



1990
TRAVEL
BEHAVIOR
INVENTORY

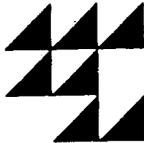
Twin Cities Metro Area

Home Interview Survey Methodology and Results

Prepared for:

**Metropolitan Council
Minnesota Department of Transportation
Regional Transit Board
Transportation Advisory Board**

December 1992



METROPOLITAN COUNCIL
*Mears Park Centre, 230 East Fifth Street
St. Paul, Minnesota 55101*

*For more information about
this report, call the Metropolitan
Council's Transportation
Division at 291-6308.*

Publication No. 550-92-061

Prepared for :
Metropolitan Council
Minnesota Department of Transportation
Regional Transit Board
Transportation Advisory Board

HE
310
.T85
N562
V.4

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
SURVEY METHODOLOGY	2
QUESTIONNAIRE DESIGN	2
• Household Information (Appendix B, Attachment 1)	
• Travel Diary (Appendix B, Attachment 2)	
SURVEY PRETEST	4
DATA COLLECTION PROCESS	5
QUALITY CONTROL	8
ADDRESS VERIFICATION AND CODING	9
SURVEY RESULTS	10
FACTORING PROCESS	12
DEMOGRAPHICS	12
SUMMARY OF RESULTS	
1. HOUSEHOLD CHARACTERISTICS	15
2. TRIP RATES	27
3. TRIP PURPOSE AND MODE	30
4. VEHICLE OCCUPANCY	37
5. TIME OF DAY TRAVEL BY PURPOSE AND MODE	41
6. TRAVEL TIME AND TRIP LENGTH	47
DATA FILE SPECIFICATIONS	58
APPENDIX A: TBI STUDY OUTLINE	
APPENDIX B: SURVEY DESIGN MATERIAL	
APPENDIX C: ADDITIONAL CORRESPONDENCE	

LIST OF TABLES

	<u>Page</u>
Table 1: Sample Households by County	11
Table 2: Final Expansion Factors	13
Table 3: Demographic Characteristics	14
Table 4: Household Summary: Seven County Area	16
Table 5: Household Summary: Anoka County	16
Table 6: Household Summary: Carver County	17
Table 7: Household Summary: Dakota County	17
Table 8: Household Summary: Hennepin County	18
Table 9: Household Summary: Ramsey County	18
Table 10: Household Summary: Scott County	19
Table 11: Household Summary: Washington County	19
Table 12: Household Summary: Hennepin County Except Minneapolis	20
Table 13: Household Summary: Ramsey County Except St. Paul	20
Table 14: Household Summary: Minneapolis	21
Table 15: Household Summary: St. Paul	21
Table 16A: Age Distribution by County	22
Table 16B: Percent Age Distribution by County	22
Table 17: Households by Size and Income Group	23
Table 18: Households Biking, Walking and Making Daycare Dropoffs	23
Table 19: Employment Status by Income Group	24
Table 20: Hours Worked per Week	24
Table 21: Distribution of Households by Vehicle Availability	25
Table 22: Distribution of Vehicles by Vehicle Availability	25
Table 23: Distribution by Licensed Drivers	26
Table 24: Licensed Drivers by Household Size	26

LIST OF TABLES

	<u>Page</u>
Table 25: Trip Rates by Household Size	28
Table 26: Household Trip Rates by Household Income	28
Table 27: Household Trip Rates	29
Table 28: Trips by Purpose	31
Table 29: Trips by Travel Mode	32
Table 30A: Travel Mode by Destination Purpose	33
Table 30B: Percent Travel Mode by Destination Purpose .	34
Table 31A: Travel Mode by General Trip Purpose	35
Table 31B: Percent Travel Mode by General Trip Purpose	36
Table 32A: Vehicle Trips by Destination Purpose and Occupancy	38
Table 32B: Percent Vehicle Trips by Destination Purpose and Occupancy	38
Table 33A: Vehicle Trips by General Purpose and Occupancy	39
Table 33B: Percent Vehicle Trips by General Purpose and Occupancy	39
Table 34: Average Vehicle Occupancy	40
Table 35: Distribution of Trips by Time of Day, Purpose and Mode	43
Table 36: Percent Distribution of Trips by Time of Day, Purpose and Mode	44
Table 37: Percent Distribution of Trip Purpose and Mode by Time Period	45
Table 38: Percent Distribution of Trips by Purpose, Mode and Time of Day	46
Table 39: Average Travel Time by Mode and General Purpose	48
Table 40: Distribution of Trips by General Purpose and Duration	49
Table 41: Percent Distribution of Trips by General Purpose and Duration	50
Table 42: Distribution of Trips by Mode and Duration ..	51

LIST OF TABLES

	<u>Page</u>
Table 43: Percent Distribution of Trips by Mode and Duration	52
Table 44: Average Travel Distance by Mode and General Purpose	53
Table 45: Distribution of Trips by General Purpose and Distance	54
Table 46: Percent Distribution of Trips by General Purpose and Distance	55
Table 47: Distribution of Trips by Mode and Distance ..	56
Table 48: Percent of Trips by Mode and Distance	57
Table 49: Data File Specifications	59

INTRODUCTION

This Home Interview Survey report is one of a series of technical reports produced for the "Twin Cities Metropolitan Area 1990 Travel Behavior Inventory" (1990 TBI). This study is intended to document how Twin Cities residents and businesses use the streets, highways and transit services in the region. This information will be used to improve and update the Region's Transportation Planning Process, including regional computer forecasting and travel simulation tools.

The 1990 TBI is the first major travel survey in the Twin Cities region since 1970 and will provide the primary regional data base on travel, and how travel relates to development and transportation infrastructure. As in other metropolitan regions, the Twin Cities faces significant long term demands for highway and transit services. Since 1970, land in urban use has doubled, population increased 325,000 and employment 670,000, mostly in new work centers. Person travel by auto is estimated to have grown by 66 percent. Costs for highway construction or reconstruction and transit system development by 2020 are projected in the billions of dollars. The 1990 TBI will provide much of the data needed to determine needs and set priorities.

The Twin Cities Metropolitan Council, Minnesota Department of Transportation and Regional Transit Board are the lead agencies for the 1990 TBI and will be the principal users of the study. In addition, the 1990 TBI receives substantial financial support and cooperation from the region's seven counties and 150 municipalities. The study has been designed with the travel data needs of local governments in mind. Collecting data in 1990 provides needed coordination with the demographic data base of the 1990 census. The TBI and Census data are complementary.

The 1990 TBI includes four major components encompassing fifteen interrelated work tasks. The Home Interview Survey report is part of Task 2.

The study was conducted over a seven month period by the firms of Strgar-Roscoe-Fausch, Inc. and Colle and McVoy, Inc. Technical Reports in this series are:

- . Home Interview Survey
- . Establishment Survey
- . Transit Survey
- . External Station Traffic Counts
- . External Station Origin/Destination Survey

- . Screenline Traffic Counts and Auto Occupancy Counts
- . Special Generators: Minneapolis Cordon Count, St. Paul Cordon Count, Shopping Centers, Airport, University of Minnesota
- . Highway Speeds Study

Appendix A contains an outline of the entire 1990 TBI Study tasks.

SURVEY METHODOLOGY

The Home Interview Survey was conducted by mail and telephone using a random sample of households drawn from the entire seven-county Twin Cities metropolitan area. The goal of the project was to complete 9,600 surveys. To achieve this, a goal was set to recruit 13,700 households from a sample of 30,000 household addresses and telephone numbers that were purchased from Survey Sampling of Westport, Oregon.

A county-stratification was used to ensure that the numbers of households initially selected in the sample and also those interviewed in a county reflected that county's proportion of households in the seven-county area. Initially, the county household goals were based on the Metropolitan Council's 1990 estimates of households by county. Subsequently, when the 1990 Census data became available, the goals were adjusted accordingly.

QUESTIONNAIRE DESIGN

The Home Interview Survey consisted of two major elements: a household survey and a travel diary.

Household Information (see Appendix B, Attachment 1)

The questionnaire contained the following household information:

1. Vehicles available (cars, vans, pick-up trucks and motorcycles).
2. Number of persons with the following information for each:
 - . Name
 - . Gender
 - . Age
 - . Licensed driver or not
 - . Employment status
 - . Number of jobs
 - . Hours per week employed
3. Household income.

Travel Diary (see Appendix B, Attachment 2)

The travel diary was designed to collect one-way person trips taken in vehicles. All trips over one block in length made by household members five and over during a 24-hour period (travel day) were included. A travel diary was completed for each household member five years of age or older.

The travel diary contained the following information:

1. Household address and identification
2. Household member identification
3. Travel day date
4. Workplace address (and school address for students)
5. Company name
6. Trip information (for every one-way trip made by members 5 years of age or older)
 - a. Trip start time
 - b. Trip start address or nearest cross-streets or placename
 - c. Trip end address or nearest cross-streets or placename
 - d. Trip end time
 - e. Type of vehicle used and occupancy
 - . auto, van or pickup
 - drive alone
 - drive someone (number of people in vehicle)
 - ride with someone (number of people in vehicle)
 - . public bus
 - . school bus
 - . taxi
 - . motorcycle
 - . other
 - f. Purpose of trip
 - . home
 - . work
 - . work-related business
 - . school
 - . drop off/pick up someone
 - . shopping
 - . other

7. Household members that walked to work on the travel day.
8. Household members that bicycled to work on the travel day.
9. Whether or not, on the travel day, a child was dropped off or picked up at child care on the way to or from work by a member of the household.

SURVEY PRETEST

Once the initial survey questionnaire was designed, it was pretested in March 1990 using a sample of 50 households. Forty-eight responses were obtained. The pretest revealed several problems which were corrected before implementing the final survey. These problems were:

- . Some households refused to participate because of safety concerns related to giving out their travel itinerary. To reduce this concern, it was decided to send out an initial contact letter to each household before contacting it by telephone. The letter, which was signed by the chairman of the Metropolitan Council, explained the purpose of the survey, the potential benefits for transportation in the metro area and emphasized the confidentiality of the responses.
- . Vehicles "available for use" by the household was used rather than household vehicles "including company cars", to avoid concerns that the survey was "checking up" on people's use of company cars. As a result, vehicles available for use include company cars at the household.
- . The original question, "Are you employed", was changed to "Are you employed, other than as a homemaker" to ensure that we would capture employed persons working at home.
- . It was found that most people did not know the zip code of their destination unless it was their home or their principal place of employment (although not everyone knew the latter). For this reason, the destination zip code question was eliminated. At the same time, the state in which the trip originated or was destined was added.
- . Information about trips made by area residents while they are outside of the study area was not to be collected. However, after the pretest it was decided to collect the information for Wisconsin trips.
- . "Work-related business" trips were found to be significant and the trip purpose was added to the questionnaire.
- . "Buying gas" showed up as a frequent trip. It was decided to include these in the "shopping" purpose. Also a trip for "shopping and eating" were treated as a shopping trip.

- . It was decided that trips made by carriers, highway patrols, police, taxis and similar occupations would not be recorded.
- . A question about the presence of household visitors was eliminated from the questionnaire after the pretest because of the difficulty of defining a household visitor is (e.g., area resident versus non-resident, visitor for one hour, one day or six months, etc.).

DATA COLLECTION PROCESS

The Home Interview Survey household recruitment and data collection process consisted of the following five steps (see Figure 1):

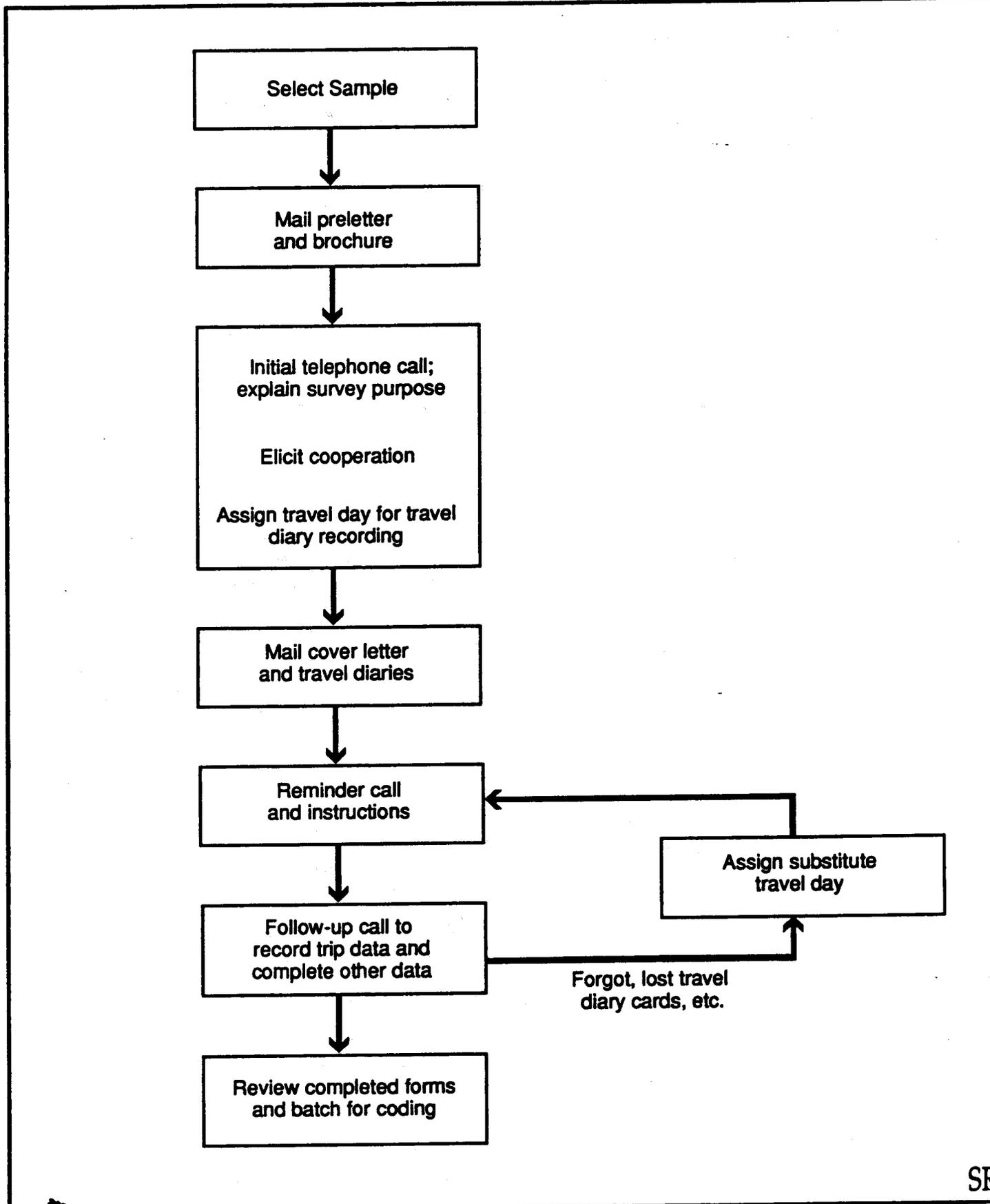
1. Introductory Letter and Project Brochure. (See Appendix B, Attachment 3.)

A letter was prepared by the Chairman of the Metropolitan Council and was sent to selected households from the sample drawn for the Home Interview Survey. This letter, which was sent on Metropolitan Council letterhead, explained the purpose of the study, alerted the household members that they would soon be contacted by telephone and asked them to participate. Letters were sent over the entire period of the survey to ensure that when households were contacted by telephone they would have only received the letter just a few days prior to the telephone contact.

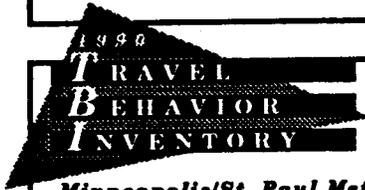
2. Recruitment Telephone Call

Households who were sent letters the preceding week were contacted by telephone to secure their participation in the Home Interview Survey. If the household agreed to participate in the survey, the following steps were taken:

- . Initial calls were made Tuesdays through Saturdays (to schedule Monday through Friday travel days).
- . For each household recruited, a single contact person was assigned for subsequent communications and, very importantly, to recruit the other members of the household. (A condition of selecting the household was that all members had to participate.)
- . A specific travel date was agreed upon when all members of the household (five and older) would record travel information in their respective Travel Diary. The travel date was generally scheduled within five to six days of the recruitment call to ensure mail delivery of the travel diaries, and because it was close enough to the initial call to sustain the offer to cooperate.



SR



- . It was arranged that the contact person should expect a packet of information and travel diaries in the mail within a few days.
- . All household data, except for income, was obtained from the contact person during the recruitment call. (Income was collected along with the travel data at a later date.)

3. Mailing of Travel Diaries

Soon after recruiting the household, a packet containing a cover letter, instructions on how to fill out the travel diary (including a filled out sample form), and travel diaries for each household member five and older was sent to the contact person by first class mail. Included in the cover letter was the travel date agreed upon and a name and telephone number to call in case there were questions.

4. Reminder Telephone Call

One day prior to the assigned travel date, interviewers contacted the households to make sure that they had received the travel diaries and to remind them to complete the travel diaries the following day. If, at this point, a household member(s) changed his or her mind and decided not to participate, the household was replaced in the sample. Households were replaced from the randomly selected master list of households (by county). Finally, the interviewers arranged a date (typically the day after the travel day) and time when they would call back to obtain the travel data from the contact person (for all household members).

5. Telephone Interview

The day after the travel day, at the agreed-upon time, interviewers called the participating households to obtain and record the travel information for each household member. The information was entered directly into CRTs.

In cases where the travel survey records were incomplete (one or more household member missing) or if it was not possible to collect the information at that time, another date and time was set up for retrieving the information. Under these conditions, a minimum of six attempts to contact the households were made before a decision to replace the household was made.

QUALITY CONTROL

To ensure the quality of the data collected, the following steps were instituted:

1. Major emphasis was placed on training of interviewers, supervisors, data coders, data checkers, and data entry personnel to eliminate problems, mistakes and confusion. A team of transportation professionals and market researchers worked together extensively during the first several weeks of the survey to guide this effort.
2. Regularly scheduled debriefings were held to involve personnel in different tasks and to increase their understanding of the overall study, to evaluate their tasks and to discuss and resolve problems encountered.
3. A "hotline" was put in place to assist respondents that had problems or questions.
4. Interviews were pre-programmed on CRTs with appropriate cross-checks to ensure that all questions were asked and answered. Direct data entry into the CRT eliminated transcription errors that are present when data are first coded on hardcopy.
5. A wide variety of resources were used to check and verify addresses and locations given. (See discussion of Address Verification and Coding on page 9.)
6. Instructions on how to complete the diaries were included as part of the diaries themselves. As a result, each household respondent carried the directions everywhere the diary went.
7. At each step of the process, multiple attempts at reaching the selected households were made. A minimum of six attempts were made for the initial recruitment call, the remainder call, and the interview call, before a household was replaced.
8. One hundred percent of all completed questionnaires were edited by supervisors; 20 percent of all calls were monitored; and ten percent of all initial calls and data collection were "callbacks" to verify the information.
9. Households who refused to participate were asked to provide several pieces of information to help verify if there were significant differences between the demographics of participants and non-participants. The data obtained of a large proportion of non-participants included household size and household income.

ADDRESS VERIFICATION AND CODING

For the first time in this metropolitan area, the Home Interview Survey trip addresses were matched with a computer-based geographic file using a mainframe program called UNIMATCH. For this to be possible, it was necessary to ensure that the reported trip addresses be as accurate as possible. Three types of addresses were accepted according to the following hierarchy:

1. Street address (house number, street name, street type and a direction, where applicable. In this case, abbreviations were checked to ensure that they matched standards provided by the Metropolitan Council. Spelling of street names were verified anytime there was a question).
2. If the respondent did not know the address then a "closest intersection" was accepted. Street name syntax and abbreviations were checked.
3. If the respondent knew neither the address nor the closest street intersection then a place name or building was accepted.

Included in this category were places like the airport, Southdale, the Metrodome, 3M Center, the University of Minnesota East Bank, etc. A list of common places was prepared to help coders and to ensure consistent spelling and abbreviations. The Metropolitan Council provided the coders with a listing of regional parks which were added to the list of placenames.

4. Finally, locations for which respondents could not provide addresses, intersections or placenames were given a special code. These required special effort in order to assign them a geographic descriptor.

Regardless of the address type obtained, coders made every attempt to convert them to a valid street address (number, street name, direction, city). A variety of resources were used, including Hudson directories, code directories, Minneapolis and St. Paul telephone books, local telephone books, listings from files provided by the Metropolitan Council (firm name file, building name file and post-office address file), and the regional traffic assignment zone maps. In addition, coders called directory assistance when telephone numbers could not be found in directories; specific places were called to obtain their addresses; people familiar with the areas in question were consulted; and advertisements from major retailers listing their stores and locations were collected. When all the above resources failed to resolve a specific address problem, the respondents were called back to obtain clarification and to assist in decoding the address.

It is estimated that fifty percent of all addresses were modified before being sent to the Metropolitan Council for geocoding. The address-matching procedure uncovered additional problems with the coded addresses (as well as with the address-matching program file itself). Metropolitan Council staff performed extensive and detailed verification of addresses over a period of several months. Much effort was spent identifying the minor civil division associated with one of the trip ends as many respondents were unsure of the city they were in, or used the Post Office city name instead. Ultimately, hand-made corrections were needed to complete the geocoding process. Most of these corrections were a result of the absence of addresses in the 1990 TIGRE reference files.

Once geocoding was complete, the Home Interview Survey trip file was updated and the following geographic attributes were added to each trip record:

- . Traffic Assignment Zone (TAZ) based on the 1990 network
- . Census tract and census block
- . Minor Civil Division name
- . County name
- . X-Y coordinate

SURVEY RESULTS

The Home Interview Survey was conducted between the fourth week of June and the second week of December, 1990.

The Home Interview Survey yielded 9,746 completed households, that is, household data and travel diary information for all household members five and older. According to the 1990 census (June 1991 report), there were 875,504 households in the seven-county metropolitan area. This means that the household sample size was 1.1 percent.

The 9,746 completed household surveys were drawn from a total of 10,746 recruited households. In addition, 3661 households contacted refused to participate and 1,214 household provided partial demographic information only (household size and income).

Table 1 shows the surveys responses by County and the 1990 County households (from June 1991 Census report).

**TABLE 1
SAMPLE HOUSEHOLDS AND TOTAL HOUSEHOLDS BY COUNTY**

County	1990TBI Sample		1990 Census		1990 Sample as Percent of Total Households
	Number	Percent	Number	Percent	
Hennepin	4,439	45.6	419,060	47.9	1.1%
Ramsey	2,007	20.6	190,500	21.8	1.1
Dakota	1,174	12.0	98,293	11.2	1.2
Anoka	1,026	10.5	82,437	9.4	1.2
Washington	634	6.5	49,246	5.6	1.3
Scott	252	2.6	19,367	2.2	1.3
Carver	214	2.2	16,601	1.9	1.3
Total	9,746	100.0	875,504	100.0	1.1

The above comparison shows that Hennepin and Ramsey Counties were slightly undersampled, while the remaining counties were slightly oversampled. This discrepancy is resolved during the subsequent factoring process.

A further breakdown of Hennepin County into City of Minneapolis and Rest of Hennepin County households and City of St. Paul and Rest of Ramsey County households yields the following sample size comparison:

	1990 TBI Sample		1990 Census		1990 Sample as Percent of Total Households
	Number	Percent	Number	Percent	
Minneapolis	1,300	13.3	160,682	18.4	0.8%
Rest of Hennepin County	3,139	32.2	258,378	29.5	1.2
St. Paul	1,026	10.5	110,249	12.6	0.9
Rest of Ramsey County	981	10.1	80,251	9.2	1.2

These results indicate that the central cities of Minneapolis and St. Paul were underrepresented in the sample, while the rest of their counties were overrepresented. This situation is also resolved through the factoring process.

FACTORING PROCESS

In the middle of 1991, 1990 Census information, specifically household geographical distribution and size, became available. Using the household size distribution by county, weighting factors were developed to expand the Home Interview Survey sample from 9,746 households to the regional total of 875,504 households. The resulting factors are summarized in Table 2.

The resulting overall expansion factor is 89.83, which means that approximately one in ninety households was surveyed. The individual factors, which are based on the combination of county/city households, household size and vehicle availability, range from a low of 35.4258 for three-member households with four or more vehicles in Carver County, to 471.3157 for single-member households with zero cars in Washington County. The higher factors correct for sampling underrepresentation and bring the sample "up" to the correct total. Conversely, factors lower than the average correct for sampling overrepresentation.

It should be noted that the factors for zero-car households are consistently higher, which indicates that the sample understated the number of zero-car households in every county. Conversely, four-plus-car households are consistently lower than the average factor, which indicates overrepresentation of this group in the sample.

The remainder of this report will focus on the expanded regional demographic and travel data. When relevant, comparisons will be made with the 1990 Census data.

DEMOGRAPHICS

Table 3 summarizes the demographic characteristics of the population surveyed and compares them to the 1990 Census data. These results show that the characteristics of the surveyed population are similar to the Census findings except for an underrepresentation of young adults (17-34) and a corresponding overrepresentation of middle-aged adults (35-64). However, there is no reason to believe that this discrepancy affects the tripmaking characteristics of the sample.

TABLE 2
FINAL EXPANSION FACTORS

	Vehicles per Household	Household Size					
		1	2	3	4	5	6+
Anoka	0	233.3605	272.5022	84.5500	69.9300	241.9479	118.0400
	1	112.0473	130.8198	157.8515	127.7483	60.7400	118.0400
	2	60.5384	70.6885	85.2753	69.0108	62.7915	117.2375
	3	56.3952	65.8074	79.3908	64.2553	58.4547	109.1646
	4+	45.8345	54.1373	65.3304	52.8630	48.1170	89.8505
Washington	0	471.3157	358.9642	428.8247	65.9600	70.9100	100.0600
	1	128.2874	97.5833	116.8566	99.8252	109.1098	100.0600
	2	88.2106	67.0782	80.3194	68.6211	75.0445	137.0120
	3	79.4649	60.4604	72.4258	61.8804	67.6769	123.4061
	4+	59.3095	45.2186	54.1611	46.2553	50.6088	92.4323
Scott	0	234.9476	75.7200	84.1300	58.0000	76.1200	134.8300
	1	94.1054	91.8680	108.8517	74.3328	98.1567	134.8300
	2	78.5468	76.7687	90.9902	62.1934	82.0497	135.6175
	3	63.3809	61.5407	72.9520	49.8800	65.6231	108.9044
	4+	62.1825	61.3513	72.6491	49.7002	65.6002	134.8300
Carver	0	210.5229	87.0700	56.5500	61.0400	102.7300	68.1100
	1	126.0253	165.4114	120.7416	61.0400	197.4842	68.1100
	2	63.4510	83.3500	60.8203	66.5555	99.7335	65.2565
	3	128.9100	72.2750	52.7456	57.6745	86.4809	56.1250
	4+	128.9100	48.4706	35.4258	38.7406	102.7300	38.0864
Minneapolis	0	289.2360	299.4391	396.6707	90.4000	120.0200	211.1100
	1	118.2887	122.4620	162.2713	132.4138	168.6146	178.6216
	2	81.6436	84.5483	112.0319	91.4193	116.4663	123.2236
	3	56.2049	58.1203	77.0095	62.8389	80.0166	84.7589
	4+	71.8229	74.7321	98.9687	80.7051	120.0200	108.8913
Rest of Hennepin	0	282.8731	266.4958	297.8031	67.8100	69.1400	55.8700
	1	113.4497	106.8521	119.4669	105.2691	107.6051	74.8698
	2	79.5506	74.9349	83.7927	73.8070	75.4542	52.4975
	3	64.4696	60.6832	67.8467	59.7644	61.1073	42.5165
	4+	53.5344	50.4261	56.4120	49.6884	50.7914	35.3625
St. Paul	0	269.1222	286.1521	369.9334	299.1435	123.5400	182.2500
	1	104.0949	110.6841	143.1772	115.6792	188.3174	290.2071
	2	68.6080	72.9172	94.3280	76.1976	124.1118	191.2650
	3	53.1778	57.2167	74.0066	59.7732	97.3770	149.9677
	4+	51.7703	54.3266	70.1976	56.7380	92.2376	142.2995
Rest of Ramsey	0	339.5108	334.7875	375.0926	319.2203	73.7200	63.5300
	1	111.8837	110.4212	123.6488	105.2969	117.4668	103.6280
	2	74.2372	73.2694	82.0579	69.9055	77.9991	68.6509
	3	66.4709	65.5643	73.3992	62.5414	69.7724	61.4504
	4+	44.7458	44.5885	49.9320	42.5295	47.4806	41.7537
Dakota	0	218.5882	218.8936	88.8900	182.4980	69.4300	63.7200
	1	114.1150	114.3239	125.7377	95.1995	100.1438	90.9199
	2	83.9441	84.1195	92.5122	70.0627	73.7332	67.1874
	3	71.9945	72.2154	79.4460	60.1681	63.3119	57.7039
	4+	56.1147	55.9138	61.4467	46.5143	48.9263	44.6177

**TABLE 3
DEMOGRAPHIC CHARACTERISTICS**

	1990 TBI (Expanded)	1990 Census
Gender		
Male	47.9%	48.8%
Female	52.1%	51.2%
Population (1)	2,241,564	2,241,586
Households	875,506	875,504
Average Household Size	2.56	2.56
Age Distribution		
Under 5	9.1%	8.1%
5-16	18.6	16.6
17-34	23.1	31.9
35-64	39.4	33.6
65 and Over	9.8	9.8
Average Age (2)	38.1	35.9

(1) In occupied housing, excluding group homes.

(2) Does not include persons under 5 years of age. 1990 U.S. Census value represents median age.

SUMMARY OF SURVEY RESULTS

1. HOUSEHOLD CHARACTERISTICS

- . The median household size is two people; the average is 2.56 people. (The average size of non-cooperating households is lower: 2.45 persons.) (Table 4)
- . Washington and Scott Counties have the largest average household size with 2.94 persons per household. Anoka County has 2.93 persons per household. (Table 5 through 11)
- . Hennepin and Ramsey Counties have the lowest average household size with 2.41 and 2.47, respectively. (Tables 5 through 11)
- . The yearly average household income is \$43,600. (Table 17)
- . 6.4 percent of all households pick up or drop off a child at a daycare on the way to or from work. (Table 18)
- . In 2.4 percent of all households a household member walked to work and 0.9 percent bicycled to work. (Table 19)
- . 49.0 percent of all household members are employed, 4.1 percent have more than one job, and 16.3 percent said they were students and not employed. (Table 19)
- . 75.3 percent of all workers work forty hours or more per week. (Table 20)
- . The average number of vehicles (auto, vans, pick up trucks and motorcycles) available to the household--including company cars--is 1.74. (Table 21)
- . 9.5 percent of the households do not have a vehicle available for their use. (This is the same percentage reported by the 1990 Census.) (Table 21)
- . 6.4 percent of households don't have someone with a licensed driver or permit. (Table 23)
- . The average number of licensed drivers (including permits) per household is 1.77. When compared to 1.74 vehicles available per household, the result is that there are 1.02 licensed drivers per vehicle available. (Table 24)

Table 4
HOUSEHOLD SUMMARY: SEVEN-COUNTY AREA

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	222,624	25	222,624	10	80,630	141,995	80,630	141,995
2	282,987	32	565,978	25	268,680	294,536	269,998	295,980
3	149,528	17	448,582	20	194,314	205,013	218,282	230,300
4	137,404	16	549,614	25	236,300	235,185	275,457	274,157
5+	82,963	10	454,766	20	197,086	187,972	232,765	222,001
TOTAL	875,506	100%	2,241,564	100%	977,010	1,064,701	1,077,131	1,164,434

MEAN HOUSEHOLD SIZE = 2.56

Table 5
HOUSEHOLD SUMMARY: ANOKA COUNTY

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	12,215	15	12,215	5	4,896	7,320	4,896	7,320
2	23,763	30	47,528	20	22,768	24,629	22,831	24,697
3	15,381	19	46,142	20	19,686	21,835	21,877	24,265
4	17,585	22	70,339	30	31,484	29,868	36,096	34,243
5+	10,656	14	57,375	25	25,249	24,551	29,090	28,285
TOTAL	79,600	100%	233,599	100%	104,083	108,203	114,789	118,811

MEAN HOUSEHOLD SIZE = 2.93

Table 6
HOUSEHOLD SUMMARY: CARVER COUNTY

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	3,075	19	3,075	7	1,191	1,884	1,191	1,884
2	4,980	31	9,961	22	4,660	5,300	4,660	5,301
3	3,002	19	9,005	20	3,698	4,324	4,151	4,854
4	2,911	18	11,645	26	5,125	4,649	6,101	5,539
5+	2,054	13	11,073	25	4,629	4,861	5,401	5,672
TOTAL	16,022	100%	44,759	100%	19,303	21,018	21,510	23,249

MEAN HOUSEHOLD SIZE = 2.79

Table 7
HOUSEHOLD SUMMARY: DAKOTA COUNTY

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	18,123	18	18,123	7	8,309	9,813	8,309	9,813
2	30,188	31	60,376	22	29,011	31,168	29,116	31,260
3	18,683	19	56,048	20	24,307	25,052	27,601	28,447
4	19,561	20	78,242	29	34,432	33,640	39,576	38,666
5+	11,289	12	60,763	22	25,255	26,114	29,873	30,890
TOTAL	97,844	100%	273,552	100%	121,314	125,767	134,476	139,076

MEAN HOUSEHOLD SIZE = 2.80

Table 8

HOUSEHOLD SUMMARY: HENNEPIN COUNTY

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	121,537	29	121,537	12	44,631	76,906	44,631	76,906
2	141,789	34	283,578	28	133,864	148,590	134,397	149,181
3	67,340	16	202,021	20	86,462	92,844	97,415	104,606
4	56,502	13	226,008	23	94,563	98,015	110,978	115,030
5+	32,090	8	175,940	17	76,154	70,252	91,516	84,424
TOTAL	419,258	100%	1,009,084	100%	435,674	486,607	478,938	530,146

MEAN HOUSEHOLD SIZE = 2.41

Table 9

HOUSEHOLD SUMMARY: RAMSEY COUNTY

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	57,219	29	57,219	12	17,220	39,999	17,220	39,999
2	62,756	32	125,512	26	59,025	65,526	59,480	66,032
3	31,385	16	94,155	19	41,961	42,833	46,593	47,562
4	26,456	14	105,824	22	45,900	44,839	53,531	52,293
5+	17,675	9	99,730	21	44,505	40,261	52,362	47,368
TOTAL	195,491	100%	482,440	100%	208,611	233,458	229,186	253,254

MEAN HOUSEHOLD SIZE = 2.47

Table 10
HOUSEHOLD SUMMARY: SCOTT COUNTY

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	2,933	16	2,933	5	1,020	1,913	1,020	1,913
2	5,753	30	11,506	21	5,999	5,338	6,088	5,418
3	3,531	19	10,593	19	4,916	4,404	5,587	5,006
4	4,078	21	16,312	29	6,516	6,453	8,196	8,116
5+	2,712	14	14,580	26	5,351	7,213	6,210	8,370
TOTAL	19,007	100%	55,924	100%	23,802	25,321	27,101	28,823

MEAN HOUSEHOLD SIZE = 2.94

Table 11
HOUSEHOLD SUMMARY: WASHINGTON COUNTY

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	7,522	16	7,522	5	3,363	4,160	3,363	4,159
2	13,758	29	27,517	19	13,353	14,005	13,431	14,086
3	10,206	21	30,618	22	13,284	13,721	15,061	15,557
4	10,311	21	41,244	29	18,280	17,721	20,942	20,302
5+	6,487	13	35,305	25	15,943	14,720	18,357	16,948
TOTAL	48,284	100%	142,206	100%	64,223	64,327	71,153	71,053

MEAN HOUSEHOLD SIZE = 2.94

Table 12

HOUSEHOLD SUMMARY: HENNEPIN COUNTY EXCEPT MINNEAPOLIS

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	59,830	23	59,830	9	20,955	38,638	21,038	38,792
2	90,815	35	181,631	28	85,979	94,923	86,325	95,306
3	45,450	18	136,351	21	58,211	62,294	65,866	70,485
4	41,493	16	165,971	25	69,936	73,905	80,696	85,275
5+	21,296	8	114,971	17	49,448	46,233	59,417	55,554
TOTAL	258,884	100%	658,754	100%	284,529	315,993	313,342	345,412

MEAN HOUSEHOLD SIZE = 2.54

Table 13

HOUSEHOLD SUMMARY: RAMSEY COUNTY EXCEPT ST. PAUL

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	19,247	22	19,247	9	5,511	13,460	5,591	13,656
2	29,601	35	59,201	26	28,061	29,719	28,751	30,450
3	15,432	18	46,295	21	20,214	21,313	22,535	23,760
4	14,053	16	56,211	25	24,167	24,593	27,860	28,351
5+	7,872	9	42,223	19	16,405	16,044	21,346	20,877
TOTAL	86,205	100%	223,177	100%	94,358	105,129	106,084	117,093

MEAN HOUSEHOLD SIZE = 2.59

Table 14

HOUSEHOLD SUMMARY: MINNEAPOLIS

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	61,707	38	61,944	18	23,676	38,268	23,676	38,268
2	51,048	32	102,096	29	47,885	53,667	48,142	53,954
3	21,890	14	65,669	19	28,251	30,550	31,551	34,118
4	15,009	9	60,037	17	24,627	24,110	30,337	29,700
5+	10,794	7	60,969	17	26,706	24,019	32,099	28,870
TOTAL	160,448	100%	350,715	100%	151,145	170,614	165,805	184,910

MEAN HOUSEHOLD SIZE = 2.18

Table 15

HOUSEHOLD SUMMARY: ST. PAUL

Household Size	Total Households	Percent	Population	Percent	Male 5 & Over	Female 5 & Over	Total Population Male	Total Population Female
1	38,248	35	38,248	15	11,709	26,539	11,709	26,539
2	33,587	31	67,174	25	30,964	35,807	31,151	36,023
3	15,953	14	47,860	18	21,747	21,520	24,056	23,804
4	12,403	11	49,613	19	21,733	20,246	25,685	23,928
5+	10,057	9	59,164	23	28,100	24,217	31,778	27,386
TOTAL	110,248	100%	262,059	100%	114,253	128,329	124,378	137,681

MEAN HOUSEHOLD SIZE = 2.38

Table 16A
AGE DISTRIBUTION BY COUNTY

Age	Total	Anoka	Carver	Dakota	Hennepin	Ramsey	Scott	Washington	City of Mpls.	City of St. Paul
<5	199,868	21,306	4,435	26,478	86,813	40,376	6,804	13,656	28,966	22,370
5-16	408,266	50,673	9,661	55,516	161,748	86,232	12,027	32,409	50,177	46,081
17-24	145,505	17,702	4,003	19,025	61,888	31,504	2,505	8,878	21,197	17,436
25-34	363,074	39,294	7,290	49,012	164,762	71,031	10,618	21,067	61,937	38,808
35-44	418,633	43,602	7,887	50,622	189,173	88,387	10,342	28,620	71,167	46,387
45-54	246,175	29,368	3,838	31,834	108,594	49,758	5,509	17,274	30,517	24,792
55-64	200,983	16,446	3,454	21,190	102,804	43,667	3,142	10,280	31,936	20,151
65+	214,720	13,810	3,848	17,472	109,304	56,006	4,834	9,446	43,876	35,178
TOTAL	2,197,224	232,201	44,416	271,149	985,086	466,961	55,781	141,630	339,773	251,203
MEAN AGE	38.1	34.4	35.0	35.2	39.8	39.5	34.9	34.8	41.1	40.3

Mean age is for population > 5 years old.

NOTE: Tables do not match overall population due to nonresponses to some survey questions.

Table 16B
PERCENT AGE DISTRIBUTION BY COUNTY

Age	Total	Anoka	Carver	Dakota	Hennepin	Ramsey	Scott	Washington	City of Mpls.	City of St. Paul
<5	9	9	10	10	9	9	12	10	9	9
5-16	18	21	21	20	16	18	21	23	15	19
17-24	7	8	9	7	6	7	4	6	6	7
25-34	17	17	16	18	17	15	19	15	18	15
35-44	19	19	18	19	20	19	19	20	21	18
45-54	11	13	9	12	11	11	10	12	9	10
55-64	9	7	8	8	10	9	6	7	9	8
65+	10	6	9	6	11	12	9	7	13	14
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%

Table 17

HOUSEHOLDS BY SIZE AND INCOME GROUP

Income Group	Total Households	Percent	One Person	Two Persons	Three Persons	Four Persons	Five+ Persons
<7,500	24,842	3	18,047	4,234	1,838	395	329
7,500-15,000	73,614	8	44,892	19,946	5,252	2,471	1,053
15,001-25,000	113,859	13	51,098	41,416	11,139	6,223	3,983
25,001-35,000	128,493	15	39,674	42,531	18,164	14,434	13,690
35,001-45,000	145,409	17	22,769	46,918	28,874	28,815	18,033
45,001-55,000	114,975	13	9,185	37,148	27,898	25,954	14,790
55,001-75,000	113,486	13	6,639	35,489	26,541	30,455	14,362
>75,000	80,572	9	3,165	26,128	19,688	21,304	10,286
No Response	80,256	9	27,156	29,178	10,135	7,350	6,436
TOTAL	875,506	100%	222,625	282,988	149,529	137,401	82,962
MEAN INCOME	\$43,568		\$25,312	\$44,074	\$51,779	\$56,106	\$52,254

NOTE: For the <\$7,500 income group, \$5,000 was used to represent the midpoint.
For the \$75,000 income group, \$107,000 was used to represent the midpoint.

Table 18

HOUSEHOLDS BIKING, WALKING AND MAKING DAY CARE DROPOFFS/PICKUPS

Total Households	Dropoff/Pickup Child at Daycare	Made a Walk Trip to Work	Made a Bike Trip to Work
875,506	56,167	21,057	8,094
100%	6.4%	2.4%	0.9%

Table 19

EMPLOYMENT STATUS BY INCOME GROUP

Income Group	Total Persons	Persons Employed	Percent	Work 30 or More Hours	Work 40 or More Hours	Have More Than One Job	Student (not employed)
<7,500	35,412	5,883	1	3,661	2,395	937	5,927
7,500-15,000	116,196	30,653	3	22,205	15,178	3,042	11,149
15,001-25,000	214,073	86,651	8	70,783	58,732	8,702	25,541
25,001-35,000	312,008	140,564	13	119,624	105,290	15,569	54,630
35,001-45,000	417,338	208,393	18	181,306	160,478	18,851	72,239
45,001-55,000	352,065	195,630	18	170,829	150,823	13,504	64,361
55,001-75,000	357,788	205,983	19	184,567	165,153	14,746	64,743
>75,000	256,086	147,023	13	130,839	116,123	9,476	46,592
No Response	180,597	76,533	7	65,410	52,105	7,557	20,865
TOTAL	2,241,564	1,097,313	100%	949,224	826,277	92,384	366,047
PERCENT	100%	49%		42.4%	36.9%	4.1%	16.3%

Table 20

HOURS WORKED PER WEEK

Hours Per Week Worked	ALL WORKERS		UNDER 25 YEARS OLD		25-54 YEARS OLD		55 YEARS OLD AND OLDER	
	Persons	Percent	Persons	Percent	Persons	Percent	Persons	Percent
<20	57,306	5.3	13,227	12.4	31,170	3.7	12,909	9.8
20-29	90,782	8.4	20,021	18.8	54,859	6.5	15,902	12.0
30-39	106,876	9.9	19,407	18.2	73,632	8.7	13,838	10.5
40	510,829	47.3	38,592	36.1	412,175	49.0	60,062	45.3
41-49	113,645	10.5	6,120	5.7	96,611	11.5	10,914	8.2
50+	201,681	18.6	9,347	8.8	173,600	20.6	18,734	14.2
TOTAL	1,081,119	100.0%	106,714	9.9%	842,047	77.9	132,359	12.2%
MEAN HOURS WORKED	40		34		41		38	

NOTE: The total workers in this table represent people who gave a response to the number of hours worked question. This total does not match the total number of persons in Table 19 who said they were employed.

DISTRIBUTION OF HOUSEHOLDS BY VEHICLE AVAILABILITY AND BY COUNTY

Vehicles Per Household	Total	Anoka	Carver	Dakota	Hennepin	Ramsey	Scott	Washington	City of Mpls.	City of St. Paul
None	82,731	3,354	632	3,244	49,880	23,545	705	1,371	36,604	20,066
One	279,639	18,249	4,090	25,805	142,960	73,400	3,831	11,304	66,170	46,677
Two	361,398	37,559	7,488	47,938	163,925	71,895	9,221	23,373	44,211	32,800
Three	111,255	14,403	2,707	15,271	46,851	19,856	3,697	8,470	10,521	8,014
Four	27,610	4,077	796	3,861	10,534	5,097	955	2,290	1,899	1,953
Five+	12,873	1,959	310	1,725	5,110	1,699	598	1,476	1,279	738
TOTAL	875,506	79,601	16,023	97,844	419,260	195,492	19,007	48,284	160,684	110,248
MEAN	1.74	2.06	2.00	1.97	1.63	1.57	2.14	2.08	1.26	1.35

Table 22

DISTRIBUTION OF VEHICLES BY VEHICLE AVAILABILITY AND BY COUNTY

Vehicles Per Household	Total	Anoka	Carver	Dakota	Hennepin	Ramsey	Scott	Washington	City of Mpls.	City of St. Paul
None	0	0	0	0	0	0	0	0	0	0
One	279,639	18,249	4,090	25,805	142,960	73,400	3,831	11,304	66,170	46,677
Two	722,798	75,118	14,976	95,876	327,850	143,790	18,442	46,746	88,422	65,600
Three	333,765	43,209	8,121	45,813	140,553	59,568	11,091	25,410	31,563	24,042
Four	110,440	16,308	3,184	15,444	42,136	20,388	3,820	9,160	7,596	7,812
Five+	73,964	11,363	1,707	9,483	29,765	10,270	3,511	7,865	8,159	4,454
TOTAL	1,520,606	164,247	32,078	192,421	683,264	307,416	40,695	100,485	201,910	148,585

Table 23
DISTRIBUTION OF LICENSED DRIVERS BY GENDER

Licensed Drivers Per Household	All Households	Percent	Male Drivers	Percent	Female Drivers	Percent
None	56,279	6	0	0	0	0
One	244,299	28	108,024	14	136,275	17
Two	457,971	52	450,570	60	465,372	59
Three	88,319	10	135,584	18	129,373	16
Four	23,184	3	46,052	6	46,688	6
Five+	5,454	1	14,521	2	13,489	2
TOTAL	875,506	100%	754,751	100%	791,197	100%

Table 24
LICENSED DRIVERS BY HOUSEHOLD SIZE

Persons Per Household	Households	Percent	Number of Licensed Drivers	Percent	Average Number of Licensed Drivers
One	222,624	25	175,650	11	0.79
Two	282,988	33	501,297	33	1.77
Three	149,527	17	336,335	22	2.25
Four	137,404	16	324,262	21	2.36
Five+	82,963	9	208,408	13	2.51
TOTAL	875,506	100%	1,545,952	100%	1.77

2. TRIP RATES

- . The 875,500 households in the region made 8,860,600 person trips for an average of 10.12 weekday person trips per household. (Table 25)
- . Two-member households are responsible for almost 27 percent of all trips, while one member-households are only responsible for about 10 percent of the trips. (Table 25)
- . The trip rate per person shows little variability with household size. Five-or-more-member households have individual trip rates of 3.56 trips per person per day, the lowest found, while the rate for two-member households is 4.20. Overall, individuals make 3.95 trips per weekday. (Table 25)
- . Household trip rates increase with household size from 3.8 for one-member households to 19.5 trips for households with five or more members. (Table 25)
- . Household trip rates increase with household income. The rate for the lowest income bracket (less than \$7,500) is 3.60, for the highest bracket (over \$75,000) it is 14.0. (Table 26)
- . The average household trip rates per weekday day is 10.12. Mondays are lowest (9.4) while Fridays are highest (10.7). (Table 27)
- . Household trip rates increase with number of household vehicles. Households with zero vehicles available make 2.4 trips per day. Households with four or more vehicles make 16.6 trips per day. (Table 27)

Table 25

TRIP RATES BY HOUSEHOLD SIZE

Household Size	Total Households	Percent	Total Persons	Percent	Total Trips	Percent	Trips per Person	Trips per Household
One	222,624	25.4	222,624	9.9	846,174	9.5	3.8	3.8
Two	282,988	32.3	565,976	25.3	2,379,694	26.9	4.2	8.4
Three	149,527	17.1	448,582	20.0	1,829,754	20.7	4.1	12.2
Four	137,604	15.7	549,616	24.5	2,188,179	24.7	4.0	15.9
Five or More	82,963	9.5	454,766	20.3	1,616,833	18.2	3.6	19.5
Total	875,506	100.0%	2,241,564	100.0%	8,860,634	100.0%	3.9	10.1

Table 26

HOUSEHOLD TRIP RATES BY HOUSEHOLD INCOME

Income	Households	Number of Trips (a)	Percent	Trips Per Household
Less than \$7,500	24,842	89,226	1.1	3.6
\$7,500 to \$15,000	73,614	334,000	4.1	4.5
\$15,001 to \$25,000	113,859	782,670	9.5	6.9
\$25,001 to \$35,000	128,493	1,169,104	14.2	9.1
\$35,001 to \$45,000	145,409	1,670,426	20.3	11.5
\$45,001 to \$55,000	114,975	1,509,499	18.3	13.1
\$55,001 to \$75,000	113,486	1,543,539	18.8	13.6
Over \$75,000	80,572	1,128,194	13.7	14.0
Total	795,250	8,226,658	100.0%	10.3

(a) Does not include responses of "Refused/Don't Know." For this reason, the household trip rate differs from that shown in Table 25.

Table 27
HOUSEHOLD TRIP RATES

Day of Week	Household Trip Rate	Vehicle Availability	Household Trip Rate
Monday	9.4	Zero	2.4
Tuesday	10.1	One	7.0
Wednesday	10.2	Two	12.3
Thursday	10.2	Three	14.4
Friday	10.7	Four or More	16.6
Total	10.1	Total	10.1

3. TRIP PURPOSE AND MODE

- . Home Based Work (HBW) trips represent 14.3 percent of all trips made. Non Home Based Work trips are 13.7 percent. The largest categories are Home Based Other (HBO) with 35.9 percent and Non-Home Based Other (NHBO) with 19.5 percent. Home Based School (HBSC) trips are 5.0 percent of all trips and Home Based Shopping (HBSP) trips are 11.6 percent of the total. (Table 28)
- . As a destination, home has the largest share of trips, with one-third of all trips. Personal business trips account for another 23.6 percent. (Table 28)
- . Almost three-quarters of all person trips are made by auto drivers. Public transit accounts for 2.5 percent of all trips. (Table 29)
- . Among auto users, 53 percent drive alone while 47 percent rideshare. (Table 29)
- . About 80.1 percent of people traveling to work drive alone. (Table 30B)

Table 28
TRIPS BY PURPOSE

Trip Purpose	Number of Trips	Percent
<u>Destination Purpose</u>		
Went Home	2,942,315	33.2
Went to Work	1,111,182	12.6
Work-Related	488,648	5.5
Went to School	283,086	3.2
Dropped Off-Picked-up Others	734,537	8.3
Went to Other Transportation	65,256	0.7
Went Shopping	1,090,285	12.3
Other	2,145,325	24.2
Total	8,860,634	100.0%
<u>General Trip Purpose</u>		
Home Based Work	1,271,909	14.3
Home Based School	440,521	5.0
Home Based Shopping	1,029,001	11.6
Home Based Other	3,178,406	35.9
Non-Home Based Work	1,210,369	13.7
Non-Home Based Other	1,730,428	19.5
Total	8,860,634	100.0%
<u>Three Trip Purposes</u>		
Home Based Work	1,271,909	14.3
Home Based Other	4,647,928	52.5
Non-Home Based	2,940,797	33.2
Total	8,860,634	100.0%

Table 29
TRIPS BY TRAVEL MODE (a)

Travel Mode	Number of Trips	Percent
Drive Alone	4,384,738	49.5
Drive with Passengers	2,032,784	22.9
Ride as Passenger	1,857,101	21.0
Public Transit	225,128	2.5
School Bus	311,749	3.5
Taxi	8,283	0.1
Motorcycle	14,494	0.2
Other	26,357	0.3
Total	8,860,634	100.0%
Auto Mode		
Drive Alone	4,384,738	53.0
Carpools	3,889,885	47.0
Total	8,274,623	100.0%

(a) The number of "Rode as Passenger" responses is understated in relation to the number of "Drive with Passenger" responses. This is a result of not sampling trips made by respondents under 5 years of age and the likelihood of under-reporting of trips by riders, especially the young. However, this does not affect the total number of trips since the Screenline adjustment process ensures that the correct number of person and vehicle trips is obtained.

Table 30A

TRAVEL MODE BY DESTINATION PURPOSE (a)

Travel Mode	Went Home	Went to Work	Work Related-Business	Went to School	Drop-Off/Pick-Up Others	Other Transp.	Went Shopping	Other	Total
Drive Alone	1,473,435	889,736	382,882	41,298	215,105	14,173	511,206	856,902	4,384,737
Drive w/Passengers	617,451	78,254	64,083	12,386	374,444	3,683	303,396	579,088	2,032,785
Ride as Passenger	628,793	77,576	28,717	65,166	139,274	18,548	254,495	644,532	1,857,101
Public Transit	78,266	57,872	4,259	9,697	1,460	22,048	19,330	32,196	225,128
School Bus	127,440	1,340	1,717	151,875	3,637	4,276	142	21,323	311,750
Taxi	4,575	271	75	0	107	397	374	2,484	8,283
Motorcycle	5,691	3,251	352	226	191	73	1,012	3,698	14,494
Other	6,665	2,882	6,563	2,437	319	2,059	329	5,102	26,356
TOTAL	2,942,316	1,111,182	488,648	283,085	734,537	65,257	1,090,284	2,145,325	8,860,634

(a) The number of "Rode as Passenger" responses is understated in relation to the number of "Drive with Passenger" responses. This is a result of not sampling trips made by respondents under 5 years of age and the likelihood of under-reporting of trips by riders, especially the young. However, this does not affect the total number of trips since the Screenline adjustment process ensures that the correct number of person and vehicle trips is obtained.

Table 308

PERCENT TRAVEL MODE BY DESTINATION PURPOSE

Travel Mode	Went Home	Went to Work	Work Related-Business	Went to School	Drop-Off/Pick-up Others	Other Transp.	Went Shopping	Other	Total
Drive Alone	50.0	80.1	78.4	14.6	29.3	21.7	46.9	39.9	49.5
Drive w/Passengers	21.0	7.0	13.1	4.4	51.0	5.6	27.8	27.0	22.9
Ride as Passenger	21.4	7.0	5.9	23.0	19.0	28.4	23.4	30.1	21.0
Public Transit	2.7	5.2	0.9	3.4	0.2	33.8	1.8	1.5	2.5
School Bus	4.3	0.1	0.3	53.6	0.5	6.6	0.0	1.0	3.5
Taxi	0.2	0.0	0.0	0.0	0.0	0.6	0.0	0.1	0.1
Motorcycle	0.2	0.3	0.1	0.1	0.0	0.1	0.1	0.2	0.2
Other	0.2	0.3	1.3	0.9	0.0	3.2	0.0	0.2	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 31A

TRAVEL MODE BY GENERAL TRIP PURPOSE (a)

Travel Mode	Home Based Work	Home Based Other (b)	Non-Home Based Work	Non-Home Based Non-Work	Total
Drive Alone	1,066,973	1,889,711	892,945	535,108	4,384,737
Drive w/Passenger	52,389	1,224,524	156,019	599,851	2,032,783
Ride as Passenger	82,879	1,197,492	93,425	483,304	1,857,100
Public Transit	60,089	69,849	54,737	40,453	225,128
School Bus	1,481	240,730	2,737	66,801	311,749
Taxi	1,083	6,848	0	352	8,283
Motorcycle	4,890	7,012	1,411	1,181	14,494
Other	2,123	11,763	9,094	3,377	26,357
Total	1,271,907	4,647,929	1,210,368	1,730,427	8,860,631

(a) The number of "Rode as Passenger" responses is understated in relation to the number of "Drive with Passenger" responses. This is a result of not sampling trips made by respondents under 5 years of age and the likelihood of under-reporting of trips by riders, especially the young. However, this does not affect the total number of trips since the Screenline adjustment process ensures that the correct number of person and vehicle trips is obtained.

(b) Includes Home-Based School, Home-Based Shopping and Home-Based Other trip purposes.

Table 318

PERCENT TRAVEL MODE BY GENERAL TRIP PURPOSE

Travel Mode	Home Based Work	Home Based Other (a)	Non-Home Based Work	Non-Home Based Non-Work	Total
Drive Alone	83.9	40.7	73.8	30.9	49.5
Drive w/Passenger	4.1	26.3	12.9	34.7	22.9
Ride as Passenger	6.5	25.8	7.7	27.9	21.0
Public Transit	4.7	1.5	4.5	2.3	2.5
School Bus	0.1	5.2	0.2	3.9	3.5
Taxi	0.1	0.1	0.0	0.0	0.1
Motorcycle	0.4	0.1	0.1	0.1	0.2
Other	0.2	0.3	0.8	0.2	0.3
Total	100.0	100.0	100.0	100.0	100.0

(a) Includes Home-Based School, Home-Based Shopping and Home-Based Other trip purposes.

4. PASSENGER-VEHICLE OCCUPANCY

. 68.3 of all vehicle-trips are made in single-occupant vehicles. (Table 32B)

. The passenger-vehicle occupancy rates by trip purpose are as follows: (Table 34)

Home Based Work	1.07
Home Based Other	1.38
Non-Home Based Work	1.09
Non-Home Based Other	1.43

Overall Occupancy	1.29
-------------------	------

. The passenger-vehicle occupancy rates by destination trip purpose is as follows: (Table 34)

Went Home	1.30
Went to Work	1.08
Work-Related Business	1.06
School	2.21
Drop Off/Pick Up Others	1.24
To Other Transportation	2.04
Shopping	1.31
Other	1.45

Overall Occupancy	1.29
-------------------	------

Note: Vehicle occupancy is calculated by dividing all passengers (i.e., the sum of the modes drove alone, drove with passengers and rode with someone responses) by all passenger vehicle (i.e., the sum of drove alone and drove with passenger responses).

Table 32A

VEHICLE TRIPS BY DESTINATION PURPOSE AND VEHICLE OCCUPANCY

Vehicle Occupancy	Went Home	Went to Work	Work Related-Business	Went to School	Drop-Off/Pick-Up Others	Other Transp.	Went Shopping	Other	Total
One	1,473,435	889,736	382,882	69,298	215,105	14,173	511,206	856,902	4,384,737
Two	422,628	61,203	48,813	367	234,357	2,688	218,756	390,428	1,387,240
Three	127,967	12,174	10,770	495	91,368	663	57,474	113,915	416,826
Four	47,073	3,078	2,985	939	32,550	332	20,558	49,781	157,296
Five or More	19,784	1,799	1,515	585	16,168	0	6,608	24,964	71,423
Total	2,090,887	967,990	446,965	5,684	589,568	17,856	814,602	1,435,990	6,417,522

Table 32B

PERCENT VEHICLE TRIPS BY DESTINATION PURPOSE AND VEHICLE OCCUPANCY

Vehicle Occupancy	Went Home	Went to Work	Work Related-Business	Went to School	Drop-Off/Pick-Up Others	Other Transp.	Went Shopping	Other	Total
One	70.5	91.9	85.7	76.9	36.5	79.4	62.8	59.7	68.3
Two	20.2	6.3	10.9	15.6	39.8	15.0	26.9	27.2	21.6
Three	6.1	1.3	2.4	4.6	15.5	3.7	7.0	7.9	6.5
Four	2.3	0.3	0.7	1.8	5.5	1.9	2.5	3.5	2.5
Five or More	0.9	0.2	0.3	1.1	2.7	0.0	0.8	1.7	1.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 33A

NUMBER OF VEHICLE TRIPS BY GENERAL PURPOSE AND VEHICLE OCCUPANCY

Vehicle Occupancy	Home Based Work	Home Based Other	Non-Home Based Work	Non-Home Based Other	Total
One	1,066,973	1,889,711	892,945	535,108	4,384,737
Two	42,556	827,606	117,772	399,305	1,387,239
Three	6,597	260,179	26,460	123,590	416,826
Four	2,646	94,770	8,224	51,654	157,294
Five or More	590	41,968	3,562	25,302	71,422
Total	1,119,362	3,114,234	1,048,963	1,134,959	6,417,518

Table 33B

PERCENT OF VEHICLE TRIPS BY GENERAL PURPOSE AND VEHICLE OCCUPANCY

Vehicle Occupancy	Home Based Work	Home Based Other	Non-Home Based Work	Non-Home Based Other	Total
One	95.3	60.7	85.1	47.1	68.3
Two	3.8	26.6	11.2	35.2	21.6
Three	0.6	8.4	2.5	10.9	6.5
Four	0.2	3.0	0.8	4.6	2.5
Five or More	0.1	1.3	0.4	2.2	1.1
Total	100.0	100.0	100.0	100.0	100.0

Table 34
AVERAGE VEHICLE OCCUPANCY

By Destination Purpose	
Went Home	1.30
Went to Work	1.08
Work Related Business	1.06
Went to School	2.21
Drop Off/Pick Up Others	1.24
Other Transportation	2.04
Went Shopping	1.31
Other	1.45
Average	1.29
By General Purpose	
Home-Based Work	1.07
Home-Based Other	1.38
Non-Home Based Work	1.09
Non-Home Based Non-Work	1.43
Average	1.29

5. TIME-OF-DAY TRAVEL BY PURPOSE AND MODE

- The percent of trips by purpose and by time periods is as follows: (Table 36)

Time Period	Trip Purpose (%)			Total
	HBW	HBO	NHB	
A.M. Peak Period (6:45-9:45)	30.0%	15.4%	14.2%	17.1%
P.M. Peak Period (3:00-6:00)	30.0	25.2	24.4	25.7
A.M. Peak Hour (6:45-7:45)	17.6	5.3	4.2	6.7
P.M. Peak Hour (4:00-5:00)	12.1	7.9	8.7	8.8
Midday Period (9:45-3:00)	13.0	26.4	42.5	29.8

- The p.m. peak hour travel (8.8%) is higher than the a.m. peak hour travel (6.7%). The p.m. peak hour carries 12.1 percent of the HBW trips, 7.9 percent of the HBO and 8.7 percent of the NHB trips.
- 42.8 percent of all daily trips occur during the a.m. and p.m. peak periods: 17.1 percent in the three-hour a.m. peak period (6:45 a.m. - 9:45 a.m.) and 25.7 percent in the three-hour p.m. peak period.
- The distribution of trips by purpose within peak periods and peak hour is as follows: (Table 37)

Time Period	Trip Purpose (%)			Total
	HBW	HBO	NHB	
A.M. Peak Period (6:45-9:45)	25.2%	47.3%	27.6%	100.0%
P.M. Peak Period (3:00-6:00)	16.8	51.6	31.6	100.0
A.M. Peak Hour (6:45-7:45)	37.7	41.3	21.0	100.0
P.M. Peak Hour (4:00-5:00)	19.8	46.4	47.3	100.0
Midday Period (9:45-3:00)	6.3	46.4	47.3	100.0

37.7 percent of the a.m. peak hour traffic are HBW trips, 41.3 percent are HBO and 21.1 are NHB. During the p.m. peak hour only 19.8 percent are HBW (reflecting the fact that, typically, home-to-work trips are made directly while work-to-home trips often make stops for other purposes) while 33 percent are NHB. (Table 37)

The peak hour and peak period distribution of passenger-vehicle traffic and transit trips is as follows: (Table 36)

Time Period	Percent by Mode		
	Automobile	Auto Passengers	Transit
A.M. Peak Period (6:45-9:45)	16.8	11.9	27.2
P.M. Peak Period (3:00-6:00)	25.7	24.7	31.0
A.M. Peak Hour (6:45-7:45)	6.6	4.6	14.6
P.M. Peak Hour (4:00-5:00)	9.3	7.8	13.1

Transit exhibits higher peaking characteristics than passenger vehicle traffic. Whereas peak hour auto driver trips represent 39.3 percent of all a.m. period driver trips and 36.2 percent of all p.m. period trips, transit is 53.7 percent and 42.3 percent, respectively. (Table 36)

Table 35

DISTRIBUTION OF NUMBER OF TRIPS BY TIME OF DAY, PURPOSE AND MODE

Time of Day	All Trips	Home Based Work	Home Based Other	Non-Home Based	Driver Trips	Passenger Trips	Transit Trips	School Bus	Other
<u>Morning</u>									
6:45 - 7:44	592,439	223,110	244,621	124,707	420,172	84,375	32,845	50,602	4,444
7:45 - 8:44	499,501	117,408	242,522	139,571	348,064	65,573	15,793	65,690	4,381
8:45 - 9:44	422,092	40,980	228,618	152,494	309,301	70,811	12,536	26,993	2,450
<u>Subtotal</u>	<u>1,514,032</u>	<u>381,498</u>	<u>715,761</u>	<u>416,772</u>	<u>1,077,537</u>	<u>220,759</u>	<u>61,174</u>	<u>143,285</u>	<u>11,275</u>
<u>Afternoon</u>									
3:00 - 3:59	716,299	94,682	362,526	259,091	489,003	130,207	18,558	74,509	4,023
4:00 - 4:59	779,396	153,896	367,965	257,535	597,837	145,156	29,553	3,555	3,295
5:00 - 5:59	777,192	132,769	442,173	202,250	563,276	184,293	21,612	3,897	4,114
<u>Subtotal</u>	<u>2,272,887</u>	<u>381,347</u>	<u>1,172,664</u>	<u>718,876</u>	<u>1,650,116</u>	<u>459,656</u>	<u>69,723</u>	<u>81,961</u>	<u>11,432</u>
<u>Remainder</u>									
Midnight-6:44	357,848	193,135	117,396	47,317	297,663	38,945	13,677	4,192	3,370
9:45 - 2:59	2,643,761	165,598	1,227,589	1,250,574	2,003,506	482,989	63,595	79,126	14,545
6:00-11:59	2,072,107	150,331	1,414,518	507,258	1,388,699	654,752	16,959	3,184	8,513
<u>Subtotal</u>	<u>5,073,716</u>	<u>509,064</u>	<u>2,759,503</u>	<u>1,805,149</u>	<u>3,689,868</u>	<u>1,176,686</u>	<u>94,231</u>	<u>86,502</u>	<u>26,428</u>
<u>Total</u>	<u>8,860,635</u>	<u>1,271,909</u>	<u>4,647,928</u>	<u>2,940,797</u>	<u>6,417,521</u>	<u>1,857,101</u>	<u>225,128</u>	<u>311,748</u>	<u>49,135</u>

Table 36

PERCENT DISTRIBUTION OF TRIPS BY TIME OF DAY, PURPOSE AND MODE

Time of Day	All Trips	Home Based Work	Home Based Other	Non-Home Based	Driver Trips	Passenger Trips	Transit Trips	School Bus	Other
<u>Morning</u>									
6:45 - 7:44	6.7	17.6	5.3	4.2	6.6	4.6	14.6	16.2	9.0
7:45 - 8:44	5.6	9.2	5.2	4.8	5.4	3.5	7.0	21.1	8.9
8:45 - 9:44	4.8	3.2	4.9	5.2	4.8	3.8	5.6	8.7	5.0
Subtotal	17.1%	30.0%	15.4%	14.2%	16.8%	11.9%	27.2%	46.0%	22.9%
<u>Afternoon</u>									
3:00 - 3:59	8.1	7.4	7.8	8.8	7.6	7.0	8.3	23.9	8.2
4:00 - 4:59	8.8	12.1	7.9	8.7	9.3	7.8	13.1	1.1	6.7
5:00 - 5:59	8.8	10.5	9.5	6.9	8.8	9.9	9.6	1.3	8.4
Subtotal	25.7%	30.0%	25.2%	24.4%	25.7%	24.7%	31.0%	26.3%	23.3%
<u>Remainder</u>									
Midnight-6:44	4.0	15.2	2.5	1.6	4.6	2.1	6.1	1.3	6.9
9:45 - 2:59	29.8	13.0	26.4	42.5	31.2	26.0	28.2	25.4	29.6
6:00-11:59	23.4	11.8	30.5	17.3	21.7	35.2	7.5	1.0	17.3
Subtotal	57.2%	40.0%	59.4%	61.4%	57.5%	63.3%	41.8%	27.7%	53.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 37

PERCENT DISTRIBUTION OF TRIP PURPOSE AND MODE BY TIME PERIOD

Time of Day	All Trips	Home Based Work	Home Based Other	Non-Home Based	Driver Trips	Passenger Trips	Transit Trips	School Bus	Other
<u>Morning</u>									
6:45 - 7:44	100.0%	37.7	41.3	21.0	70.9	14.2	5.5	8.5	0.8
7:45 - 8:44	100.0%	23.5	48.6	27.9	69.7	13.1	3.2	13.1	0.9
8:45 - 9:44	100.0%	9.7	54.2	36.1	73.3	16.8	2.9	6.4	0.6
Subtotal	100.0%	25.2%	47.3%	27.5%	71.2%	14.6%	4.0%	9.5%	0.7%
<u>Afternoon</u>									
3:00 - 3:59	100.0%	13.2	50.6	36.2	68.3	18.2	2.6	10.4	0.5
4:00 - 4:59	100.0%	19.8	47.2	33.0	76.7	18.6	3.8	0.5	0.4
5:00 - 5:59	100.0%	17.1	56.9	26.0	72.5	23.7	2.8	0.5	0.5
Subtotal	100.0%	16.8%	51.6%	31.6%	72.6%	20.2%	3.1%	3.6%	0.5%
<u>Remainder</u>									
Midnight-6:44	100.0%	54.0	32.8	13.2	83.2	10.9	3.8	1.2	0.9
9:45 - 2:59	100.0%	6.3	46.4	47.3	75.8	18.3	2.4	3.0	0.5
6:00-11:59	100.0%	7.2	68.3	24.5	67.0	31.6	0.8	0.2	0.4
Subtotal	100.0%	10.0%	54.4%	35.6%	72.7%	23.2%	1.9%	1.7%	0.5%
Total	100.0%	14.4%	52.5%	33.2%	72.4%	21.0%	2.5%	3.5%	0.6%

Table 38

PERCENT DISTRIBUTION OF TRIPS BY PURPOSE, MODE AND TIME OF DAY

Time of Day	All Trips	Home Based Work	Home Based Other	Non-Home Based	Driver Trips	Passenger Trips	Transit Trips	School Bus	Other
<u>Morning</u>									
6:45 - 7:44	6.7	2.5	2.8	1.4	4.7	1.0	0.4	0.6	0.1
7:45 - 8:44	5.6	1.3	2.7	1.6	3.9	0.7	0.2	0.7	0.0
8:45 - 9:44	4.8	0.5	2.6	1.7	3.5	0.8	0.1	0.3	0.0
Subtotal	17.1%	4.3%	8.1%	4.7%	12.2%	2.5%	0.7%	1.6%	0.1%
<u>Afternoon</u>									
3:00 - 3:59	8.1	1.1	4.1	2.9	5.5	1.5	0.2	0.8	0.1
4:00 - 4:59	8.8	1.7	4.1	2.9	6.7	1.6	0.3	0.0	0.0
5:00 - 5:59	8.8	1.5	5.0	2.3	6.4	2.1	0.2	0.1	0.0
Subtotal	25.7%	4.3%	13.2%	8.1%	18.6%	5.2%	0.7%	0.9%	0.1%
<u>Remainder</u>									
Midnight-6:44	4.0	2.2	1.3	0.5	3.4	0.4	0.2	0.0	0.0
9:45 - 2:59	29.8	1.9	13.9	14.1	22.6	5.5	0.7	0.9	0.2
6:00-11:59	23.4	1.7	16.0	5.7	15.7	7.4	0.2	0.0	0.1
Subtotal	57.2%	5.8%	31.2%	20.3%	41.6%	13.3%	1.1%	1.0%	0.3%
Total	100.0%	14.4%	52.5%	33.2%	72.4%	21.0%	2.5%	3.5%	0.6%

6. TRAVEL TIME AND TRIP LENGTH

- . The average travel time for all trips in the region is 15.8 minutes. Among the trip purposes, Home Based Work trips are longest, at 21.2 minutes and Home Based Shopping are shortest, at 12.4 minutes. (Table 39)
- . Auto passenger trips are slightly shorter than auto driver trips (14.5 versus 15.5 minutes). At 25.8 minutes, public transit trips have, on the average, about 70 percent longer travel time than auto trips. (Table 39)
- . 21.7 percent of all trips are 5 minutes or less in length. These trips average 4.3 minutes in duration. (Table 41)
- . 46.1 percent of all trips are 10 minutes or less in duration. These trips average 6.9 minutes. (Table 41)
- . Almost 80 percent of all trips are 20 minutes or less in duration, while less than half of all transit trips are 20 minutes or less. (Table 43)
- . The average travel distance for all trips in the region is 5.90 miles. Among the trip purposes, Home Based Work trips are longest, at 9.20 miles and Home Based School trips are shortest, at 4.01 miles. (Table 44)
- . Auto driver trips are longest, at 6.55 miles and school bus trips are the shortest, at 3.70 miles. (Table 44)
- . 12.9 percent of all trips are 1.0 mile or less in length. The median value is 3.78 miles. (Table 46)

Table 39

AVERAGE TRAVEL TIME (MINUTES) BY MODE AND GENERAL PURPOSE (a)

	HB-Work	HB-School	HB-Shopping	HB-Other	MHB-Work	MHB-Other	Average
Auto Driver	20.70	18.12	11.80	14.60	16.67	13.28	15.47
Drive Alone	20.66	15.33	11.29	14.33	16.63	12.87	16.00
Auto Passenger	19.21	10.50	13.43	15.09	15.35	13.87	14.49
Carpool	20.13	10.97	13.08	14.69	16.32	13.75	14.40
Public Transit	31.25	28.21	21.16	25.94	24.63	21.76	25.84
School Bus	39.56	20.84	9.80	32.32	32.56	21.86	21.32
Other	26.17	11.83	11.89	20.00	18.83	26.27	19.66
Average	21.16	18.16	12.37	14.94	17.05	14.07	15.83

(a) Does not include any internal-external, external-internal, or external-external trips.

Table 40

DISTRIBUTION OF TRIPS BY GENERAL PURPOSE AND DURATION (MINUTES)

MINUTES	ALL TRIPS	HB WORK	HB SCHOOL	HB SHOPPING	HB OTHER	MHB WORK	MHB OTHER	EXTERNAL
5 or Less	1,889,092	102,747	55,923	295,414	739,625	222,784	474,213	3,348
6-10	2,124,022	198,410	95,558	309,335	817,283	260,185	445,678	5,570
11-15	1,773,036	259,697	93,113	221,570	644,421	240,377	317,521	7,912
16-20	1,029,940	200,536	76,606	90,665	333,989	161,966	169,807	9,630
21-25	538,075	130,367	33,284	38,635	161,221	86,738	89,194	3,840
26-30	689,214	183,890	42,283	36,557	222,088	112,912	98,101	13,169
31-40	343,111	107,014	23,403	17,008	95,773	56,089	48,419	12,579
41-50	180,795	48,079	10,052	8,715	65,672	29,004	25,973	12,872
51-60	66,336	16,266	3,435	3,201	26,337	10,479	12,055	12,259
More than 60	64,516	11,631	2,743	4,345	71,998	9,062	12,248	81,317
TOTAL	8,698,137	1,258,637	436,400	1,025,445	3,178,407	1,189,596	1,693,209	162,497
AVERAGE DURATION	15.8	21.2	18.2	12.4	14.9	17.0	14.1	128.8

Table 41

PERCENT DISTRIBUTION OF TRIPS BY GENERAL PURPOSE AND DURATION (MINUTES)

MINUTES	ALL TRIPS	HB WORK	HB SCHOOL	HB SHOPPING	HB OTHER	MHB WORK	MHB OTHER	EXTERNAL
5 or Less	21.7	8.2	12.8	28.8	23.3	18.7	28.0	2.1
6-10	24.4	15.8	21.9	30.2	25.7	21.9	26.3	3.4
11-15	20.4	20.6	21.3	21.6	20.3	20.2	18.8	4.9
16-20	11.8	15.9	17.6	8.8	10.5	13.6	10.0	5.9
21-25	6.2	10.4	7.6	3.8	5.1	7.3	5.3	2.4
26-30	7.9	14.6	9.7	3.6	7.0	9.5	5.8	8.1
31-40	3.9	8.5	5.4	1.7	3.0	4.7	2.9	7.7
41-50	2.1	3.8	2.3	0.8	2.1	2.4	1.5	7.9
51-60	0.8	1.3	0.8	0.3	0.8	0.9	0.7	7.5
More than 60	0.7	0.9	0.6	0.4	2.3	0.8	0.7	50.0
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 42

DISTRIBUTION OF TRIPS BY MODE AND DURATION (MINUTES)

MINUTES	AUTO DRIVER	AUTO PASSENGER	PUBLIC TRANSIT	SCHOOL BUS	OTHER
5 or less	1,398,751	460,723	11,202	55,923	8,515
6 - 10	1,550,834	484,090	26,832	95,558	9,094
11 - 15	1,291,412	369,222	34,157	93,113	9,809
16 - 20	746,982	175,288	32,671	76,606	5,547
21 - 25	386,797	91,552	24,919	33,284	3,433
26 - 30	499,688	116,042	34,408	42,283	3,858
31 - 40	242,472	47,529	28,112	23,403	2,507
41 - 50	118,516	31,452	19,088	10,052	1,397
51 - 60	40,791	13,440	5,900	3,435	1,518
More than 60	40,020	13,952	6,742	2,743	827
TOTAL	6,316,263	1,803,390	224,031	436,400	46,505
AVERAGE DURATION	15.5	14.5	25.8	21.3	19.7

Table 41

PERCENT DISTRIBUTION OF TRIPS BY GENERAL PURPOSE AND DURATION (MINUTES)

MINUTES	ALL TRIPS	HB WORK	HB SCHOOL	HB SHOPPING	HB OTHER	MHB WORK	MHB OTHER	EXTERNAL
5 or Less	21.7	8.2	12.8	28.8	23.3	18.7	28.0	2.1
6-10	24.4	15.8	21.9	30.2	25.7	21.9	26.3	3.4
11-15	20.4	20.6	21.3	21.6	20.3	20.2	18.8	4.9
16-20	11.8	15.9	17.6	8.8	10.5	13.6	10.0	5.9
21-25	6.2	10.4	7.6	3.8	5.1	7.3	5.3	2.4
26-30	7.9	14.6	9.7	3.6	7.0	9.5	5.8	8.1
31-40	3.9	8.5	5.4	1.7	3.0	4.7	2.9	7.7
41-50	2.1	3.8	2.3	0.8	2.1	2.4	1.5	7.9
51-60	0.8	1.3	0.8	0.3	0.8	0.9	0.7	7.5
More than 60	0.7	0.9	0.6	0.4	2.3	0.8	0.7	50.0
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 42

DISTRIBUTION OF TRIPS BY MODE AND DURATION (MINUTES)

MINUTES	AUTO DRIVER	AUTO PASSENGER	PUBLIC TRANSIT	SCHOOL BUS	OTHER
5 or less	1,398,751	460,723	11,202	55,923	8,515
6 - 10	1,550,834	484,090	26,832	95,558	9,094
11 - 15	1,291,412	369,222	34,157	93,113	9,809
16 - 20	746,982	175,288	32,671	76,606	5,547
21 - 25	386,797	91,552	24,919	33,284	3,433
26 - 30	499,688	116,042	34,408	42,283	3,858
31 - 40	242,472	47,529	28,112	23,403	2,507
41 - 50	118,516	31,452	19,088	10,052	1,397
51 - 60	40,791	13,440	5,900	3,435	1,518
More than 60	40,020	13,952	6,742	2,743	827
TOTAL	6,316,263	1,803,390	224,031	436,400	46,505
AVERAGE DURATION	15.5	14.5	25.8	21.3	19.7

Table 43
 PERCENT DISTRIBUTION OF TRIPS BY MODE AND DURATION (MINUTES)

MINUTES	AUTO DRIVER	AUTO PASSENGER	PUBLIC TRANSIT	SCHOOL BUS	OTHER
5 or less	22.1	25.5	5.0	12.8	18.3
6 - 10	24.6	26.8	12.0	21.9	19.6
11 - 15	20.4	20.5	15.2	21.3	21.1
16 - 20	11.8	9.7	14.6	17.6	11.9
21 - 25	6.1	5.1	11.1	7.6	7.4
26 - 30	7.9	6.4	15.4	9.7	8.3
31 - 40	3.8	2.6	12.5	5.4	5.4
41 - 50	1.9	1.7	8.5	2.3	3.0
51 - 60	0.6	0.7	2.6	0.8	3.3
More than 60	0.6	0.8	3.0	0.6	1.8
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%

Table 44

AVERAGE TRAVEL DISTANCE (MILES) BY MODE AND GENERAL PURPOSE (a)

	HB-Work	HB-School	HB-Shopping	HB-Other	MHB-Work	MHB-Other	Average
Drive Alone	9.46	7.79	3.98	5.61	6.89	4.81	6.18
Auto Driver	9.82	8.32	3.67	5.78	6.95	4.56	6.55
Auto Passenger	7.98	3.13	4.74	5.76	5.85	5.01	5.38
Public Transit	6.25	3.92	3.78	4.11	6.44	4.24	5.24
School Bus	3.41	3.30	1.99	5.63	6.95	4.97	3.70
Other	7.52	4.01	4.15	5.23	7.32	7.49	5.67
Average	9.20	4.01	4.15	5.63	6.79	4.86	5.90

(a) Does not include any internal-external, external - internal, or external-external trips.

Table 45

DISTRIBUTION OF TRIPS BY GENERAL PURPOSE AND DISTANCE

MILES	ALL TRIPS	HB WORK	HB SCHOOL	HB SHOPPING	HB OTHER	MHB WORK
1.0 or less	1,118,492	50,210	64,901	171,526	431,285	125,099
1.01 - 2	1,338,966	81,523	100,142	198,053	487,090	162,166
2.01 - 3	1,207,322	102,407	81,212	175,364	464,870	128,877
3.01 - 4	873,727	95,710	51,461	120,733	320,313	107,257
4.01 - 5	681,892	100,112	33,631	87,420	238,762	87,455
5.01 - 6	527,736	87,950	25,508	58,937	185,129	73,687
6.01 - 7	411,691	73,066	16,309	44,981	143,381	65,941
7.01 - 9	669,317	137,805	22,031	59,949	226,486	104,448
9.01 - 11	492,976	116,339	12,000	40,220	156,791	94,096
11.01 - 15	629,479	176,013	14,558	38,091	197,569	112,076
More than 15	746,342	237,376	14,646	30,100	243,178	128,495
TOTAL	8,697,940	1,258,511	436,399	1,025,374	3,094,854	1,189,597
AVERAGE DISTANCE	5.9	9.2	4.01	4.15	5.63	6.79
MEDIAN	3.78	7.5	2.63	2.77	3.45	4.8

Table 46

PERCENT DISTRIBUTION OF TRIPS BY GENERAL PURPOSE AND DISTANCE

MILES	ALL TRIPS	HB WORK	HB SCHOOL	HB SHOPPING	HB OTHER	NHB WORK
1.0 or less	12.9	4.0	14.9	16.7	13.9	10.5
1.01 - 2	15.4	6.5	22.9	19.3	15.7	13.6
2.01 - 3	13.9	8.1	18.6	17.1	15.0	10.8
3.01 - 4	10.0	7.6	11.8	11.8	10.3	9.0
4.01 - 5	7.8	8.0	7.7	8.5	7.7	7.4
5.01 - 6	6.1	7.0	5.8	5.7	6.0	6.2
6.01 - 7	4.7	5.8	3.7	4.4	4.6	5.5
7.01 - 9	7.7	10.9	5.0	5.8	7.3	8.8
9.01 - 11	5.7	9.2	2.7	3.9	5.1	7.9
11.01 - 15	7.2	14.0	3.3	3.7	6.4	9.4
More than 15	8.6	18.9	3.4	2.9	7.9	10.8
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Table 47

DISTRIBUTION OF TRIPS BY MODE AND DISTANCE

MILES	AUTO DRIVER	AUTO PASSENGER	PUBLIC TRANSIT	SCHOOL BUS	OTHER
1.0 or less	781,465	268,808	17,507	42,112	8,601
1.01 - 2	924,312	297,512	31,621	78,068	7,453
2.01 - 3	833,035	273,937	31,460	64,433	4,457
3.01 - 4	611,159	195,419	25,670	38,381	3,098
4.01 - 5	486,787	140,522	26,485	25,276	2,822
5.01 - 6	382,384	102,777	22,967	16,067	3,541
6.01 - 7	307,909	74,845	14,226	12,330	2,382
7.01 - 9	505,324	129,976	17,814	11,934	4,268
9.01 - 11	388,886	83,152	14,173	4,291	2,474
11.01 - 15	499,968	108,113	11,783	6,774	2,842
More than 15	594,839	128,328	10,324	8,284	4,567
TOTAL	6,316,068	1,803,389	224,030	307,950	46,505
AVERAGE DISTANCE	6.18	5.38	5.24	3.7	5.67
MEDIAN	4.03	3.28	4.22	2.49	3.96

Table 48
 PERCENT DISTRIBUTION OF TRIPS BY MODE AND DISTANCE

MILES	AUTO DRIVER	AUTO PASSENGER	PUBLIC TRANSIT	SCHOOL BUS	OTHER
1.0 or less	12.4	14.9	7.8	13.7	18.5
1.01 - 2	14.6	16.5	14.1	25.4	16.0
2.01 - 3	13.2	15.2	14.0	20.9	9.6
3.01 - 4	9.7	10.8	11.5	12.5	6.7
4.01 - 5	7.7	7.8	11.8	8.2	6.1
5.01 - 6	6.1	5.7	10.3	5.2	7.6
6.01 - 7	4.9	4.2	6.4	4.0	5.1
7.01 - 9	8.0	7.2	8.0	3.9	9.2
9.01 - 11	6.2	4.6	6.3	1.4	5.3
11.01 - 15	7.9	6.0	5.3	2.2	6.1
More than 15	9.4	7.1	4.6	2.7	9.8
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%

DATA FILE SPECIFICATIONS

There are four primary datasets related to the TBI Home Interview Survey referred to as Card Types 1, 2, 3 and 4. The specifications of each dataset is denoted in Table 49. Card Type 1 represents general household data and information about individuals within the household. Card Type 2 data is additional household information related to the travel date and specific individual information on walk or bike to work. Card Type 3 contains information about each individual within a household including main employer or school. Card Type 4 contains all of the trip data with one surveyed trip contained in one data record. Information included in this dataset includes start time and location of trip, end time and location of trip, type of vehicle used, number of people in vehicle and main purpose of trip.

TABLE 49
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY

Record Layout	
CARD TYPE 1--HOUSEHOLD DATA (One Card per Household)	
001-005	Household ID
006-007	Blank
008-009	Number of Vehicles (Q6 Recruit)
010-011	Children Under 5 (Q7 Recruit)
012-013	People 5 Years or Older (Q8 Recruit)
014-015	01 Person Number
016	Gender (1 = M, 2 = F)
017-018	Age (1-99, RF = Refused)
019	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
020	Employed (1 = Yes, 2 = No)
021	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
022-024	Hours/Week Employed (RF = Refused/DK)
025-026	02 Person Number
027	Gender (1 = M, 2 = F)
028-029	Age (1-99, RF = Refused)
030	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
031	Employed (1 = Yes, 2 = No)
032	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
033-035	Hours/Week Employed (RF = Refused/DK)
036-037	03 Person Number
038	Gender (1 = M, 2 = F)
039-040	Age (1-99, RF = Refused)
041	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
042	Employed (1 = Yes, 2 = No)
043	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
044-046	Hours/Week Employed (RF = Refused/DK)

TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY

Record Layout	
047-048	04 Person Number
049	Gender (1 = M, 2 = F)
050-051	Age (1-99, RF = Refused)
052	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
053	Employed (1 = Yes, 2 = No)
054	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
055-057	Hours/Week Employed (RF = Refused/DK)
058-059	05 Person Number
060	Gender (1 = M, 2 = F)
061-062	Age (1-99, RF = Refused)
063	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
064	Employed (1 = Yes, 2 = No)
065	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
066-068	Hours/Week Employed (RF = Refused/DK)
069-070	06 Person Number
071	Gender (1 = M, 2 = F)
072-073	Age (1-99, RF = Refused)
074	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
075	Employed (1 = Yes, 2 = No)
076	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
077-079	Hours/Week Employed (RF = Refused/DK)
080-081	07 Person Number
082	Gender (1 = M, 2 = F)
083-084	Age (1-99, RF = Refused)
085	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
086	Employed (1 = Yes, 2 = No)
087	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
088-090	Hours/Week Employed (RF = Refused/DK)

TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY

Record Layout	
091-092	08 Person Number
093	Gender (1 = M, 2 = F)
094-095	Age (1-99, RF = Refused)
096	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
097	Employed (1 = Yes, 2 = No)
098	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
099-101	Hours/Week Employed (RF = Refused/DK)
102-103	09 Person Number
104	Gender (1 = M, 2 = F)
105-106	Age (1-99, RF = Refused)
107	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
108	Employed (1 = Yes, 2 = No)
109	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
110-112	Hours/Week Employed (RF = Refused/DK)
113-114	10 Person Number
115	Gender (1 = M, 2 = F)
116-117	Age (1-99, RF = Refused)
118	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
119	Employed (1 = Yes, 2 = No)
120	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
121-123	Hours/Week Employed (RF = Refused/DK)
124-125	11 Person Number
126	Gender (1 = M, 2 = F)
127-128	Age (1-99, RF = Refused)
129	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
130	Employed (1 = Yes, 2 = No)
131	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
132-134	Hours/Week Employed (RF = Refused/DK)

TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY

Record Layout	
135-136	12 Person Number
137	Gender (1 = M, 2 = F)
138-139	Age (1-99, RF = Refused)
140	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
141	Employed (1 = Yes, 2 = No)
142	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
143-145	Hours/Week Employed (RF = Refused/DK)
146-147	13 Person Number
148	Gender (1 = M, 2 = F)
149-150	Age (1-99, RF = Refused)
151	Drivers License (1 = Yes, 2 = No, 3 = Refused/DK)
152	Employed (1 = Yes, 2 = No)
153	More than One Job (1 = Yes, 2 = No, 3 = Refused/DK)
154-156	Hours/Week Employed (RF = Refused/DK)
157	Blank
158	Day of Week for Travel
	1 = Monday
	2 = Tuesday
	3 = Wednesday
	4 = Thursday
	5 = Friday
159	County (from Recruit) * See Note
	1 = Anoka
	2 = Carver
	3 = Dakota
	4 = Hennepin
	5 = Ramsey
	6 = Scott
	7 = Washington
160	1 (Card Type "1")

**TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY**

Record Layout	
The following are from the address matching by Met Council:	
161-166	County-MCD Code (of Home Address)
167	Blank
168-175	Expansion Factor
* Notes:	
County Codes (1-7) were not changed from what was reported by the respondent. The County-MCD codes appended to each record are from the Met Council's address matching.	
Record Layout for Travel Behavior Inventory Tape: Final for SRF	
CARD TYPE 2 - HOUSEHOLD DATA (One Card per Household)	
001-005	Household ID
006	Blank
007-009	Total Trips Made by Household
010-013	Travel Date (MMDD)
014	Blank
015	1 (Address Type 1 for Home Address)
016	Blank
017-065	Home Address * See Note
066-087	Home City (will be blank)
088-089	Home State (MN)
090	Blank

TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY

Record Layout	
091-095	Home Zip Code
096	Blank
097-099	Home City Code (001-190 See Municipality List) * See note
100	Blank
101-107	Home/Contact Phone
108-109	Blank
110	Walk to Work? (1 = Yes, 2 = No, 3 = Refused/DK)
111-112	1st Person Who Walked
113-114	2nd Person Who Walked
115-116	3rd Person Who Walked
117-118	4th Person Who Walked
119-120	5th Person Who Walked
121-122	6th Person Who Walked
123-124	7th Person Who Walked
125-126	8th Person Who Walked
127-128	9th Person Who Walked
129-130	10th Person Who Walked
131-132	11th Person Who Walked
133-134	12th Person Who Walked
135-136	13th Person Who Walked
137	Bike to Work? (1 = Yes, 2 = No, 3 = Refused/DK)
138-139	1st Person Who Biked
140-141	2nd Person Who Biked
142-143	3rd Person Who Biked
144-145	4th Person Who Biked
146-147	5th Person Who Biked
148-149	6th Person Who Biked
150-151	7th Person Who Biked
152-153	8th Person Who Biked
154-155	9th Person Who Biked
156-157	10th Person Who Biked
158	Drop Off/Pick Up at Daycare? (1 = Yes, 2 = No, 3 = Refused/DK)

**TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY**

Record Layout	
159	Total Household Income 1 Less than \$7,500 2 Between \$7,500 and \$15,000 3 Between \$15,001 and \$25,000 4 Between \$25,001 and \$35,000 5 Between \$35,001 and \$45,000 6 Between \$45,001 and \$55,000 7 Between \$55,001 and \$75,000 8 Over \$75,000 9 Refused/Don't Know - Refused/Don't Know but \$35,000 or less 0 Refused/Don't Know but Over \$35,000
160	2 (CARD Type "2")
161-164	1990 TAZ of Home Address
165-172	1990 Tract and Home Address
173-178	County and MCD of Home Address
179-183	Household ID
184-185	Household Size (Total)
186-187	Number of Vehicles (Q6 Recruit)
188-189	Children Under 5 (Q7 Recruit)
190-191	People 5 Years or Older (Q8 Recruit)
192-197	County-MCD Code (of Home Address)
198	Blank
199-206	Expansion Factor
* Notes:	
Home address has been corrected to match the corrected address returned to the Met Council from its original "reject" file.	
Municipality codes (1-190) were not changed from what was reported by the respondent. The County-MCD codes appended to each record are from the Met Council's address matching.	

**TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY**

Record Layout	
CARD TYPE 3 - INDIVIDUAL DATA (One Card per Person)	
001-005	Household ID
006-007	Person ID (01, 02, ..., 13)
008-013	Blank
014-054	Name of Main Employer or School
055-065	Blank
066-109	Address of Main Employer or School * See Note
110	Address Type (1-4) for Main Employer or School * See Note 1 = Street Address 2 = Intersection 3 = Building or Place 4 = Other
111-130	City for Main Employer or School will be Blank if Metro Code (1-190)
131	Blank
132-133	State for Main Employer or School
134	Blank
135-139	Zip Code for Main Employer or School will be Blank if Respondent Doesn't Know
140	Blank
141-143	City Code for Main Employer or School (1-192, 194) * Note
150	Employed (1 = Yes, 2 = No, 3 = Refused/Don't Know)
151	More than One Employer (1 = Yes, 2 = No, 3 = Refused/DK)
152-154	Hours Worked per Week (RF = Refused/Don't Know)
155	Student on Travel Day (1 = Yes, 2 = No, 3 = Refused/DK) Only Asked if not Employed
156	Attend School on Travel Day (1 = Yes, 2 = No, 3 = Refused/DK) Only Asked if not Employed and Student

**TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY**

Record Layout	
157-158	Number of Trips Made by Member
159	Travel Information Recorded in Diary? 1 = Recorded in Diary 2 = Reconstructed from Memory 3 = Both (some recorded and the rest reconstructed)
160	3 (Card Type "3")
161-164	1990 TAZ of Work/School Address
165-172	1990 Tract and Work/School Address
173-178	County and MCD of Work/School Address
179-183	Household ID
184-185	Household Size (Total)
186-187	Number of Vehicles (Q6 Recruit)
188-189	Children Under 5 (Q7 Recruit)
190-191	People 5 Years or Older (Q8 Recruit)
192-197	County-MCD Code (for Home Address)
198	Blank
199-206	Expansion Factor
* Notes:	
Work/school address has been corrected to match the corrected address returned to the Met Council from its original "reject" file.	
Address types (1-4) were not changed from what was in the original data file.	
Municipality codes (1-190) were not changed from what was reported by the respondent. The City/County MCD codes appended to each record are from the Met Council's address matching.	

**TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY**

Record Layout	
CARD TYPE 4 - TRIP DATA (One Card per Trip)	
001-005	Household ID
006-007	Person ID (01, 02, ..., 13)
008-009	Trip Number (01, 02, ..., 20)
010-013	Start Time (HHMM)
014	Start a.m. or p.m.? 1 = a.m. 2 = p.m. 3 = a.m. (estimate of time) 4 = p.m. (estimate of time)
015	Address Type for Start Location (1-4) * See Note (Blank if 016-063 Home, Work, School) Home (See Column 015 of Card Type "2") Work (See Column 110 of Card Type "3") School (See Column 110 of Card Type "3")
016-063	Address for Start Location Home (See Columns 017-065 of Card Type "2") Work (See Columns 066-109 of Card Type "3") School (See Columns 066-109 of Card Type "3")
064-077	City for Start Location will be Blank Unless City Code 191 or 194
078-079	State for Start Location
080-082	City Code for Start Location (1-192, 194) * See Note (Blank if 016-063 Home, Work, School) Home (See Columns 097-099 of Card Type "2") Work (See Columns 141-143 of Card Type "3") School (See Columns 141-143 of Card Type "3")

**TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY**

Record Layout	
083	Address Type for End Location(1-4) * See Note (Blank if 016-063 Home, Work, School) Home (See Columns 017-065 of Card Type "2") Work (See Columns 066-109 of Card Type "3") School (See Columns 066-109 of Card Type "3")
084-131	Address for End Location (Can be Home, Work, School) Home (See Columns 017-065 of Card Type "2") Work (See Columns 066-109 of Card Type "3") School (See Columns 066-109 of Card Type "3")
132-145	City for End Location Will be Blank unless City Code 191 or 194
146-147	State for End Location
148-151	End Time (HHMM)
152	End a.m. or p.m. 1 = a.m. 2 = p.m. 3 = a.m. (estimate of time) 4 = p.m. (estimate of time)
153-155	City code for End Location (1-192, 194) * See Note
<p>*Notes: Municipality codes (1-190) were not changed from what was reported by the respondent. The County-MCD codes appended to each record are from the Met Council's address matching. Address types (1-4) were not changed from what was in the original data file.</p> <p>Trip addresses have not been corrected to match the corrected address returned to the Met Council from its original "reject" file. This would need to be done manually because the original "reject" file from the Met Council did not indicate whether the address it could not geo-code was a "trip-end (destination)" or a "trip-start (origin)". Also, the same address may have been used as a destination for one trip and was probably the origin for the following trip. In the reject file, this address would only have been listed one time.</p>	

TABLE 49 - CONTINUED
1990 TRAVEL BEHAVIOR INVENTORY
HOME INTERVIEW SURVEY

Record Layout	
156	Type of Vehicle Used for Trip 1 = Drove Alone 2 = Drove with Passenger 3 = Rode in Car, etc. 4 = Public Bus 5 = School Bus 6 = Taxi 7 = Motorcycle 8 = Other
157-158	Number of People in Vehicle if Column 156 = 2 or 3
159	Main Purpose of Trip 1 = Went Home 2 = Went to Work 3 = Went on Work-Related Business 4 = Attended School 5 = Dropped Off/Picked Up Others 6 = Went to Other Transportation 7 = Went Shopping 8 = Other
160	4 (Card Type "4")
161-164	1990 TAZ of Trip Origination
165-172	1990 Tract and Block of Trip Origination
173-178	County and MCD of Trip Origination
179-182	1990 TAZ of Trip Destination
183-190	1990 Tract and Block of Trip Destination
191-196	County and MCD of Trip Destination
197-201	Household ID
202-203	Household Size (Total)
204-205	Number of Vehicles (Q6 Recruit)
206-207	Children Under 5 (Q7 Recruit)
208-209	People 5 Years or Older (Q8 Recruit)
210-215	County-MCD Code (of Home Address)
216	Blank
217-224	Expansion Factor

APPENDIX A

TBI STUDY OUTLINE

APPENDIX A
TBI STUDY OUTLINE

The 1990 TBI is a comprehensive survey of travel behavior in the seven county area designed to update and revise all major travel forecasting data used as the factual basis to update and recalibrate the Twin Cities travel forecast computer models. The study began in 1990 and is to be completed in 1992. The objectives of the study are to:

1. To Update the Regional Travel Models
2. To Identify the Travel Needs of Citizens and Business
3. To Enhance the Credibility of Regional Transportation Plans
4. To Evaluate the Effects of Transportation Policies and Plans
5. To Assist Local Governments in Making Land Use Decisions
6. To Evaluate Future Transportation Scenarios
7. To Identify, Plan and Design Needed Transportation Improvements

The Metropolitan Council is the lead agency in preparing the study with the cooperation of the Minnesota Department of Transportation and the Regional Transit Board.

The study is designed to be completed in three phases. Phase I is the design and pretest of the surveys; Phase II is conducting surveys of regional travel and processing the data collected; Phase III is Model Calibration and Project Documentation. The study is divided into 15 work tasks that are organized into four major components. A listing of tasks by components is as follows:

PROJECT MANAGEMENT AND DOCUMENTATION

The first task is the project planning and control of all work activities and the final documentation of the 1990 TBI Study.

Task 1--Management and Coordination

- . Work planning and control
- . Study documentation

TRAVEL SURVEYS

Ten surveys are performed on randomly sampled households, business establishments, transit riders, traffic counts and special generators, locations that have unique travel characteristics such as the MSP International Airport, several major regional shopping centers, the Minneapolis and St. Paul Downtowns, and the University of Minnesota campus.

Task 2--Home Interview Survey

Task 3--Establishment Survey

- . Worker and visitor travel at businesses

Task 4--Transit On-Board Survey

Task 5--Traffic Counts/Vehicle Classification

- . Vehicle class
- . Screenlines
- . Auto occupancy

Task 6--External O/D Survey

Task 7--Truck Volumes

Task 8--Special Generators

Task 10--Highway Speeds Study

LAND USE AND SOCIO-ECONOMIC DATA COLLECTION

The TBI data is integrated with the 1990 Census socio-economic data and the TIGER geographic information system. Employment data obtained through the Minnesota Department of Jobs and Training supplements the Census data. To update the region's land use information, 1990 aerial photography was used.

Task 13--1990 Census Coordination

- . Census TIGER files
- . Geographic information system
- . Census transportation planning package

Task 14--Employment Survey

Task 15--Aerial Photography and Land Use Mapping

TRAVEL FORECAST MODELING COMPONENT

The 1988 Transit Network is updated through a 1990 on-board survey and recoded. Traffic Assignment Zones were revised in 1990 to reflect new development that occurred in the 1980s and to improve the correlation to Census block configurations. The recalibration of the highway network model is to begin in 1991 and completed in 1992 using the trip generation, distribution and mode choice information gathered.

Task 9--Transit Network

Task 11--Model Recalibration

- . Trip generation
- . Trip distribution
- . Mode choice

Task 12--1990 Highway Network and Traffic Zones

APPENDIX B

SURVEY DESIGN MATERIAL

Attachment 1: Pre-Travel Household Questionnaire

Attachment 2: Travel Diary Instructions and Post-Travel Questions

Attachment 3: Pre-Survey Contact Letter and TBI Brochure

ATTACHMENT 1

PRE-TRAVEL HOUSEHOLD QUESTIONNAIRE

TRAVEL BEHAVIOR STUDY
#0132
June, 1990
DM-MJ

NAME: _____	SERIAL	Draft I <table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="text-align: center;">1</td><td style="text-align: center;">2</td><td style="text-align: center;">3</td><td style="text-align: center;">4</td></tr></table>					1	2	3	4
1	2	3	4							
ADDRESS: _____	CARD NUMBER	<table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px; text-align: center;">0</td><td style="width: 20px; height: 20px; text-align: center;">1</td></tr><tr><td style="text-align: center;">5</td><td style="text-align: center;">6</td></tr></table>	0	1	5	6				
0	1									
5	6									
CITY: _____ ZIP _____	STATE	<table border="1" style="display: inline-table;"><tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr><tr><td style="text-align: center;">7</td><td style="text-align: center;">8</td></tr></table>			7	8				
7	8									
TELEPHONE (____) _____										
INTERVIEWER: _____										
TIME IN _____ DATE OUT _____										
EDITED BY: _____										

Hello, this is _____ from Rockwood Research in St. Paul. I am calling on behalf of the Metropolitan Council. For the first time in 20 years, a study of people's travel in the Twin Cities area will be conducted for the purposes of estimating future travel as well as planning highways and other transportation systems. Your household has been selected to participate in this study. What we are asking, is that all members of your household record their travel for one day in diaries that we will send to you. Are you the person who will serve as the contact person for your household?

- 1 Yes [CONTINUE]
- 2 No [ASK TO SPEAK TO THAT PERSON, REPEAT INTRO]
- 3 Refused to do study - [GO TO NON-RESPONDERS SECTION, PAGE 5]

A. Your travel diary date for your household will be [DATE]. Will all the members of your household who are five years of age and older be willing to record all of the trips they make on their travel day?

- 1 Yes
- 2 No

B. Will you provide that information to us during a follow-up telephone call?

- 1 Yes
- 2 No

Now I'd like to ask you several questions about your household.

1. How many vehicles, including cars, vans, pick-up trucks, or motorcycles are available for use by members of your household?

--	--

vehicles

- 2a. How many children in your household are under five years of age?

--	--

children under five years of age

- 2b. And how many children in your household are five years of age or older?

--	--

children five years of age or older

We need a little more information to prepare the travel diaries. I need to record the names of the members living in your household who are five years of age or older. As the contact person for your household, we will start with you.

3a. What is your name?

3b. [IF CAN'T TELL FROM VOICE] Are you male or female?

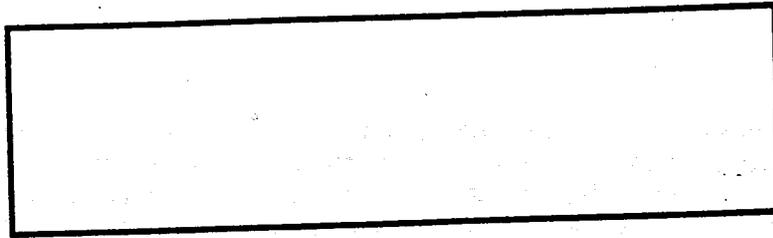
3c. How old are you?

3d. Do you have a valid driver's license?

[IF REFUSE TO CONTINUE-GO TO Q5c (NON-RESPONDER SECTION)]

[REPEAT Q3a-3d FOR EACH MEMBER WHO IS FIVE YEARS OF AGE OR OLDER]

Person Number	Name	Gender		Age	Driver's License	
		M	F		Yes	No
01		M	F		1	2
02		M	F		1	2
03		M	F		1	2
04		M	F		1	2
05		M	F		1	2
06		M	F		1	2
07		M	F		1	2
08		M	F		1	2
09		M	F		1	2
10		M	F		1	2
11		M	F		1	2
12		M	F		1	2
13		M	F		1	2



Please do not remove this label.

INSTRUCTIONS FOR COMPLETING YOUR TRAVEL DIARY

1. Each person in your household who is age five or older, should have their own diary. Make sure that each person gets the diary that has their name on it. Your travel date is on the label above. You may want to help children fill theirs out.
2. On your travel day, carry your Travel Diary with you as you travel. It will help to pay close attention to the address, or the intersection near each of your stops.
3. Please record all trips that you make, either as the driver or as a passenger in a car, truck, van, bus, taxi, or motorcycle.
4. For each trip that you make, you need to record:
 - The time your trip started,
 - The address where you started your trip,
 - The address where you finished that trip,
 - The time your trip ended,
 - What kind of vehicle you used to make that trip,
 - The purpose of the trip.
5. Try to get the complete address at each stop you make. If you can't get the complete address, record the nearest intersection, or name of the place you went to, such as a shopping mall.
6. Be sure to count each place that you stop as one trip. For example, if you stop to get gas on your way home from work, the trip to the gas station is one trip, the trip from the gas station to home is a second trip.
7. Please be sure to write down the address of your workplace in the space provided!
8. If you leave the seven-county metro area (Hennepin, Ramsey, Anoka, Washington, Dakota, Scott and Carver counties), please record the city of your destination, but do not record any trips you made while you were outside of the seven-county area.
9. If you don't take any trips on your Travel Day, just write "No Trips Taken".

**IF YOU HAVE ANY QUESTIONS,
PLEASE CALL THE TRAVEL DIARY HOTLINE AT 639-2235.**

NAME: **SAMPLE DIARY** TRAVEL DAY: Tuesday Date _____

ADDRESS OF WORKPLACE: 812 WATER STREET ST. PAUL COMPANY NAME: ABC COMPANY

Please carry this card with you on the travel day and write down each trip you make that uses a motor vehicle, including buses, for at least part of the trip. By "trip" we mean a one-way trip of at least one city block made from one place to the next place you stop. Going on to another place counts as another trip. The first trip recorded should be the first trip made after 4:00 a.m. on your travel date, and the last trip recorded should be the last trip you made before 4:00 a.m. of the next day. Please be as accurate as possible since your answers are very important.

What time did trip start? (Write in time and check a.m. or p.m.)	Where did trip start? (Number, Street, City)	Where did trip end? (Number, Street, City)	What time did trip end? (Write in time and check a.m. or p.m.)	What type vehicle was used? (Check one)	What was main purpose of trip? (Check one)
7:25 <input checked="" type="checkbox"/> a.m. Time <input type="checkbox"/> p.m.	2400 East 59th St. Number, Street Minneapolis, MN City State	812 Water Street Number, Street St. Paul, MN City State	8:10 <input checked="" type="checkbox"/> a.m. Time <input type="checkbox"/> p.m.	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Motorcycle <input type="checkbox"/> School Bus <input type="checkbox"/> Public Bus <input type="checkbox"/> Van or Minivan <input type="checkbox"/> Truck or Pickup <input type="checkbox"/> Other	<input type="checkbox"/> Went to work <input checked="" type="checkbox"/> Went on work-related business <input type="checkbox"/> Attended school <input type="checkbox"/> Dropped off/picked up others <input type="checkbox"/> Went to other transportation <input type="checkbox"/> Went shopping <input type="checkbox"/> Other purpose
11:50 <input checked="" type="checkbox"/> a.m. Time <input type="checkbox"/> p.m.	812 Water St. Number, Street St. Paul MN City State	300 Cloud Drive Number, Street St. Paul MN City State	12:05 <input type="checkbox"/> a.m. Time <input checked="" type="checkbox"/> p.m.	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Motorcycle <input type="checkbox"/> School Bus <input type="checkbox"/> Public Bus <input type="checkbox"/> Van or Minivan <input type="checkbox"/> Truck or Pickup <input type="checkbox"/> Other	<input type="checkbox"/> Went to work <input checked="" type="checkbox"/> Went on work-related business <input type="checkbox"/> Attended school <input type="checkbox"/> Dropped off/picked up others <input type="checkbox"/> Went to other transportation <input type="checkbox"/> Went shopping <input type="checkbox"/> Other purpose
1:00 <input type="checkbox"/> a.m. Time <input checked="" type="checkbox"/> p.m.	300 Cloud Drive Number, Street St. Paul MN City State	812 Water St. Number, Street St. Paul, MN City State	1:15 <input type="checkbox"/> a.m. Time <input checked="" type="checkbox"/> p.m.	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Motorcycle <input type="checkbox"/> School Bus <input type="checkbox"/> Public Bus <input type="checkbox"/> Van or Minivan <input type="checkbox"/> Truck or Pickup <input type="checkbox"/> Other	<input type="checkbox"/> Went to work <input checked="" type="checkbox"/> Went on work-related business <input type="checkbox"/> Attended school <input type="checkbox"/> Dropped off/picked up others <input type="checkbox"/> Went to other transportation <input type="checkbox"/> Went shopping <input type="checkbox"/> Other purpose
5:10 <input type="checkbox"/> a.m. Time <input checked="" type="checkbox"/> p.m.	812 Water St. Number, Street St. Paul MN City State	3930 Long Ave. So. Number, Street Mendota Heights, MN City State	5:30 <input type="checkbox"/> a.m. Time <input checked="" type="checkbox"/> p.m.	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Motorcycle <input type="checkbox"/> School Bus <input type="checkbox"/> Public Bus <input type="checkbox"/> Van or Minivan <input type="checkbox"/> Truck or Pickup <input type="checkbox"/> Other	<input type="checkbox"/> Went to work <input checked="" type="checkbox"/> Went on work-related business <input type="checkbox"/> Attended school <input type="checkbox"/> Dropped off/picked up others <input type="checkbox"/> Went to other transportation <input type="checkbox"/> Went shopping <input checked="" type="checkbox"/> Other purpose
6:00 <input type="checkbox"/> a.m. Time <input checked="" type="checkbox"/> p.m.	3930 Long Ave. So. Number, Street Mendota Heights, MN City State	1601 West 67th St. Number, Street Richfield MN City State	6:40 <input type="checkbox"/> a.m. Time <input checked="" type="checkbox"/> p.m.	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Motorcycle <input type="checkbox"/> School Bus <input type="checkbox"/> Public Bus <input type="checkbox"/> Van or Minivan <input type="checkbox"/> Truck or Pickup <input type="checkbox"/> Other	<input type="checkbox"/> Went to work <input checked="" type="checkbox"/> Went on work-related business <input type="checkbox"/> Attended school <input type="checkbox"/> Dropped off/picked up others <input type="checkbox"/> Went to other transportation <input type="checkbox"/> Went shopping <input checked="" type="checkbox"/> Other purpose
6:55 <input type="checkbox"/> a.m. Time <input checked="" type="checkbox"/> p.m.	1601 West 67th St. Number, Street Richfield, MN City State	2400 East 59th St. Number, Street Minneapolis, MN City State	7:05 <input type="checkbox"/> a.m. Time <input checked="" type="checkbox"/> p.m.	<input checked="" type="checkbox"/> Car <input type="checkbox"/> Motorcycle <input type="checkbox"/> School Bus <input type="checkbox"/> Public Bus <input type="checkbox"/> Van or Minivan <input type="checkbox"/> Truck or Pickup <input type="checkbox"/> Other	<input type="checkbox"/> Went to work <input checked="" type="checkbox"/> Went on work-related business <input type="checkbox"/> Attended school <input type="checkbox"/> Dropped off/picked up others <input type="checkbox"/> Went to other transportation <input type="checkbox"/> Went shopping <input type="checkbox"/> Other purpose

SAMPLE DIARY

SAMPLE DIARY

FINAL QUESTIONS IF LAST PERSON IN HOUSEHOLD

251 On the travel day, did anyone in your household walk to work?

- 1 Yes
- 2 No [GO TO Q253]
- 3 Don't Know [GO TO Q253]

252 What are their names? [ENTER "PERSON NUMBERS" OF THOSE WHO WALKED TO WORK]

- 01 Person 1
- 02 Person 2
- 03 Person 3
- 04 Person 4
- 05 Person 5
- 06 Person 6
- 07 Person 7
- 08 Person 8
- 09 Person 9
- 10 Person 10
- 11 Person 10
- 12 Person 12
- 13 Person 13

253 On the travel day, did anyone in you household ride a bicycle to work?

- 1 Yes
- 2 No [GO TO Q255]
- 3 Don't Know [GO TO Q255]

254 What are their names? [ENTER "PERSON NUMBERS" OF THOSE WHO BICYCLED TO WORK]

- 01 Person 1
- 02 Person 2
- 03 Person 3
- 04 Person 4
- 05 Person 5
- 06 Person 6
- 07 Person 7
- 08 Person 8
- 09 Person 9
- 10 Person 10
- 11 Person 10
- 12 Person 12
- 13 Person 13

255 On the travel day, did anyone in your household drop off a child at child day care on the way to work, or pick up a child at child day care on the way home from work?

- 1 Yes
- 2 No
- 3 Don't Know

256 And one final question, which of the following ranges best describes the total yearly income of all the people who live in your household? Is it ... [READ LIST]

- 01 \$35,000 or less [GO TO Q256.1]
- 02 over \$35,000 [GO TO Q256.2]
- 03 [DO NOT READ] Don't Know/Refused [GO TO Q276]

256.1 Would that be ...

- 1 less than \$7,500
- 2 between \$7,500 and 15,000
- 3 between \$15,001 and \$25,000, or
- 4 between 25,001 and \$35,000
- 5 [DO NOT READ] Refused/Don't Know

[GO TO Q276]

256.2 Would that be ...

- 5 between \$35,001 and \$45,000
- 6 between \$45,001 and \$55,000
- 7 between \$55,001 and \$75,000, or
- 8 over \$75,000
- 9 [DO NOT READ] Refused/Don't Know

THANK AND END INTERVIEW

[HANG UP PHONE - STUDY IS DONE FOR RESPONDENT]

276 Enter household person's name exactly as it appears on the call sheet, and person number.

--	--