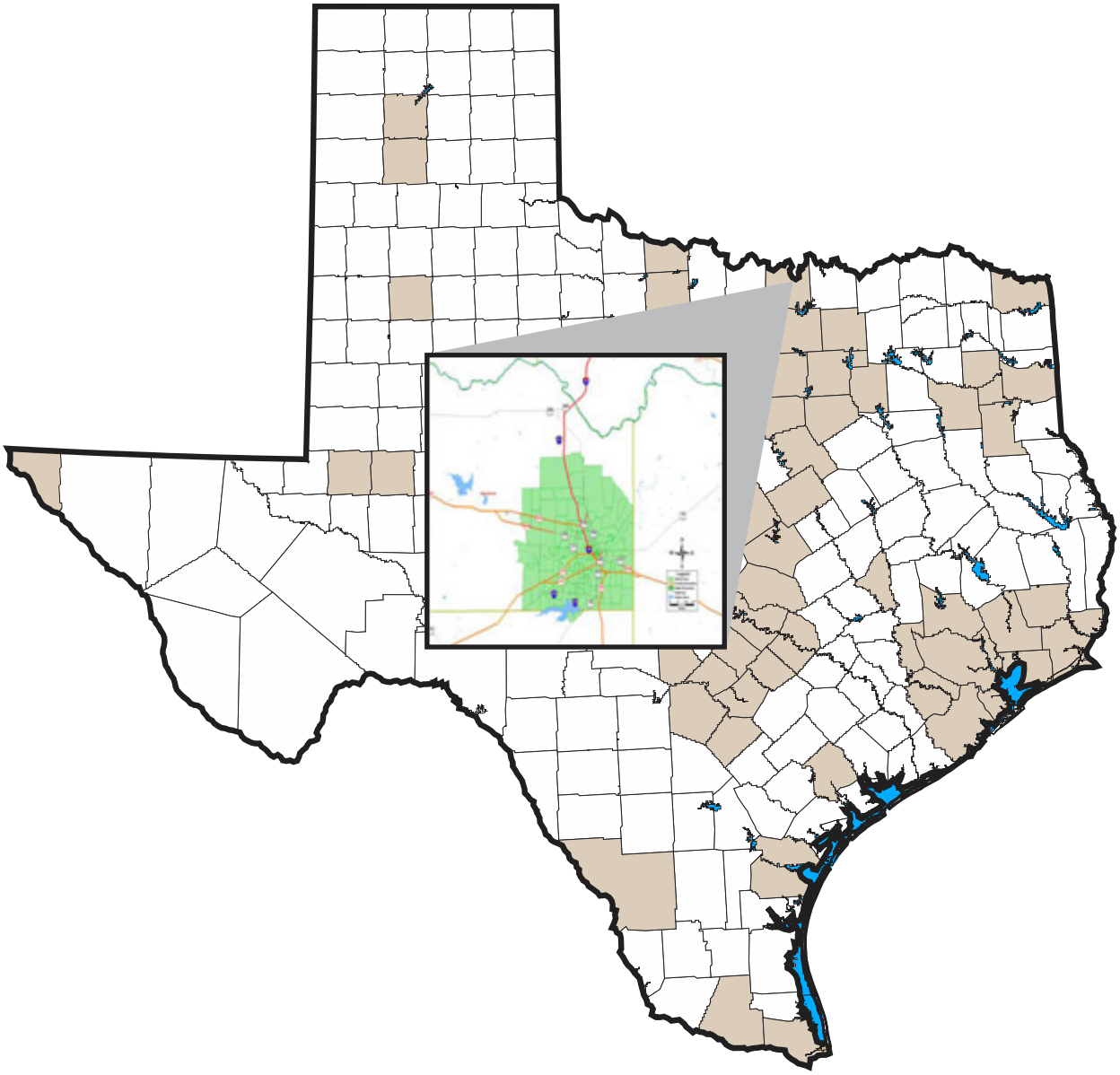
2011-2012 Sherman-Denison Household Travel Survey Technical Summary



Texas Department of Transportation

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2011-2012 Sherman-Denison Household Travel Survey

Technical Summary

Texas Department of Transportation Travel Survey Program

By
Debbie Spillane
Associate Transportation Researcher
Texas A&M Transportation Institute

and

Edwin N. Hard
Transportation Planning Program Manager
Texas A&M Transportation Institute

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TEXAS A&M TRANSPORTATION INSTITUTE
The Texas A&M University System
College Station, Texas 77843-3135

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INTRODUCTION

From 2005 to 2012, the Transportation Planning and Programming Division (TPP) of the Texas Department of Transportation (TxDOT) sponsored a comprehensive set of travel surveys in the Sherman-Denison Metropolitan Planning Organization (MPO) area located in Grayson County, Texas. Throughout this report, the area will be referred to as the Sherman-Denison MPO area. The purpose of the survey was to collect data and information needed as input to the Sherman-Denison MPO area travel demand model. The model is an important planning tool used to forecast future traffic levels on area roadways, evaluate the region's transportation plan, and aid (if needed) in the region's air quality conformity analyses. Most urbanized areas in Texas (as well as in the U.S. and abroad) rely on travel forecasting models as a tool in their transportation planning and air quality analysis efforts. Since model results may be used in determining conformity or non-conformity status of transportation plans to federal clean air regulations, the use of accurate and up-to-date data from regional travel surveys is important to TxDOT and MPOs across the state.

Four different types of travel surveys were conducted in the Sherman-Denison MPO area, including a household survey that included a passive Global Positioning System (GPS) component, a workplace survey that included special generator surveys, a commercial vehicle survey, and an external survey. The household survey collected data on the amount and characteristics of travel generated by households within the area. The work place survey collected data on travel to and from area businesses, special generators, and places of employment. The commercial vehicle survey collected data on cargo transport vehicles and fleet or service vehicles of area governments and businesses. The external survey collected data on trips made into, out of, and through the study area. Each survey collected a different component of travel needed for the travel demand model. All surveys were designed to capture characteristics of weekday travel during the school year.

This report summarizes the results of the household survey for the Sherman-Denison MPO area. It presents a variety of household summary information that may be subject to modification as the survey data are further evaluated and analyzed within the context of all the travel surveys conducted.

The household survey sample design is based on obtaining travel information from a pre-determined number of randomly selected households within certain ranges of household income and household size. The desired number of surveyed households in any household size/income range is not proportional to the estimated number of households in the cell. Rather, the number of households to be surveyed in each cell is based on the total estimated number of households in the area and the expected number of trips the households will make during a typical school-year weekday.

The survey sample design is based on a desired level of accuracy of +/- 10 percent with a confidence level of 90 percent of the total person trips in the survey area. Figure 1 shows the Sherman-Denison MPO are. Figure 2 illustrates the general distribution of sampled households included in the study. It also shows the Traffic Analysis Zones (TAZs) and county areas. The number of households in the study area in 2011-12 was estimated from the 2010 census and the Texas State Data Center (TSDC) population projections for Grayson County.

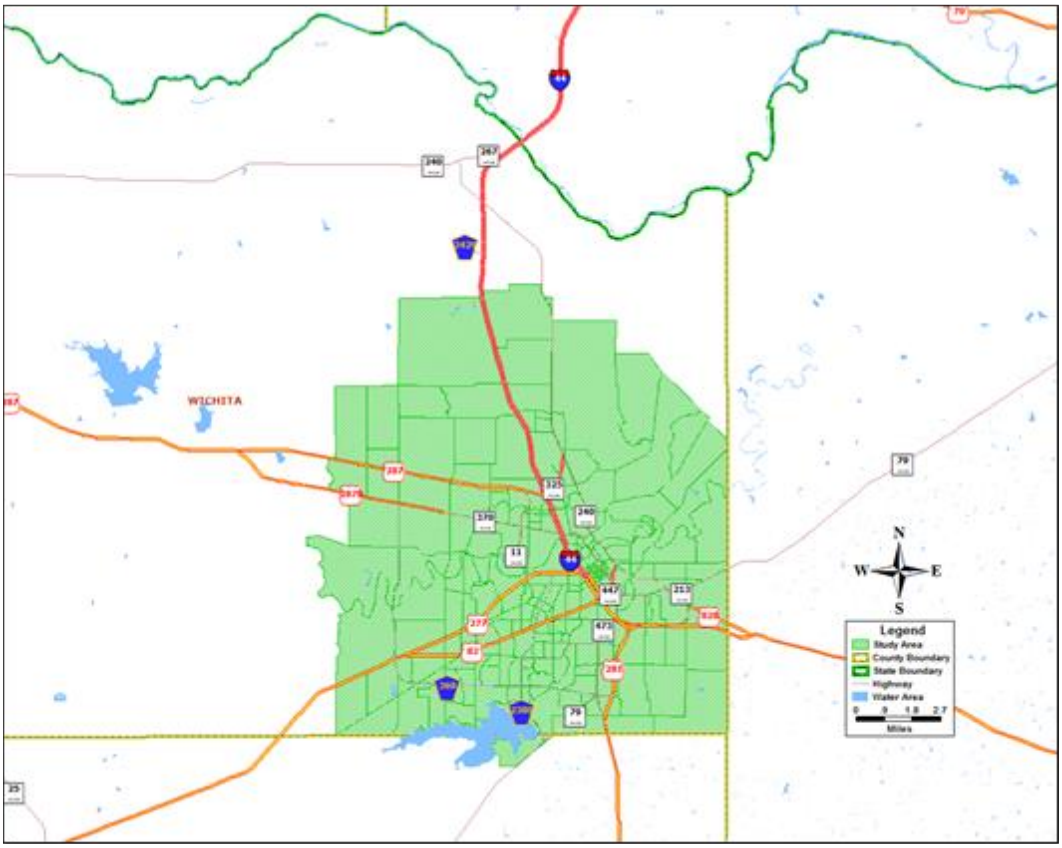

Figure 1. Sherman-Denison MPO Study Area.

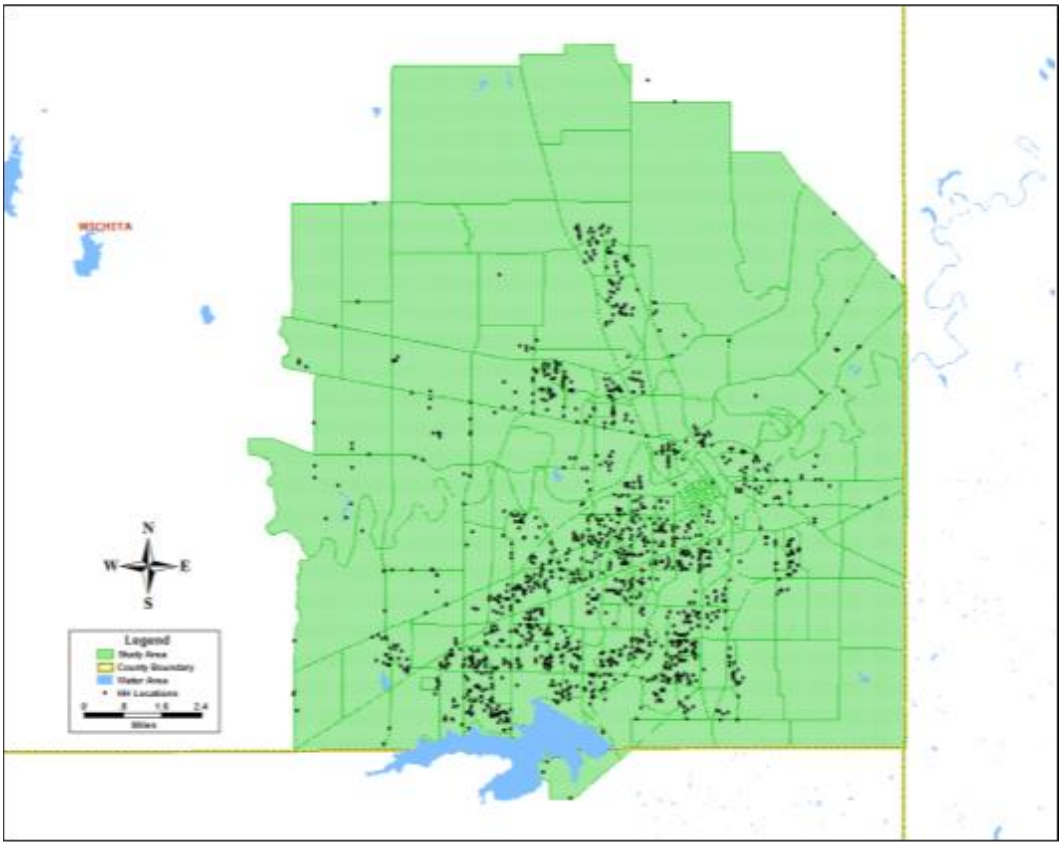

Figure 2. Sherman-Denison MPO Study Area Household Locations and TAZs.

Table 1 shows the estimated number of households in the study area, the number of households surveyed and the distribution of the number of households surveyed stratified by household size and household income range. A total of 2,041 households were surveyed in the Sherman-Denison MPO study area. The minimum number of households surveyed in any household size/income range cell was 16 and the maximum number surveyed was 159. Of the estimated 45,877 households in the study area, 25 percent are households with one person and 38 percent are households with two persons.

Table 1. Estimated Number of 2011-2012 Households, Number of Households Surveyed, and Percent of Surveyed Households, Stratified by Household Size and Income Range.

Income Range	Household Size					
	1	2	3	4	5+	Total
Estimated Number of Households						
$0 to $19,999	5,116	2,147	817	367	234	**8,681**
$20,000 to $34,999	2,932	3,037	982	684	459	**8,094**
$35,000 to $49,999	1,532	3,276	1,308	968	629	**7,713**
$50,000 to $74,999	780	3,551	1,766	1,505	1,023	**8,625**
$75,000	1,023	5,226	2,491	2,294	1,730	**12,764**
Total	**11,383**	**17,237**	**7,364**	**5,818**	**4,075**	**45,877**
Number of Households Surveyed						
$0 to $19,999	101	126	56	28	16	**327**
$20,000 to $34,999	78	159	73	38	33	**381**
$35,000 to $49,999	41	135	86	70	53	**385**
$50,000 to $74,999	34	138	100	111	64	**447**
$75,000	32	148	115	138	68	**501**
Total	**286**	**706**	**430**	**385**	**234**	**2,041**
Percent of Households Surveyed						
$0 to $19,999	4.9	6.2	2.7	1.4	0.8	**16.0**
$20,000 to $34,999	3.8	7.8	3.6	1.9	1.6	**18.7**
$35,000 to $49,999	2.0	6.6	4.3	3.4	2.6	**18.9**
$50,000 to $74,999	1.7	6.8	4.9	5.4	3.1	**21.9**
$75,000	1.6	7.3	5.6	6.7	3.3	**24.5**
Total	**14.0**	**34.7**	**21.1**	**18.8**	**11.4**	**100.0**

HOUSEHOLD SURVEY RESULTS

The survey represents a sample of household demographic and travel characteristics for a Monday through Friday weekday during the school year from the spring of 2011 through the fall of 2012. For participating households, each member of the household was provided a diary to record his or her travel. The survey data were retrieved from participants by phone at a pre-arranged call-back time within two days after their specified travel date. Every attempt was made to interview all persons in each of the 2,041 randomly selected households that participated in the survey. In many cases, a proxy provided information for household members who were not available. Adult members of the household usually reported the activities and trips for minors in

the household. A small number of households chose to return their completed diaries by mail, in lieu of providing their trip information over the phone.

Key Points Regarding Household Survey Data

- The survey data are for an average weekday collected from February 2011 through September 2012.
- The survey data were tabulated only for persons who lived in the surveyed households. Persons living in group quarters, such as nursing homes, correctional facilities, or dormitories were not surveyed.
- The survey data are for persons of all ages unless otherwise noted.
- The survey data do not include non-household-based travel such as commercial vehicles, tourists, or persons staying in hotels.
- The estimates of population and number of households are based on the expanded survey data and may differ from population and household estimates developed by other agencies.
- The survey data are for trips that began and ended within the planning area. Trips that began inside the planning area and ended outside the planning area, or vice versa, are summarized in the external travel survey report.

Findings of the Survey

Summary findings from the survey include are provided below.

- 99 percent of households had a vehicle available.
- 99 percent of households had a licensed driver.
- In general, trip rates per household increased with household size, with household income, and with vehicle availability.
- The average vehicle occupancy was 1.05 persons per vehicle.
- 94 percent of person trips were made in a personal-use vehicle.
- Of the household population that travelled, 67 percent drove a vehicle, 27.2 percent rode as a passenger in a vehicle, 2.1 percent walked, and the remainder of the trips used some other mode.
- Nearly 26 percent of the total persons within the household population did not make an internal trip within the planning area on their survey day.
- On average, each person made 3.8 person trips per day and each household made 10.1 person trips per day.

- The average person trip length was 5.6 miles and the average person trip duration was 9.7 minutes.
- The average vehicle trip length was 5.9 miles and the average vehicle trip duration was 10.2 minutes.
- The peak hour for household travel was from 3:01 p.m. to 4:00 p.m., during which 14.6 percent of the trip starts occurred. The second highest hour for household trip starts was from 7:01 a.m. to 8:00 a.m. when 14.2 percent of the daily trip starts occurred.
- Weekday school year household travel internal to the study area accounted for an estimated 2.72 million vehicle miles of travel (VMT).

HOUSEHOLD CHARACTERISTICS

Characteristics of the household influence travel behavior. For example, household size, income, vehicles available, number of persons employed, and family life cycle affect the amount and time-of-day that trips are made. For this survey, households include only persons living in residences, and do not include persons living in group quarters. The figures in this section are for the expanded survey data.

Household Size

Figure 3 shows the distribution of households by household size for the Sherman-Denison MPO area in 2011-2012. Household size and household income range were the household variables used to stratify the household trip rates calculated from the survey. When forecasting future travel, the forecast population must be estimated by household size and household income range. Average household size in the Sherman-Denison MPO area in 2011-2012 estimated from the expanded survey results was 2.6 persons per household. For the Sherman-Denison MPO area travel model, three variables—household size, household income, and the number of persons employed in the household—were used to stratify trip rates for the home-based work (HBW) trip purpose. For the home-based non-work (HBNW) and the non-home based (NHB) trip purposes, two variables—household size and household income—were used to stratify trip rates.

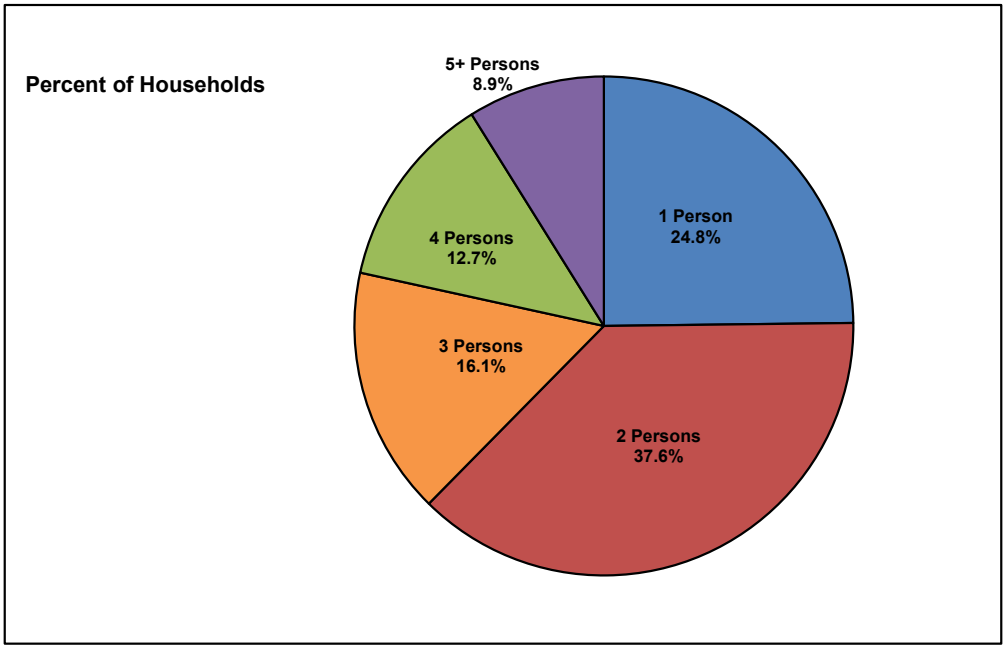

Figure 3. Distribution of Households by Household Size.

A typical household makes a certain number of trips on most days to meet household needs; for example, to purchase food and other necessities, to earn an income, to attend school, to visit friends and family, to receive medical care, to attend events, etc. For this reason, the number of households is a better predictor of future travel than using the number of persons.

Household Life Cycle

Household life cycle influences the amount and time of travel. For example, households with children tend to make more trips than households without children. Households with working adults tend to make more trips than households with retired adults. There were an estimated 45,877 households in the Sherman-Denison MPO study area in 2011-2012. Figure 4 shows the distribution of these 45,877 households by household size and household life cycle (those with no children and not retired, those with children, and those with only retired persons).

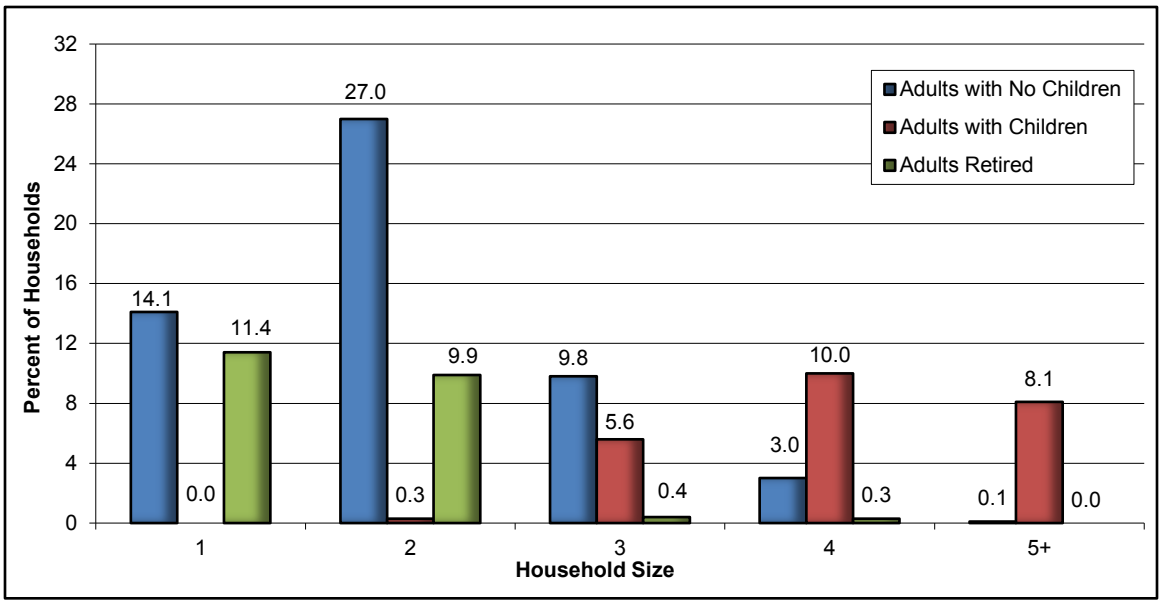

Figure 4. Distribution of Household Size vs. Life Cycle.

Household Income

Household income and household size are the two primary variables used to estimate household trip rates. As household income increases, the amount of household travel tends to increase. Additionally, as income increases, vehicle ownership tends to increase and additional financial resources are available to the household to support increased travel. Figure 5 provides the distribution of the 45,877 expanded households in the survey by the combined annual household income range.

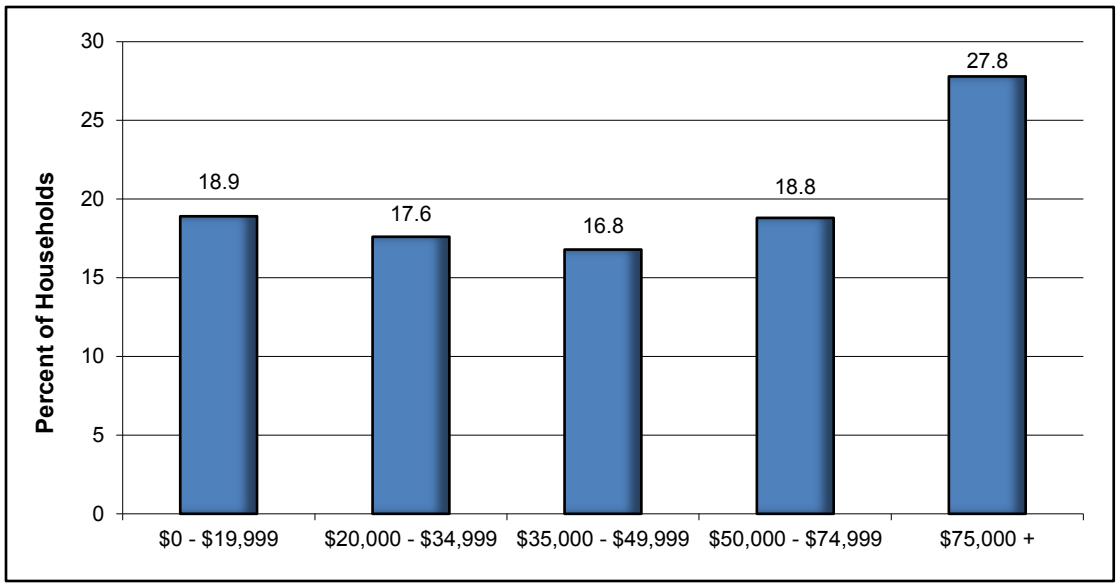

Figure 5. Distribution of Households by Household Income Range.

Household Vehicle Availability and Licensed Drivers

In general, as the number of vehicles available to the household increases, daily household travel increases. This household characteristic also impacts forecasting and the demand for public transportation. As household vehicle availability increases, the household demand for public transportation tends to decrease. Figure 6 shows the distribution of the 45,877 expanded households in the survey by the number of vehicles available. Approximately 4 percent of households did not have a vehicle available. The average number of vehicles available per household was 2.1.

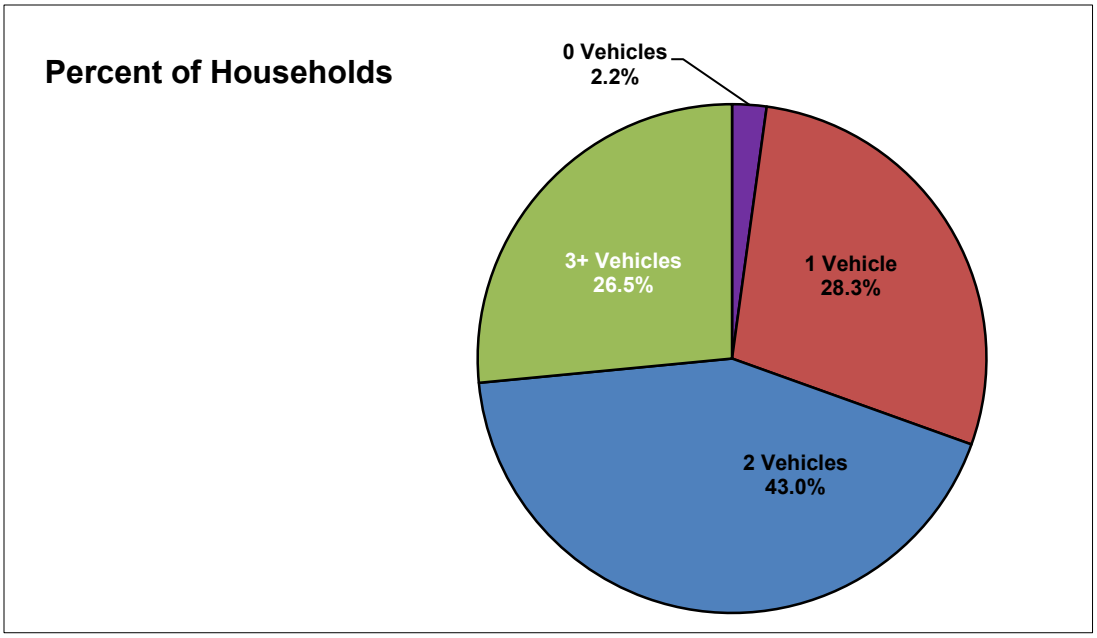

Figure 6. Distribution of Households by Number of Vehicles Available.

Figure 7 shows the distribution of the 45,877 expanded households by the number of licensed drivers per household. Less than 2 percent of the households did not have a licensed driver.

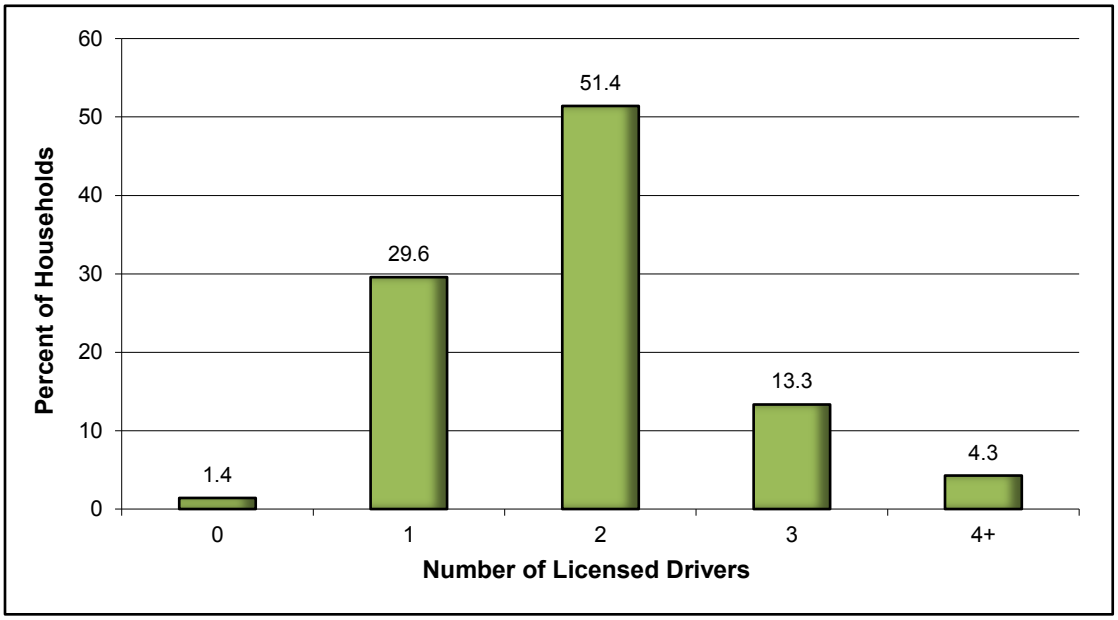

Figure 7. Distribution of Households by Number of Licensed Drivers.

Figure 8 shows the distribution of the 45,877 expanded households by the number of licensed drivers and the number of vehicles available. For over two-thirds of the households (67.3

percent), the number of licensed drivers and the number of vehicles available was equal. For 14 percent of the households, the number of licensed drivers was more than the number of vehicles available and for 18 percent of the households, the number of licensed drivers was less than the number of vehicles available. Fewer than one percent of the households had neither a licensed driver nor a vehicle available.

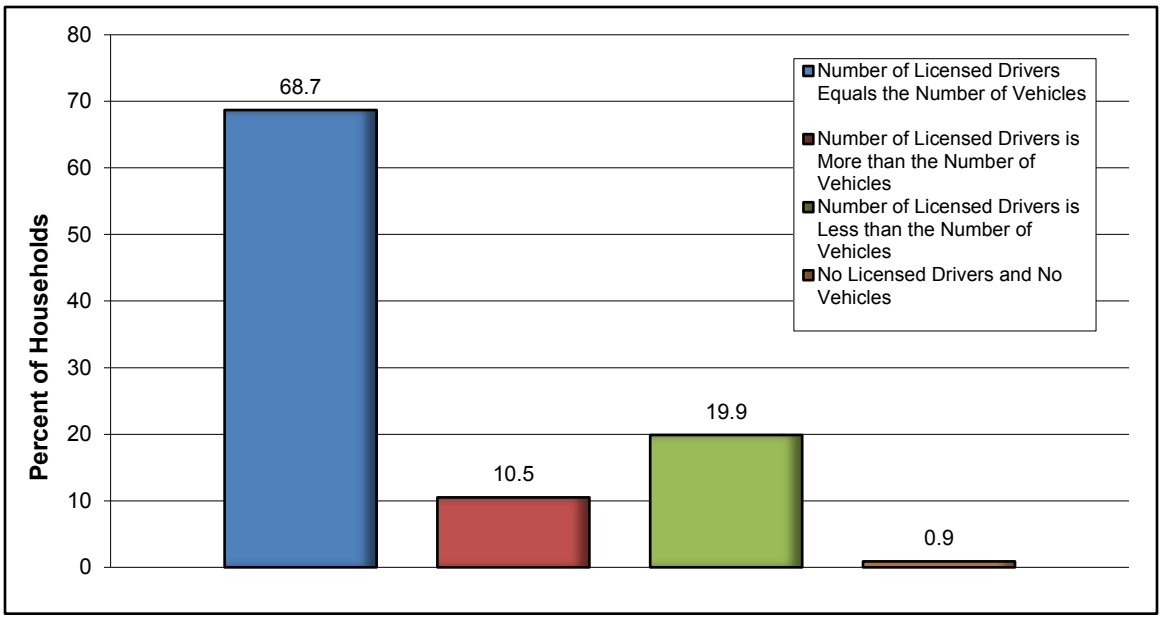

Figure 8. Comparison of Households by Licensed Drivers and Vehicle Availability.

Figure 9 shows the distribution of the 45,877 expanded households by the number of persons employed. The 45,877 expanded households included 131,488 persons for an average of 2.6 persons per household. Thirty-eight percent of households had one person employed, while about 29 percent of households did not have any person employed and about 28 percent had two persons employed.

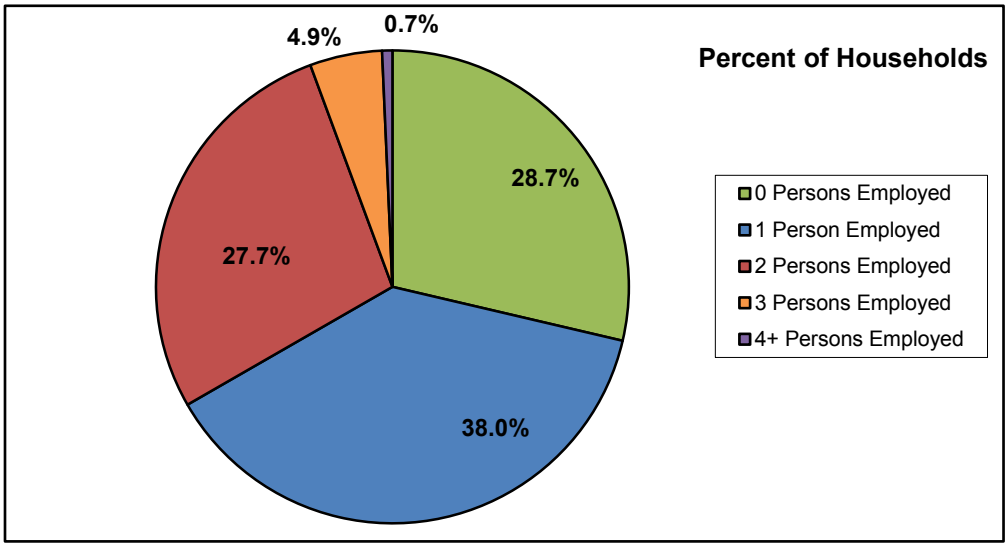

Figure 9. Distribution of Households by Number of Persons Employed.

Figure 10 shows the distribution of all persons, regardless of age, by employment status. Approximately 31 percent of the population was employed full time and just over 25 percent of the population was unemployed students. Over 11 percent of the population was retired.

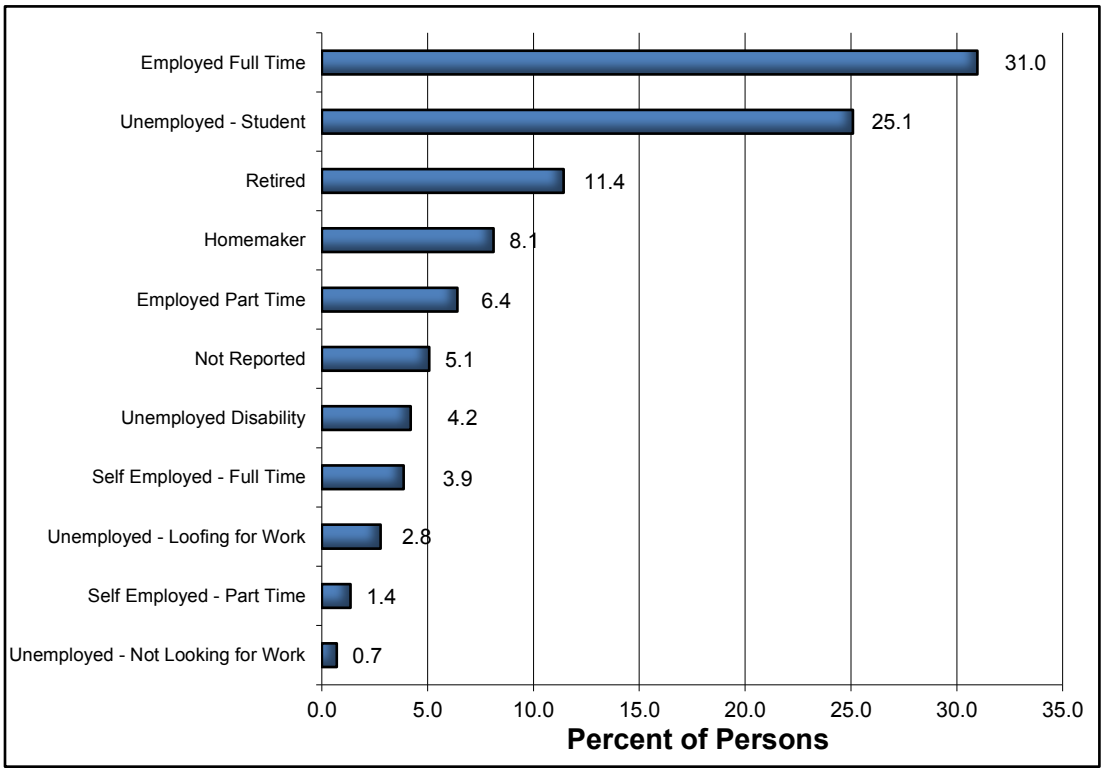

Figure 10. Distribution of Persons by Employment Status.

Figure 11 shows the distribution of the employed persons by the type of employer. The 45,877 households had 55,817 employed persons for an average of 1.22 employed persons per household. The employment type of Office Non-Government included the largest percentage of employed persons with over 17 percent of those employed. The Industrial/Manufacturing employer type had the second largest percentage of employed persons with 15.7 percent, followed closely by the Eating Establishment employer type at 15.6 percent.

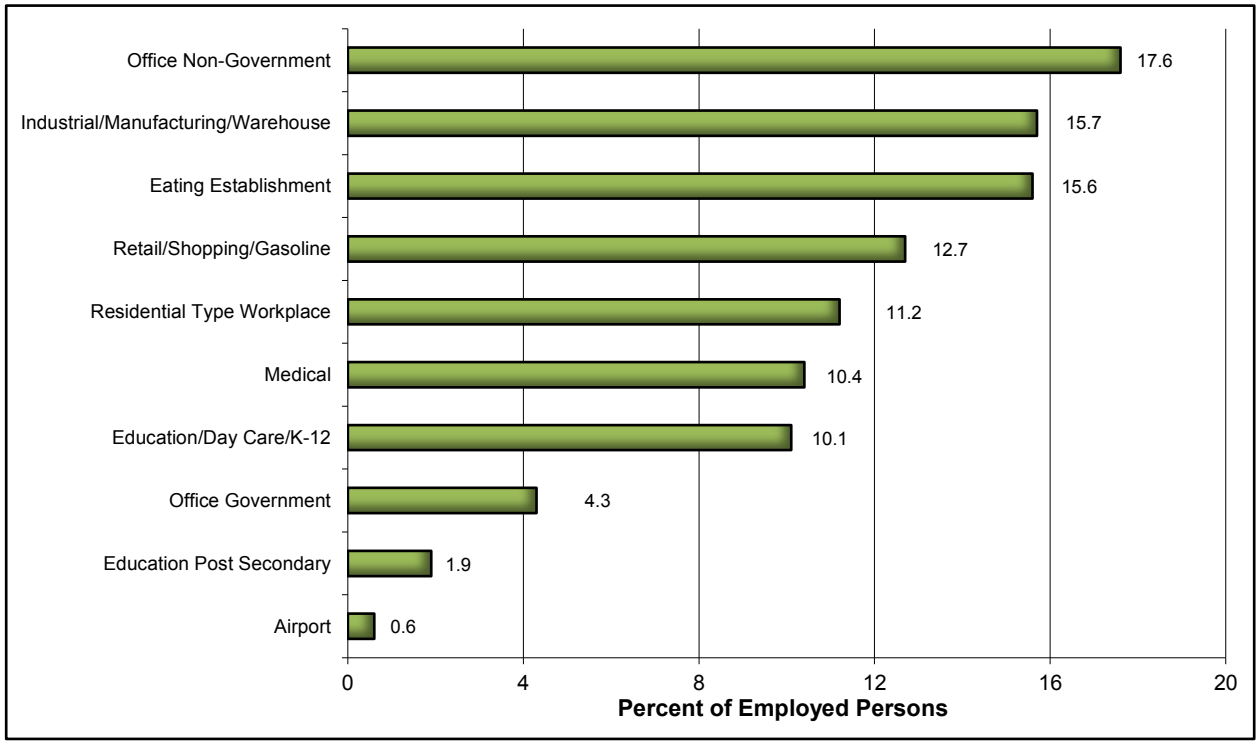

Figure 11. Distribution of Employed Persons by Employer Type.

Ethnicity

Figure 12 shows the distribution of the 121,311 persons by ethnicity. Over three-fourths (almost 80 percent) of the population was White/Caucasian, just under 13 percent of the population was Hispanic/Mexican American, and 4 percent of the population was Black/African American. All other ethnicities combined comprised less than 4 percent of the population.

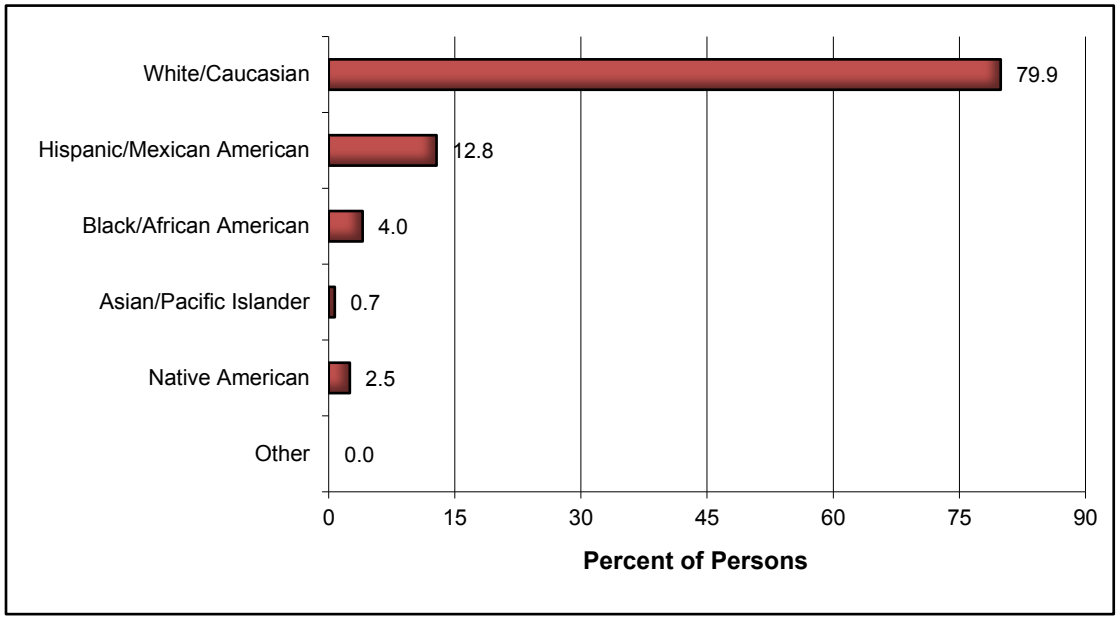

Figure 12. Distribution of Persons by Ethnicity.

TRAVEL CHARACTERISTICS

The previous section reported on a variety of household and person characteristics obtained from the household travel survey. In this section, these household and person characteristics are related to household travel characteristics. Household size, household income, household life cycle, household vehicle availability, household licensed drivers, and household employment all affect the amount of household travel.

Household Trip Rates and Vehicle Occupancy

The household trip rates in this section are for person trips made in a vehicle either as the driver or as a passenger. Figure 13 shows the household trip rates as a function of household size. As the household size increases, household trip rates increase and become higher for large household sizes. For travel forecasting applications, households with five or more household members are grouped and an average trip rate is used for the group. Figure 14 shows the

household trip rates as a function of the household income range. As expected, as household income increases, the household trip rate increases.

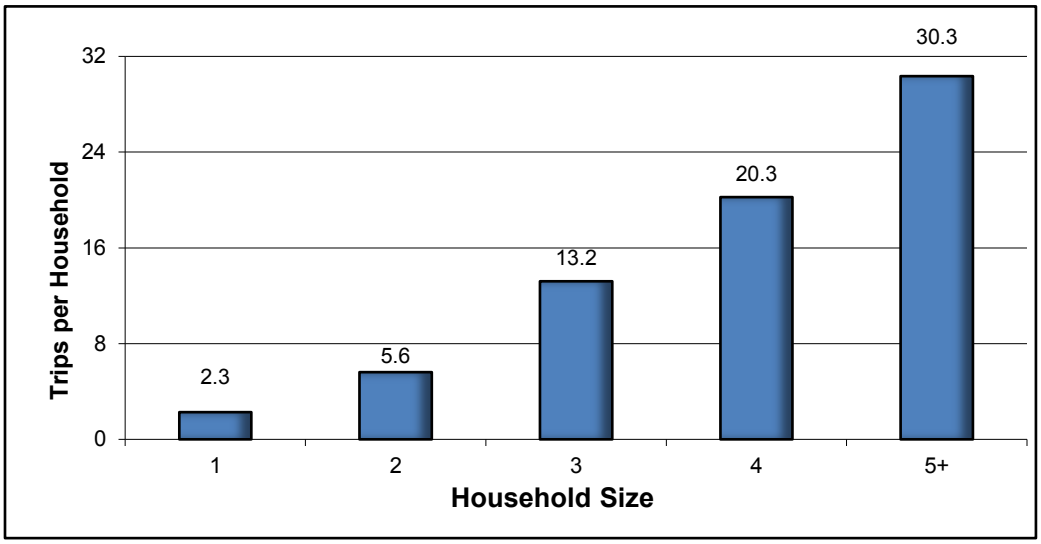

Figure 13. Household Trip Rate by Household Size.

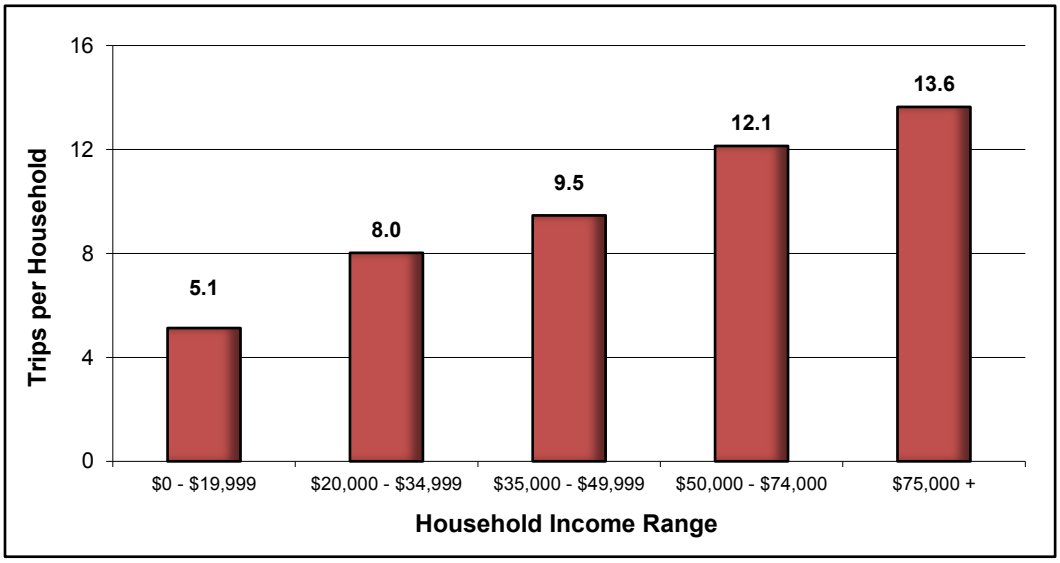

Figure 14. Household Trip Rate by Household Income Range.

Table 2 shows the person trip rates cross classified by household size and household income for all internal trip purposes combined, that is, trips that begin and end inside the household travel survey area. These trip rates are for all trips by all modes including transit, bicycle, and walk trips. For travel forecasting applications, the cross-classified trip rates are disaggregated by trip purpose into HBW trips, HBNW trips, and NHB trips (see the terminology section for the definitions of these terms). As part of the travel forecasting process, the person trips are divided among the modes during the mode split step. The average person trip rate, internal to the planning area for all households, was 10.05 person trips per household.

Table 2. Person Trip Rates by Household Size and Household Income.

Household Income Range	Household Size					
	1	2	3	4	5+	Total
$0-$19,999	1.56	5.11	12.92	22.36	29.06	5.13
$20,000-$34,999	3.15	5.19	11.63	19.19	33.44	8.02
$35,000-$49,999	2.16	5.47	13.10	17.55	28.01	9.46
$50,000-$74,999	2.93	5.16	13.37	20.21	29.59	12.14
$75,000+	2.92	6.47	13.88	21.40	30.98	13.64
Total	**2.27**	**5.61**	**13.21**	**20.25**	**30.34**	**10.05**

Table 3 shows the average vehicle occupancy for person trips made in private vehicles by household size and by household income range. The average vehicle occupancy of households was 1.05 persons per vehicle.

Table 3. Average Vehicle Occupancy by Household Size and Household Income.

Household Income Range	Household Size					
	1	2	3	4	5+	Total
$0-$19,999	1.09	0.81	0.76	1.50	1.704	1.05
$20,000-$34,499	1.10	1.04	0.77	1.00	1.554	1.08
$35,000-$49,999	1.05	0.84	0.78	0.88	1.412	0.95
$50,000-$74,999	0.90	0.99	0.90	1.05	1.133	1.01
$75,000+	1.02	0.99	0.85	1.19	1.345	1.10
Total	**1.06**	**0.95**	**0.83**	**1.10**	**1.341**	**1.05**

Travel by Age Cohort

A total of 121,311 persons were represented in the expanded household survey based on persons who reported their age. Table 4 shows the number of persons and distribution of persons by age cohort that did not make any internal trips on their survey day. As expected, older persons are less likely to travel than are younger persons, but the older population is mobile and contributes significantly to the amount of household travel.

Table 4. Number of Persons, Percent of Persons, and Percent of Persons Making Zero Trips by Age Cohort.

Age Cohort	Number of Persons	Percent of Persons	Number of Persons Making Trips	Number of Persons Making Zero Internal Trips	Percent of Persons Making Zero Internal Trips
0-15	25,820	20.77	22,956	2,865	11.09
16-19	7,106	5.72	5,875	1,230	17.31
20-24	7,571	6.09	5,147	2,425	32.03
25-29	7,092	5.71	4,360	2,732	38.52
30-34	6,678	5.37	4,638	2,040	30.55
35-39	7,252	5.83	5,394	1,858	25.62
40-44	7,518	6.05	5,412	2,106	28.01
45-49	8,967	7.21	6,750	2,217	24.72
50-54	9,151	7.36	6,348	2,803	30.63
55-59	7,883	6.34	5,542	2,341	29.71
60-64	7,430	5.98	5,591	1,839	24.75
65-69	5,945	4.78	4,229	1,715	28.85
70-74	7,372	5.93	2,979	1,394	31.88
75-79	3,579	2.88	2,276	1,303	36.41
80+	4,947	3.98	2,913	2,034	41.12
Total	**124,311**	**100.0**	**90,410**	**30,902**	**25.49**

MODE OF TRAVEL

The modes of travel were household automobile-driver, household automobile-passenger, school bus, walk, public transportation, bicycle, carpool/vanpool, and commercial vehicle. Figure 15 provides the distribution of person trips by mode. Automobile travel accounted for approximately 95 percent of the person trips. The "walk" mode accounted for just 2 percent of the person trips, while taxi and commercial vehicle trips combined accounted for only 0.5 percent of the person trips. The surveyed households made little use of public transportation, accounting for only 0.1 percent of person trips.

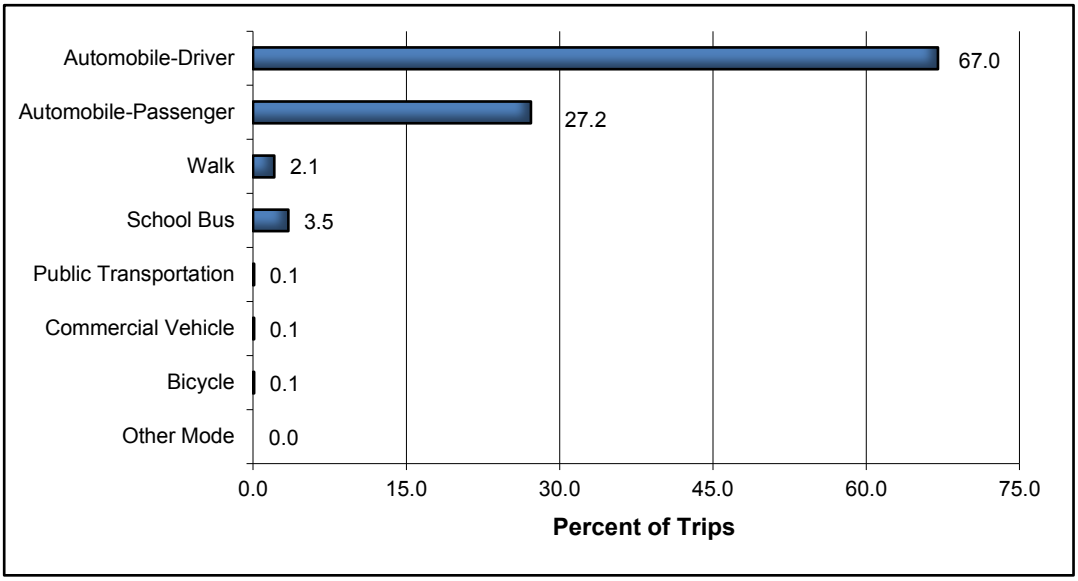

Figure 15. Distribution of Person Trips by Mode of Travel.

AMOUNT OF TRAVEL

Several measures are used to record the amount of travel—the number of person trips, the number of vehicle trips, the trip distances in miles, the trip durations or travel times in minutes, and the VMT.

Trip Distance

Figure 16 shows the distribution of person trips by the length of the trip in miles. The distribution is for internal person trips, trips beginning and ending inside the study area. The average person trip length was 5.6 miles.

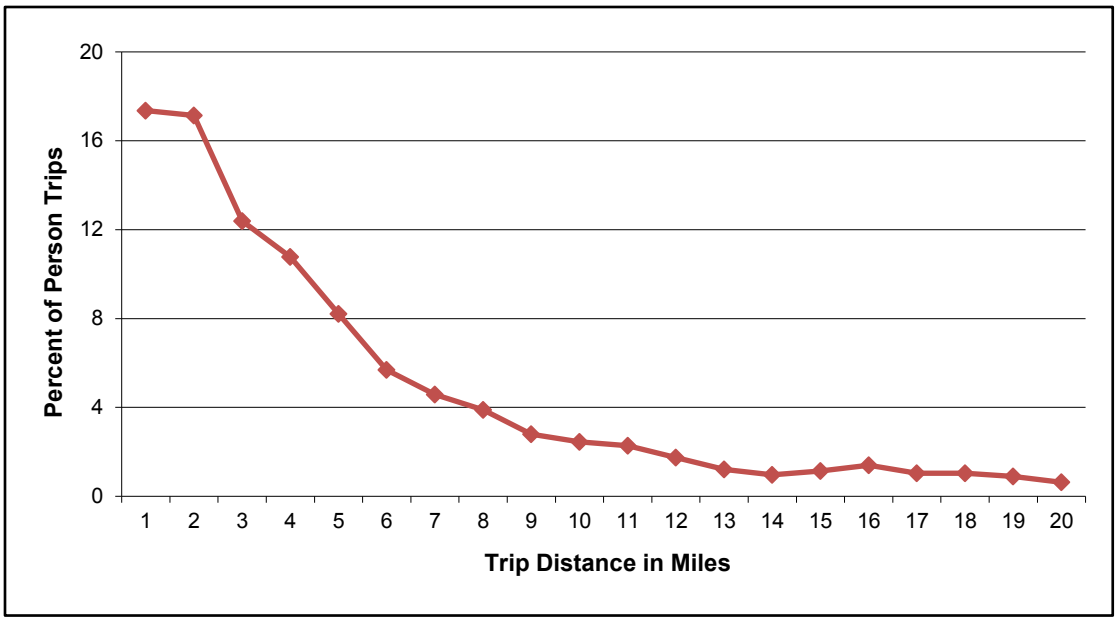

Figure 16. Distribution of Person Trips by Trip Distance in Miles.

Figure 17 provides the distribution of vehicle trips by the length of the trip in miles. For travel demand modeling purposes, the travel modeler needs data about the distribution of vehicle trips in miles and the average vehicle trip length in miles for each internal trip purpose. The average vehicle trip length was 5.9 miles. Distributions similar to Figure 18 are prepared for each internal trip purpose.

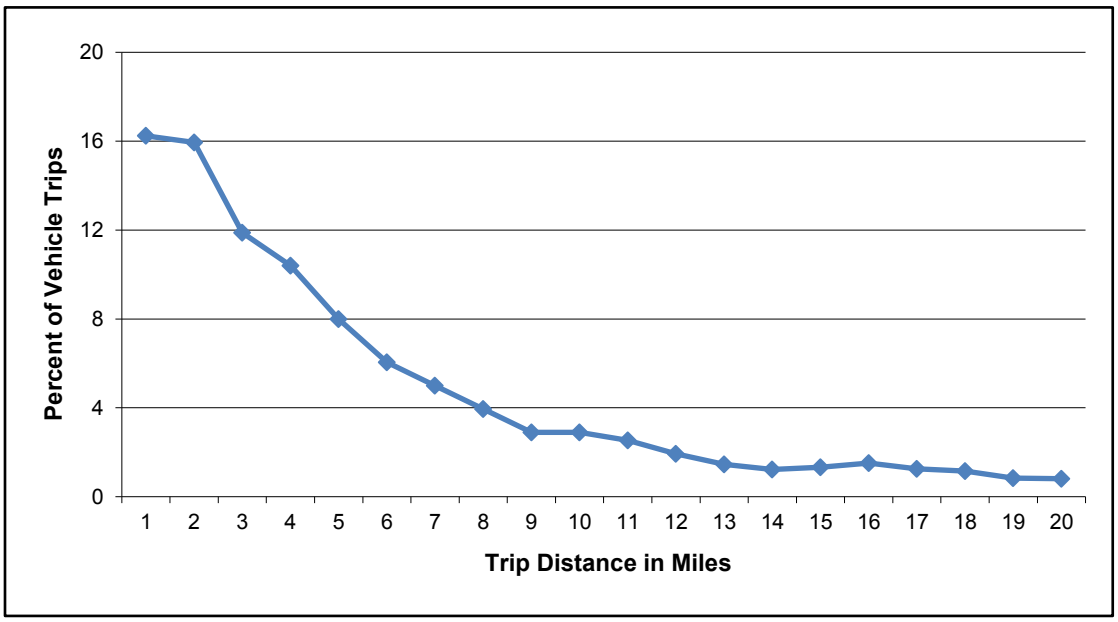

Figure 17. Distribution of Motorized Vehicle Trips by Trip Distance in Miles.

Trip Duration

Figure 18 shows the distribution of person trips by the duration of the trip in minutes. The distribution is for internal person trips, trips beginning and ending inside the study area. The average person trip duration was 9.7 minutes.

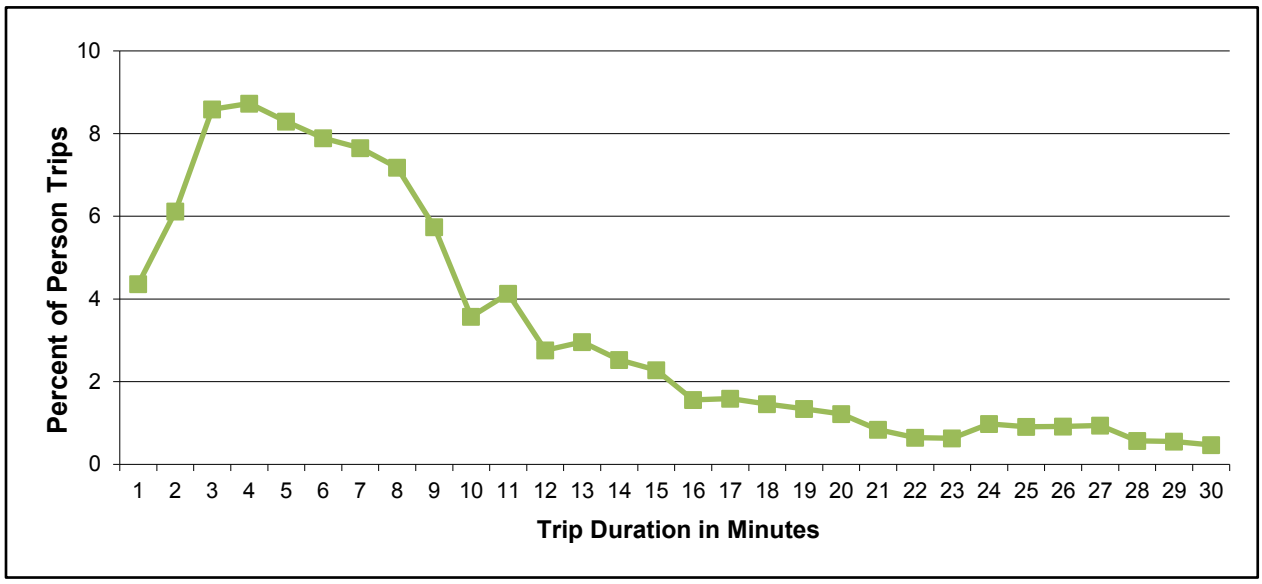

Figure 18. Distribution of Person Trips by Trip Duration in Minutes.

Figure 19 presents the distribution of vehicle trips by the duration of the trip in minutes. The average vehicle trip duration was 10.2 minutes.

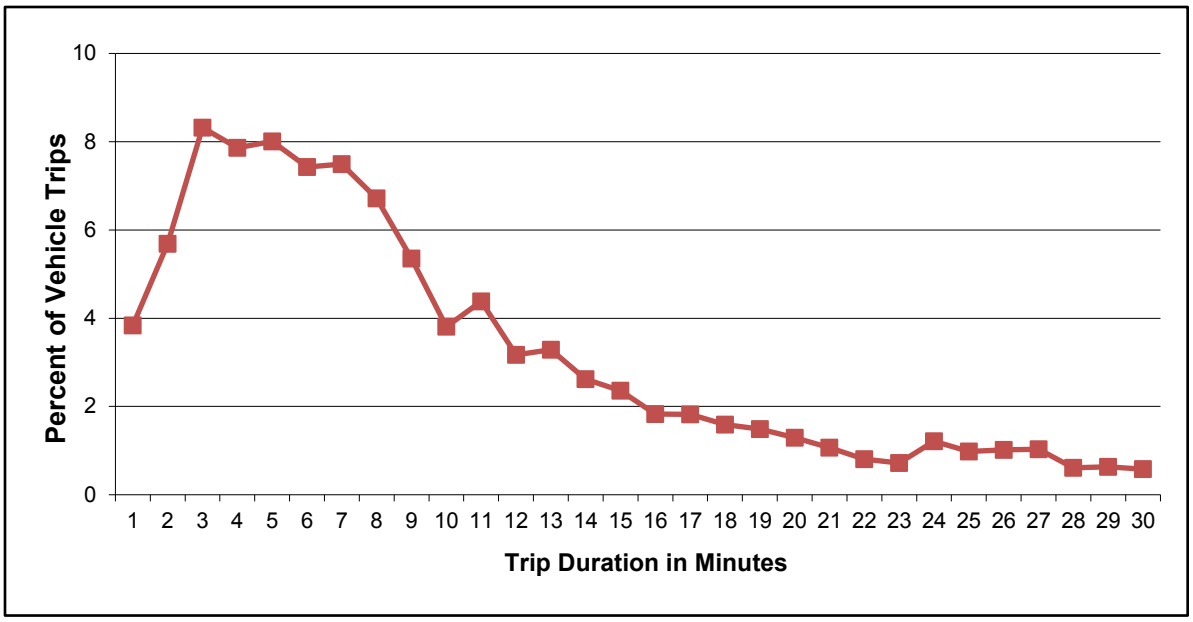

Figure 19. Distribution of Motorized Vehicle Trips by Trip Duration in Minutes.

Vehicle Miles of Travel

VMT is calculated as the product of the average vehicle trip length in miles and the number of vehicle trips. For household trips internal to the study area, the estimated VMT was 2.72 million miles per school-year weekday. This is not the total VMT for the study area, as the VMT associated with external-local, external-through, commercial vehicle, visitor travel, and intrazonal trips are not included in the estimate.

TIME OF TRAVEL

The time of travel is a function of the activity to be accomplished. The start times for trips to work and to school are dictated by the time that work and school begin. For other activities, such as trips to shop or for recreation, the trip start times are flexible. As travel during peak periods becomes more congested, some drivers choose to make trips earlier or later to avoid the most congested travel times. Figure 20 shows the distribution of start times for a 24-hour weekday during the school year. The highest percentage (14.6 percent) of trip starts occurs during the afternoon peak between the hours of 3:01 p.m. and 4:00 p.m. During this hour, trips from school to home are largely contributing to this peak. The morning peak period of 7:01 a.m. to 8:00 a.m. has the second highest percentage (14.2 percent) of daily trip starts. During this morning peak period, trips from home to work and trips from home to school are typical. Trip starts during the

hour from 5:01 p.m. to 6:00 p.m., which are largely trips from work to home, has the third highest percentage (7.5 percent) of daily trip starts.

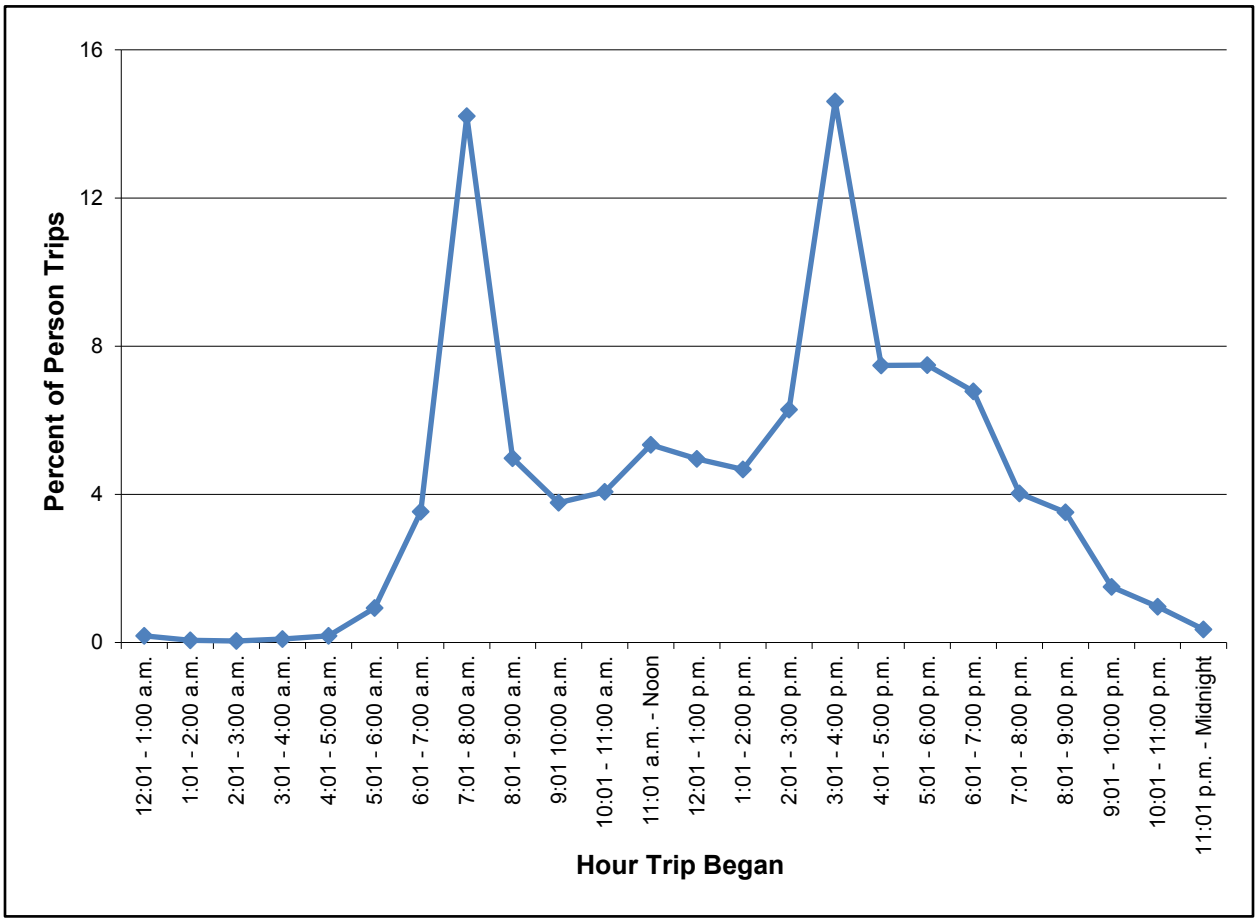

Figure 20. Distribution of Person Trip Start Times by Hour of the Day.

TRAVEL PURPOSE

As a part of their travel diary, each household member was asked to identify from a list of choices what they did at each trip destination. The information about the trip destination was used to categorize the trip by trip purpose. In travel demand modeling, typically there are three internal trip purposes—HBW, HBNW, and NHB trips. Figure 21 shows the distribution of person trips by the trip destination purposes used in the survey. As would be expected, the most frequent trip destination was the return home trip.

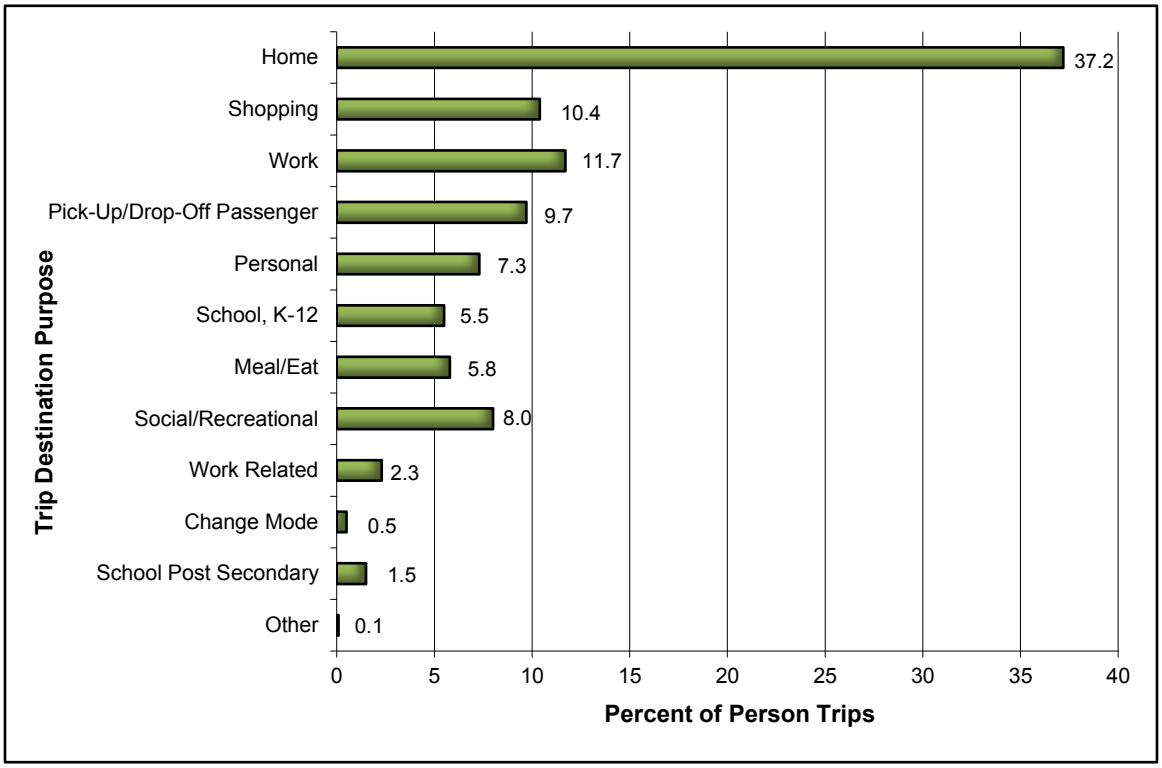

Figure 21. Distribution of Person Trips by Trip Destination Purpose.

Type of Place at Trip Destination

Closely related to the travel purpose and what the traveler did at the destination end of the trip is information on the type of place or business that was at the destination end of the trip. The travel demand modeler uses this information to develop trip attraction rates for various types of land use. In travel demand modeling, attractions are typically grouped into four categories—basic, retail, service, and education. Table 5 shows the distribution of person trips by the types of places identified in the survey for the destination end of the trip.

Table 5. Number of Person Trips and Distribution of Person Trips by Type of Place at Trip Destination.

Type of Place	Person Trips	Percent of Person Trips
Residential	29,187	8.36
Residential Type Work Place	1,656	0.47
Construction Site	721	0.21
Transportation Stop	977	0.28
Automotive Dealer/Repair	3,808	1.09
Bank/Financial Institution	7,067	2.03
Barber/Beauty/Nail Salon	2,225	0.64
Bookstore/Newsstand	636	0.18
Convenience/Drug Store	7,522	2.16
Government Offices	10,145	2.91
Offices Non-Government	14,046	4.03
Grocery	19,391	5.56
Health Club	4,076	1.17
Medical Facility/Hospital	20,764	5.95
Movie Theater/Cinema	442	0.13
Restaurant/Fast Food, Bar and Grill	33,131	9.48
Educational-12th Grade or Lower	99,826	28.61
Educational-College, Trade, Etc.	6,999	2.01
Shopping Mall/Department Store	30,533	8.75
Gas Station	8,606	2.46
Airport	194	0.05
Other	0	0
Do Not Know/Refused	46,990	13.47
Total	**348,942**	**100.00**

WHERE PEOPLE TRAVELED

Figure 22 shows the Sherman-Denison MPO area divided into eight sub-regions. This map is used to generally illustrate the geographic distribution of internal person trip movements within the region. Figure 23 through Figure 30 illustrates the number of person trip interchanges between each sub-region and all other sub-regions. The general amount of travel between each sub-region within the region is reflected by the width of the line between each subarea. The

wider the line is indicates a greater amount of travel between the sub-regions. Figure 31, the final figure in this sequence, shows the percent of person trips that remained within each sub-region.

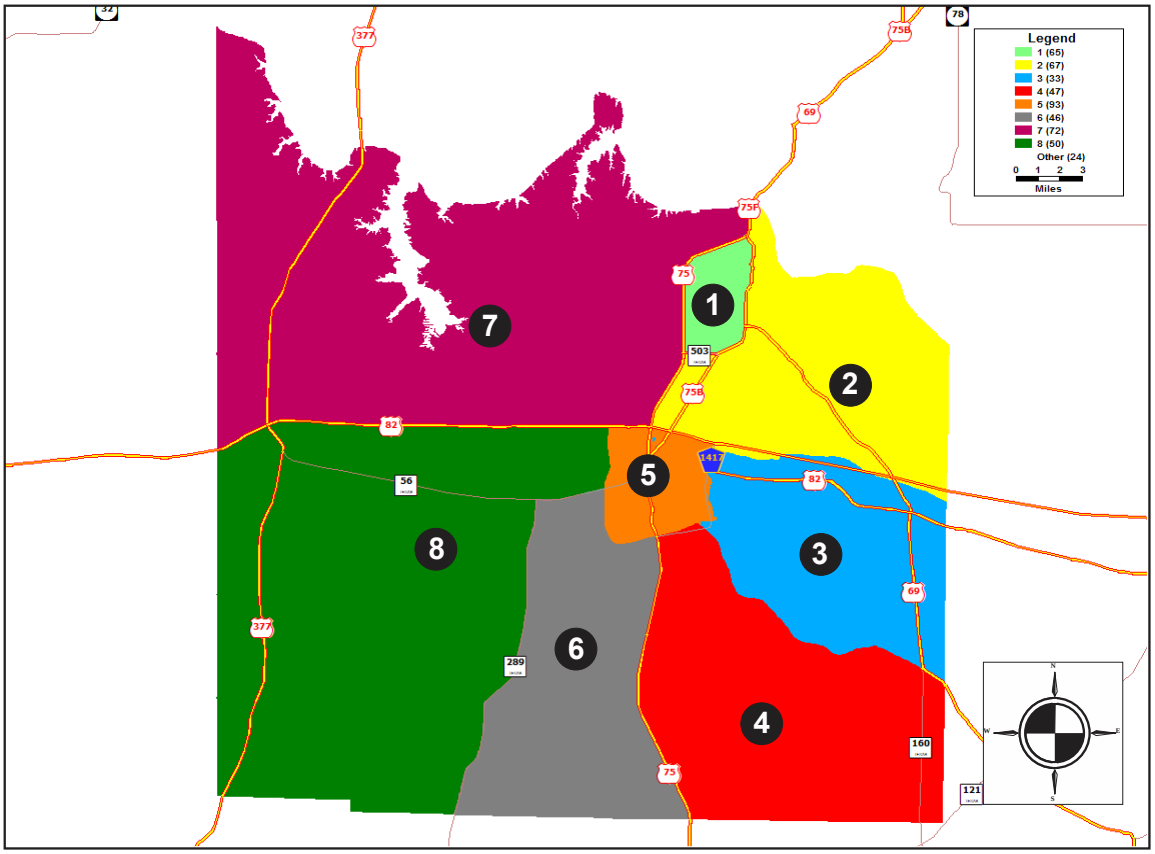

Figure 22. Sherman-Denison MPO Area and the Eight Sub-Regions within the Study Area.

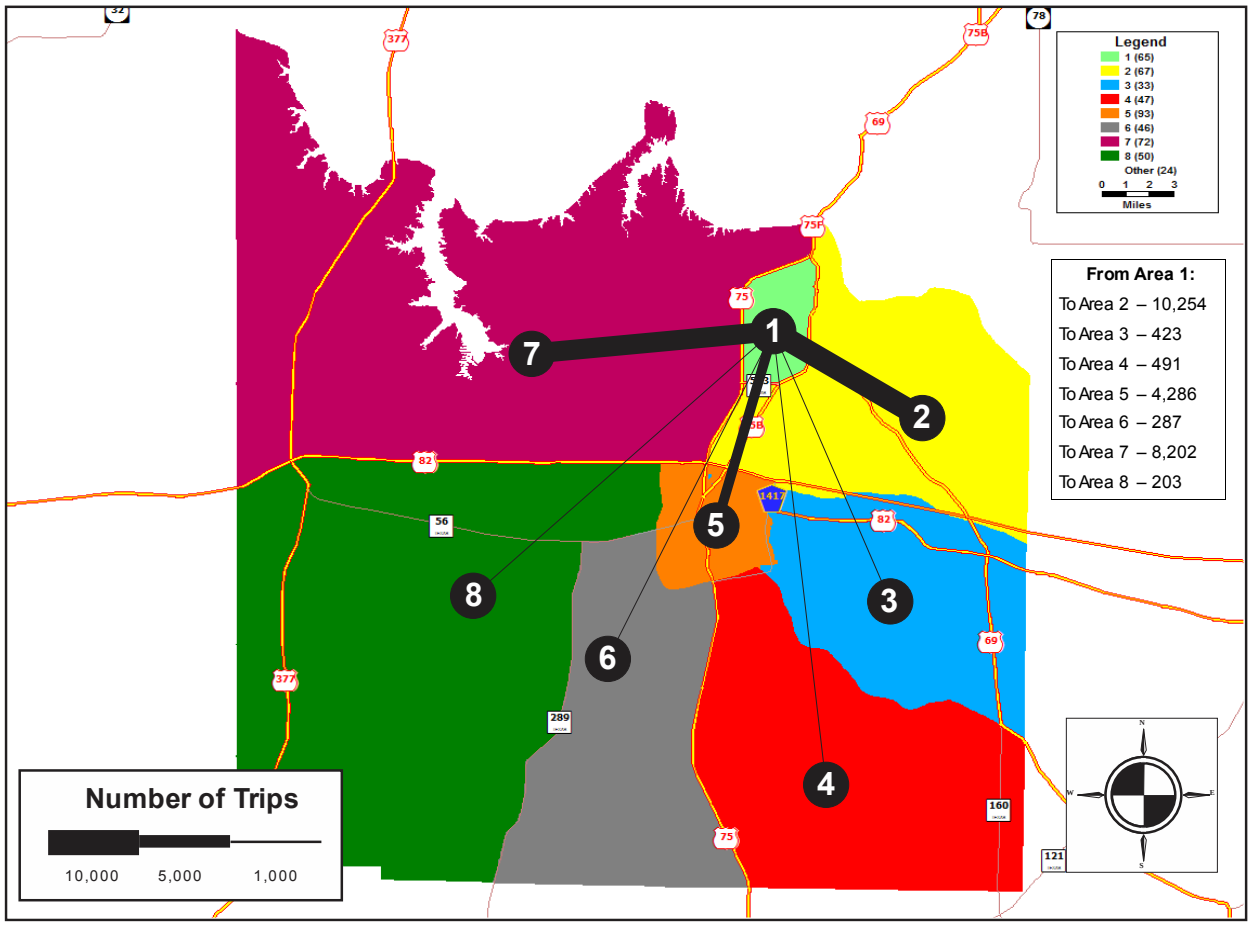

Figure 23. Person Trip Interchanges between Area 1 and Areas 2-8.

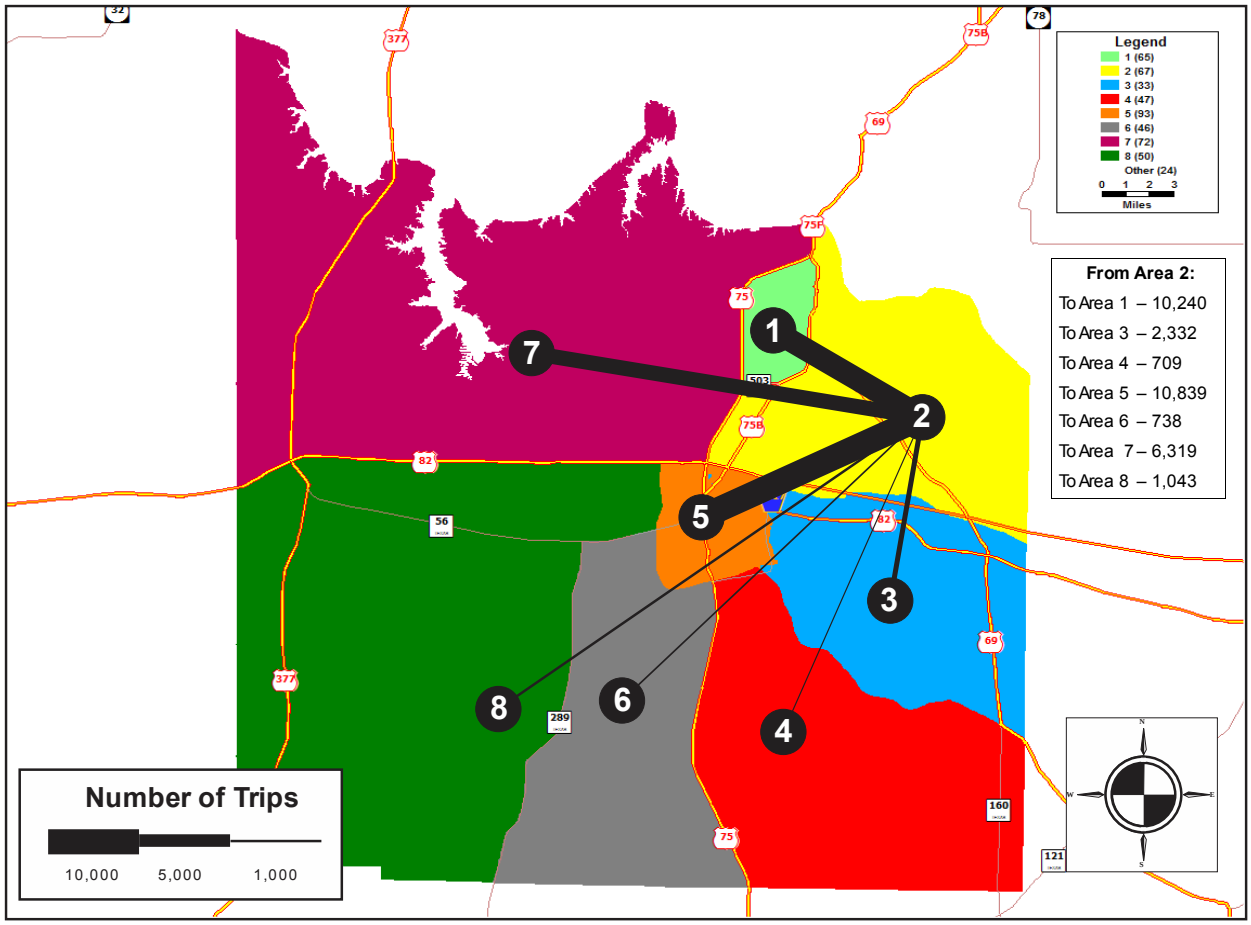

Figure 24. Person Trip Interchanges between Area 2 and Area 1 and Areas 3-8.

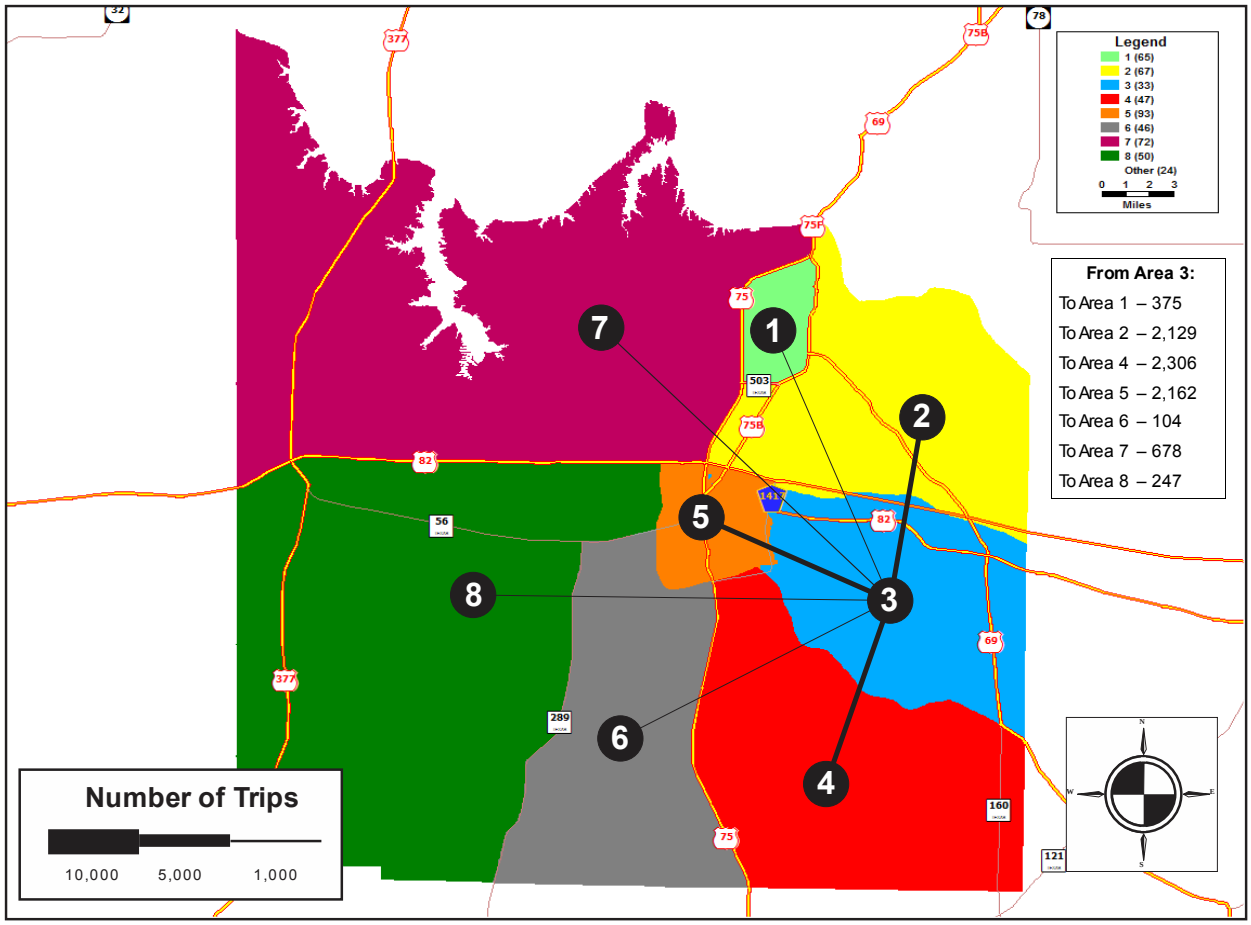

Figure 25. Person Trip Interchanges between Area 3 and Areas 1-2 and Areas 4-8.

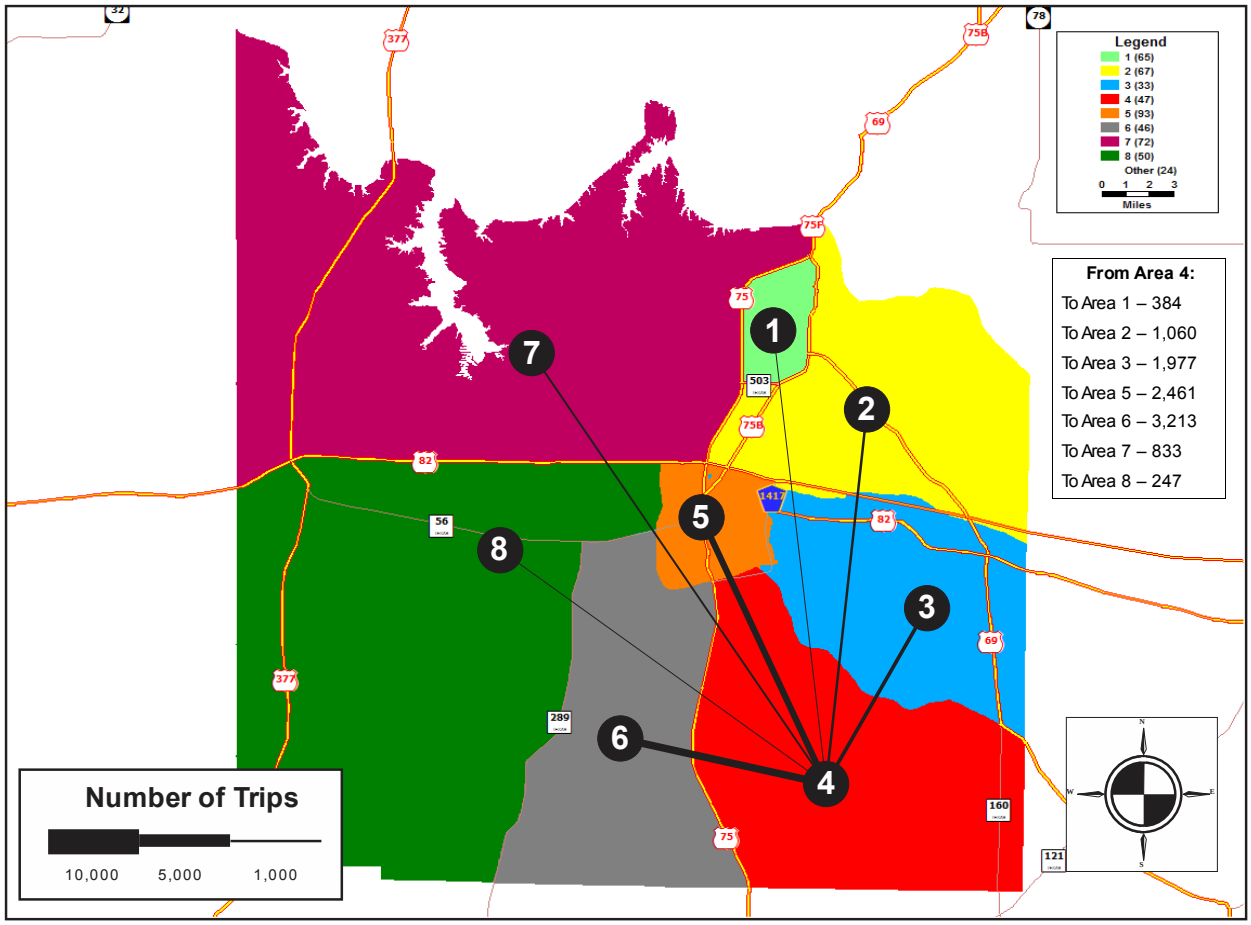

Figure 26. Person Trip Interchanges between Area 4 and Areas 1-3 and Areas 5-8.

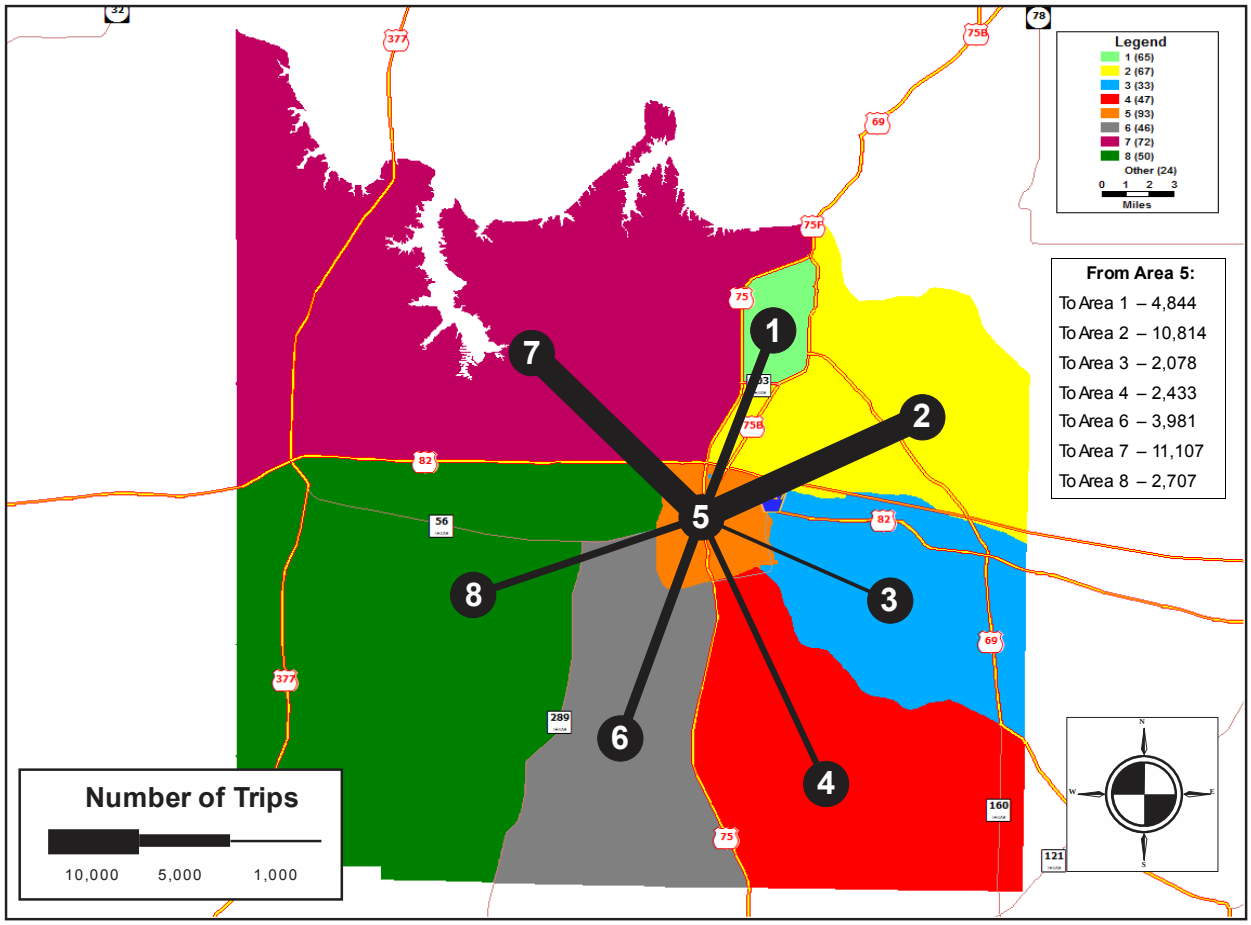

Figure 27. Person Trip Interchanges between Area 5 and Areas 1-4 and Areas 6-8.

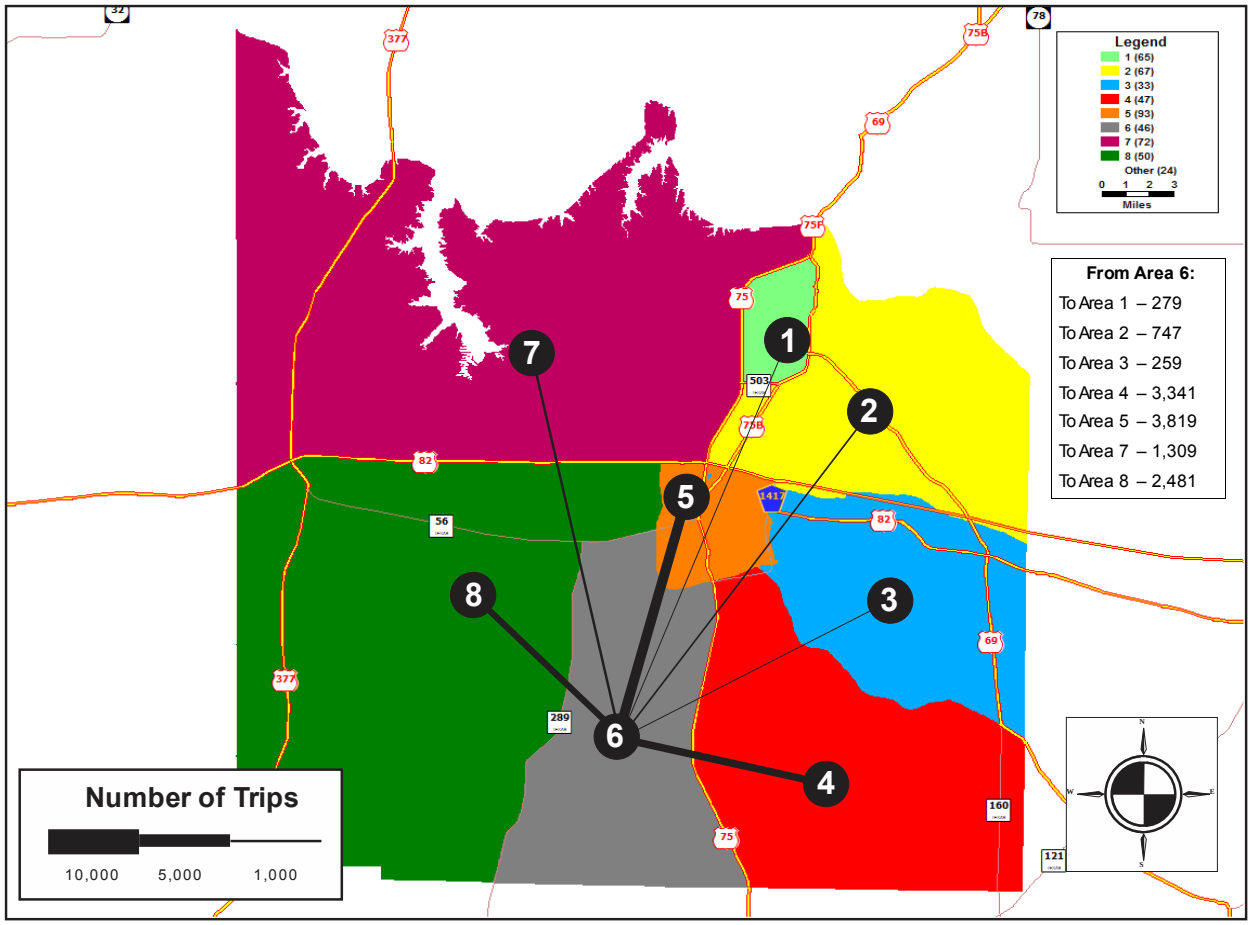

Figure 28. Person Trip Interchanges between Area 6 and Areas 1-5 and Areas 7-8.

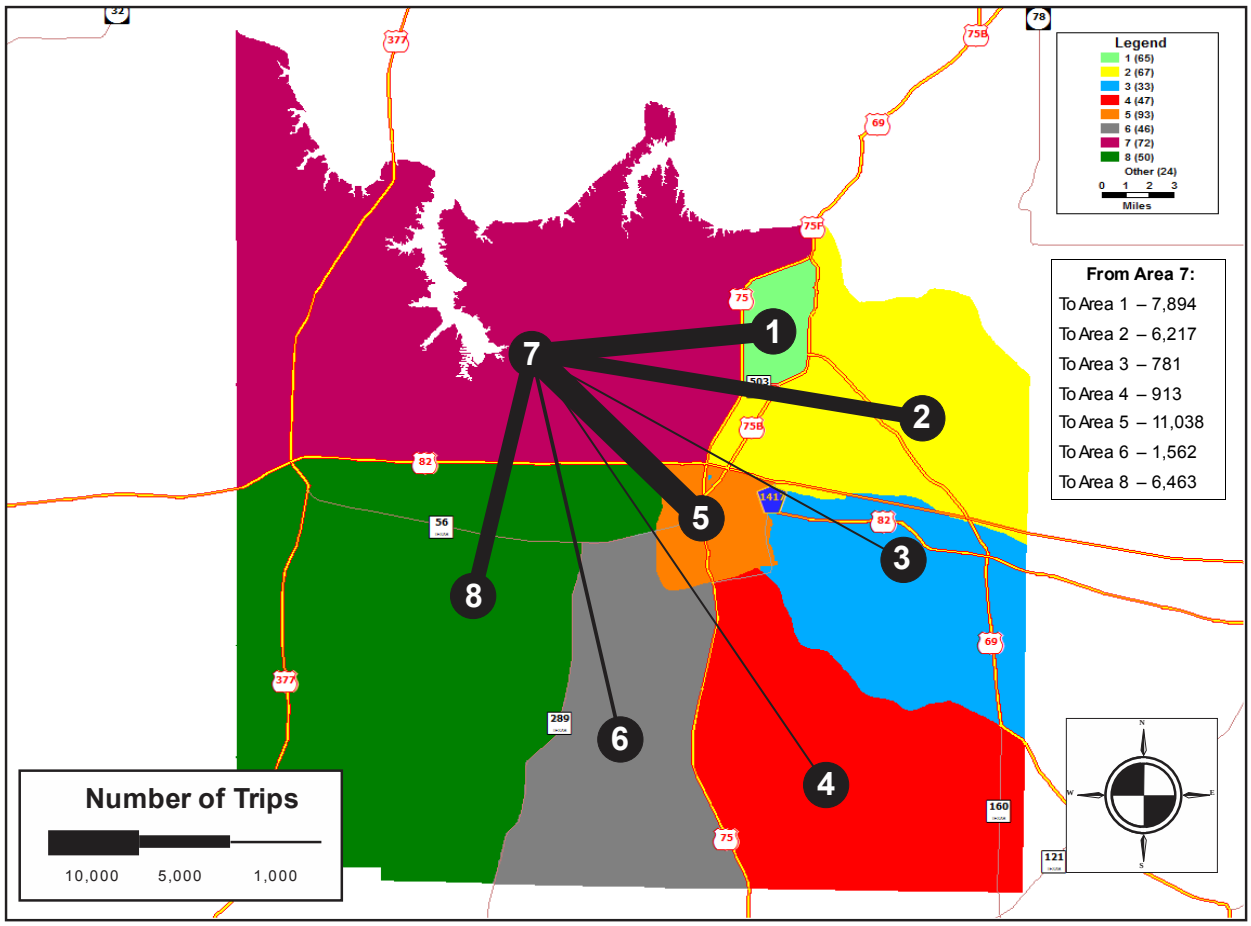

Figure 29. Person Trip Interchanges between Area 7 and Areas 1-6 and Area 8.

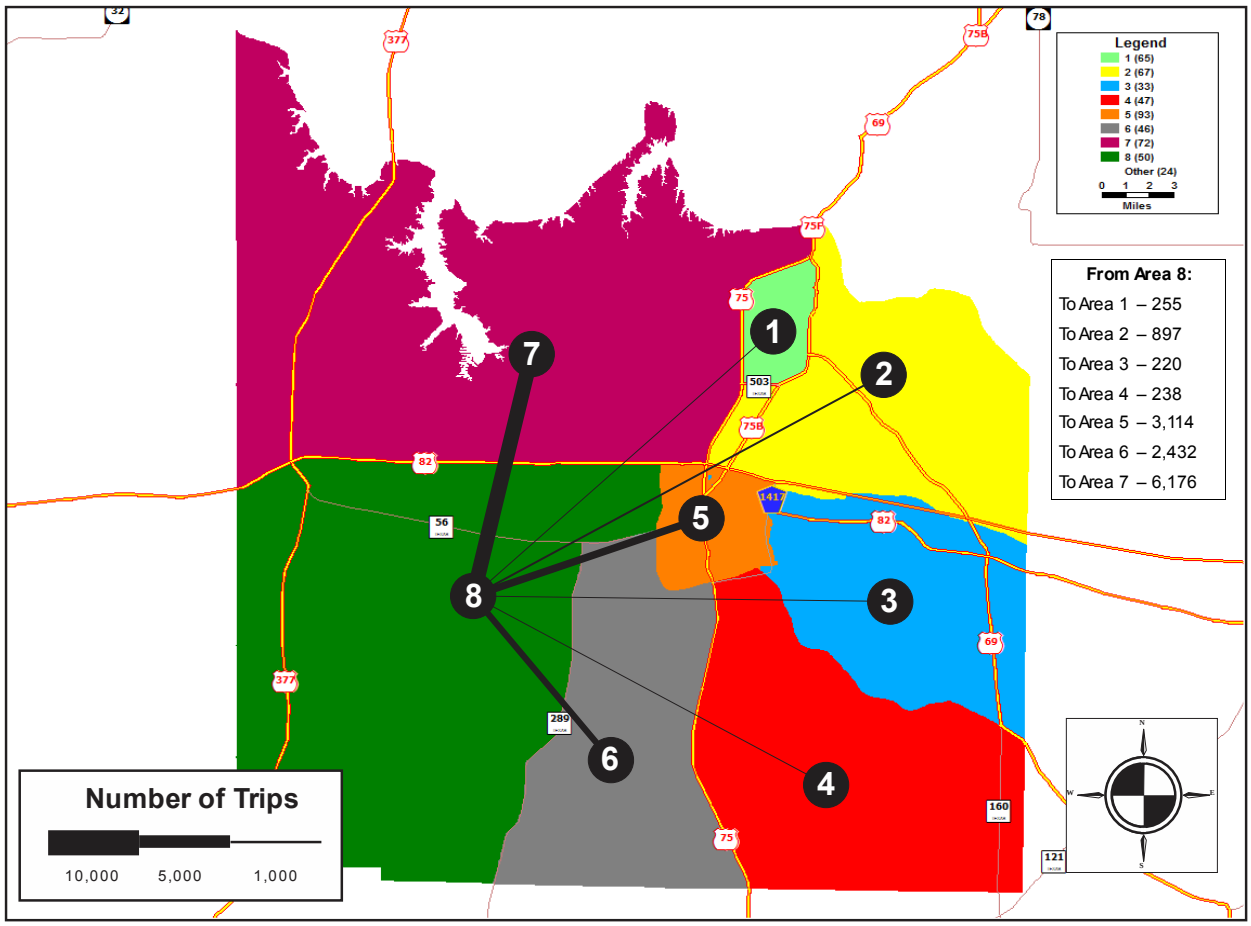

Figure 30. Person Trip Interchanges between Area 8 and Areas 1-7.

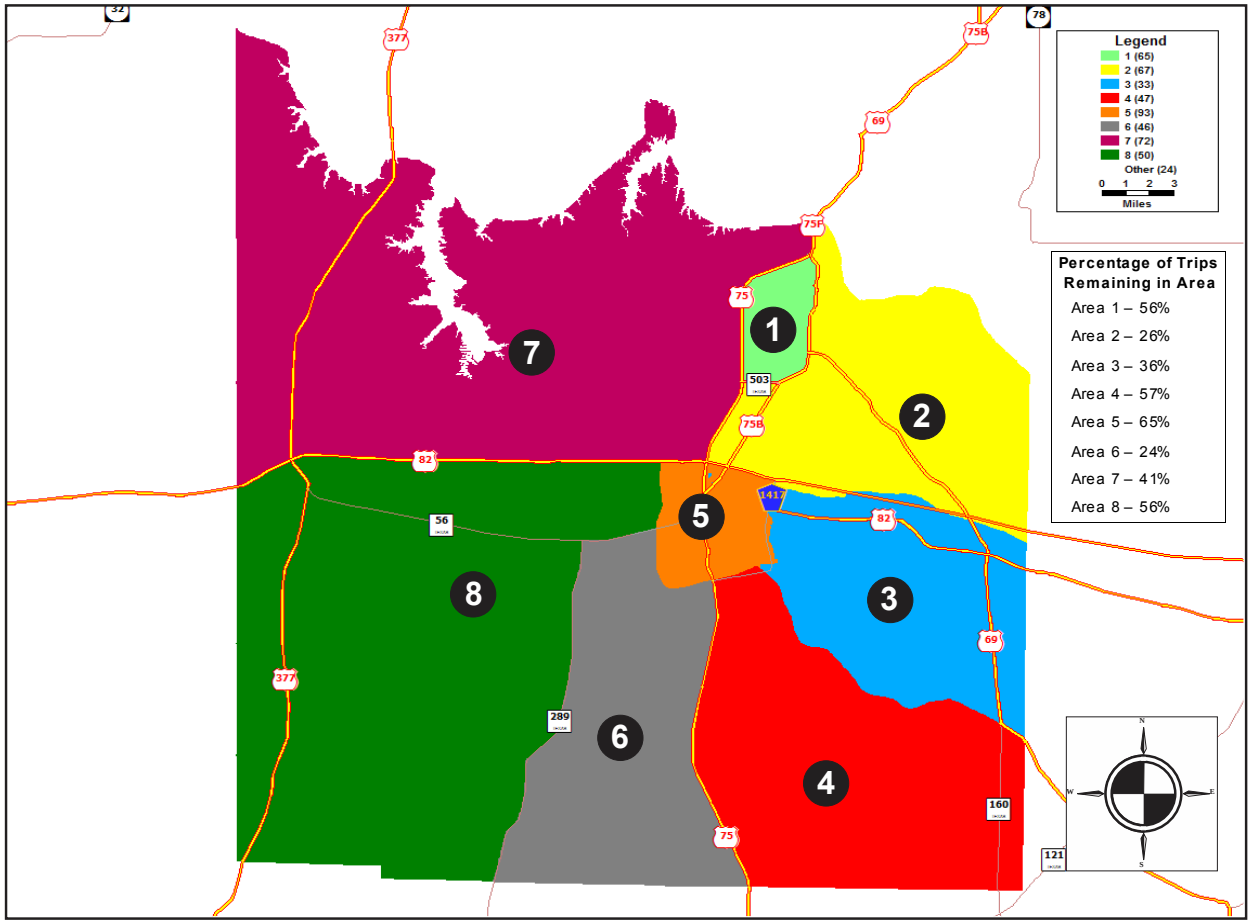

Figure 31. Percent of Person Trips that Remain within Each Sub-Region.

SUMMARY DATA

Table 6 shows the household survey summary data for the Sherman-Denison MPO area and for travel surveys conducted in a few other study areas in Texas. More detailed data than provided in this report has been provided to TxDOT's TPP Division for their use in updating the Sherman-Denison MPO area travel demand model.

Table 6. Comparative Household Survey Data.

Urban Area	Killeen-Temple Study Area	McLennan County	Potter and Randall Counties	Taylor and Jones Counties	Grayson County
Demographics					
Household Population	335,963	228,241	233,533	131,496	121,311
Licensed Drivers	243,610	151,191	164,001	92,930	85,482
Number of Households	125,934	83,995	88,507	50,724	45,877
Average Household Size	2.67	2.72	2.64	2.59	2.64
Number of Motor Vehicles	134,398	158,805	178,784	100,571	94,094
Motor Vehicles per Household	1.07	1.89	2.02	1.98	2.05
Number of Daily Trips by Mode					
Total Person Trips	1,212,890	712,766	830,583	511,575	461,172
Automobile-Driver Trips	848,141	450,637	523,635	348,903	309,146
Motor Vehicle Passenger Trips	288,138	223,990	265,544	135,126	125,408
School Bus Trips	32,618	3,201	7,872	10,819	15,940
Walk Trips	35,372	16,627	11,563	6,818	9,584
Public Transit Trips	831	3,201	7,872	2,394	288
Bicycle Trips	1,888	4,781	2,002	1,017	309
Commercial Vehicle Trips	125,862	111,659	81,403	113,789	327
Other Modes/Taxi	2,109	NA	1,873	NA	179
Number of Daily Trips by Destination/Purpose					
Trips to Home	469,134	254,084	300,993	175,402	127,729
Trips to Work	150,646	80,919	86,938	50,718	33,152
Trips Work Related	32,199	21,604	25,302	12,246	8,198
Trips to Shop	128,720	74,105	95,421	53,481	37,820
Trips to Pick-Up/Drop-Off Passenger	119,222	65,744	77,014	53,811	37,490
Trips for Personal Business	97,279	59,229	73,011	38,984	30,215
Trips for Social/Recreation	77,136	69,543	68,556	37,945	26,202
Trips for School (K-12)	69,738	35,467	46,973	27,469	24,667
Trips for School Post Secondary	13,519	5,739	4,897	5,351	2,605
Trips for Meal/Eat	67,322	40,757	46,049	33,358	18,927
Trips to Change Mode	9,462	4,038	2,836	2,586	1,804
Other Trips	10,863	1,537	2,590	1,135	0
Daily Trip Rates					
Person Trips per Person	3.60	3.12	3.62	3.85	3.80
Person Trips per Household	9.63	8.49	9.38	9.98	10.05
Trip Lengths					
Average Person Trip Length in Miles	5.1	5.8	4.7	3.9	5.6
Average Vehicle Trip Length in Miles	5.4	6.3	5	4.1	5.9
Average Person Trip Duration in Minutes	10.1	8.8	5.9	7	9.7
Average Vehicle Trip Duration in Minutes	10.3	9.4	6.1	7.3	10.2

TERMINOLOGY

Within the context of the household travel survey, a number of terms are used. These terms are defined in this section.

Automobile Driver Trip – The movement of a vehicle from one location to another location. These trips are recorded for the person driving the vehicle. These are also referred to as vehicle trips.

Home-Based Non-Work (HBNW) Trip – A trip with one end of the trip at home and the other end of the trip is at a location other than the work location. An HBNW trip is non-directional in terms of the trip activity/trip purpose.

Home-Based Work (HBW) Trip – A trip that has one end of the trip at home and the other end of the trip at work. An HBW trip is non-directional in terms of the trip activity/trip purpose (i.e., a trip from home to work or from work to home is defined as an HBW trip).

Mode of Travel – The physical means used by the household member to make a trip. The modes are walk, vehicle driver, vehicle passenger, carpool driver, carpool passenger, public transportation, school bus, taxi/paid limousine, bicycle, motorcycle/moped, and other.

Non-Home-Based (NHB) Trip – A trip with neither end of the trip at home.

Person Trip – The movement of an individual from one location to another location. In the household survey, trips were recorded for all persons in a surveyed household.

Trip Activity – The activity at the location the trip began and/or the location the trip ended. There are 22 activities used in the household survey. The activities were recorded in the survey and post processed to identify the trip purpose associated with each trip activity.

Trip Attractions – The number of trips attracted to a particular category of land use. Trip attractions are calculated by trip purpose and model of travel for different land use categories.

Trip Productions – The number of trips produced by members of a household. Trip productions are calculated by trip purpose and mode of travel. Production rates are the number of trip productions divided by the number of households that produced those trips.

Trip Purpose – Stated in terms of the purpose at the location the trip began and the purpose at the location the trip ended. For example, a trip that began at home and ended at work would be referred to as a home-based work (HBW) trip. There are three primary trip purposes used in the household survey. These include HBW, HBNW, and NHB.

Vehicle Availability – The number of vehicles available to members of a household for making trips.

Vehicle Occupancy – The number of occupants in a vehicle during a vehicle trip including the driver of the vehicle.

APPENDIX A:
HOUSEHOLD SURVEY INSTRUMENTS

Location 4: Where did you go next?

When did you arrive at this location?

___ ___ : ___ ___ ☐ AM ☐ PM

What is the Name of this Location?

What Type of Place/Business Is This?

Street Address (be as specific as possible)

_____ & _____

Nearest Intersecting Streets

City County State

Zip Code (if known)

Did you walk **more than a block** from a parking lot or bus stop to get to this location?

☐ Yes ☐ No

If YES: where did you park?

How did you get to Location 4?

What was the primary type of transportation you used?

☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

If you used a car, van, or truck for this trip . . .

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? ☐ Carpool ☐ Vanpool ☐ Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? ☐ Yes ☐ No

How much did you pay to park? $_____

What did you do here?

What did you do at this location? (check all that apply)

☐ Return Home from your primary job
☐ Return Home for another reason
☐ Meal/Eat
☐ Work
☐ Work Related
☐ School
☐ Personal Business: _____
☐ Volunteer/Civic
☐ Shop
☐ Social/Recreation/Entertainment
☐ Pick-Up/Drop-Off Passenger
☐ Change Mode (e.g., car to bus): _____

When did you leave this location?

___ ___ : ___ ___ ☐ AM ☐ PM

- - - - - - - - - - - - - OR - - - - - - - - - - - - -

☐ This was the last place I went today

If You Forgot a Stop *Anywhere* Between This Location and Location 5, Provide the Information Below:

For what reason did you stop between Location 4 and 5? _____ Number of minutes stopped: _____

Where did you stop? _____ Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State

Location 5: Where did you go next?

When did you arrive at this location?

___ ___ : ___ ___ ☐ AM ☐ PM

What is the Name of this Location?

What Type of Place/Business Is This?

Street Address (be as specific as possible)

_____ & _____

Nearest Intersecting Streets

City County State

Zip Code (if known)

Did you walk **more than a block** from a parking lot or bus stop to get to this location?

☐ Yes ☐ No

If YES: where did you park?

How did you get to Location 5?

What was the primary type of transportation you used?

☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

If you used a car, van, or truck for this trip . . .

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? ☐ Carpool ☐ Vanpool ☐ Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? ☐ Yes ☐ No

How much did you pay to park? $_____

What did you do here?

What did you do at this location? (check all that apply)

☐ Return Home from your primary job
☐ Return Home for another reason
☐ Meal/Eat
☐ Work
☐ Work Related
☐ School
☐ Personal Business: _____
☐ Volunteer/Civic
☐ Shop
☐ Social/Recreation/Entertainment
☐ Pick-Up/Drop-Off Passenger
☐ Change Mode (car to bus): _____

When did you leave this location?

___ ___ : ___ ___ ☐ AM ☐ PM

- - - - - - - - - - - - - OR - - - - - - - - - - - - -

☐ This was the last place I went today

If You Forgot a Stop *Anywhere* Between This Location and Location 6, Provide the Information Below:

For what reason did you stop between Location 5 and 6? _____ Number of minutes stopped: _____

Where did you stop? _____ Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State

Location 6: Where did you go next?

When did you arrive at this location?

___ ___ : ___ ___ ☐ AM ☐ PM

What is the Name of this Location?

What Type of Place/Business Is This?

Street Address (be as specific as possible)

_____ & _____
Nearest Intersecting Streets

City County State

Zip Code (if known)

Did you walk **more than a block** from a parking lot or bus stop to get to this location?

☐ Yes If YES: where did you park?
☐ No

How did you get to Location 6?

What was the primary type of transportation you used?

☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

If you used a car, van, or truck for this trip . . .

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? ☐ Carpool ☐ Vanpool ☐ Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? ☐ Yes ☐ No

How much did you pay to park? $_____

What did you do here?

What did you do at this location? (check all that apply)

☐ Return Home from your primary job
☐ Return Home for another reason
☐ Meal/Eat
☐ Work
☐ Work Related
☐ School
☐ Personal Business: _____
☐ Volunteer/Civic
☐ Shop
☐ Social/Recreation/Entertainment
☐ Pick-Up/Drop-Off Passenger
☐ Change Mode (car to bus): _____

When did you leave this location?

___ ___ : ___ ___ ☐ AM ☐ PM

- - - - - - - - - - - - - OR - - - - - - - - - - - - -

☐ This was the last place I went today

If You Forgot a Stop *Anywhere* Between This Location and Location 7, Provide the Information Below:

For what reason did you stop between Location 6 and 7? _____ Number of minutes stopped: _____

Where did you stop? _____ Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State

Location 3: Where did you go next?

When did you arrive at this location?

___ ___ : ___ ___ ☐ AM ☐ PM

What is the Name of this Location?

What Type of Place/Business Is This?

Street Address (be as specific as possible)

_____ & _____
Nearest Intersecting Streets

City County State

Zip Code (if known)

Did you walk **more than a block** from a parking lot or bus stop to get to this location?

☐ Yes If YES: where did you park?
☐ No

How did you get to Location 3?

What was the primary type of transportation you used?

☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

If you used a car, van, or truck for this trip . . .

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? ☐ Carpool ☐ Vanpool ☐ Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? ☐ Yes ☐ No

How much did you pay to park? $_____

What did you do here?

What did you do at this location? (check all that apply)

☐ Return Home from your primary job
☐ Return Home for another reason
☐ Meal/Eat
☐ Work
☐ Work Related
☐ School
☐ Personal Business: _____
☐ Volunteer/Civic
☐ Shop
☐ Social/Recreation/Entertainment
☐ Pick-Up/Drop-Off Passenger
☐ Change Mode (car to bus): _____

When did you leave this location?

___ ___ : ___ ___ ☐ AM ☐ PM

- - - - - - - - - - - - - OR - - - - - - - - - - - - -

☐ This was the last place I went today

If You Forgot a Stop *Anywhere* Between This Location and Location 4, Provide the Information Below:

For what reason did you stop between Location 3 and 4? _____ Number of minutes stopped: _____

Where did you stop? _____ Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State

Location 2: Where did you go next?

When did you arrive at this location?
___ ___ : ___ ___ ☐ AM ☐ PM

What is the Name of this Location?

What Type of Place/Business Is This?

Street Address (be as specific as possible)

_____ & _____
Nearest Intersecting Streets

City County State

Zip Code (if known)

Did you walk **more than a block** from a parking lot or bus stop to get to this location?
☐ Yes ☐ No
If YES: where did you park?

How did you get to Location 2?

What was the primary type of transportation you used?
☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

If you used a car, van, or truck for this trip . . .

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? ☐ Carpool ☐ Vanpool ☐ Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? ☐ Yes ☐ No

How much did you pay to park? $_____

What did you do here?

What did you do at this location? (check all that apply)
☐ Return Home from your primary job
☐ Return Home for another reason
☐ Meal/Eat
☐ Work
☐ Work Related
☐ School
☐ Personal Business: _____
☐ Volunteer/Civic
☐ Shop
☐ Social/Recreation/Entertainment
☐ Pick-Up/Drop-Off Passenger
☐ Change Mode (car to bus): _____

When did you leave this location?

___ ___ : ___ ___ ☐ AM ☐ PM

- - - - - - - - - - - - - OR - - - - - - - - - - - - -

☐ This was the last place I went today

If You **Forgot** a Stop ***Anywhere*** Between This Location and Location 3, Provide the Information Below:

For what reason did you stop between Location 2 and 3? _____ Number of minutes stopped: _____

Where did you stop? _____ Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State

Location 7: Where did you go next?

When did you arrive at this location?
___ ___ : ___ ___ ☐ AM ☐ PM

What is the Name of this Location?

What Type of Place/Business Is This?

Street Address (be as specific as possible)

_____ & _____
Nearest Intersecting Streets

City County State

Zip Code (if known)

Did you walk **more than a block** from a parking lot or bus stop to get to this location?
☐ Yes ☐ No
If YES: where did you park?

How did you get to Location 7?

What was the primary type of transportation you used?
☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

If you used a car, van, or truck for this trip . . .

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? ☐ Carpool ☐ Vanpool ☐ Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? ☐ Yes ☐ No

How much did you pay to park? $_____

What did you do here?

What did you do at this location? (check all that apply)
☐ Return Home from your primary job
☐ Return Home for another reason
☐ Meal/Eat
☐ Work
☐ Work Related
☐ School
☐ Personal Business: _____
☐ Volunteer/Civic
☐ Shop
☐ Social/Recreation/Entertainment
☐ Pick-Up/Drop-Off Passenger
☐ Change Mode (car to bus): _____

When did you leave this location?

___ ___ : ___ ___ ☐ AM ☐ PM

- - - - - - - - - - - - - OR - - - - - - - - - - - - -

☐ This was the last place I went today

If You **Forgot** a Stop ***Anywhere*** Between This Location and Location 8, Provide the Information Below:

For what reason did you stop between Location 7 and 8? _____ Number of minutes stopped: _____

Where did you stop? _____ Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State

Location 8: Where did you go next?

When did you arrive at this location?

___ ___ : ___ ___ ☐ AM ☐ PM

What is the Name of this Location?

What Type of Place/Business Is This?

Street Address (be as specific as possible)

_____ & _____

Nearest Intersecting Streets

City County State

Zip Code (if known)

Did you walk **more than a block** from a parking lot or bus stop to get to this location?

☐ Yes ☐ No

If YES: where did you park?

How did you get to Location 8?

What was the primary type of transportation you used?

☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

If you used a car, van, or truck for this trip . . .

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? ☐ Carpool ☐ Vanpool ☐ Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? ☐ Yes ☐ No

How much did you pay to park? $_____

What did you do here?

What did you do at this location? (check all that apply)

☐ Return Home from your primary job
☐ Return Home for another reason
☐ Meal/Eat
☐ Work
☐ Work Related
☐ School
☐ Personal Business: _____
☐ Volunteer/Civic
☐ Shop
☐ Social/Recreation/Entertainment
☐ Pick-Up/Drop-Off Passenger
☐ Change Mode (car to bus): _____

When did you leave this location?

___ ___ : ___ ___ ☐ AM ☐ PM

- - - - - - - - - - - - - OR - - - - - - - - - - - - -

☐ This was the last place I went today

If You Forgot a Stop *Anywhere* Between This Location and Location 9, Provide the Information Below:

For what reason did you stop between Location 8 and 9? _____ Number of minutes stopped: _____

Where did you stop? _____ Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State

Location 1: Where did you go first?

When did you arrive at this location?

___ ___ : ___ ___ ☐ AM ☐ PM

What is the Name of this Location?

What Type of Place/Business Is This?

Street Address (be as specific as possible)

_____ & _____

Nearest Intersecting Streets

City County State

Zip Code (if known)

Did you walk **more than a block** from a parking lot or bus stop to get to this location?

☐ Yes ☐ No

If YES: where did you park?

How did you get to Location 1?

What was the primary type of transportation you used?

☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

If you used a car, van, or truck for this trip . . .

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? ☐ Carpool ☐ Vanpool ☐ Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? ☐ Yes ☐ No

How much did you pay to park? $_____

What did you do here?

What did you do at this location? (check all that apply)

☐ Return Home from your primary job
☐ Return Home for another reason
☐ Meal/Eat
☐ Work
☐ Work Related
☐ School
☐ Personal Business: _____
☐ Volunteer/Civic
☐ Shop
☐ Social/Recreation/Entertainment
☐ Pick-Up/Drop-Off Passenger
☐ Change Mode (e.g., car to bus): _____

When did you leave this location?

___ ___ : ___ ___ ☐ AM ☐ PM

- - - - - - - - - - - - - OR - - - - - - - - - - - - -

☐ This was the last place I went today

If You Forgot a Stop *Anywhere* Between This Location and Location 2, Provide the Information Below:

For what reason did you stop between Location 1 and 2? _____ Number of minutes stopped: _____

Where did you stop? _____ Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State

Start Location: At 3:00 am today, were you . . .?

☐ At Home

Please proceed to "Location 1" on the next page.

☐ Traveling (you were driving or flying at 3:00 am today)

What type of transportation were you using?

☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? ☐ Carpool ☐ Vanpool ☐ Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? ☐ Yes ☐ No

☐ At Work, or

☐ At Another Location

_____
What is the Name of this Location?

_____
What Type of Place/Business Is This?

_____
Street Address (be as specific as possible)

_____ _____ _____
City County State

_____
Zip Code (if known)

_____ & _____
Nearest Intersecting Streets

At what time did you leave your starting location?_____

Location 9: Where did you go next?

When did you arrive at this location?

___ ___ : ___ ___ ☐ AM ☐ PM

_____
What is the Name of this Location?

_____
What Type of Place/Business Is This?

_____
Street Address (be as specific as possible)

_____ & _____
Nearest Intersecting Streets

_____ _____ _____
City County State

_____
Zip Code (if known)

Did you walk **more than a block** from a parking lot or bus stop to get to this location?

☐ Yes If YES: where did you park?
☐ No _____

How did you get to Location 9?

What was the primary type of transportation you used?

☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

If you used a car, van, or truck for this trip . . .

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? ☐ Carpool ☐ Vanpool ☐ Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? ☐ Yes ☐ No

How much did you pay to park? $_____

What did you do here?

What did you do at this location? (check all that apply)

☐ Return Home from your primary job
☐ Return Home for another reason
☐ Meal/Eat
☐ Work
☐ Work Related
☐ School
☐ Personal Business: _____
☐ Volunteer/Civic
☐ Shop
☐ Social/Recreation/Entertainment
☐ Pick-Up/Drop-Off Passenger
☐ Change Mode (car to bus): _____

When did you leave this location?

___ ___ : ___ ___ ☐ AM ☐ PM

- - - - - - - - - - - - - OR - - - - - - - - - - - - -

☐ This was the last place I went today

If You **Forgot** a Stop ***Anywhere*** Between This Location and Location 10, Provide the Information Below:

For what reason did you stop between Location 9 and 10? _____ Number of minutes stopped: _____

Where did you stop? _____ _____ _____
Name of Stop Location Address or Nearest Intersection City, County, and State

Instructions

Please tell us about ALL locations you traveled to, what you did, and how you got there, beginning at 3 a.m. Include all changes in location you made whether you were traveling by vehicle, bus, bike, walking, or other means. Give us as much information as you can about each location or place you stopped, no matter how short. For example, if you stop to get gas on your way to work, please record both locations separately. Also, try to record as much detail about the address as possible. For example, write 123 N. Main Street instead of 123 Main.

If you have any questions, please call 1-888-801-5368
ETC Institute

School Information

Do you currently attend school? ☐ Yes ☐ No
(This includes all levels of school, from day care to college.)

If you do not currently attend school, please go to the "Bike Use" section to the right.

What type of school do you attend?

- ☐ Day Care/Preschool
- ☐ K-12 (Elementary – High School)

If your answer to the question is below this line, please also answer the question below.

- ☐ Vocational or trade school
- ☐ Post-secondary (College, professional school)
- ☐ Other (Specify): _____

Are you enrolled for 12 or more hours? ☐ Yes ☐ No

Bike Use

Of the last seven days,
How many did you ride a bike? ____ days

What was the most common purpose for your bike trip(s)?

- ☐ Work
- ☐ School
- ☐ Shopping
- ☐ Visiting
- ☐ Recreation/Exercise
- ☐ Other (Specify): _____

Additional Locations

Use the additional sheets provided if you have more than 10 Locations where you made a stop.

Questions?

If you have any questions,
please call **1-888-801-5368** toll-free.

ETC Institute
725 W. Frontier Circle
Olathe, KS 66061

Comments

_____

_____

_____

_____

Thank you for your participation in this important survey.

Instructions

Please tell us about ALL locations you traveled to, what you did, and how you got there, beginning at 3 a.m. Include all changes in location you made whether you were traveling by vehicle, bus, bike, walking, or other means. Give us as much information as you can about each location or place you stopped, no matter how short. For example, if you stop to get gas on your way to work, please record both locations separately. Also, try to record as much detail about the address as possible. For example, write 123 N. Main Street instead of 123 Main.

If you have any questions, please call 1-888-801-5368
ETC Institute

School Information

Do you currently attend school? ☐ Yes ☐ No
(This includes all levels of school, from day care to college.)

If you do not currently attend school, please go to the "Bike Use" section to the right.

What type of school do you attend?

- ☐ Day Care/Preschool
- ☐ K-12 (Elementary – High School)

If your answer to the question is below this line, please also answer the question below.

- ☐ Vocational or trade school
- ☐ Post-secondary (College, professional school)
- ☐ Other (Specify): _____

Are you enrolled for 12 or more hours? ☐ Yes ☐ No

Bike Use

Of the last seven days,
How many did you ride a bike? ____ days

What was the most common purpose for your bike trip(s)?

- ☐ Work
- ☐ School
- ☐ Shopping
- ☐ Visiting
- ☐ Recreation/Exercise
- ☐ Other (Specify): _____

Additional Locations

Use the additional sheets provided if you have more than 10 Locations where you made a stop.

Questions?

If you have any questions,
please call **1-888-801-5368** toll-free.

ETC Institute
725 W. Frontier Circle
Olathe, KS 66061

Comments

_____

_____

_____

_____

Thank you for your participation in this important survey.

Location 2: Where did you go next?

When did you arrive at this location?
___ ___ : ___ ___ · AM · PM

What is the Name of this Location?

What Type of Place/Business Is This?

Street Address (be as specific as possible)

_____ & _____
Nearest Intersecting Streets

City County State

Zip Code (if known)

Did you walk **more than a block** from a parking lot or bus stop to get to this location?
☐ Yes ☐ No If YES: where did you park?

How did you get to Location 2?

What was the primary type of transportation you used?

☐ Car, van, truck ☐ Motorcycle or moped
☐ Bicycle ☐ Taxi
☐ Walk ☐ School Bus
☐ Service vehicle ☐ Cargo transport vehicle
☐ Transit Bus (Specify Route: _____)
☐ Other _____

If you used a car, van, or truck for this trip . . .

Were you the . . .? ☐ driver ☐ passenger

Including yourself, how many TOTAL people were in the vehicle? _____

Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Was this a . . .? · Carpool · Vanpool · Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? · Yes · No

How much did you pay to park? $_____

What did you do here?

What did you do at this location? (check all that apply)

☐ Return Home from your primary job
☐ Return Home for another reason
☐ Meal/Eat
☐ Work
☐ Work Related
☐ School
☐ Personal Business: _____
☐ Volunteer/Civic
☐ Shop
☐ Social/Recreation/Entertainment
☐ Pick-Up/Drop-Off Passenger
☐ Change Mode (car to bus): _____

When did you leave this location?

___ ___ : ___ ___ · AM · PM

- - - - - - - - - - - - - OR - - - - - - - - - - - - -

· This was the last place I went today

If You Stopped *Anywhere* Between This Location and Location 3, Provide the Information Below:

For what reason did you stop between Location 2 and 3? _____ Number of minutes stopped: _____

Where did you stop? _____ Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State

Each person completes an activity/travel diary for **ONE** day
See Example on back page

Circle your travel day: Monday Tuesday Wednesday Thursday Friday

Write your travel date: _____

Person's age: _____ Gender: Male Female

If someone stays home all day, mark diary Location 1 "stayed home all day" and return.

If someone is out of town or away from residence for entire day and night,
Mark diary Location 1 " out of region all day" and return.

2011-2012 Sherman-Denison MPO
HOUSEHOLD ACTIVITY/TRAVEL SURVEY

Texas Department of Transportation

SHERMAN-DENISON MPO
Metropolitan Planning Organization

APPENDIX B:
HOUSEHOLD SURVEY DATA FILE FORMATS

RECORD TYPE 1 - HOUSEHOLD INFORMATION

This file will contain the household information collected for each household on Part 1, Household Information in the Household Survey. The data should be in an ASCII data file.

FIELD COLUMNS

Item	Begin	End	Type	Format	Description
1. Record Type	1	2	Numeric RJ	I2	Code indicating type of record. Here it should be 1.
2. Sample Number	3	9	Numeric RJ	I7	Unique non-zero number assigned to each household participating in survey.
3. Phone	10	21	Alphanum. LJ	A12	Phone number of household.
4. Month	22	23	Numeric RJ	I2	Month of travel day.
5. Day	24	25	Numeric RJ	I2	Day of the month of travel.
6. Year	26	29	Numeric RJ	I4	Year travel day occurred
7. Day of Week	30	30	Numeric RJ	I1	Day of the week travel was recorded: 1-Monday, 2-Tuesday, 3-Wednesday, 4-Thursday, 5-Friday.
8. Advance Letter	31	32	Numeric RJ	I2	Code indicating if household received advance letter: 1-Yes, 2-No, 3-No letter sent, 98-Don't Know, 99-Refused.
9. HH address	33	92	Alphanum. LJ	A60	Street address or nearest cross streets to household.
10. HH City	93	122	Alphanum. LJ	A30	City where household is located.
11. HH State	123	137	Alphanum. LJ	A15	State where household is located.
12. HH Zip Code	138	142	Numeric RJ	I5	Zip code of household address.
13. HH County	143	144	Numeric RJ	I2	Code indicating county/area in which household is located: 1-Grayson County.
14. HH Study Area	145	146	Alphanum	A2	Use 'SD' to indicate zone is in the Sherman-Denison/Grayson County study area. If household is located outside study area and zone number is SAM zone, this field should be coded 'TX' to indicate zone number is a SAM zone.
15. HH Zone	147	151	Numeric RJ	I5	This field should be left blank-TxDOT or TTI will complete. TAZ number where household is located. The HH address must be coded to a zone in the Sherman-Denison/Grayson County study area. Unknown zones should be coded 88888.
16. HH Longitude	152	161	Numeric RJ	F10.6	Longitude of household address. If unknown, it should be coded 888.8888.
17. HH Latitude	162	171	Numeric RJ	F10.6	Latitude of household address. If unknown, it should be coded 888.8888.
18. Number Persons	172	173	Numeric RJ	I2	Number of persons living in residence.
19. Number Employed	174	175	Numeric RJ	I2	Number of persons in household that are employed either full or part time.
20. Vehicles Available	176	177	Numeric RJ	I2	Number of cars, vans, light trucks, motorcycles available for use by the HH. 98-Don't Know, 99-Refused
21. Vehicles Owned / Leased	178	179	Numeric RJ	I2	Combined number of cars, vans, light trucks, motorcycles owned or leased by members of the household. 98-Don't know, 99-Refused
22. Bikes	180	181	Numeric RJ	I2	Number of working bicycles available for use by members of household. 98-Don't know, 99-Refused
23. Residence	182	183	Numeric RJ	I2	Code indicating the type of residence. See below for code definitions.
24. Other Residence	184	213	Alphanum. LJ	A30	If residence is coded as 'other', this field contains a description of the type of residence.

RECORD TYPE 1, FIELD COLUMNS, CONTINUED

Item	Begin	End	Type	Format	Description
25. Tenure	214	215	Numeric RJ	I2	Code indicating number of years at residence: 1-one year or less, 2-two years, 3-three years, 4-four years, 5-five or more years, 98-Don't know, 99-Refused.
26. Previous Residence	216	217	Numeric RJ	I2	If tenure was less than five years, this code indicates if previous residence was in Grayson county: 1-Yes, 2-No, 98-Don't know, and 99-Refused.
27. Previous Zip Code	218	222	Numeric RJ	I5	If tenure was less than five years, this is the zip code of the previous residence. Use 99998 for don't know or 99999 for refused.
28. HH Factors	223	242	Alphanum LJ	A20	Code indicating factors that influenced their decision to locate in their current household. If more than one, separate code numbers by comma. See code definitions.
29. Other Factors	243	272	Alphanum LJ	A30	Other factors influencing their decision to locate in their current household.
30. Income	273	274	Numeric RJ	I2	Code indicating combined annual income of all household members. See codes below.
31. Day Visitors	275	276	Numeric RJ	I2	Number of non-family persons that stopped at this residence for any reason on the travel day. 98-Don't Know, 99-Refused
32. Overnight Visitors	277	278	Numeric RJ	I2	Number of overnight visitors at this residence during their travel day. 98-Don't Know, 99-Refused
33. Delivery Vehicle	279	280	Numeric RJ	I2	Code indicating if someone in household drives a form of delivery vehicle: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
34. Number Delivery Driver	281	282	Numeric RJ	I2	Number of persons in household that are delivery drivers or travel within study area as part of their work. 98-Don't know, 99-Refused
35. HH Vehicle Use by Non HH Number	283	284	Numeric RJ	I2	Code indicating if one or more of the household vehicles was used by a non-household member on the travel day: 1-Yes, 2-No, 3-Zero vehicle household, 98-Don't Know, 99-Refused.
36. GPS House	285	286	Numeric RJ	I2	Code indicating if household vehicles had GPS equipment installed for GPS survey: 1-Yes, 2-No.
37. Total HH Trips	287	289	Numeric RJ	I3	The total combined number of all trips made by all persons in the household on the assigned travel day.

RESIDENCE
1 - Unattached Single Family Home
2 - Condo
3 - Duplex
4 - Apartment
5 - Mobile Home
96 - Other
98 - Don't Know
99 - Refused

HH FACTORS
1 - Price of Property
2 - Taxes
3 - Proximity to Work
4 - School District
5 - Proximity to School
6 - Character of Neighborhood or Area
7 - Access to Public Transportation
8 - Security / Safety
96 - Other
98 - Don't Know
99 - Refused

TIME WITHOUT PHONE
1 - Less than one week
2 - one week to less than two weeks
3 - two weeks to less than one month
4 - one month to less than three months
5 - three months to less than six months
6 - six months to less than one year
7 - one year or more
98 - Don't know
99 - Refused

RECORD TYPE 1 - CONTINUED

HOUSEHOLD INCOME CODES

1 - Less than $5,000
2 - $5,000 to $9,999
3 - $10,000 to $14,999
4 - $15,000 to $17,499
5 - $17,500 to $19,999
6 - $20,000 to $22,499
7 - $22,500 to $24,999
8 - $25,000 to $27,499
9 - $27,500 to $29,999
10 - $30,000 to $32,499
11 - $32,500 to $34,999
12 - $35,000 to $39,999
13 - $40,000 to $44,999
14 - $45,000 to $49,999
15 - $50,000 to $54,999
16 - $55,000 to $59,999
17 - $60,000 to $64,999
18 - $65,000 to $69,999
19 - $70,000 to $74,999
20 - $75,000 to $79,999
21 - $80,000 to $99,999
22 - $100,000 to $124,999
23 - $125,000 to $149,999
24 - $150,000 to $199,999
25 - $200,000 or more
98 - Don't Know
99 - Refused

RECORD TYPE 2 - PERSON INFORMATION

This file will contain the information on each person in the household in Part 2, Person Information. The data should be in an ASCII data file.

FIELD COLUMNS

Item	Begin	End	Type	Format	Description
1. Record Type	1	2	Numeric RJ	I2	Code indicating type of record, here it should be 2.
2. Sample Number	3	9	Numeric RJ	I7	Unique non-zero number assigned to each household participating in survey. This number should match the sample number of the above record.
3. Person Number	10	12	Numeric RJ	I3	Number assigned to each person in the household.
4. Relationship	13	14	Numeric RJ	I2	Code indicating relationship of person to the head of household. See code definitions below.
5. Sex	15	16	Numeric RJ	I2	Sex of person: 1-Male, 2-Female, 98-Don't Know, 99-Refused.
6. Ethnicity	17	18	Numeric RJ	I2	Race or ethnicity of person. See code definitions below.
7. Ethnicity Other	19	78	Alphanum RJ	A60	Description of other ethnicity which is not included in code definitions.
8. Age	79	81	Numeric RJ	I3	Age of person. 998-Don't know, 999-Refused
9. Licensed Driver	82	83	Numeric RJ	I2	Code indicating if person is a licensed driver (regardless of age): 1-Yes, 2-No, 98-Don't Know, 99-Refused.
10. Employment	84	85	Numeric RJ	I2	Code indicating if person is employed in a paying or volunteer job (regardless of age): 1-Yes, 2-No, 98-Don't Know, 99-Refused.
11. Employment Status	86	87	Numeric RJ	I2	If person is employed, this is a code number indicating the person's employment status. See code definitions.
12. Hours	88	90	Numeric RJ	I3	On average, the number of hours worked per week: 996-Varies from week to week, 998-Don't know, 999-Refused
13. Not Employed	91	92	Numeric RJ	I2	Code indicating current status if person is not employed. See code definitions below.
14. Not Employed Other	93	152	Alphanum LJ	A60	Description of employment status if none of the options in the employment status code is applicable.
15. Commercial Vehicle Driver	153	154	Numeric RJ	I2	Code indicating if person is a commercial vehicle driver: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
16. Commercial Vehicle Type	155	156	Numeric RJ	I2	If person drives commercial vehicle, enter code identifying type of vehicle: 1-Cargo transport vehicle, 2-Commercial service vehicle, 3-Cargo transport and Service vehicle, 96-Other, 98-Don't Know, 99-Refused. If person does not drive a commercial vehicle, this field should be blank.
17. Other Vehicle	157	186	Alphanum. LJ	A30	If commercial vehicle type is coded as 'other', this field contains a description of the type of commercial vehicle.
18. Flex Time	187	188	Numeric RJ	I2	Code indicating if person's employer allows them to work flexible hours or the hours are fixed: 1-Flexible/Variable, 2-Fixed/Unchanging, 98-Don't Know, 99-Refused.
19. Job	189	190	Numeric RJ	I2	Code indicating if person has more than one paying job: 1-Yes, 2-No, 98-Don't Know, 99-Refused.

RECORD TYPE 2, FIELD COLUMNS - CONTINUED

Item	Begin	End	Type	Format	Description
20. Employer Name	191	250	Alphanum. LJ	A60	Name of person's primary employer.
21. Workplace Type	251	252	Numeric RJ	I2	Code indicating type of workplace where person is employed. See code definitions below.
22. Other Workplace	253	282	Alphanum. LJ	A30	Description of workplace type if 'other' is coded.
23. Home Office	283	284	Numeric RJ	I2	Code indicating if workplace is a home office or business operated out of the home: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
24. Telecommute	285	286	Numeric RJ	I2	If employed 30 or more hours per week, code indicating if person works from home or telecommutes on a regular basis: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
25. Work Place Address	287	346	Alphanum. LJ	A60	Street address of work place or nearest intersecting street names.
26. Work Place City	347	376	Alphanum. LJ	A30	City where work place is located.
27. Work Place State	377	391	Alphanum. LJ	A15	State where work place is located.
28. Work Place County	392	393	Numeric RJ	I2	Code indicating county/area in which work place is located: 1-Grayson County, 96-Other, 98-Unknown, 99-Refused.
29. Work Place Other County	394	423	Alphanum LJ	A30	If county is coded as 'other', this field should contain the name of the county where the work place is located.
30. Work Place Zip Code	424	428	Numeric RJ	I5	Zip code of workplace address.
31. Work Place Study Area	429	430	Alphanum	A2	Code indicating study area in which work address and TAZ zone is located. Use 'SD' if address is in the Grayson County study area. If work address is outside Grayson County but in Texas, 'TX' should be entered in this field to indicate the zone number in the following field is a state zone number. Field should be left blank if location is outside the state of Texas.
32. Work Zone	431	435	Numeric RJ	I5	This field should be left blank-TxDOT or TTI will complete. Zone where workplace is located. This should be coded to a TAZ in the Sherman-Denison study area. If unknown but in the study area being surveyed, it should be coded 88888. Locations outside of the study area but within Texas should be coded using the Statewide Zone System. Unknown locations outside of the study areas but within Texas should be coded 66666. Addresses in Mexico should be coded 77777. Addresses outside of Texas and Mexico should be coded using 99999.
33. Work Place Longitude	436	445	Numeric RJ	F10.6	Longitude of workplace location. If within the study area being surveyed, but unknown it should be coded 888.8888. If outside the study area being surveyed but within Texas and unknown, it should be coded as 666.6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.

RECORD TYPE 2, FIELD COLUMNS - CONTINUED

Item	Begin	End	Type	Format	Description
34. Work Place Latitude	446	455	Numeric RJ	F10.6	Latitude of workplace location. If within the study area being surveyed, but unknown it should be coded 888.8888. If outside the study area being surveyed but within Texas and unknown it should be coded as 666.6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.
35. Days Worked	456	457	Numeric RJ	I2	Number of days per week person typically works. 98-Don't Know, 99-Refused
36. Work at Home	458	459	Numeric RJ	I2	Out of the last seven days, the number of days worked at home instead of going to work. Valid responses: 0-7, 98-Don't Know, 99-Refused.
37. Second Job Type	460	461	Numeric RJ	I2	Code indicating type of workplace where person works at second job. See code definitions below.
38. Second Job Other	462	521	Alphanum. LJ	A60	Description of workplace type for second job if 'other' is coded.
39. Second Job Employment Status	522	523	Numeric RJ	I2	If person is employed in a second job, this is a code number indicating the person's employment status related to the second job. See code definitions below.
40. Total Hours	524	526	Numeric RJ	I3	Total hours on average person works per week at all jobs. 998-Don't know, 999-Refused
41. Primary Occupation	527	528	Numeric RJ	I2	Code indicating the type of occupation for primary job. See code definitions below.
42. Primary Industry	529	530	Numeric RJ	I2	Code indicating the type of industry worked in for primary job. See code definition below.
43. Secondary Occupation	531	532	Numeric RJ	I2	Code indicating the type of occupation for secondary job. See code definitions below.
44. Secondary Industry	533	534	Numeric RJ	I2	Code indicating the type of industry worked in for secondary job. See code definition below.
45. Student Status	535	536	Numeric RJ	I2	Code indicating if person is enrolled in any type of school: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
46. School Type	537	538	Numeric RJ	I2	Code indicating type of school attended. See code definitions below.
47. School Type Other	539	598	Alphanum. LJ	A60	Description of 'other' if other is coded as school type.
48. Hours Enrolled	599	600	Numeric RJ	I2	If person is enrolled in a college, trade school, etc., code indicates if person is enrolled for 12 or more hours: 1-Yes, 2-No, 98-Don't know, 99-Refused.
49. Bike Use	601	602	Numeric RJ	I2	Number of days person rode bike in last seven days. 98-Don't Know, 99-Refused
50. Bike Purpose	603	604	Numeric RJ	I2	Code indicating the most common trip purpose for person's bike trips. See code definitions below.
51. Disability	605	606	Numeric RJ	I2	Code indicating if person has transportation disability: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
52. Travel	607	608	Numeric RJ	I2	Code indicating if person traveled on the designated travel day: 1-Yes, 2-No, 96-Indicates person was out of town or away from the residence for the entire day and night of their travel day.
53. Person trips	609	611	Numeric RJ	I3	The total number of trips the person made on his/her travel day.

RECORD TYPE 2, FIELD COLUMNS - CONTINUED

Item	Begin	End	Type	Format	Description
54. Why No Travel	612	671	Alphanum LJ	A60	Description of why the person did not make any trips on the travel day.
55. Diary Use	672	673	Numeric RJ	I2	Code indicating if person used diary or if information is based on memory: 1-Yes, used diary; 2-No, did not use diary - information is based on memory.
56. Data Retrieval	674	675	Numeric RJ	I2	Code indicating how data was retrieved: 1-from respondent, 2-by proxy, 3-mailed diary, 4-internet, 98-Don't know; 99-Refused.
57. Proxy ID	676	677	Numeric RJ	I2	This item identifies the person by person number who provided the information. 98-Don't know; 99-Refused
58. Date data was retrieved	678	681	Numeric RJ	I4	The month and day the data was retrieved. Record all months as 2 digits and all days as 2 digits with the month preceding the day. Example: April 1st should be coded as 0401.
59. Travel to Austin - San Antonio	682	683	Numeric RJ	I2	Code indicating frequency of travel to Austin - San Antonio. See options below.
60. Travel to Dallas - Ft. Worth	684	685	Numeric RJ	I2	Code indicating frequency of travel to Dallas - Ft. Worth. See options below.
61. Travel to Houston	686	687	Numeric RJ	I2	Code indicating frequency of travel to Houston. See options below.
62. Passenger Rail to Austin - San Antonio or Houston	688	689	Numeric RJ	I2	Code indicating whether respondent would use passenger rail service to Austin - San Antonio or Houston: 1 - Yes, 2 - No, 3 - Possibly.
63. Commuter Rail to Dallas - Ft. Worth	690	691	Numeric RJ	I2	Code indicating whether respondent would use commuter rail service to Dallas - Ft. Worth: 1 - Yes, 2 - No, 3 - Possibly.

RELATIONSHIP

0 - Head of Household
1 - Husband / Wife / Unmarried Partner
2 - Mother / Father / In-law
3 - Brother / Sister / In-law
4 - Grandfather / Grandmother
5 - Grandson / Granddaughter
6 - Son / Daughter / In-law
7 - Aunt / Uncle
8 - Other Relative
9 - Other Non-Relative
10 - Household Help
98 - Don't Know
99 - Refused

TYPE OF WORK PLACE

1 - Office (Non-government)
2 - Office (Government)
3 - Retail/Shopping/Gas
4 - Industrial/Manufacturing/Warehouse
5 - Medical
6 - Education - Day Care/K-12
7 - Education - College, trade school, other
8 - Residential
9 - Airport
10 - Eating Establishment
96 - Other
98 - Don't Know
99 - Refused

ETHNICITY

1 - Black / African American
2 - Hispanic / Mexican American
3 - Asian / Pacific Islander
4 - Native American
5 - White / Caucasian
96 - Other Group
98 - Don't Know
99 - Refused

FREQUENCY OF TRAVEL OPTIONS

1 - Never
2 - 1 to 2 times per year
3 - 1 to 2 times every 6 months
4 - 1 to 2 times every 3 months
5 - 1 or more times every month
6 - 1 or more times every week

STATUS FOR NOT EMPLOYED

1 - Retired
2 - Disability Status
3 - Homemaker
4 - Looking for Work
5 - Not Looking for Work
6 - Student (any age)
96 - Other
98 - Don't Know
99 - Refused

SCHOOL TYPE

1 - Day Care / Pre-School
2 - K-12th
3 - Post Secondary, College, Trade
96 - Other
98 - Don't Know
99 - Refused

BIKE TRIP PURPOSE

1 - Work
2 - School
3 - Shopping
4 - Visiting
5 - Recreation / Exercise
96 - Other
98 - Don't Know
99 - Refused

RECORD TYPE 2 - CONTINUED

OCCUPATION

1 - Management, professional, and related occupations
2 - Service occupations
3 - Sales and office occupations
4 - Farming, fishing, and forestry occupations
5 - Construction, extraction, and maintenance occupations
6 - Production, transportation, and material moving occupations
96 - Not applicable (unemployed / student / retired)
98 - Don't know
99 - Refused

EMPLOYMENT STATUS

1 - Employed full time 30 or more hours per week
2 - Employed part time less than 30 hours per week
3 - Self employed full time 30 or more hours per week
4 - Self employed part time less than 30 hours per week
98 - Don't Know
99 - Refused

INDUSTRY

1 - Agriculture, forestry, fishing and hunting, mining
2 - Construction
3 - Manufacturing
4 - Wholesale trade
5 - Retail trade
6 - Transportation, warehousing, utilities
7 - Information
8 - Finance, insurance, real estate, rental and leasing
9 - Professional, scientific, management, administrative, and waste management services
10 - Education, health, and social services
11 - Arts, entertainment, recreation, accommodation, food services
12 - Other services (except public administration)
13 - Public Administration
96 - Not Applicable - (unemployed, student, retired)
98 - Don't Know
99 - Refused

RECORD TYPE 3-VEHICLE INFORMATION

This file will contain the information on each vehicle available to members in each household. Each vehicle will have a data record. The data should be in an ASCII data file.

FIELD COLUMNS

Item	Begin	End	Type	Format	Description
1. Record Type	1	2	Numeric RJ	I2	Code indicating type of record, here it should be 3.
2. Sample Number	3	9	Numeric RJ	I7	Unique non-zero number assigned to each household participating in survey.
3. Vehicle Number	10	11	Numeric RJ	I2	Unique non-zero number assigned to vehicle.
4. Type of Vehicle	12	13	Numeric RJ	I2	Code indicating type of vehicle. See code definitions below.
5. Other Vehicle Type	14	43	Alphanum LJ	A30	Other vehicle type not listed in vehicle code below.
6. Year	44	47	Numeric RJ	I4	Year vehicle was manufactured. 9998-Don't Know, 9999-Refused
7. Make	48	49	Numeric RJ	I2	Make of vehicle. See vehicle make code below.
8. Other Make	50	109	Alphanum LJ	A60	Specify other make of vehicle if not included in vehicle make code below.
9. Model	110	169	Alphanum. LJ	A60	Model of vehicle.
10. Type of Fuel	170	171	Numeric RJ	I2	Type of fuel used by vehicle: 1-Gasoline, 2-Diesel, 3-Propane, 4-Natural Gas, 5-Electricity, 6-Gas/Electric Hybrid, 96-Other, 98-Don't Know, 99-Refused.
11. Other Fuel Type	172	186	Alphanum. LJ	A15	Other type of fuel specified.
12. Commercial Use	187	188	Numeric RJ	I2	Code indicating if vehicle is used for commercial purposes: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
13. Commercial Type	189	190	Numeric RJ	I2	If vehicle is used for commercial purposes, this field contains a code indicating the type of commercial use: 1-Cargo Delivery, 2-Commercial Service, 3-Cargo delivery and Commercial Service, 96-Other, 98-Don't know; 99-Refused.
14. Other Commercial	191	220	Alphanum. LJ	A30	If commercial type is coded as 'other', this field contains a description of the type of commercial vehicle.
15. Odometer	221	228	Numeric RJ	I8	Odometer reading on vehicle at beginning of travel day. 99999998-Don't know, 99999999-Refused
16. Ownership	229	230	Numeric RJ	I2	Code indicating ownership of this vehicle: 1-Owned or leased by a member of HH, 2-Owned or leased by a non-household member or business, 98-Don't Know, 99-Refused.
17. Non HH Use	231	232	Numeric RJ	I2	Code indicating if vehicle was used by a non-household member on the travel day: 1-Yes, 2-No, 98-Don't Know, 99-Refused.

TYPE OF VEHICLE CODES

1 - Motorcycle (includes mopeds)
2 - Car (includes station wagons)
3 - Van (mini and passenger)
4 - Sport Utility Vehicle
5 - Pickup Truck
6 - Cargo Van
96 - Other
98 - Don't Know
99 - Refused

RECORD TYPE 3 - CONTINUED

VEHICLE MAKE CODES

1 - Acura
2 - Audi
3 - BMW
4 - Buick
5 - Cadillac
6 - Chevrolet
7 - Chrysler
8 - Dodge
9 - Ford
10 - Geo
11 - GMC
12 - Harley Davidson
13 - Honda
14 - Hyundai
15 - Infiniti
16 - Isuzu
17 - Jaguar
18 - Jeep
19 - Kawasaki
20 - KIA
21 - Lexus
22 - Lincoln
23 - Mazda
24 - Mercury
25 - Mercedes-Benz
26 - Mitsubishi
27 - Nissan/Datsun
28 - Oldsmobile
29 - Plymouth
30 - Pontiac
31 - Porsche
32 - Range/Land Rover
33 - Saab
34 - Saturn
35 - Subaru
36 - Suzuki
37 - Toyota
38 - Volkswagen
39 - Volvo
40 - Yamaha
41 - Daewoo
42 - Alfa Romeo
43 - AM General
44 - AMC
45 - Austin / Austin Healey
46 - Bluebird
47 - Brockway
48 - BSA
49 - Daihatsu
50 - Diamond Reo / Reo
51 - Ducati
52 - Eagle
53 - Eagle Coach
54 - Fiat
55 - Freightliner
56 - FWD
57 - Gillig
58 - Grumman
59 - Imperial
60 - International Harvester / Navistar
61 - Iveco / Magirus
62 - Kenworth
63 - Lancia
64 - Mack
65 - MCI
66 - Merkur
67 - MG
68 - Moto-Guzzi
69 - Norton
70 - Peterbuilt
71 - Peugeot
72 - Renault
73 - Sterling
74 - Thomas Built
75 - Triumph
76 - White / Autocar-White GMC
77 - Yugo
78 - Other Make Moped
79 - Other Make Motorcycle
96- Other (specify)
98 - Don’t Know
99 - Refused

RECORD TYPE 4-TRIP INFORMATION

This file will contain the trip/activity information for each person in each household. The data should be in an ASCII data file.

FIELD COLUMNS

Item	Begin	End	Type	Format	Description
1. Record Type	1	2	Numeric RJ	I2	Code indicating type of record. Here it should be 4.
2. Sample Number	3	9	Numeric RJ	I7	Unique non-zero number assigned to each household participating in survey. This number must match the number used for the same household and recorded in the Household Data File.
3. Month	10	11	Numeric RJ	I2	Month of travel day.
4. Day	12	13	Numeric RJ	I2	Day of the month of travel.
5. Year	14	17	Numeric RJ	I4	Year travel day occurred.
6. Person Number	18	19	Numeric RJ	I2	Number assigned to the person doing this activity.
7. Activity/Trip Number	20	21	Numeric RJ	I2	The first trip/activity for each person will be recorded as 0 for where their day began. Each subsequent trip/activity should be numbered sequentially as 1, 2, 3, etc.
8. Activity Type Code	22	23	Numeric RJ	I2	Code indicating the type of activity. See activity codes below. For activity 0 (where day began), this should be coded as a 1 if it began at home, 4 if day began at work, or as 20 if it began at another location. If this is coded as 20, the activity description should be included in the activity description field.
9. Activity Description	24	83	Alphanum LJ	A60	Description of Activity.
10. Location	84	113	Alphanum. LJ	A30	Name of location where activity took place.
11. Location Address	114	173	Alphanum. LJ	A60	Street address of location or names of nearest intersecting streets.
12. Location City	174	203	Alphanum. LJ	A30	Name of city where location is.
13. Location State	204	218	Alphanum. LJ	A15	Name of state where location is.
14. Location County	219	220	Numeric RJ	I2	Code indicating county/area where location is: 1-Grayson County, 96-Other, enter name of county in next field, 98-Unknown, 99-Refused.
15. Location Other County	221	250	Alphanum. LJ	A30	If county location is coded as other, this field should contain the name of the county where location is.
16. Location Zip Code	251	255	Numeric RJ	I5	Zip code of location address.
17. Exit Route Name	256	315	Alphanum LJ	A60	If location is outside of the study area being surveyed, this is the name of the highway/route/road used to exit the applicable study area.
18. External Zone	316	320	Numeric RJ	I5	This field should be left blank-TxDOT or TTI will complete. If location is outside the study area being surveyed, this field should contain the external zone number associated with the name of the highway/route/road used to exit the applicable study area.
19. Location Study Area	321	322	Alphanum	A2	Code indicating study area in which activity address/TAZ zone is located. Use 'SD' if address is in Grayson County. If location is outside the study area being surveyed but within Texas, this field should be coded 'TX' to indicate the zone number in the next field is a state zone number. Field should be left blank if location is outside Texas.

RECORD TYPE 4, FIELD COLUMNS - CONTINUED

Item	Begin	End	Type	Format	Description
20. Location Zone Number	323	327	Numeric RJ	I5	This field should be left blank-TxDOT or TTI will complete. Zone number of location address. If in the study area being surveyed but location unknown, it should be coded 88888. Locations in Mexico should be coded 77777 and addresses outside of the study area being surveyed, but within Texas should be coded using the Statewide Zone System. Unknown locations outside of the study area being surveyed but within the state of Texas should be coded 66666. Addresses outside of Texas and Mexico should be coded using 99999.
21. Location Longitude	328	337	Numeric RJ	F10.6	Longitude of location. If within the study area being surveyed, but unknown it should be coded 888.8888. If outside the study area being surveyed but within Texas and unknown it should be coded as 666.6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.
22. Location Latitude	338	347	Numeric RJ	F10.6	Latitude of location. If within the study area being surveyed, but unknown it should be coded 888.8888. If outside the study area being surveyed but within Texas and unknown it should be coded as 666.6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.
23. Type of Place	348	349	Numeric RJ	I2	Code indicating the type of place at this location. If coded as 'other', specify in the next field. See code definitions below.
24. Other Place	350	379	Alphanum. LJ	A30	Description of 'other' type of place where activity occurred.
25. Purpose	380	381	Numeric RJ	I2	Purpose of trip, developed based on the activity type. See code definitions below.
26. Mode of Travel	382	383	Numeric RJ	I2	Code indicating mode of travel used in traveling to this location. See travel mode code definitions below.
27. Other Mode	384	413	Alphanum. LJ	A30	If 'other' is coded in mode of travel, this is the description of the 'other' mode.
28. Number of People	414	415	Numeric RJ	I2	If mode of travel was by auto, van, truck, commercial vehicle, motorcycle/moped, or taxi/limo, this is the number of persons in the vehicle, including the person driving. All other modes (bus, transit, bicycle, walk, school bus, etc.) should be coded 96.
29. HH Members	416	417	Numeric RJ	I2	Of those in the vehicle, how many were household (HH) members. Field should be blank if number of people was coded 96.
30. Persons on Trip	418	427	Alphanum LJ	A10	Who was/were the HH members traveling with you? Code person numbers separated by commas.
31. Non HH Members	428	429	Numeric RJ	I2	Compute Non HH Members as number of people minus number of HH member. If number of people is coded as 96, this field should be blank.
32. HH Vehicle	430	431	Numeric RJ	I2	Was a HH vehicle used to make this trip? 1=Yes, 2=No, 98-Don't Know, 99-Refused
33. Vehicle Used	432	433	Numeric RJ	I2	If household vehicle was used for travel, this is the vehicle number (must correspond with vehicle number in household record). If other vehicle is used, this should be coded as 99.
34. Body Type	434	435	Numeric RJ	I2	See codes below for body type.
35. Other Body Type	436	465	Alphanum LJ	A30	If body type is not in code set, describe body type.
36. Other Vehicle Year	466	469	Numeric RJ	I4	Year of 'other' vehicle used for trip. 9998-Don't Know, 9999-Refused

RECORD TYPE 4, FIELD COLUMNS - CONTINUED

Item	Begin	End	Type	Format	Description
37. Other Vehicle Make	470	471	Numeric RJ	I2	Make of 'other' vehicle used for trip. See codes below.
38. Other Vehicle Make Description	472	531	Alphanum. LJ	A60	If make of other vehicle is coded as other, this field contains a description of the vehicle make.
39. Other Vehicle Model	532	591	Alphanum. LJ	A60	Model of 'other' vehicle used for trip.
40. Other Vehicle Fuel	592	593	Numeric RJ	I2	Type of fuel used by vehicle: 1-Gasoline, 2-Diesel, 3-Propane, 4-Natural Gas, 5-Electricity, 6-Gas/Electric Hybrid, 96-Other, 98-Don't Know, 99-Refused.
41. Other Fuel	594	608	Alphanum. LJ	A15	Description of 'other' fuel for 'other' vehicle, if not in fuel code above.
42. Other Vehicle Commercial Use	609	610	Numeric RJ	I2	Code indicating if other vehicle is used for commercial purposes: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
43. Other Commercial Vehicle Type	611	612	Numeric RJ	I2	If vehicle is used for commercial purposes, this field contains a code indicating the type of commercial use. 1-Cargo delivery, 2-Commercial Service, 3-Cargo Delivery and Commercial Service, 96-Other, 98-Don't Know, 99-Refused.
44. Commercial Vehicle Type Other	613	642	Alphanum. LJ	A30	If commercial type is coded as 'other', this field contains a description of the type of commercial vehicle.
45. To Bus Stop	643	644	Numeric RJ	I2	Code indicating if they walked more than one block to get to bus stop: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
46. To Activity	645	646	Numeric RJ	I2	Code indicating if they parked or got off bus more than one block from this activity: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
47. Off Bus Location	647	706	Alphanum. LJ	A60	Street address or names of nearest intersecting streets where person got off of bus.
48. Park	707	708	Numeric RJ	I2	Code indicating if person parked vehicle at this location: 1-Yes, 2-No, 98-Don't know, 99-Refused.
49. Parking Location	709	768	Alphanum. LJ	A60	If vehicle was, this field should contain the street address or the names of the nearest intersecting streets where vehicle was parked.
50. Pay Parking	769	770	Numeric RJ	I2	Code indicating if person paid to park vehicle at this location: 1-Yes, 2-No, 98-Don't know, 99-Refused.
51. Parking Cost	771	777	Numeric RJ	F7.2	If person paid to park vehicle at this location, amount paid for parking.
52. Payment Method	778	779	Numeric RJ	I2	If person paid to park vehicle at this location, time period for parking cost payment: 1-Hourly, 2-Daily, 3-Weekly, 4-Monthly, 5-Annually, 96-Other, 98-Don't Know, 99-Refused.
53. Arrival Hour	780	781	Numeric RJ	I2	Hour that person arrived at this location. This hour should be in terms of military time. If this is activity 0, this should be blank since this is where they began their day.
54. Arrival Minute	782	783	Numeric RJ	I2	Minute that person arrived at this location. If this is activity 0, this should be blank since this is where they began their day.
55. Departure Hour	784	785	Numeric RJ	I2	Hour that person departed this location. This hour should be in terms of military time. If this is the last activity, this should be blank.
56. Departure Minute	786	787	Numeric RJ	I2	Minute that person departed this location. If this is the last activity for this person, this should be blank.

RECORD TYPE 4 - CONTINUED

TYPE OF PLACE CODES

1 – Residential
2 - Residential Type Workplace
3 - Construction Site
4 - Transportation stop (Bus, Train)
5 - Automotive Dealer/Repair
6 - Bank / Financial Institution
7 - Barber/Beauty/Nail Salon
8 - Bookstore/News Stand
9 - Convenience / Drug Store
10 - Government/City/County/State/Federal Offices
11 - Offices (Non-Government)
12 - Grocery
13 - Health Club
14 - Medical Facility/Hospital
15 - Movie Theater/Cinema
16 - Restaurant/Fast Food, Bar & Grill
17 - Educational - 12th Grade or lower
18 - Educational - college, trade, etc.
19 - Shopping Mall/ Department Store.
20 - Convenience Store/ Gas Station
21 - Airport
96 - Other
98 - Don't Know
99 - Refused

ACTIVITY TYPES

1 - At Home; primary job related
2 - At Home; other
3 - At Home; job and non-job related
4 - Work
5 - Work Related
6 - School; post secondary, college, trade
7 - School; secondary-day care, kindergarten, elementary, middle, high
8 - Incidental Shopping; gas, groceries, etc.
9 - Major Shopping; clothes, appliances, etc.
10 - Banking
11- Personal Business; laundry, dry cleaning, barber, medical, etc
12 - Other Services
13 - Social / Recreational
14 - Eat Out
15 - Civic Activities (including church)
16 - Pick-up / Drop-off Person at Work
17 - Pick-up / Drop-off Person at School / Day Care
18 - Pick-up / Drop-off Person at Other
19 - Change Mode of Travel
96 - Other Activity (specify)
98 - Don't Know
99 - Refused

TRIP PURPOSE CODES

1 - Home (Act. Codes 1,2,3)
2 - Meal/Eat (14)
3 - Work (Act. Codes 4)
4 - Work Related (Act. Code 5)
5 - School; K thru 12 (Act. Codes 7)
6 - School; Post Secondary (Act. Code 6)
7 - Shopping (Act. Codes 8,9)
8 - Personal (Act. Codes 10,11,12,15)
9 - Social / Recreation (Act. Codes 13,)
10 - Pick-up Drop-off (Act. Code 16, 17, 18)
11 - Change Mode (Act. Code 19)
96 - Other (Act. Code 20)
98 - Don't Know
99 - Refused

OTHER VEHICLE CLASSIFICATION CODES

1 - Motorcycle (includes mopeds)
2 - Car (includes station wagons)
3 - Van (mini and passenger)
4 - Sport Utility Vehicle
5 - Pickup Truck
6 - Cargo Van
96 - Other
98 - Don't Know
99 - Refused

MODE OF TRAVEL CODES

1 - Walk
2 - Auto / Van / Truck Driver
3 - Auto / Van / Truck Passenger
4 - Carpool Driver
5 - Carpool Passenger
6 - Vanpool Driver
7 - Vanpool Passenger
8 - Commercial Service Vehicle Driver
9 - Commercial Service Vehicle Passenger
10 - Commercial Cargo Transport Vehicle Driver
11 - Commercial Cargo Transport Vehicle Passenger
12 - Bus
13 - School Bus
14 - Taxi / Paid Limo
15 - Bicycle
16 - Motorcycle / Moped
96 - Other
98 - Don't Know
99 - Refused

Household Travel and Activity Survey
GPS Data Part 1 – GPS Administrative Data File

Item	Name	Type	Format	Width	Description
1.	Data File Name	Alphanum. LJ	A	11	Name assigned to the data file with the GPS data for this vehicle. Naming convention is MMDDYY_XXXX where MM is the month, DD is the day, YY is the year, and XXXX is the identification number assigned to the GPS unit. The date is the travel day the GPS data is being collected.
2.	Sample Number	Numeric RJ	I	7	Sample number assigned to household being surveyed. This number should match that used in Record Types 1 thru 4
3.	Vehicle Number	Numeric RJ	I	2	Unique non-zero number assigned to vehicle. This number should match that for the vehicle in Record Type 3.
4.	Survey Year	Numeric RJ	I	4	Year survey is being done.
5.	Vehicle Year	Numeric RJ	I	4	Year vehicle was manufactured; 9998-don't know; 9999 refused
6.	Vehicle Make	Alphanum. LJ	A	60	Make of vehicle
7.	Vehicle Model	Alphanum. LJ	A	60	Model of vehicle
8.	Begin Odometer	Numeric RJ	I	8	Odometer reading on vehicle when GPS unit is installed
9.	End Odometer	Numeric RJ	I	8	Odometer reading on vehicle when GPS unit is removed
10	Installed Date	Numeric RJ	I	4	MMDD-month and day GPS unit is installed. Include leading zeros for single unit values.
11.	Installed Time	Numeric RJ	I	4	HHMM-military time GPS unit is installed. Include leading zeros for single unit values.
12.	Remove Date	Numeric RJ	I	4	MMDD-month and day GPS unit is removed. Include leading zeros for single unit values.
13.	Remove Time	Numeric RJ	I	4	HHMM-military time GPS unit is removed. Include leading zeros for single unit values.

Household Travel and Activity Survey
GPS Data Part 2 – GPS Trip Data

Item	Name	Type	Format	Width	Description
1.	GPS Unit Number	Numeric RJ	I	4	Identification number assigned to GPS unit used to collect data.
2.	Sample Number	Numeric RJ	I	7	Sample number assigned to household being surveyed. This number should match that used in Record Types 1 thru 4
3.	Vehicle Number	Numeric RJ	I	2	Unique non-zero number assigned to vehicle. This number should match that for the vehicle in Record Type 3.
4.	GMT Date	Alphanum. LJ	A	10	Greenwich mean date stamp. MM/DD/YYYY with leading zeros for single digit values.
5.	GMT Time	Alphanum. LJ	A	8	Greenwich mean time stamp. HH:MM:SS with leading zeros for single digit values.
6.	Local Date	Alphanum. LJ	A	10	Local date stamp. MM/DD/YYYY with leading zeros for single digit values.
7.	Local Time	Alphanum. LJ	A	8	Local time stamp. HH:MM:SS with leading zeros for single digit values.
8.	Latitude	Numeric RJ	F	10	Latitude in degrees as XXX.XXXXXX
9.	Longitude	Numeric RJ	F	10	Longitude in degrees as XXX.XXXXXX
10	Elevation	Numeric RJ	I	8	Elevation in feet
11.	Velocity	Numeric RJ	F	6	Speed in miles per hour as XXX.XX
12.	Heading	Numeric RJ	F	6	Heading of vehicle in degrees as XXX.XX