was assigned to each trip based on the origin of the trip, area(s) passed through and the final destination. The following codes were used:

<u>Code</u>	<u>Definition</u>
1	<p><u>Urban-Urban-Urban (U-U-U)</u></p> <p>An example of this type of trip would be where a respondent began a trip in Washington, D.C., took I-495 past Bethesda, Md., and ended trip in Arlington, Va., passing through all urban areas.</p>
2	<p><u>Rural-Rural-Rural (R-R-R)</u></p> <p>An example of this type of trip would be where a respondent began trip in Spring Arbor Lakes, Mich., took Spring Arbor Rd. through Spring Arbor City (pop. 1,932) and ended trip in Concord (pop. 990) all in Michigan, all rural areas.</p>
3	<p><u>Urban-Rural-Urban (U-R-U)</u></p> <p>An example of this type of trip would be one where respondent took I-75 out of Flint, Mich., passed all rural areas until he/she reached destination in Pontiac, Mich. (part of the Detroit urban area)</p>
4	<p><u>Rural-Urban-Rural (R-U-R)</u></p> <p>An example of this type of trip would be one where respondent began trip in Goodrich, Mich. (pop. 774), took State Rd. out of Goodrich past Davison (part of Flint urban area) to Otisville, Mich. (pop. 724).</p>
5	<p><u>Urban-Rural (U-R)</u></p> <p>An example of this type of trip would be one which respondent began trip in Flint, Mich., took I-69 out of Flint to Bancroft, Mich. (pop. 636).</p>
6	<p><u>Rural-Urban (R-U)</u></p> <p>An example of this type of trip would be one where respondent began trip in Dexter, Mich. (pop. 6702) and took Revi Rd. to Ann Arbor, Mich.</p>

Boundary Crossings

A code was assigned to each trip to identify whether an international boundary crossing was involved. The following codes were used:

<u>Code</u>	<u>Definition</u>
1	No international boundary
2	An international boundary was crossed
3	Trip information incomplete, but limited information indicated an international boundary was <u>not</u> crossed
4	Trip information incomplete, but limited information indicated an international boundary <u>was</u> crossed

Data Processing

The major steps performed by the Bureau of the Census for the 1977 NPTS included clerical editing and coding of the NTS-2 Questionnaire, (Sections I-VI); the NTS-2A (Section VII) was edited and coded by the FHWA DOT personnel; full transcription of the data to magnetic tapes; computer edit of the data to ensure completeness and consistency; calculation of the weighting factors for each household; and computation of variance and calculation of statistical reliability of the data. The data was tabulated upon receipt of the edited, weighted data tapes from the Bureau of the Census.

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.

Subject Areas Planned for 1977 NPTS Reports

The following is a list of subject areas for which 1977 NPTS reports are presently planned. The sequence does not necessarily indicate the order in which the reports will be prepared and published. It is offered as an indication of current plans as well as to give transportation researchers and planners a general indication of the variety and scope that the 1977 NPTS data encompasses. For those reports that have been published, the correct title, report number and publication date are shown.

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)

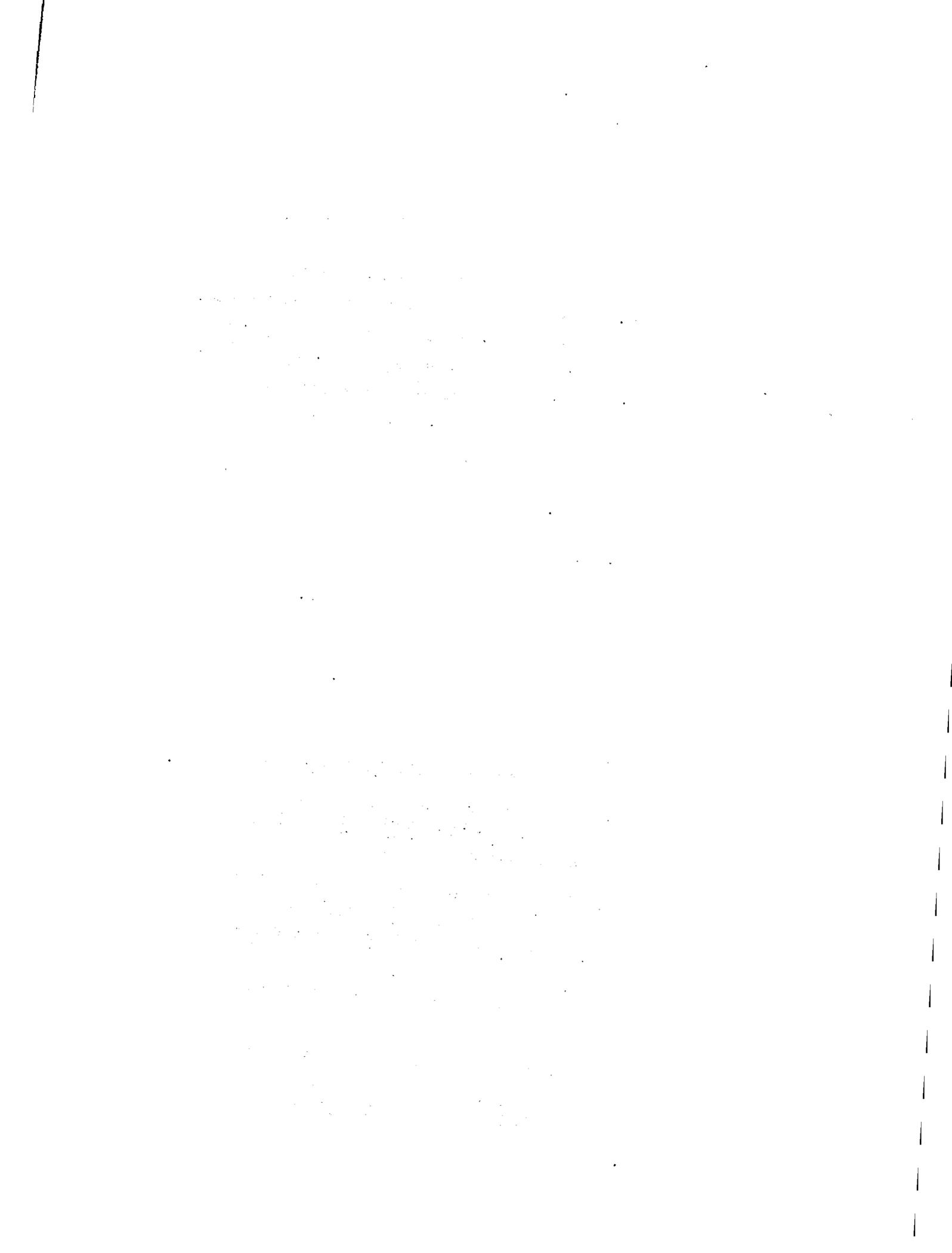
Survey description and tables of variance

Multioccupant vehicle travel - public and private

Person-trip characteristics

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. A copy of the NTS-2A, Section VII: Mapping of Private Motor Vehicle Trips is enclosed as Appendix D to this report.



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 urban area: An urban place of 5,000 or more population as determined by the Bureau of the Census. For Federal-aid purposes, all other areas are considered rural.

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, that 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 schoolbuses. 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 schoolbuses, private schoolbuses, 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 schoolbuses 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 whether 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 1 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 5 miles in the same vehicle, make 4 times 5 vehicle miles or 20 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 five nights away from home would result in 10 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 that 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 on 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 household: 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 that 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, trip duration is 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.)

- **Change means of transportation:** Trips made specifically to change from one means of transportation to another; for example, taking a taxi to an airport to catch a plane, driving a car to a fringe parking area to take a bus into town, etc.
- **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 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.
- 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 1 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 this study, one of the 12 vehicle types used for coding purposes in the household motorized vehicle record of the NTS-2 Questionnaire.

a. Control Number

FORM
NTS-2AU.S. DEPARTMENT OF COMMERCE
BUREAU OF THE CENSUS

NOTICE - Your report to the Census Bureau is confidential by law (title 13, U.S. Code). All identifiable information will be used only by persons engaged in and for the purposes of the survey, and may not be disclosed or released to others for any purpose.

NTS Serial Check PSU Segment Serial Panel

DETAILED PERSONAL INTERVIEW
(Section VII)
NATIONAL TRAVEL SURVEY
1977 CENSUS OF TRANSPORTATION

b. Questionnaire _____ of _____ questionnaires

Section VII - MAPPING OF PRIVATE MOTOR VEHICLE TRIPS

INTERVIEWER NOTE

PROCEDURE FOR COMPLETING SECTION VII

1. Enter in 70b or 71b the number of the trip that was made by private motor vehicle.
2. Enter the destination of the trip in 70c or 71c.
3. Show map and ask 70a or 71a.
4. Refer to Trip Description Codes *shown to the right* for appropriate code and enter the code in 70d or 71d.
5. If mapping is required, ask respondent to help you map the trip by tracing the routes taken. Label the endpoints of the trip, as described in c. below.

MAPPING INSTRUCTIONS

- a. Use a separate map for each respondent.
 - b. Trace the route carefully. A reader of the map should know exactly the route taken.
 - c. Use the following code to label trips traced on the map:
 - (1) the code for the Section in which the trip was reported (TD for Travel Day; TW for 14-Day Travel Period), followed by
 - (2) the Trip Column number (for example, TD-3; TW-5).
 - d. If the entire trip is on the map and ~~crosses~~ the urban/rural boundary, trace the trip and label both ends.
 - e. If a portion of the trip is off the map, trace the portion that is on the map and label the endpoint which shows on the map.
6. Complete columns e and f if code 4 or 5 is entered in column d.
 7. For return trips ask whether the same route was followed, and if no additional mapping is required, label the endpoints again to indicate the return trip.
 8. Enter in column g the distance of the trip as reported by the respondent on the NTS-2.
 9. Repeat the sequence for the next trip by private motor vehicle.
 10. Enter the Control Number and the Line Number of the respondent in the upper right hand corner of the map. **DO NOT** write the respondent's name on the map.

TRIP DESCRIPTION CODES

- 1 - Entire trip on map and wholly within URBAN area - NO MAPPING REQUIRED.
- 2 - Entire trip on map and wholly within RURAL area - NO MAPPING REQUIRED.
- 3 - Entire trip on map and crosses the URBAN/RURAL boundary marked on the map - MAP TRIP.
- 4 - A portion of the trip is off the map - MAP THE PORTION WHICH IS ON THE MAP AND COMPLETE column e and column f.
- 5 - Entire trip is off the map - COMPLETE column e and column f.

APPENDIX D

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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

[The page contains extremely faint, illegible text, likely bleed-through from the reverse side of the document. The text is scattered across the page and cannot be transcribed.]

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
\$ _____

Payment enclosed as

Money order ()

Check ()