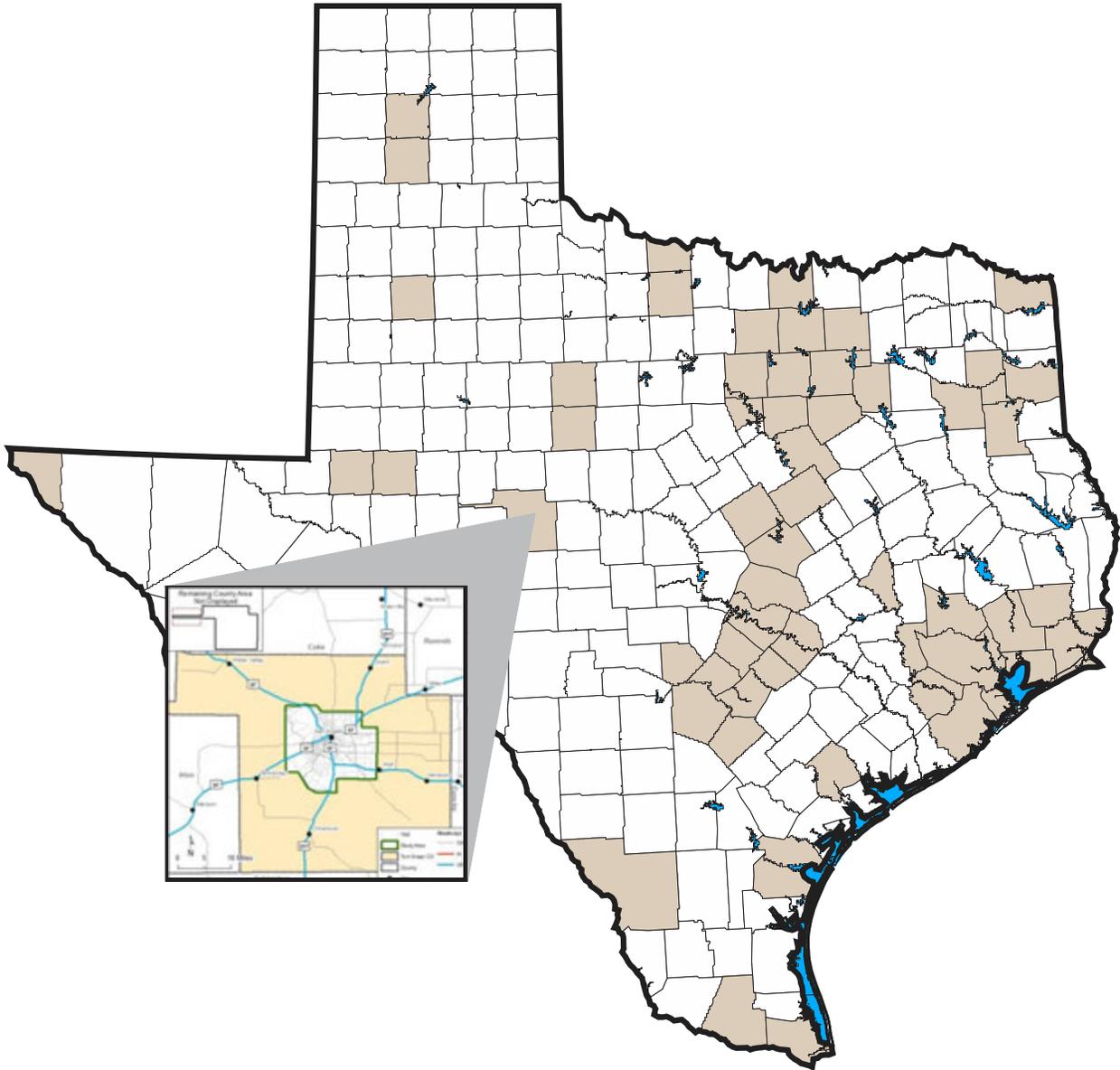


2014 San Angelo Household Travel Survey Technical Summary



Prepared by the
Texas A&M Transportation Institute
December 2016

2014 San Angelo Household Travel Survey

Technical Summary

Texas Department of Transportation Travel Survey Program

By

Lisa L. Green
Assistant Research Scientist
Texas A&M Transportation Institute

and

Byron T. Chigoy
Associated Research Scientist
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

For Monday through Friday weekdays during January 2014 and during the school year from April 2014 through April 2016, the Transportation Planning and Programming Division (TPP) of the Texas Department of Transportation (TxDOT) sponsored a comprehensive set of travel surveys in the San Angelo Metropolitan Planning Organization (MPO) area located within Tom Green County, Texas. Throughout this report, the area will be referred to as the San Angelo MPO (SA-MPO) area. The purpose of the survey was to collect data and information needed as input to the SA-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 modeling results may be used in determining the 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.

Three different types of travel surveys were conducted in the SA-MPO area, including a household survey that included a passive Global Positioning System (GPS) component, a work place survey that included special generator surveys, and a commercial vehicle 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. Each survey collected a different component of travel needed for use in a 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 SA-MPO area. A variety of household summary information is presented in this report. The summary information is 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 predetermined number of 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 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 general vicinity of the SA-MPO area, while Figure 2 provides a map showing the household locations, Traffic Analysis Zones (TAZs), and county areas. The number of households in the study area in 2014 was estimated based on three-way population distribution estimates (household size, income, and number of employees) obtained from 2012 American Community Survey data, and updated to reflect the population and households in 2014. Adjustments for age/sex cohorts are also provided based on 2014 estimates for the study area using census data.

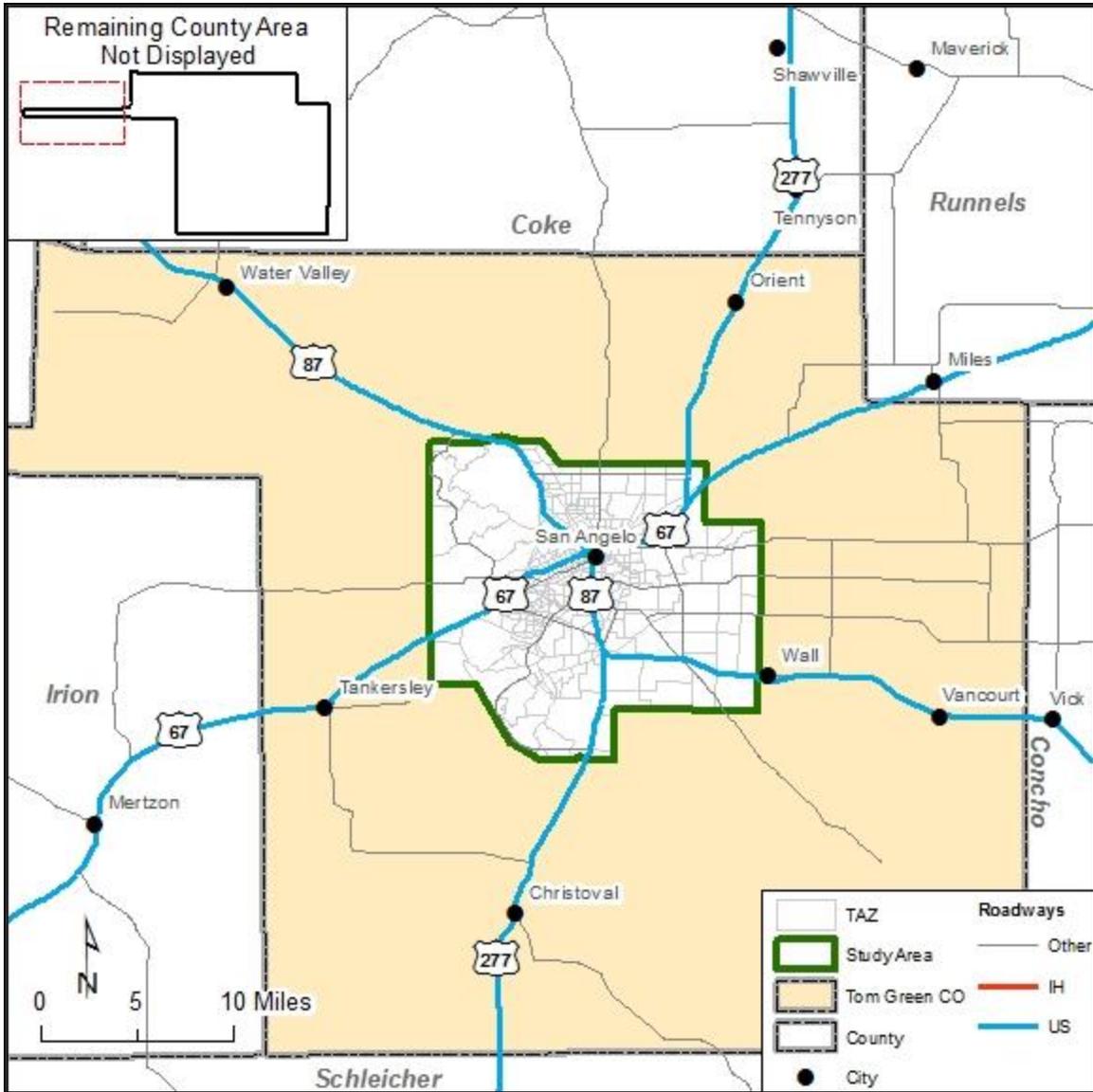


Figure 1. San Angelo Study Area.

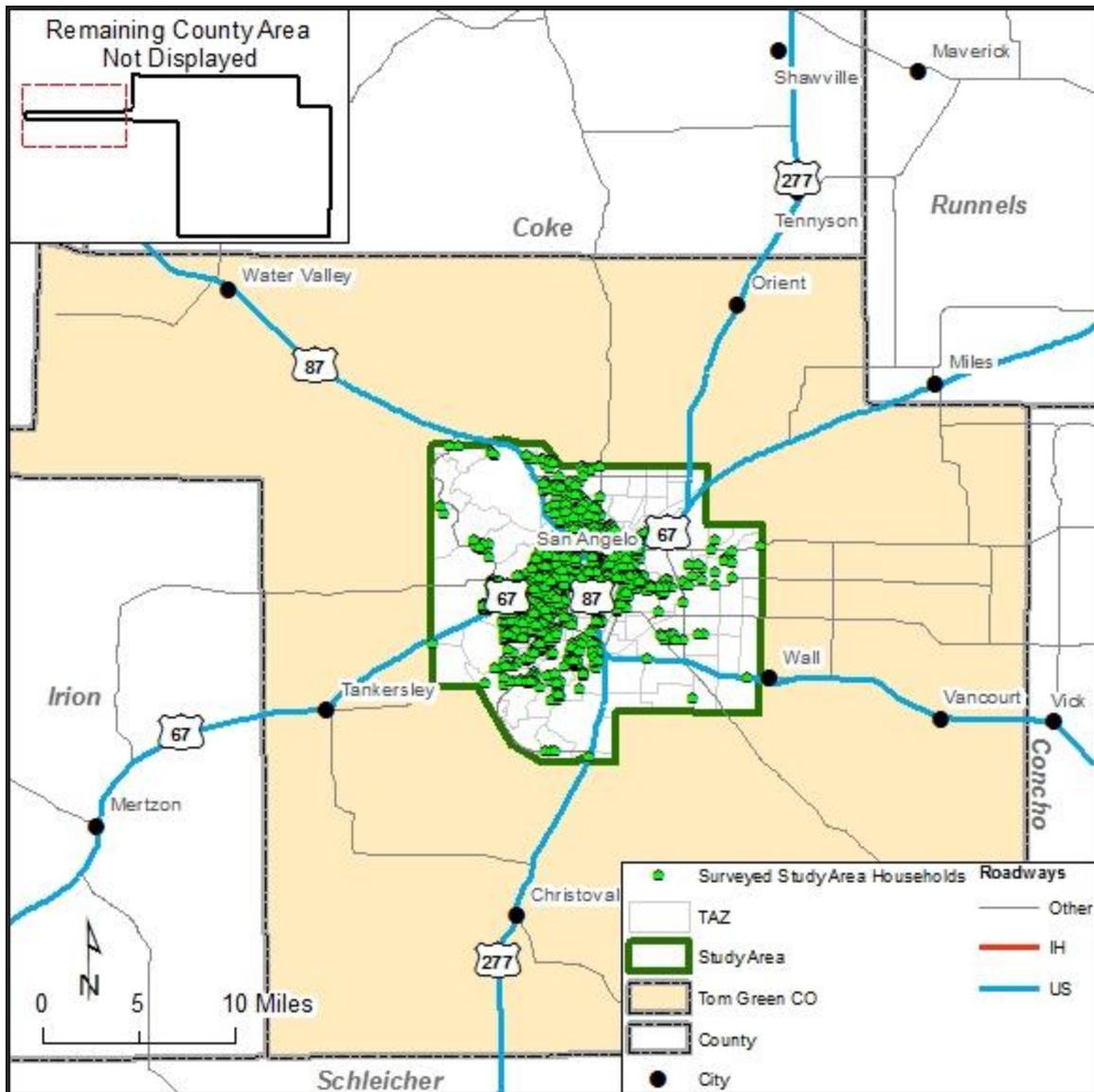


Figure 2. Household Locations within the San Angelo Study Area.

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. Although 1,988 households were surveyed within Tom Green County, only 1,791 of these households were in the SA-MPO study area. The minimum number of households surveyed in the SA-MPO area in any household size/income range cell was 10 and the maximum number surveyed was 198. Of the estimated 38,667 households in the SA-MPO area, 29.6 percent are households with one person and 33.7 percent are households with two persons.

Table 1. Estimated Number of 2014 Households, Number of Households Surveyed, and Percent of Surveyed Households, Stratified by Household Size and Income Range.

Income Range	Household Size					Total
	1	2	3	4	5+	
Estimated Number of Households						
\$0-\$19,999	5,398	1,968	785	607	391	9,149
\$20,000-\$39,999	2,788	2,614	1,117	878	561	7,958
\$40,000-\$59,999	1,829	3,329	1,496	1,233	793	8,681
\$60,000-\$99,999	955	2,703	1,288	1,249	800	6,995
\$100,000+	464	2,432	1,168	1,110	711	5,885
Total	11,434	13,046	5,854	5,077	3,256	38,667
Number of Households Surveyed						
\$0-\$19,999	106	109	28	10	21	274
\$20,000-\$39,999	127	175	66	51	48	467
\$40,000-\$59,999	73	144	50	39	46	352
\$60,000-\$99,999	65	198	71	98	59	491
\$100,000+	15	87	32	47	26	207
Total	386	713	247	245	200	1,791
Percent of Households Surveyed						
\$0-\$19,999	1.96	5.54	3.57	1.65	5.38	3.00
\$20,000-\$39,999	4.56	6.70	5.91	5.81	8.56	5.87
\$40,000-\$59,999	3.99	4.33	3.34	3.16	5.80	4.05
\$60,000-\$99,999	6.81	7.33	5.51	7.85	7.37	7.02
\$100,000+	3.23	3.58	2.74	4.24	3.65	3.52
Total	3.38	5.47	4.22	4.83	6.14	4.63

HOUSEHOLD SURVEY RESULTS

This survey represents a sample of household demographic and travel characteristics for a Monday through Friday weekday during January 2014 (pilot test) and during the school year from April 2014 through April 2016. The survey data were collected from travel diaries completed on a specified travel day for all occupants of 1,791 households located in the SA-MPO area.

Key Points Regarding Household Survey Data

- The survey data are for an average weekday collected for a Monday through Friday weekday during January 2014 (pilot test) and during the school year from April 2014 through April 2016.
- 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 generally captured in external surveys and are therefore not included in household survey reporting.

Findings of the Survey

For the San Angelo area:

- Over 95 percent of households had a vehicle available;
- Over 95 percent of households had a licensed driver;
- In general, trip rates per household increased with household size, with household income, and with vehicle availability (ignoring the trip rates associated with relatively few households with a higher number of vehicles available);
- The average private vehicle occupancy was 1.52 persons per vehicle;
- Nearly 95 percent of all person trips were made in a personal-use vehicle;
- In terms of person trips made, the travel mode breakdown was 63.7 percent drove a vehicle, 31.2 percent rode as a passenger in a vehicle, 2.1 percent used a school bus, and 1.6 percent walked;

- Only about 2.4 percent of the total persons within the household population did not make an internal trip within the planning area on their survey day (after assigning those persons who reported making no trips on the study day, *and* who had a household member who did report making trips on the study day, the average rate by trip purpose as those who *did* make trips in their age cohort);
- On average, each person made 4.2 internal person trips per day and each household made 10.5 internal person trips per day;
- The average person trip length was 3.1 miles and the average person trip duration was 5.8 minutes;
- The average vehicle trip length was 3.3 miles and the average vehicle trip duration was 6.2 minutes;
- The peak hour for household travel was from 7:00 a.m. to 7:59 a.m., during which 13.5 percent of the trip starts occurred. The second highest hour for household trip starts was from 3:00 p.m. to 3:59 p.m. when 10.3 percent of the daily trip starts occurred; and
- Weekday school year household travel internal to the study area accounted for an estimated 1,337,566 vehicle miles of travel (VMT). This estimate was derived using data for San Angelo study area internal trips (adjusting for zero-trip reporting and excluding intrazonal trips) and average vehicle trip length (calculation excluding intrazonal trips).

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 San Angelo study area in 2014. Household size and household income range are the two household variables used to stratify the household trip rates calculated from the household travel survey. When forecasting future travel, the forecast population must be estimated by household size and household income range. The weighted average household size in the SA-MPO area in 2014 was estimated to be 2.50 persons per household.

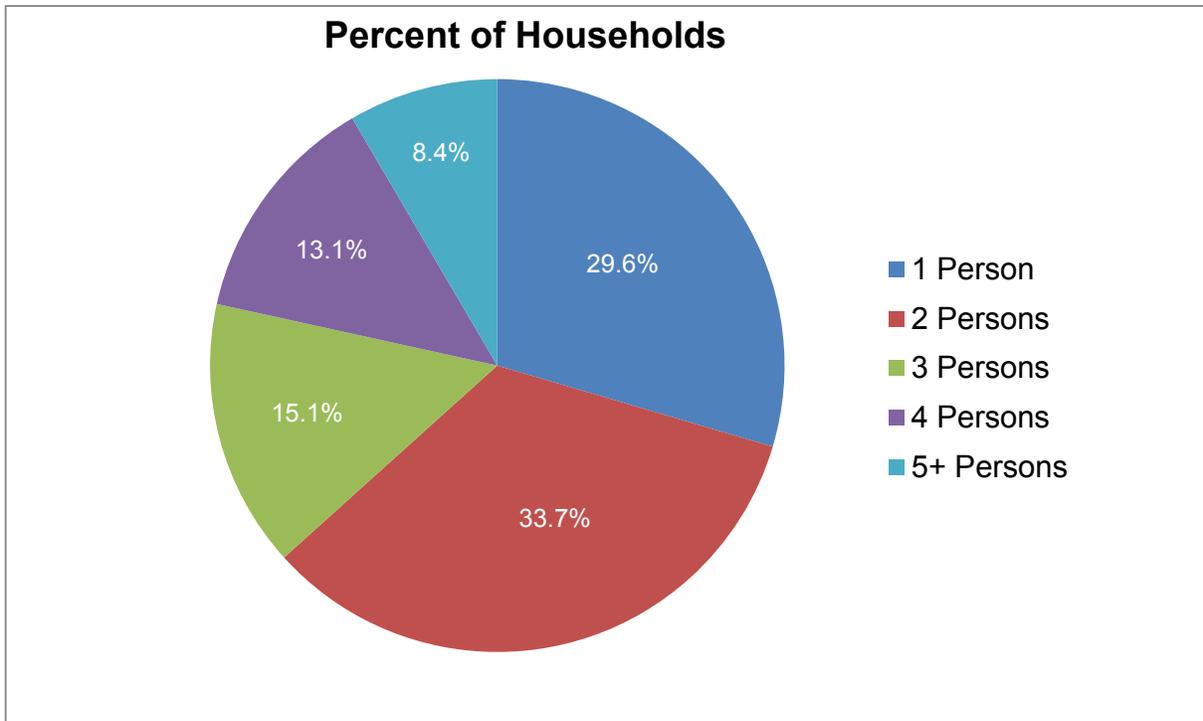


Figure 3. Distribution of Households by Household Size.

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 38,667 households in the SA-MPO area in 2014. Figure 4 shows the distribution of these 38,667 households by household size and household life cycle (Adults with No Children, Adults with Children, and Adults Retired).

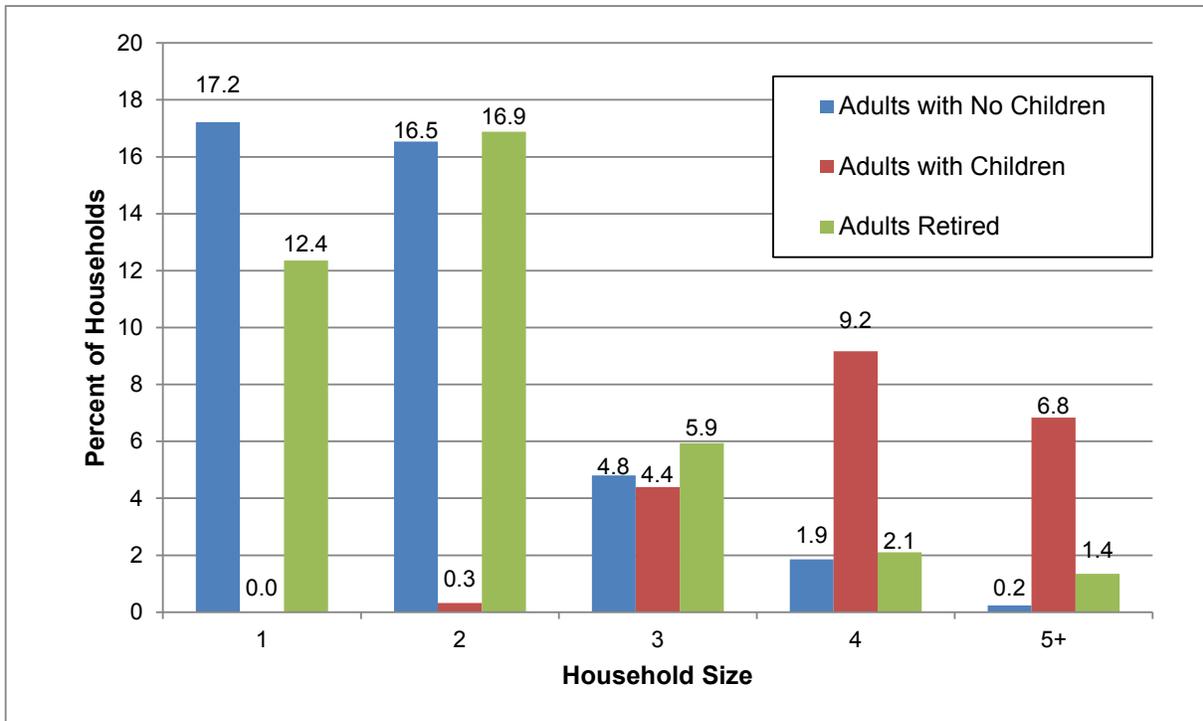


Figure 4. Distribution of Household Size vs. Life Cycle.

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 38,667 expanded households in the survey by the combined annual household income range. For sampling purposes, these income ranges were selected to produce income distributions roughly equal to quintiles of households in the study area.

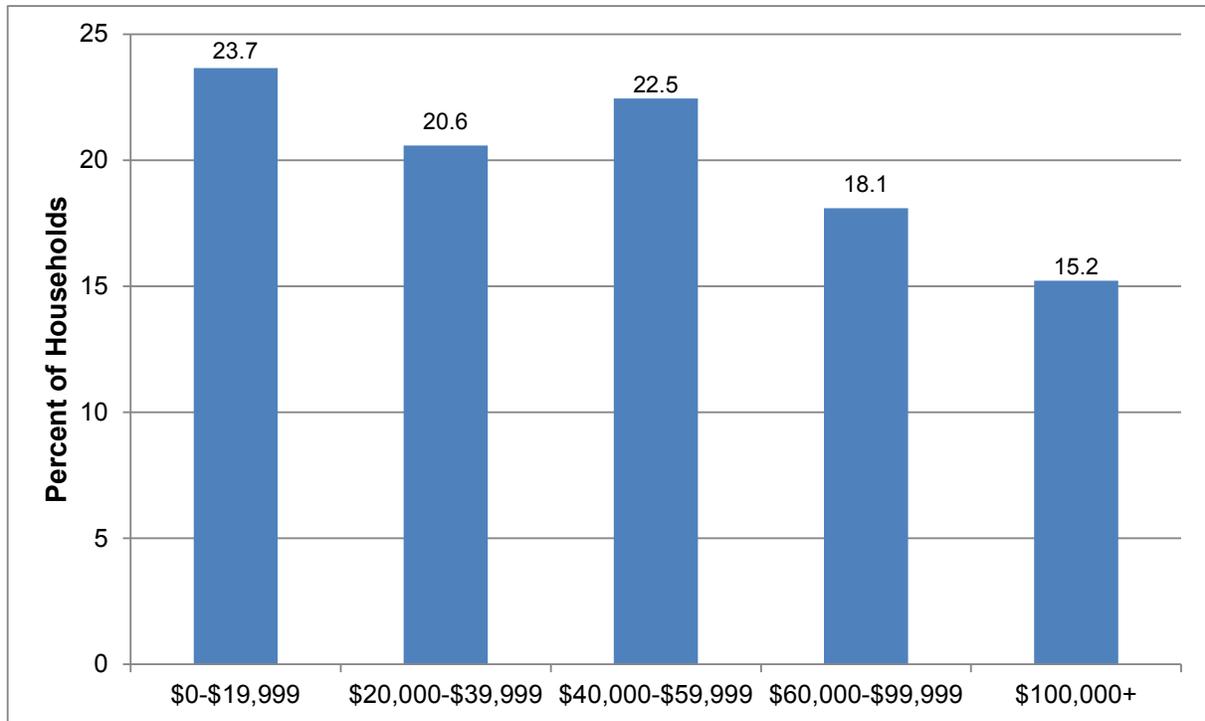


Figure 5. Distribution of Households by Household Income Range.

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 38,667 expanded households in the survey by the number of vehicles available. Only 4.4 percent of the households did not have a vehicle available. The average number of vehicles available per household was 1.94.

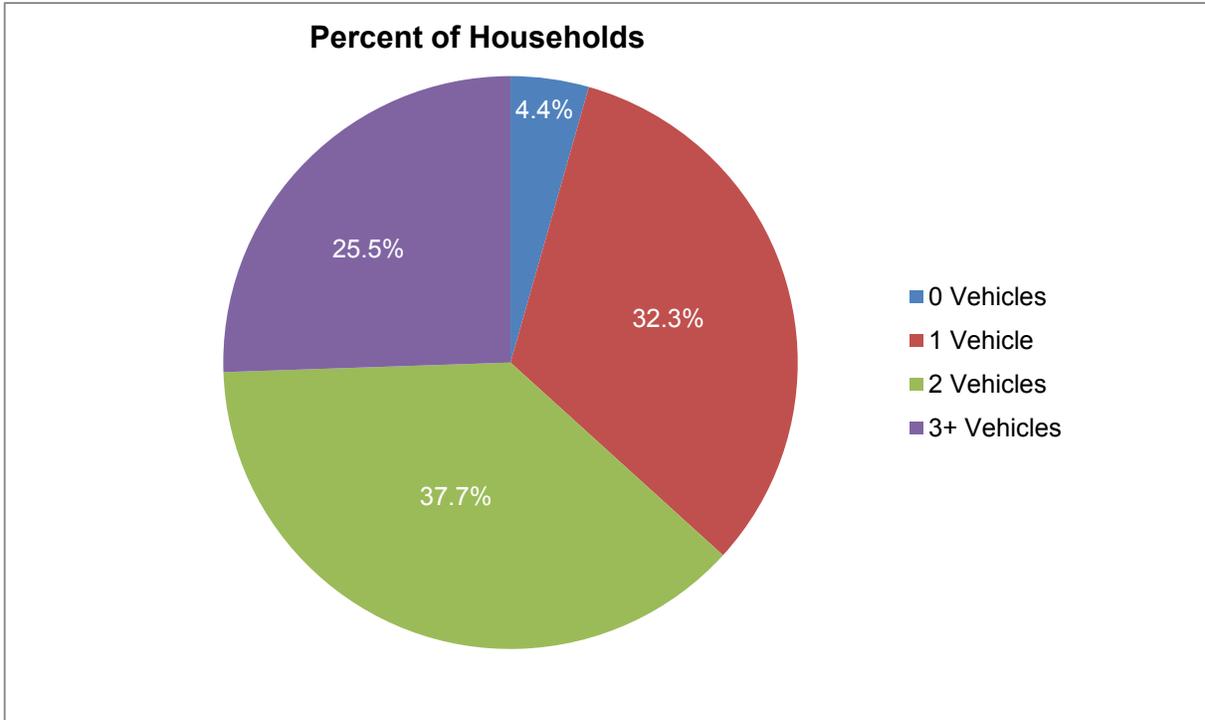


Figure 6. Distribution of Households by Number of Vehicles Available.

Figure 7 shows the distribution of the 38,667 expanded households by the number of licensed drivers per household. Only 4.2 percent of the households did not have a licensed driver.

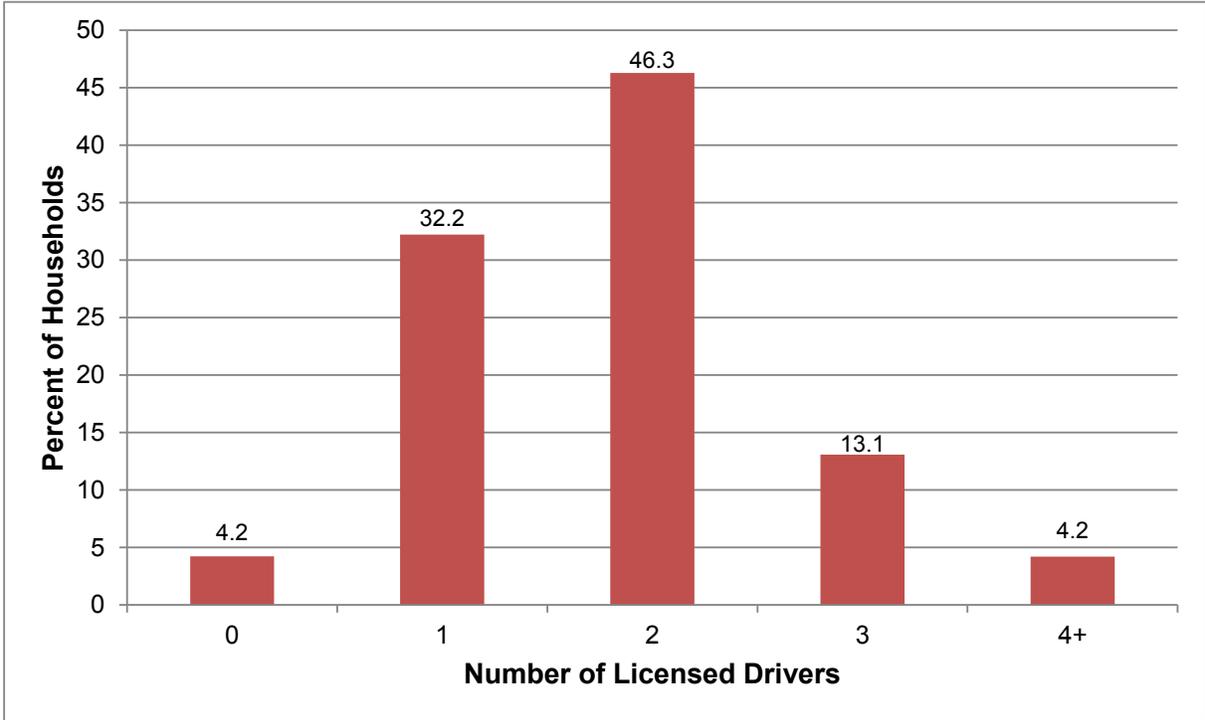


Figure 7. Distribution of Households by Number of Licensed Drivers.

Figure 8 shows the distribution of the 38,667 expanded households by the number of licensed drivers and the number of vehicles available. For 64.9 percent of the households (except those households with no licensed drivers and no vehicle available), the number of licensed drivers and the number of vehicles available was equal. For 11.5 percent of the households, the number of licensed drivers was more than the number of vehicles available and for 20.1 percent of the households, the number of licensed drivers was less than the number of vehicles available. Only 3.5 percent of the households had neither a licensed driver nor a vehicle available.

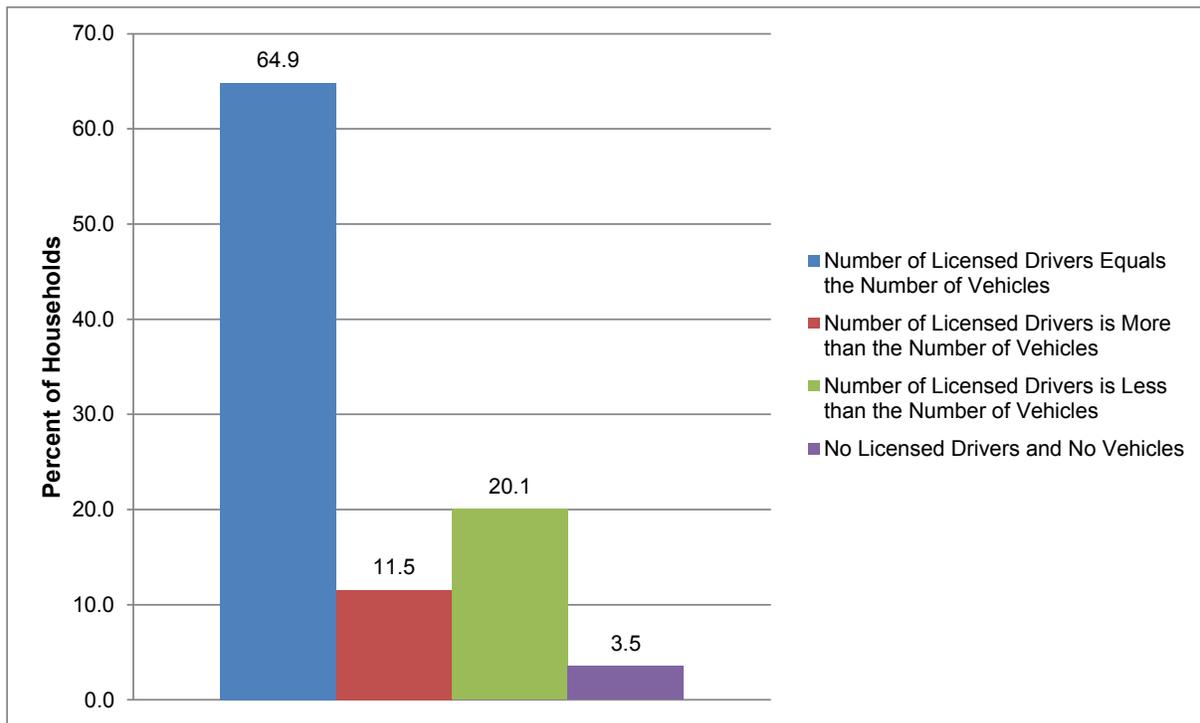


Figure 8. Comparison of Households by Licensed Drivers and Vehicle Availability.

Recall that the 38,667 expanded households had an average household size of 2.50 persons per household. Figure 9 shows the distribution of the 38,667 expanded households by the number of persons employed. Overall, the average number of persons employed per household was 1.15.

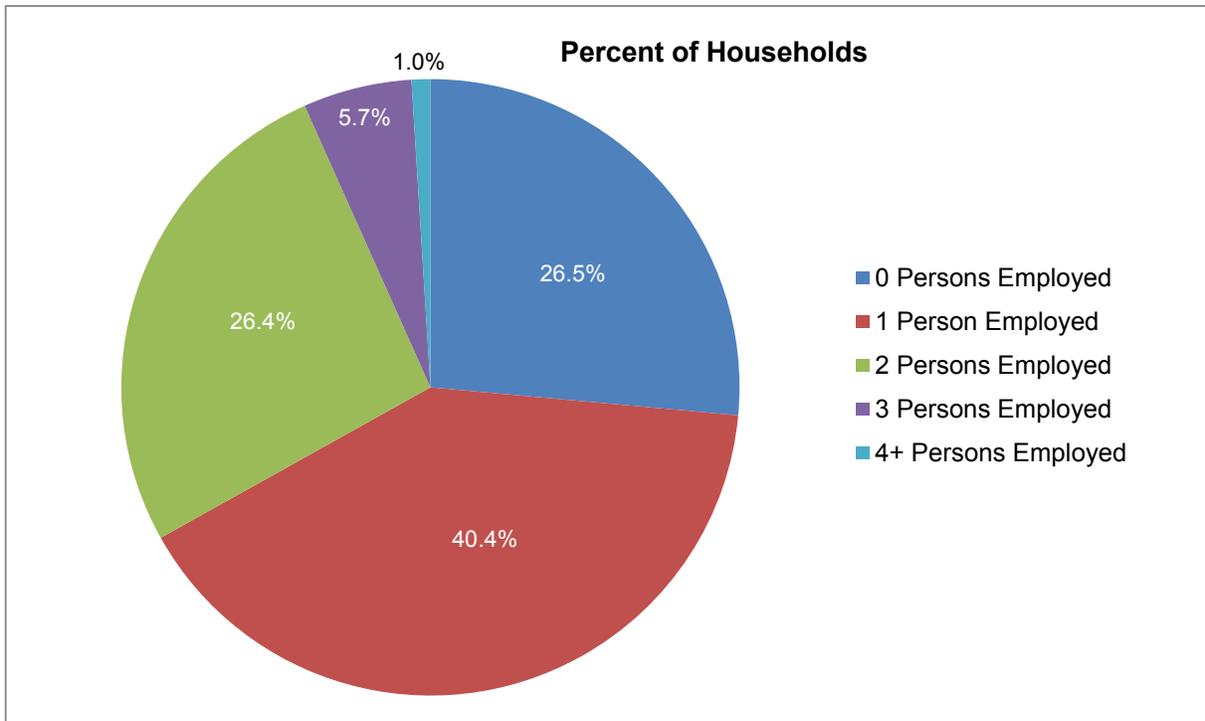


Figure 9. Distribution of Households by Number of Persons Employed.

Figure 10 shows the distribution of all persons regardless of age by employment status. A third of the population (33.7 percent) was employed full time and roughly a quarter of the population (25.3 percent) was unemployed-students. Just over 11 percent (11.4 percent) of the population was retired.

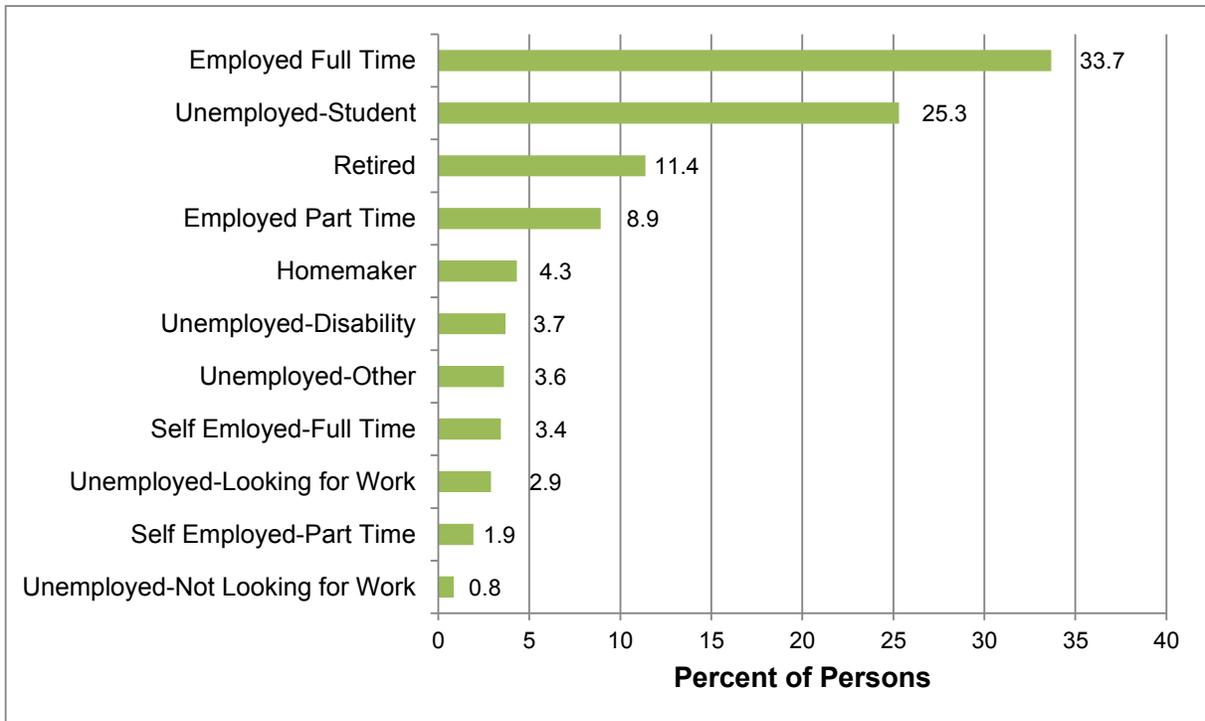


Figure 10. Distribution of Persons by Employment Status.

Figure 11 shows the distribution of the employed persons by the type of employer. The Office (non-government) employer type included the largest percentage of employed persons, encompassing 18.3 percent of those employed. The Retail/Shopping/Gas employer-type accounted for the second largest percentage of employed persons, including 14.7 percent of employees. Residential (10.9 percent of employees) and Medical (10.3 percent of employees) were third and fourth, respectively. Note that these percentages include some persons who work more than one job; meaning that the number of employed persons is less than the sum of all employees for all employer types.

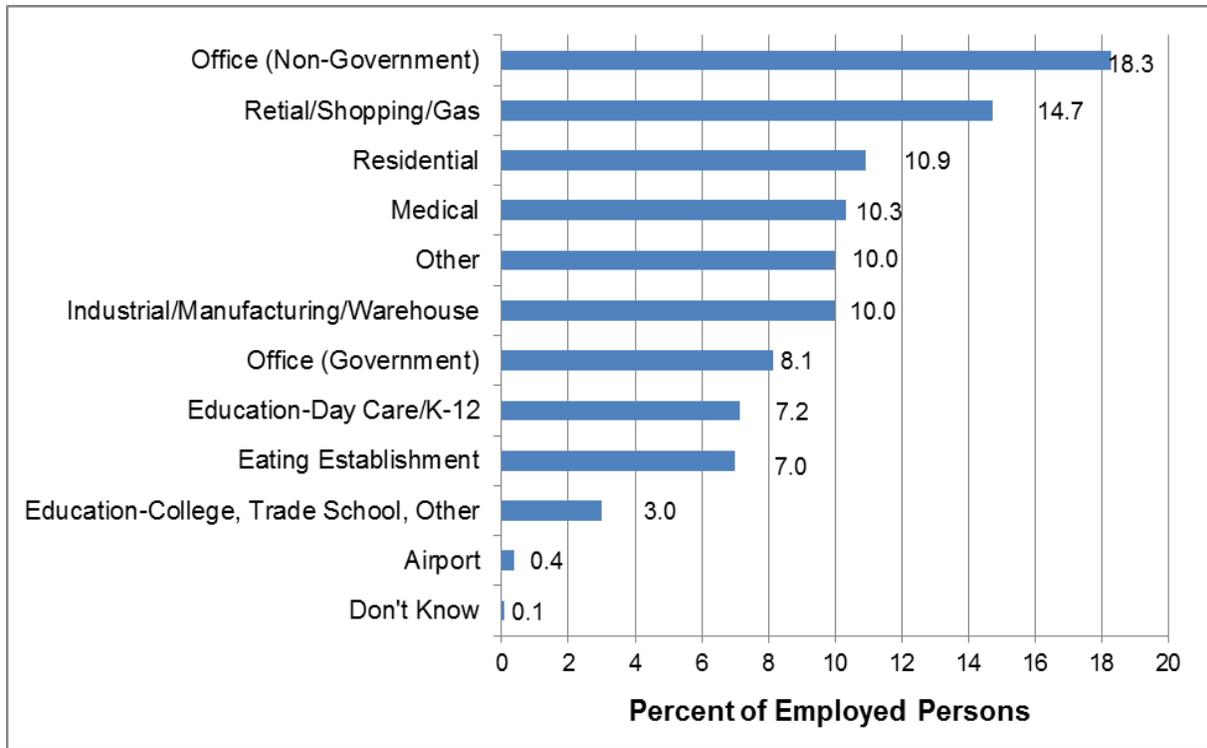


Figure 11. Distribution of Employed Persons by Employer Type.

Ethnicity

Figure 12 shows the distribution of the 96,667 persons by ethnicity. White/Caucasian persons made-up 60.9 percent of the population, and roughly a third of the population (32.6 percent) of the population was Hispanic/Mexican American. Black/African American persons comprised 4.5 percent of the population. All other ethnicities comprised a relatively small portion of the population (i.e., one percent or less of the population for each ethnicity). While these ethnicity breakdowns match the 2014 combined census values for Tom Green County fairly well, there are some slight discrepancies, which may partially be a reflection of the fact that our reported values are for the San Angelo Study Area, which does not encompass the whole of Tom Green County.

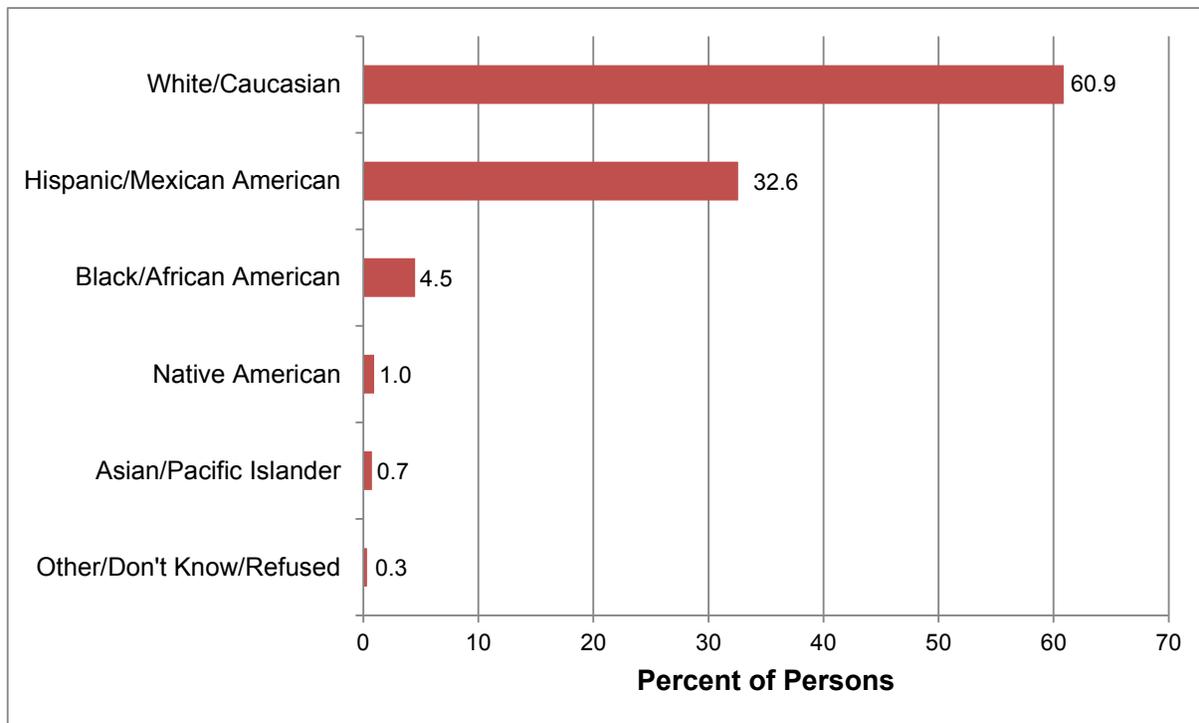


Figure 12. Distribution of Persons by Ethnicity.

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

Note that the value reported within this section only pertains to internal trip characteristics. Figure 13 shows the household trip rate as a function of household size. As the household size increases, the household trip rates increase and become higher for larger 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.

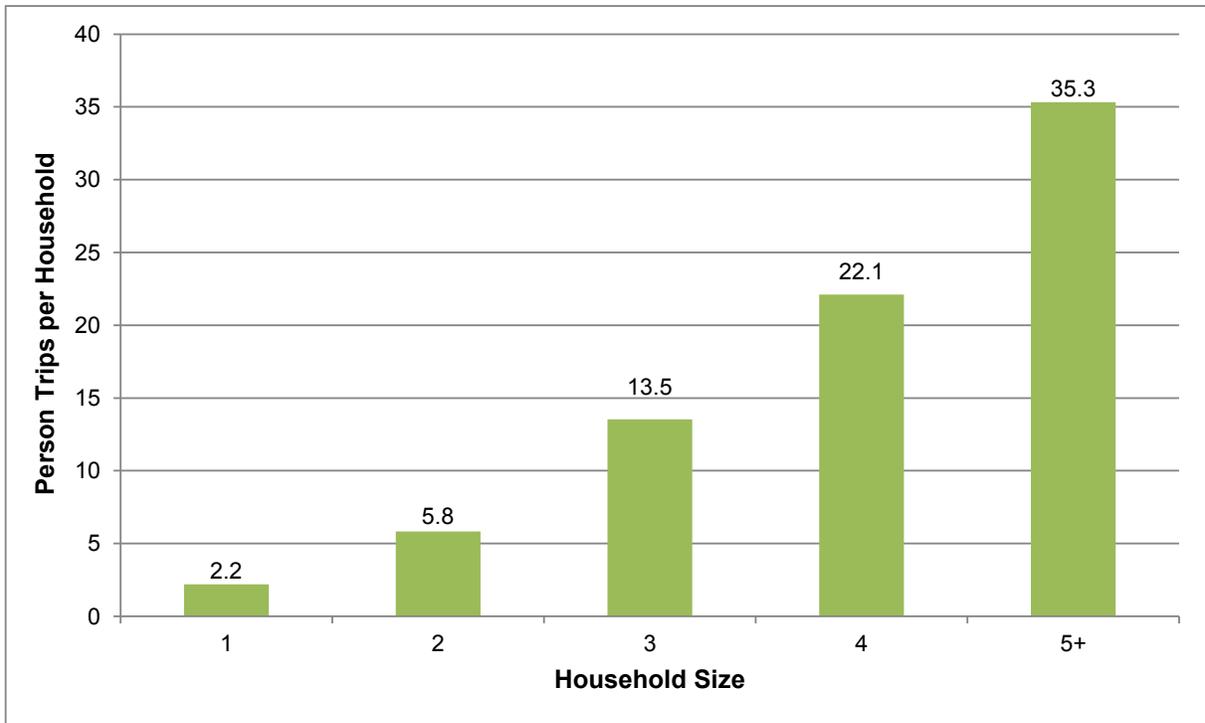


Figure 13. Household Trip Rates by Household Size.

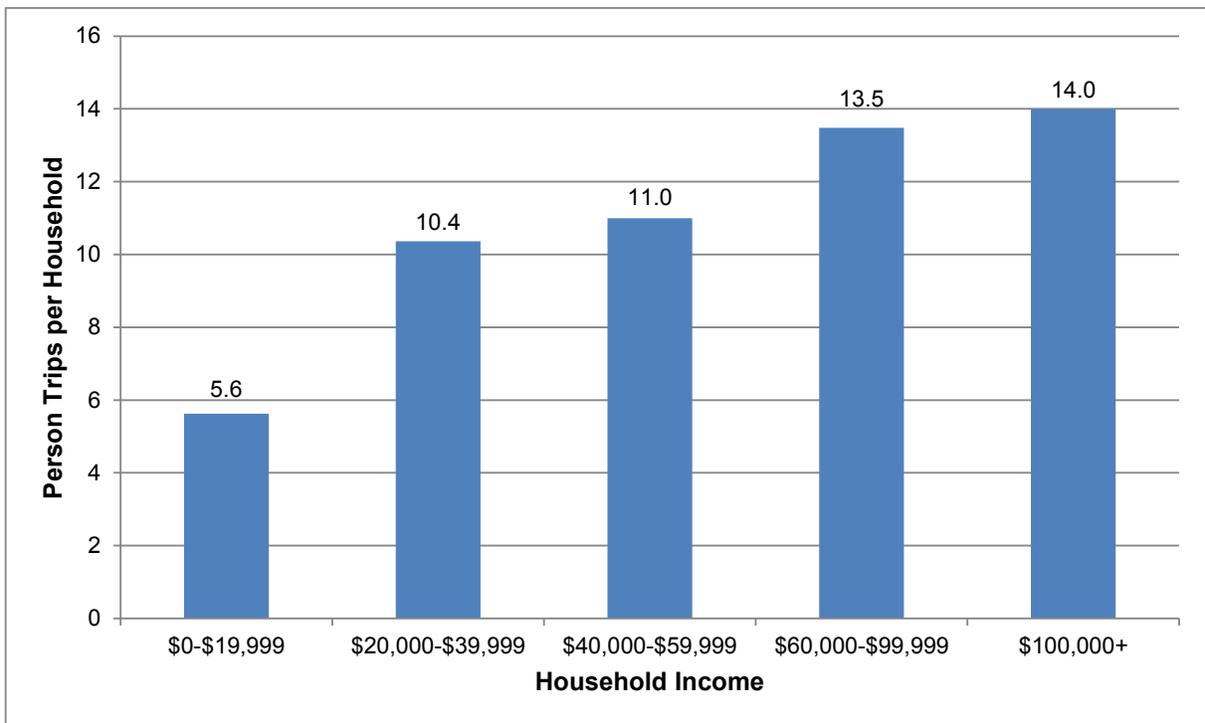


Figure 14. Household Trip Rates by Household Income Range.

Figure 15 shows the household trip rates as a function of the number of vehicles available to household members for travel. As expected, households with no vehicles available made fewer trips per household than those households with vehicles available to them; however, note that households with no vehicles available make a meaningful number of trips.

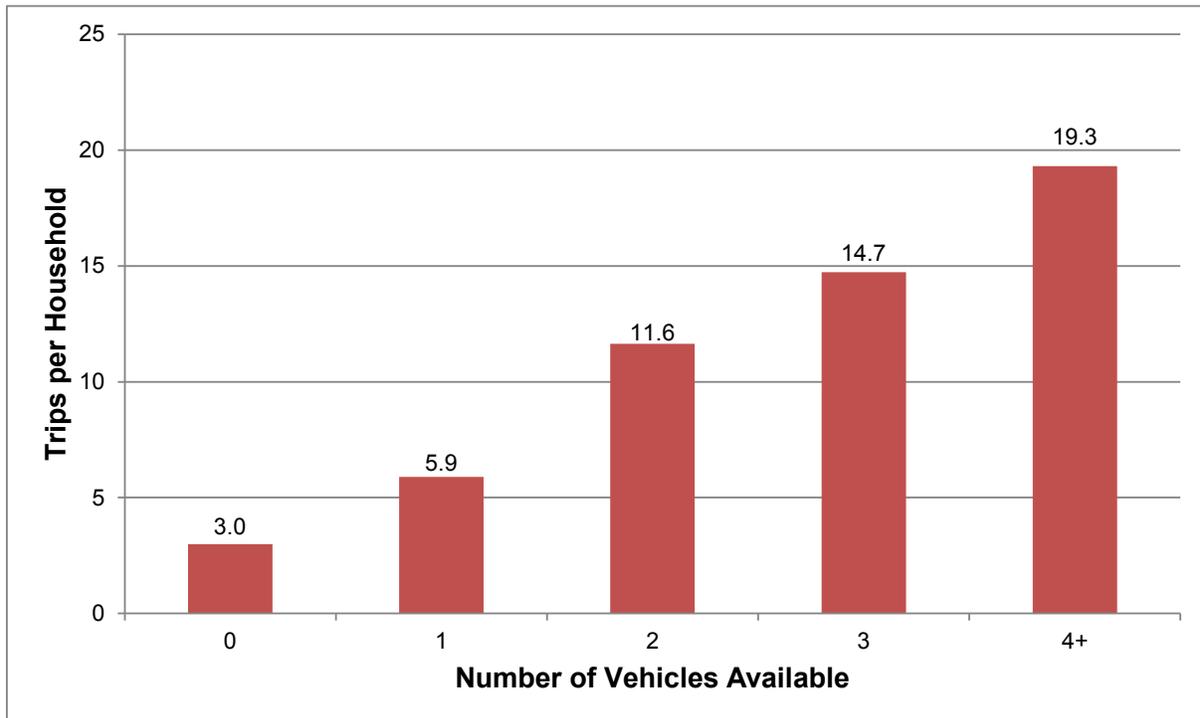


Figure 15. Household Trip Rates by Number of Vehicles Available.

Table 2 shows the person trips per household 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 home-based work (HBW) trips, home-based non-work (HBNW) trips, and non-home-based NHB trips (see the terminology section for the definitions of these terms). As a part of the travel forecasting process, the person trips are divided among the modes during the mode split step. The average person trips per household, internal to the planning area for all households, was 10.5 person trips.

Table 2. Person Trips per Household by Household Size and Household Income.

Household Income Range	Household Size					
	1	2	3	4	5+	Total
\$0-\$19,999	1.97	5.21	13.58	16.19	34.64	5.63
\$20,000-\$39,999	2.36	5.72	13.69	21.30	41.78	10.36
\$40,000-\$59,999	2.01	6.18	11.93	20.51	36.41	11.00
\$60,000-\$99,999	3.09	6.10	13.31	23.38	34.87	13.48
\$100,000+	2.71	5.63	15.71	25.00	30.02	14.00
Total	2.20	5.82	13.54	22.12	35.33	10.54

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 the households was 1.52 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	1.29	1.38	1.52	2.22	2.87	1.69
\$20,000-\$39,999	1.02	1.32	1.37	1.87	1.98	1.57
\$40,000-\$59,999	1.07	1.26	1.39	1.79	2.10	1.59
\$60,000-\$99,999	1.04	1.15	1.31	1.59	1.80	1.46
\$100,000+	1.09	1.15	1.20	1.52	1.76	1.40
Total	1.14	1.24	1.33	1.69	1.98	1.52

Travel by Age Cohort

The known population total for the study area included 96,667 persons. Table 4 shows the number of persons and distribution of persons by age cohort that did not make any internal trips on their assigned survey day, based on weighted values. As expected, older persons are generally less likely to travel than are younger persons, but the older population is mobile and contribute significantly to the amount of household travel.

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

Age Cohort	Number of Persons	Percent of Persons	Number of Persons Making Internal Trips	Number of Persons Making Zero Internal Trips	Percent of Persons Making Zero Internal Trips
0-15	21,912	22.7	21,866	46	0.21
16-19	6,436	6.7	6,402	34	0.53
20-24	8,748	9.0	8,656	92	1.05
25-29	6,328	6.5	6,277	51	0.81
30-34	6,212	6.4	6,189	22	0.36
35-39	4,982	5.2	4,952	30	0.60
40-44	5,079	5.3	5,046	34	0.66
45-49	5,084	5.3	5,064	20	0.39
50-54	5,977	6.2	5,897	80	1.34
55-59	5,975	6.2	5,759	215	3.61
60-64	5,338	5.5	5,084	254	4.76
65-69	4,466	4.6	4,249	217	4.86
70-74	3,396	3.5	3,154	242	7.13
75-79	2,723	2.8	2,257	465	17.10
80+	4,013	4.2	3,488	525	13.09
All Age Cohorts	96,667	100.0	94,340	2,327	2.41

MODE OF TRAVEL

The modes of travel included automobile-driver, automobile-passenger, school bus, walk, taxi and commercial vehicle, public transportation, bicycle, and a handful of “other modes.” Figure 16 provides the distribution of person trips by mode. Automobile-Driver trips accounted for 63.7 percent of the person trips. An additional 31.2 percent of trips were Automobile-Passenger trips. The School Bus mode accounted for 2.1 percent of the person trips while the Walk mode accounted for just 1.6 percent of the person trips.

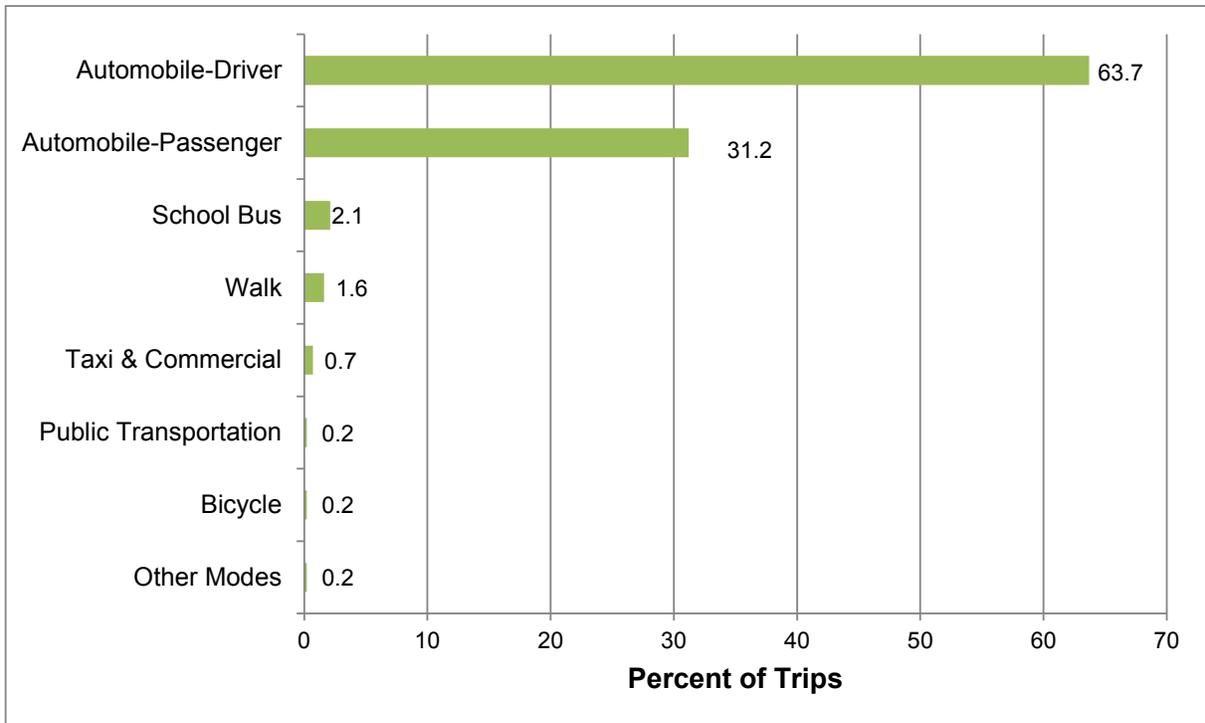


Figure 16. Distribution of Person Trips by Mode of Travel.

AMOUNT OF TRAVEL

Several measures are used to measure the amount of travel — the number of person trips, the number of vehicle trips, the trip distance in miles, the trip duration or travel time in minutes, and the VMT.

Trip Distance

Figure 17 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 calculation of average trip length in miles does not include intrazonal trips. The average person trip length was 3.1 miles.

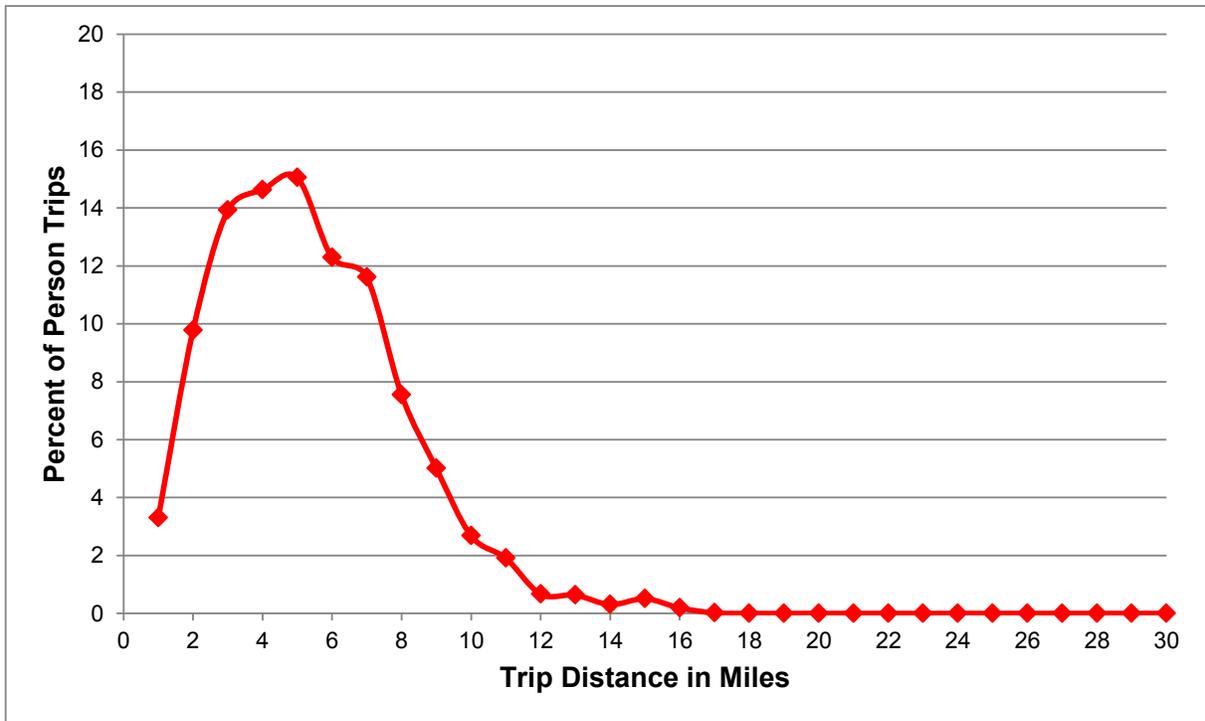


Figure 17. Distribution of Person Trips by Trip Distance in Miles.

Figure 18 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. As with the previously described person trip calculation, the calculation of average vehicle trip length also excludes intrazonal trips. The average vehicle trip length was 3.3 miles.

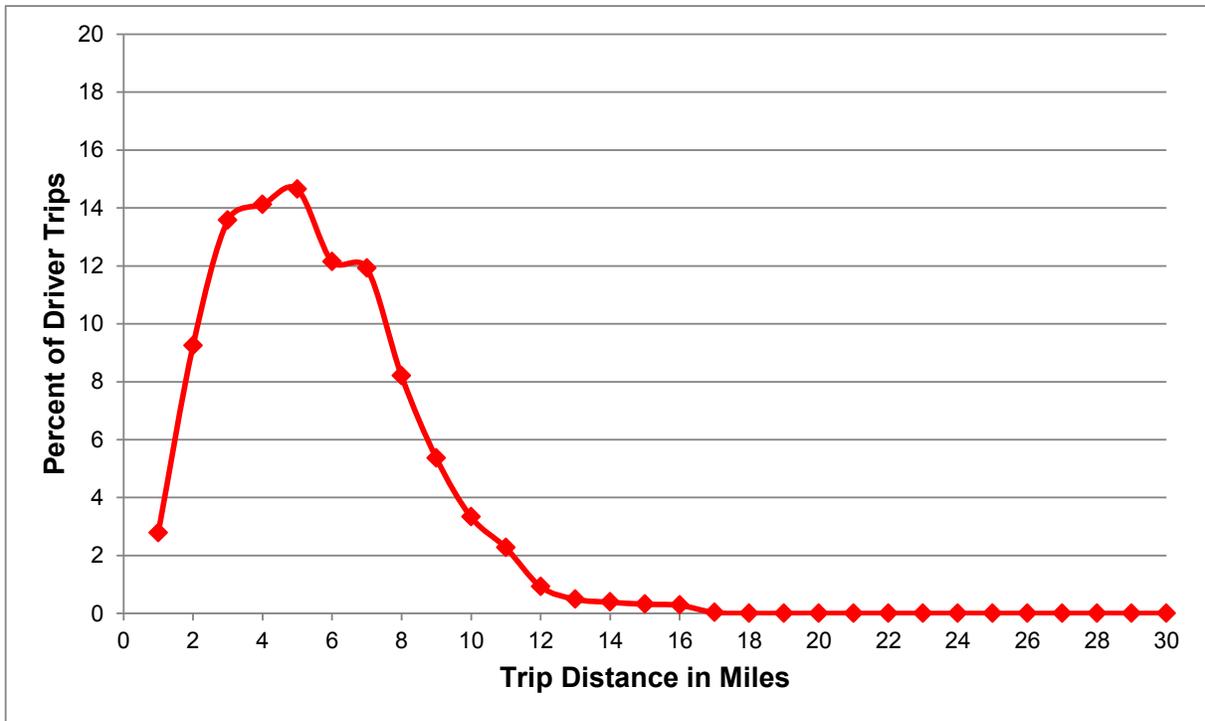


Figure 18. Distribution of Vehicle Trips by Trip Distance in Miles.

Trip Duration

Figure 19 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. As with the previously described person trip distance in miles calculation, the calculation of average person and vehicle trip duration in minutes also excludes intrazonal trips. The average person trip duration was 5.8 minutes.

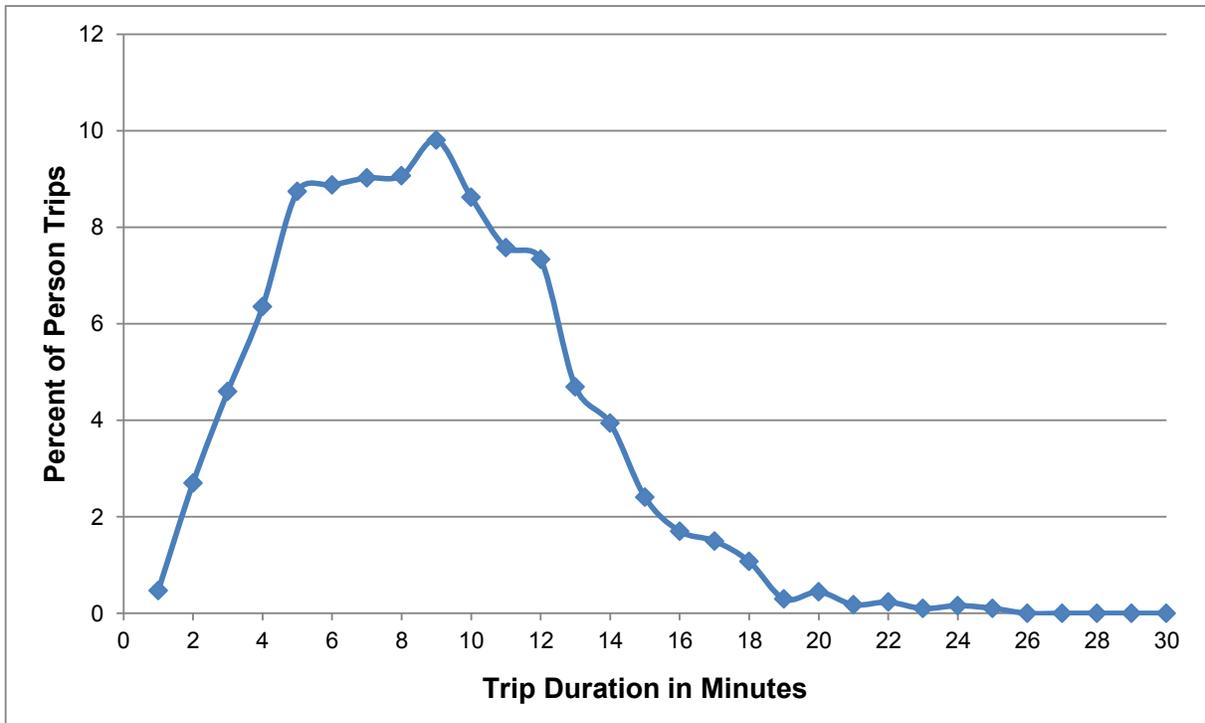


Figure 19. Distribution of Person Trips by Trip Duration in Minutes.

Figure 20 presents the distribution of vehicle trips by the duration of the trip in minutes. The average vehicle trip duration was 6.2 minutes.

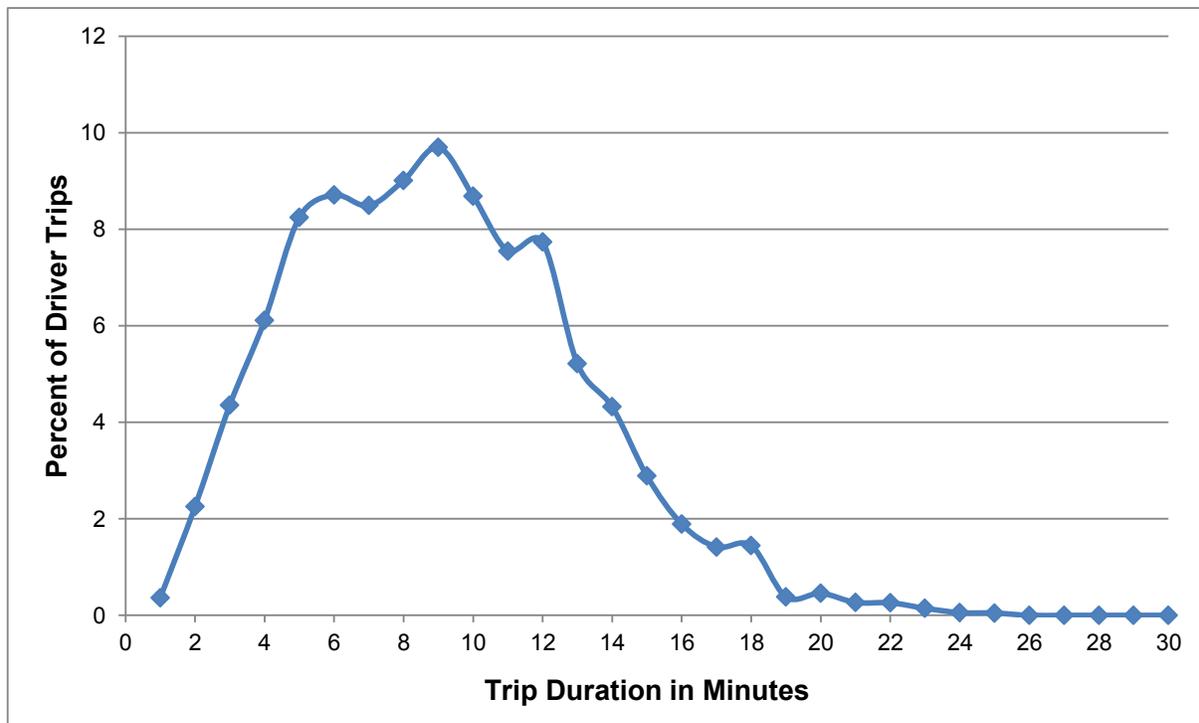


Figure 20. Distribution of Vehicle Trips by Trip Duration in Minutes.

Vehicle Miles of Travel

VMT is calculated as the product of the average internal vehicle trip length in miles and the number of internal vehicle trips. For household trips internal to the study area, the estimated VMT was 1,337,566 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 21 shows the distribution of trip start times for a 24-hour weekday during the school year. The morning peak period of 7:00 a.m. to 7:59 a.m. has the highest percentage (13.5 percent) of daily trip starts. During this morning peak period, trips from home to work and to school are largely contributing to this peak. The second highest percentage, 10.3

percent of trip starts, occurs during the afternoon between the hours of 3:00 p.m. and 3:59 p.m. During this hour, trips from school to home are typical.

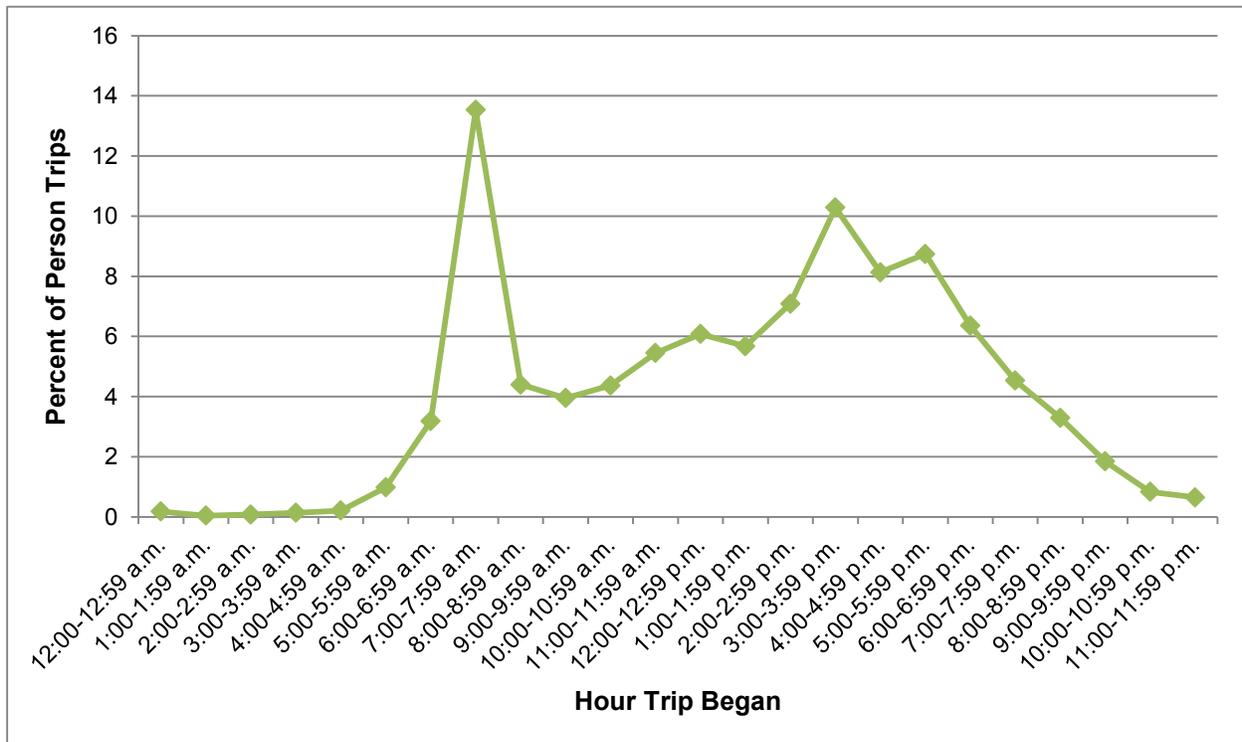


Figure 21. Distribution of Person Trip Start Times by Hour of the Day.

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 22 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.

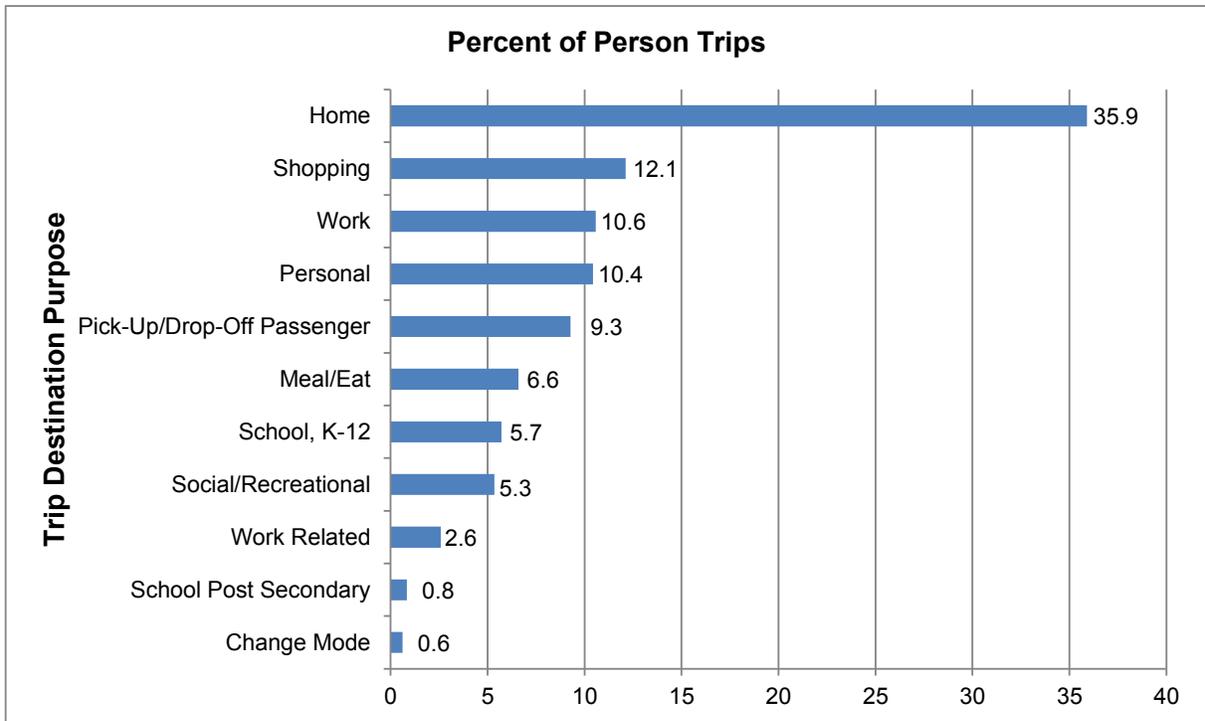


Figure 22. Distribution of Person Trips by Trip Destination Purpose.

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. 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	142,912	41.03
Residential Type Work Place	752	0.22
Construction Site	332	0.10
Transportation Stop	2,432	0.70
Automotive Dealer/Repair	3,600	1.03
Bank/Financial Institution	5,609	1.61
Barber/Beauty/Nail Salon	1,365	0.39
Bookstore/Newsstand	48	0.01
Convenience/Drug Store	4,000	1.15
Government Offices	8,782	2.52
Offices Non-Government	12,370	3.55
Grocery	9,765	2.80
Health Club	4,170	1.20
Medical Facility/Hospital	14,714	4.22
Movie Theater/Cinema	706	0.20
Restaurant/Fast Food, Bar and Grill	25,345	7.28
Educational-12th Grade or Lower	46,695	13.41
Educational-College, Trade, Etc.	5,943	1.71
Shopping Mall/Department Store	28,844	8.28
Convenience Store/Gas Station	5,789	1.66
Airport	229	0.07
Other	23,885	6.86
Total	348,288	100.00

WHERE PEOPLE TRAVELED

Figure 23 shows how the SA-MPO area was divided into seven sub-regions, to generally illustrate the geographic distribution of internal person trip movements within the region. Figure 24 through Figure 31 illustrate 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, the greater the amount of travel movements between the sub-regions. Figure 31, the final figure in this sequence, shows the percent of person trips that remained within each sub-region.

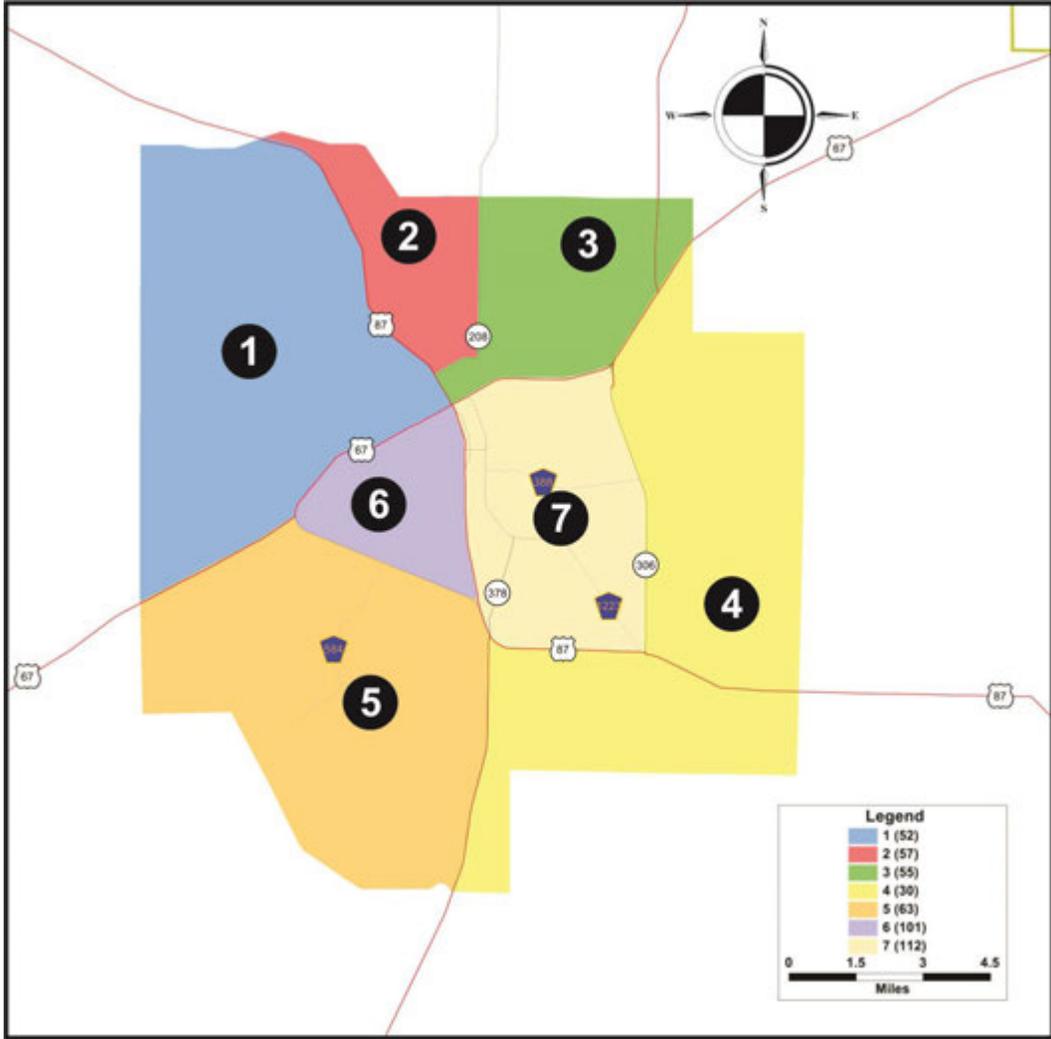


Figure 23. San Angelo Study Area and the Seven Sub-Regions within the Study Area.

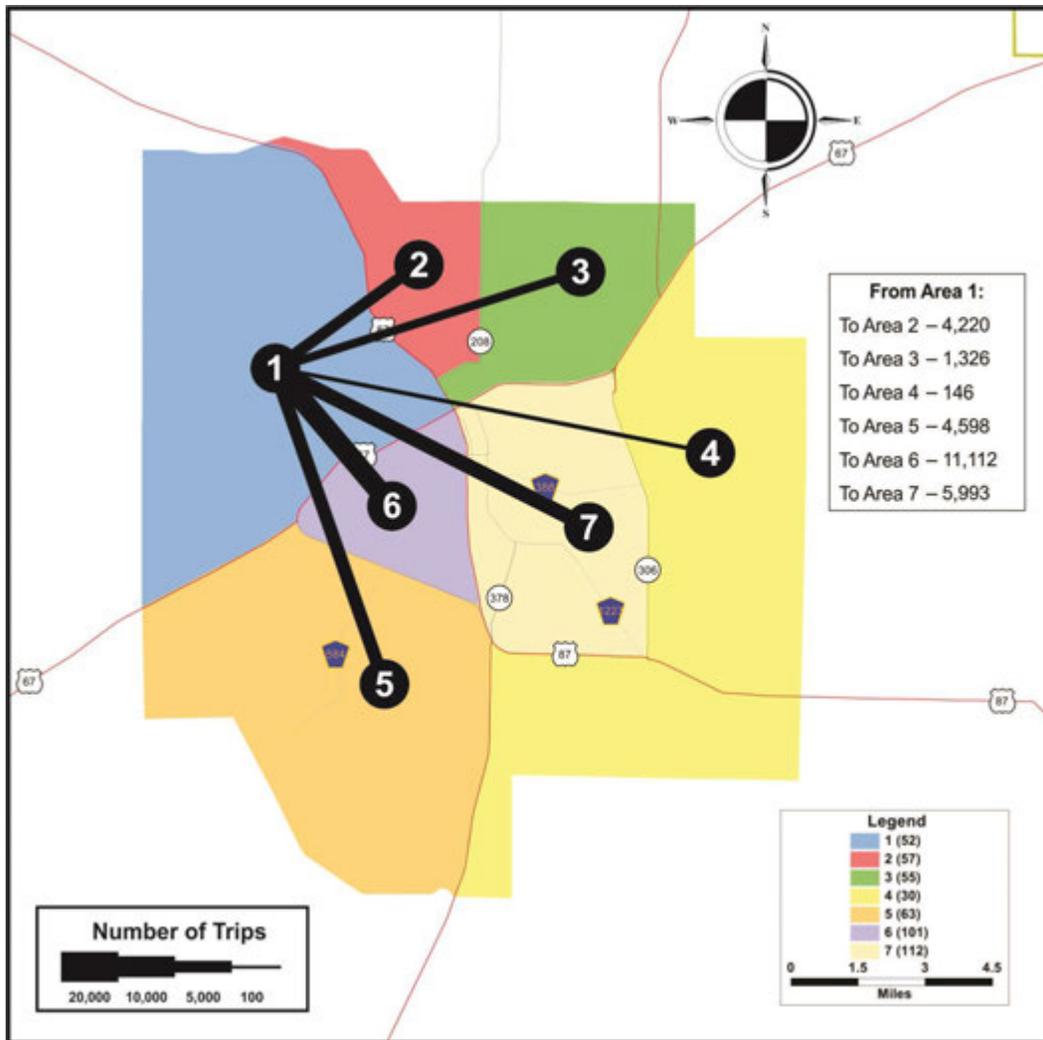


Figure 24. Person Trip Interchanges between Area 1 and Areas 2-7.

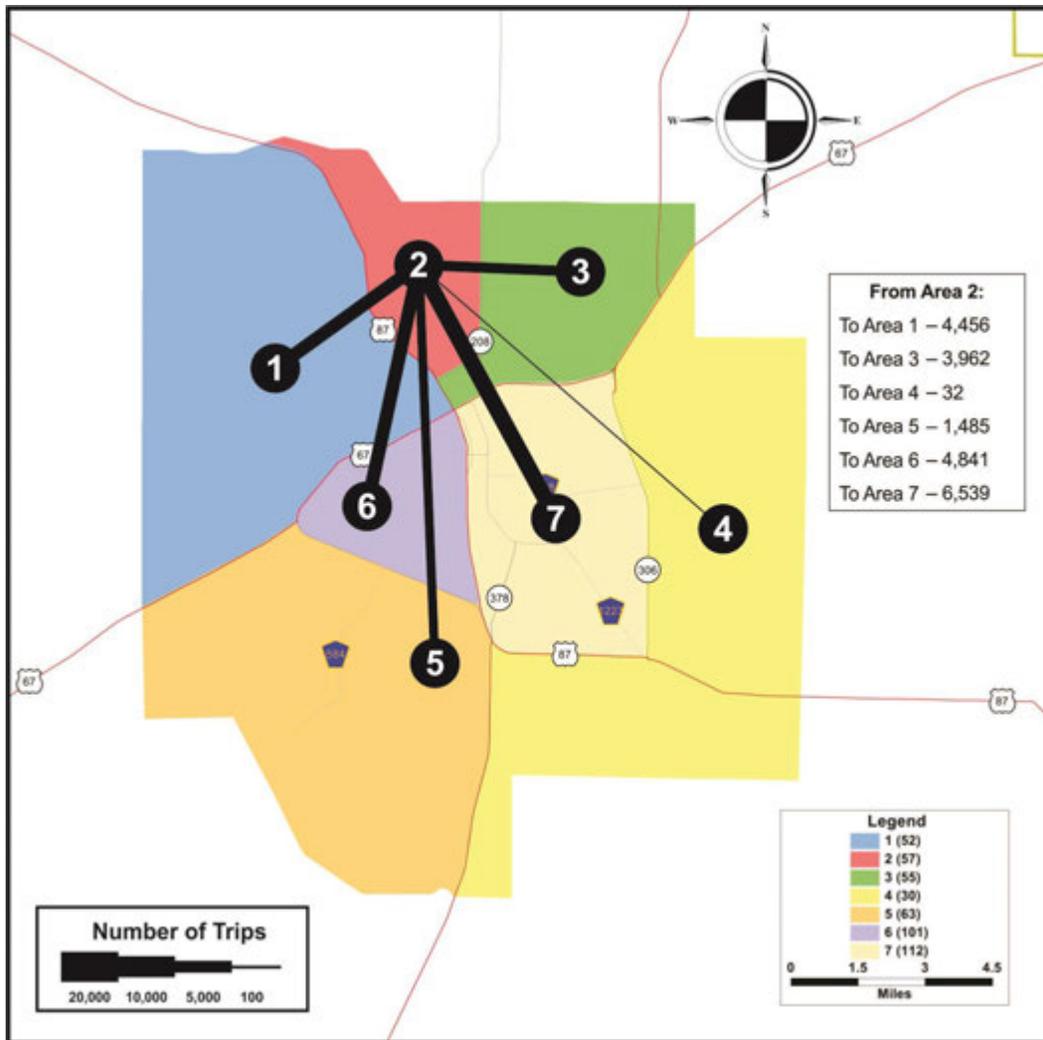


Figure 25. Person Trip Interchanges between Area 2 and Area 1 and Areas 3-7.

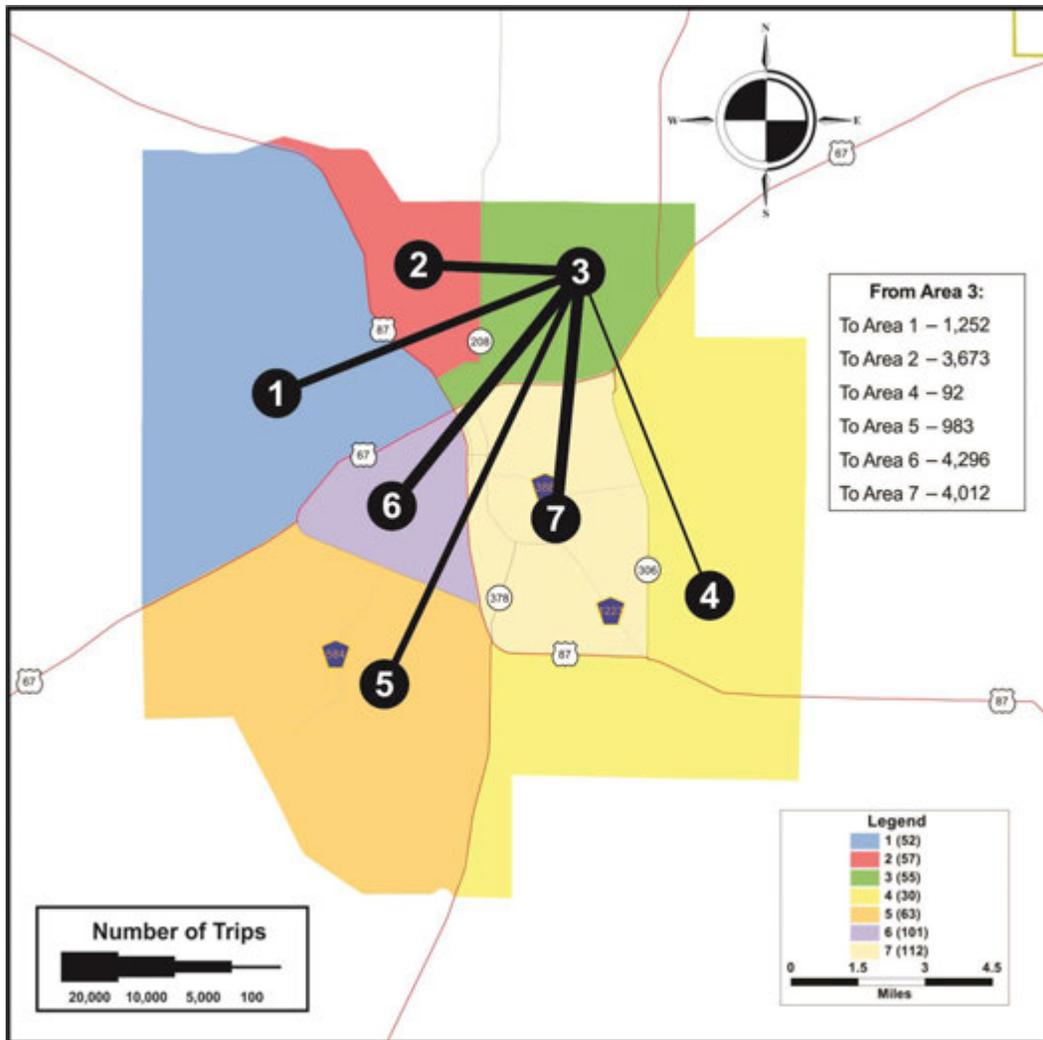


Figure 26. Person Trip Interchanges between Area 3 and Areas 1-2 and Areas 4-7.

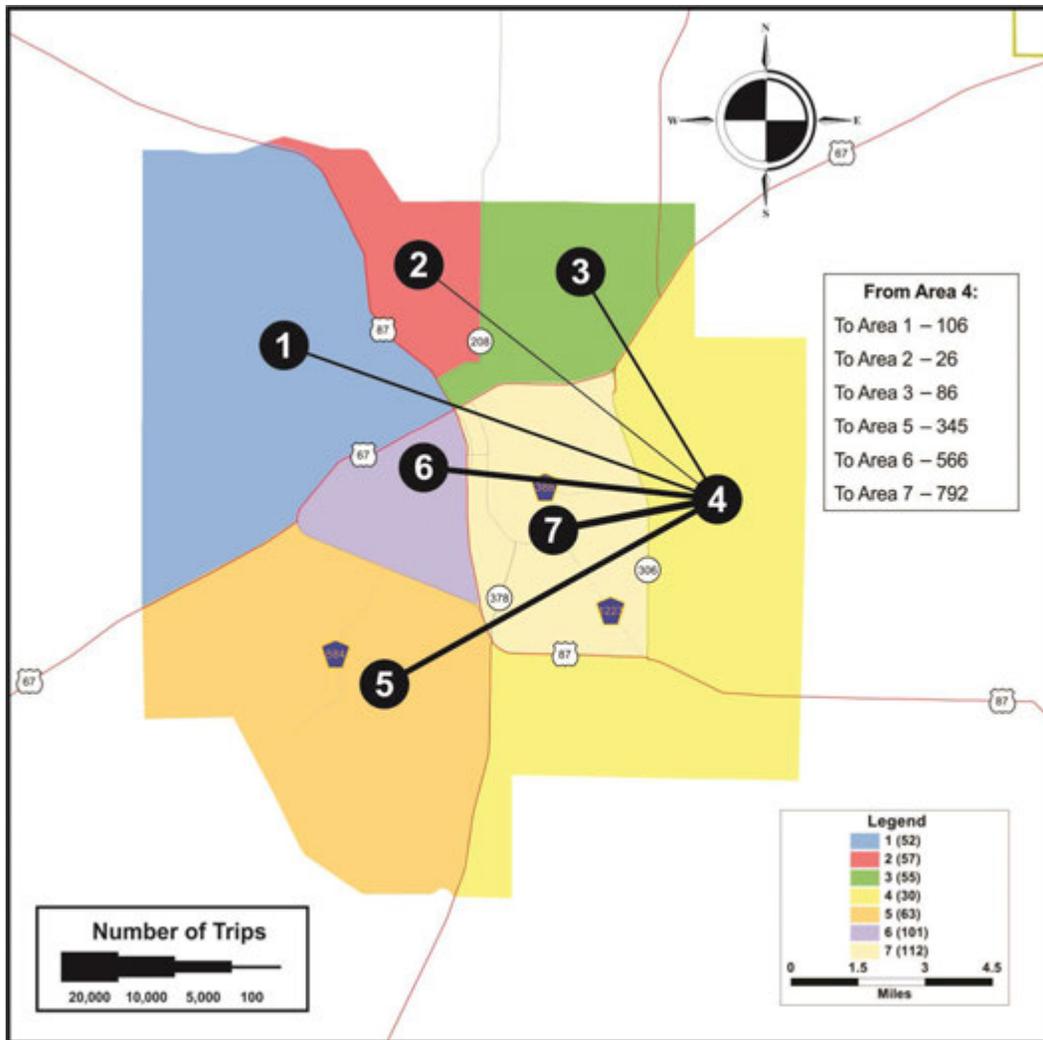


Figure 27. Person Trip Interchanges between Area 4 and Areas 1-3 and Areas 5-7.

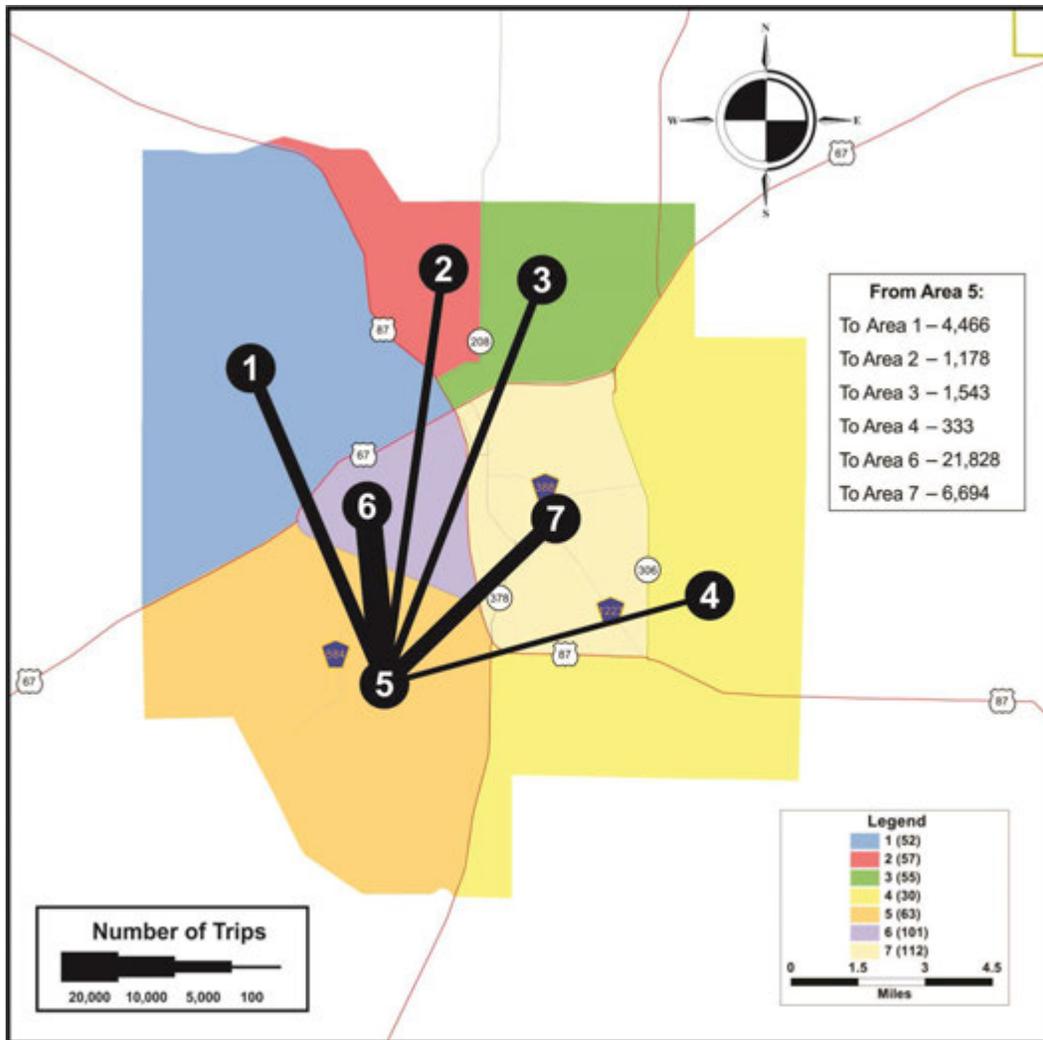


Figure 28. Person Trip Interchanges between Area 5 and Areas 1-4 and Areas 6-7.

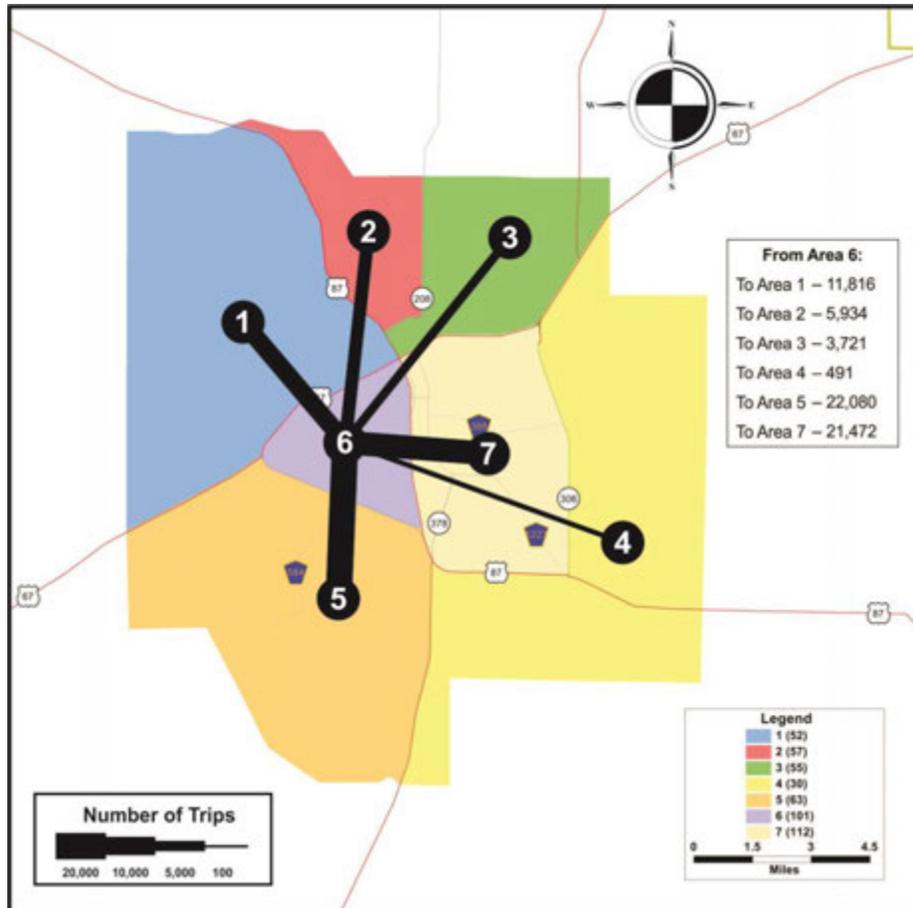


Figure 29. Person Trip Interchanges between Area 6 and Areas 1-5 and Area 7.

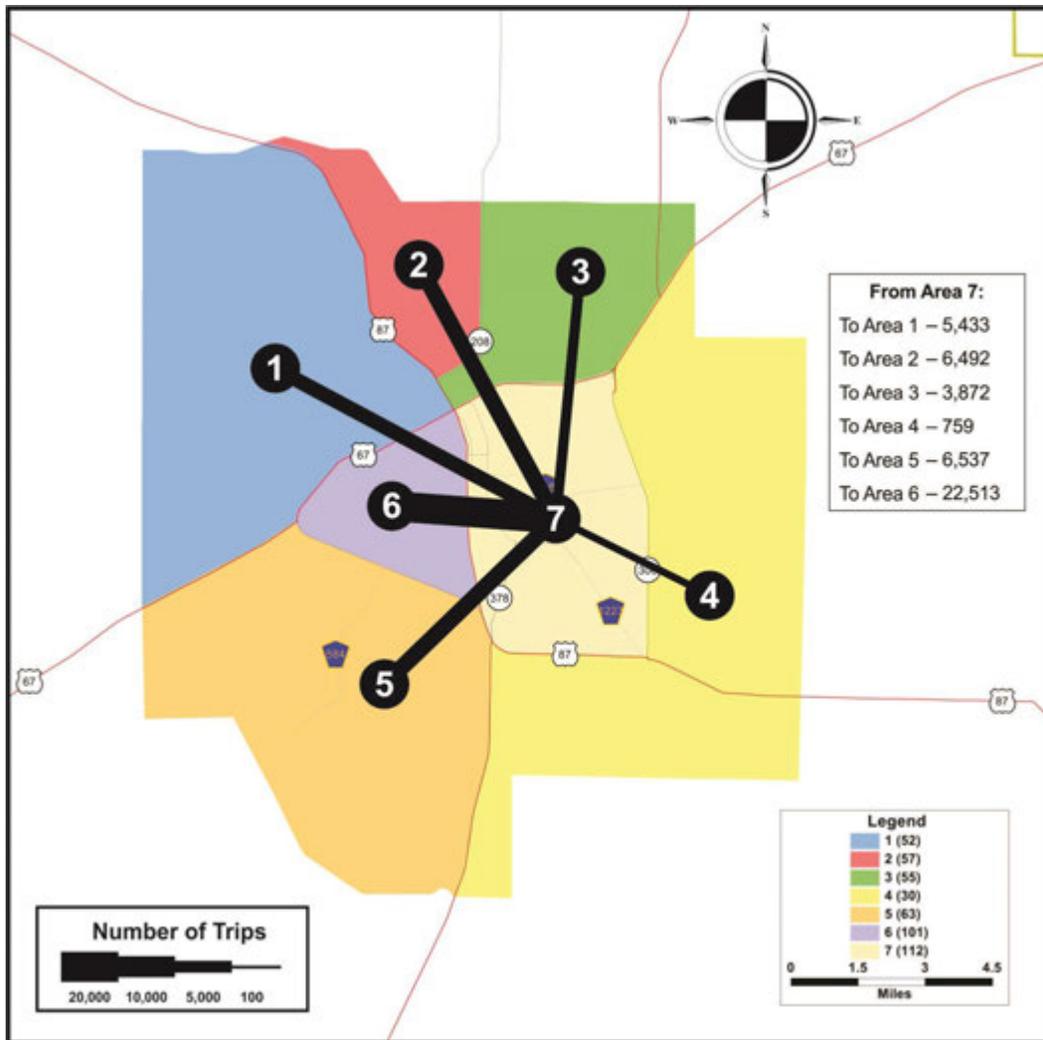


Figure 30. Person Trip Interchanges between Area 7 and Areas 1-6.

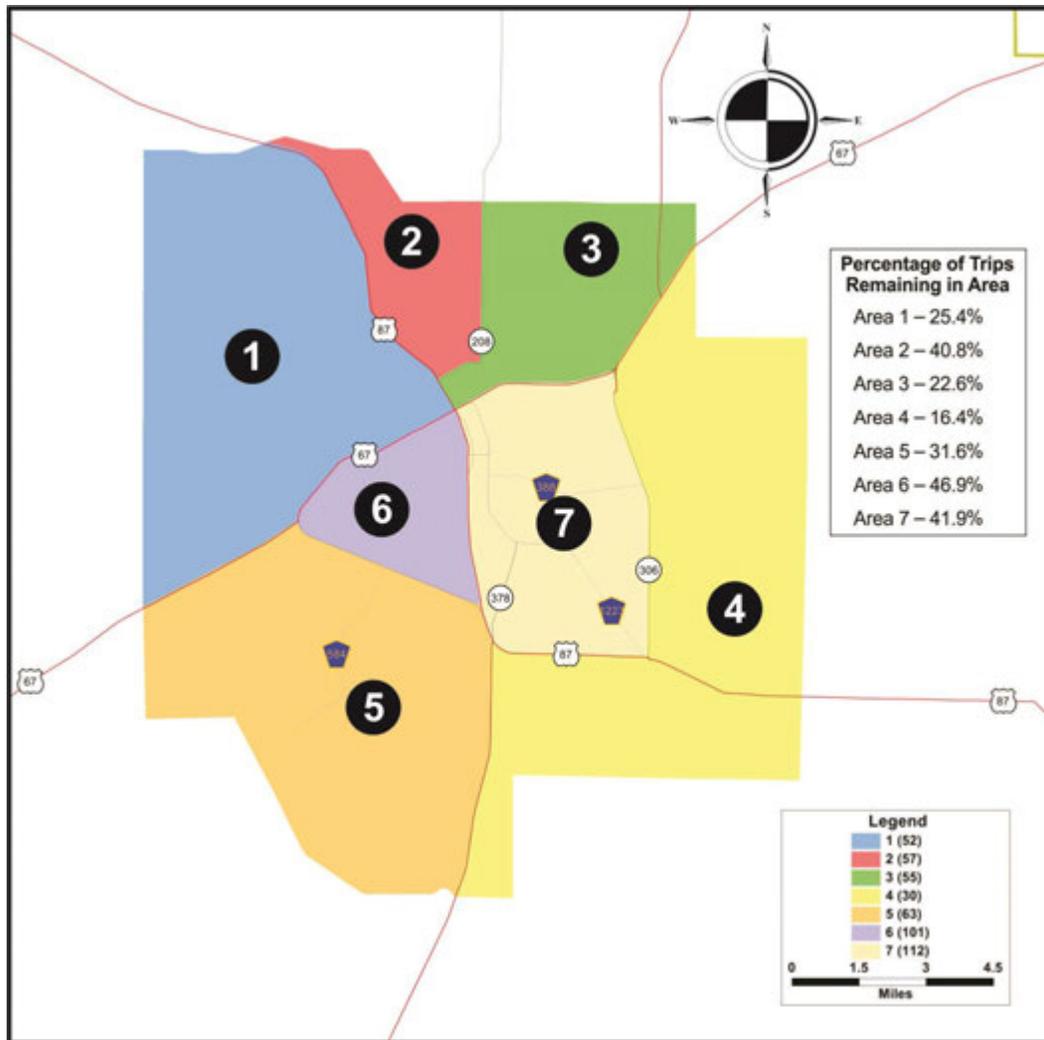


Figure 31. Percentage of Person Trips that Remain within Each Sub Region.

SUMMARY DATA

Table 6 shows the household survey summary data for the SA-MPO area and for travel surveys conducted in a few other study areas in Texas.

Table 6. Comparative Travel Survey Data for Selected Texas Urban Areas.

Urban Area	2003 Longview and Gregg County	2003 Tyler	Taylor and Jones Counties	Texarkana Study Area	San Angelo Study Area
Demographics					
Household Population	113,600	183,900	131,496	95,243	96,667
Licensed Drivers	74,100	129,300	92,930	66,399	66,839
Number of Households	42,800	69,600	50,724	38,302	38,667
Average Household Size	2.52	2.64	2.59	2.49	2.50
Number of Motor Vehicles	81,300	136,700	100,571	74,862	75,149
Motor Vehicles per Household	1.9	1.9	1.98	1.95	1.94
Number of Daily Trips by Mode					
Total Person Trips	461,000	672,800	830,583	300,950	348,288
Automobile-Driver Trips	294,800	417,300	523,635	194,923	222,028
Motor Vehicle Passenger Trips	138,400	221,800	265,544	81,643	108,515
School Bus Trips	14,000	15,100	7,872	12,095	7,163
Walk Trips	8,400	9,600	11,563	5,100	5,719
Public Transit Trips	1,800	2,900	7,872	1,643	541
Bicycle Trips	2,100	1,800	2,002	1,308	758
Commercial Vehicle Trips	N/A	N/A	81,403	2,891	2,568
Other Modes/Taxi	1,500	3,800	1,873	1,347	996
Trips by Purpose					
Trips to Home	153,100	215,400	300,993	106,626	125,061
Trips to Work	62,300	90,100	86,938	31,544	36,846
Trips Work Related	N/A	N/A	25,302	6,626	8,983
Trips to Shop	54,700	75,100	95,421	39,308	42,214
Trips to Pick-Up/Drop-Off Passenger	41,100	66,300	77,014	27,004	32,276
Trips for Personal Business	47,400	70,000	73,011	32,192	36,321
Trips for Social/Recreation	37,600	56,100	68,556	18,340	18,606
Trips for School K-12	29,400	43,500	46,973	17,283	19,916
Trips for School Post-Secondary			4,897	2,186	2,936
Trips for Meal/Eat	34,500	49,000	46,049	18,354	22,963
Trips to Change Mode	N/A	N/A	2,836	1,487	2,150
Other Trips	900	1,400	2,590	0	16
Person and Household Trips					
Person Trips per Person	4.02	3.66	3.62	3.22	4.22
Person Trips per Household	10.78	9.66	9.38	7.96	10.54
Trip Lengths					
Average Person Trip Length in Miles	4.4	6.1	4.7	3.9	3.1
Average Vehicle Trip Length in Miles			5.0	4.1	3.3
Average Person Trip Duration in Minutes	7.1	9	5.9	6.7	5.8
Average Vehicle Trip Duration in Minutes			6.1	6.9	6.2

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 mode 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 5: Where did you go next?	How did you get to Location 5?	What did you do here?
When did you arrive at this location? ____ : ____ . AM . PM	What was the primary type of transportation you used? <input type="checkbox"/> Car, van, truck <input type="checkbox"/> Motorcycle or moped <input type="checkbox"/> Bicycle <input type="checkbox"/> Taxi <input type="checkbox"/> Walk <input type="checkbox"/> School Bus <input type="checkbox"/> Service vehicle <input type="checkbox"/> Cargo transport vehicle <input type="checkbox"/> Transit Bus <input type="checkbox"/> Other _____	What did you do at this location? (check all that apply) <input type="checkbox"/> Return Home from your primary job <input type="checkbox"/> Return Home for another reason <input type="checkbox"/> Meal/Eat <input type="checkbox"/> Work <input type="checkbox"/> Work Related <input type="checkbox"/> School <input type="checkbox"/> Personal Business: _____ <input type="checkbox"/> Volunteer/Civic <input type="checkbox"/> Shop <input type="checkbox"/> Social/Recreation/Entertainment <input type="checkbox"/> Pick-Up/Drop-Off Passenger <input type="checkbox"/> Change Mode (e.g., car to bus): <input type="checkbox"/> Other: _____
What is the Name of this Location? _____	Did you walk more than a block to get to the bus stop? 01=Yes 02=No	When did you leave this location? ____ : ____ . AM . PM ----- OR ----- • This was the last place I went today
What Type of Place/Business Is This? _____	Intersection where you get off the bus? _____ & _____	
Street Address (be as specific as possible) - OR - & Nearest Intersecting Streets _____	If you used a car, van, or truck for this trip . . . Were you the . . . ? <input type="checkbox"/> driver <input type="checkbox"/> 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	
City _____ State _____ County _____		
Zip Code (if known) _____		
Where did you park? _____		
Did you pay to park? 01=Yes 02=No How much did you pay to park? \$ _____ Pay Method: 01=Hourly 02=Daily 03=Weekly 04=Monthly 05=Annually 96=Other _____		

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?	How did you get to Location 6?	What did you do here?
When did you arrive at this location? ____ : ____ . AM . PM	What was the primary type of transportation you used? <input type="checkbox"/> Car, van, truck <input type="checkbox"/> Motorcycle or moped <input type="checkbox"/> Bicycle <input type="checkbox"/> Taxi <input type="checkbox"/> Walk <input type="checkbox"/> School Bus <input type="checkbox"/> Service vehicle <input type="checkbox"/> Cargo transport vehicle <input type="checkbox"/> Transit Bus <input type="checkbox"/> Other _____	What did you do at this location? (check all that apply) <input type="checkbox"/> Return Home from your primary job <input type="checkbox"/> Return Home for another reason <input type="checkbox"/> Meal/Eat <input type="checkbox"/> Work <input type="checkbox"/> Work Related <input type="checkbox"/> School <input type="checkbox"/> Personal Business: _____ <input type="checkbox"/> Volunteer/Civic <input type="checkbox"/> Shop <input type="checkbox"/> Social/Recreation/Entertainment <input type="checkbox"/> Pick-Up/Drop-Off Passenger <input type="checkbox"/> Change Mode (e.g., car to bus): <input type="checkbox"/> Other: _____
What is the Name of this Location? _____	Did you walk more than a block to get to the bus stop? 01=Yes 02=No	When did you leave this location? ____ : ____ . AM . PM ----- OR ----- • This was the last place I went today
What Type of Place/Business Is This? _____	Intersection where you get off the bus? _____ & _____	
Street Address (be as specific as possible) - OR - & Nearest Intersecting Streets _____	If you used a car, van, or truck for this trip . . . Were you the . . . ? <input type="checkbox"/> driver <input type="checkbox"/> 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	
City _____ State _____ County _____		
Zip Code (if known) _____		
Where did you park? _____		
Did you pay to park? 01=Yes 02=No How much did you pay to park? \$ _____ Pay Method: 01=Hourly 02=Daily 03=Weekly 04=Monthly 05=Annually 96=Other _____		

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 7: Where did you go next?	How did you get to Location 7?	What did you do here?
When did you arrive at this location? ____ : ____ . AM . PM	What was the primary type of transportation you used? <input type="checkbox"/> Car, van, truck <input type="checkbox"/> Motorcycle or moped <input type="checkbox"/> Bicycle <input type="checkbox"/> Taxi <input type="checkbox"/> Walk <input type="checkbox"/> School Bus <input type="checkbox"/> Service vehicle <input type="checkbox"/> Cargo transport vehicle <input type="checkbox"/> Transit Bus <input type="checkbox"/> Other _____	What did you do at this location? (check all that apply) <input type="checkbox"/> Return Home from your primary job <input type="checkbox"/> Return Home for another reason <input type="checkbox"/> Meal/Eat <input type="checkbox"/> Work <input type="checkbox"/> Work Related <input type="checkbox"/> School <input type="checkbox"/> Personal Business: _____ <input type="checkbox"/> Volunteer/Civic <input type="checkbox"/> Shop <input type="checkbox"/> Social/Recreation/Entertainment <input type="checkbox"/> Pick-Up/Drop-Off Passenger <input type="checkbox"/> Change Mode (e.g., car to bus): <input type="checkbox"/> Other: _____
What is the Name of this Location? _____	Did you walk more than a block to get to the bus stop? 01=Yes 02=No	When did you leave this location? ____ : ____ . AM . PM ----- OR ----- • This was the last place I went today
What Type of Place/Business Is This? _____	Intersection where you get off the bus? _____ & _____	
Street Address (be as specific as possible) - OR - & _____	If you used a car, van, or truck for this trip . . .	
Nearest Intersecting Streets _____	Were you the . . . ? <input type="checkbox"/> driver <input type="checkbox"/> passenger	
City _____ State _____ County _____	Including yourself, how many TOTAL people were in the vehicle? _____	
Zip Code (if known) _____	Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____	
Where did you park? _____	Was this a . . . ? • Carpool • Vanpool • Neither	
Did you pay to park? 01=Yes 02=No	Please indicate the following about the vehicle:	
How much did you pay to park? \$ _____	Year _____ Make/Model _____	
Pay Method: 01=Hourly 02=Daily	Was this your household's vehicle? • Yes • No	
03=Weekly 04=Monthly 05=Annually		
96=Other _____		

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 4: Where did you go next?	How did you get to Location 4?	What did you do here?
When did you arrive at this location? ____ : ____ . AM . PM	What was the primary type of transportation you used? <input type="checkbox"/> Car, van, truck <input type="checkbox"/> Motorcycle or moped <input type="checkbox"/> Bicycle <input type="checkbox"/> Taxi <input type="checkbox"/> Walk <input type="checkbox"/> School Bus <input type="checkbox"/> Service vehicle <input type="checkbox"/> Cargo transport vehicle <input type="checkbox"/> Transit Bus <input type="checkbox"/> Other _____	What did you do at this location? (check all that apply) <input type="checkbox"/> Return Home from your primary job <input type="checkbox"/> Return Home for another reason <input type="checkbox"/> Meal/Eat <input type="checkbox"/> Work <input type="checkbox"/> Work Related <input type="checkbox"/> School <input type="checkbox"/> Personal Business: _____ <input type="checkbox"/> Volunteer/Civic <input type="checkbox"/> Shop <input type="checkbox"/> Social/Recreation/Entertainment <input type="checkbox"/> Pick-Up/Drop-Off Passenger <input type="checkbox"/> Change Mode (e.g., car to bus): <input type="checkbox"/> Other: _____
What is the Name of this Location? _____	Did you walk more than a block to get to the bus stop? 01=Yes 02=No	When did you leave this location? ____ : ____ . AM . PM ----- OR ----- • This was the last place I went today
What Type of Place/Business Is This? _____	Intersection where you get off the bus? _____ & _____	
Street Address (be as specific as possible) - OR - & _____	If you used a car, van, or truck for this trip . . .	
Nearest Intersecting Streets _____	Were you the . . . ? <input type="checkbox"/> driver <input type="checkbox"/> passenger	
City _____ State _____ County _____	Including yourself, how many TOTAL people were in the vehicle? _____	
Zip Code (if known) _____	Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____	
Where did you park? _____	Was this a . . . ? • Carpool • Vanpool • Neither	
Did you pay to park? 01=Yes 02=No	Please indicate the following about the vehicle:	
How much did you pay to park? \$ _____	Year _____ Make/Model _____	
Pay Method: 01=Hourly 02=Daily	Was this your household's vehicle? • Yes • No	
03=Weekly 04=Monthly 05=Annually		
96=Other _____		

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 9: Where did you go next?	How did you get to Location 9?	What did you do here?
When did you arrive at this location? _____ : _____ . AM . PM <hr/> What is the Name of this Location? _____ <hr/> What Type of Place/Business Is This? _____ <hr/> Street Address (be as specific as possible) - OR - & Nearest Intersecting Streets _____ <hr/> City _____ State _____ County _____ <hr/> Zip Code (if known) _____ <hr/> Where did you park? _____ <hr/> Did you pay to park? 01=Yes 02=No How much did you pay to park? \$ _____ Pay Method: 01=Hourly 02=Daily 03=Weekly 04=Monthly 05=Annually 96=Other _____	What was the primary type of transportation you used? <input type="checkbox"/> Car, van, truck <input type="checkbox"/> Motorcycle or moped <input type="checkbox"/> Bicycle <input type="checkbox"/> Taxi <input type="checkbox"/> Walk <input type="checkbox"/> School Bus <input type="checkbox"/> Service vehicle <input type="checkbox"/> Cargo transport vehicle <input type="checkbox"/> Transit Bus <input type="checkbox"/> Other _____ <hr/> Did you walk more than a block to get to the bus stop? 01=Yes 02=No Intersection where you get off the bus? _____ & _____ <hr/> If you used a car, van, or truck for this trip . . . Were you the . . . ? <input type="checkbox"/> driver <input type="checkbox"/> 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 . . . ? <input type="checkbox"/> Carpool <input type="checkbox"/> Vanpool <input type="checkbox"/> Neither Please indicate the following about the vehicle: Year _____ Make/Model _____ Was this your household's vehicle? <input type="checkbox"/> Yes <input type="checkbox"/> No	What did you do at this location? (check all that apply) <input type="checkbox"/> Return Home from your primary job <input type="checkbox"/> Return Home for another reason <input type="checkbox"/> Meal/Eat <input type="checkbox"/> Work <input type="checkbox"/> Work Related <input type="checkbox"/> School <input type="checkbox"/> Personal Business: _____ <input type="checkbox"/> Volunteer/Civic <input type="checkbox"/> Shop <input type="checkbox"/> Social/Recreation/Entertainment <input type="checkbox"/> Pick-Up/Drop-Off Passenger <input type="checkbox"/> Change Mode (e.g., car to bus): <input type="checkbox"/> Other: _____ <hr/> When did you leave this location? _____ : _____ . AM . PM ----- OR ----- <input type="checkbox"/> 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 _____

Location 2: Where did you go next?	How did you get to Location 2?	What did you do here?
When did you arrive at this location? _____ : _____ . AM . PM <hr/> What is the Name of this Location? _____ <hr/> What Type of Place/Business Is This? _____ <hr/> Street Address (be as specific as possible) - OR - & Nearest Intersecting Streets _____ <hr/> City _____ State _____ County _____ <hr/> Zip Code (if known) _____ <hr/> Where did you park? _____ <hr/> Did you pay to park? 01=Yes 02=No How much did you pay to park? \$ _____ Pay Method: 01=Hourly 02=Daily 03=Weekly 04=Monthly 05=Annually 96=Other _____	What was the primary type of transportation you used? <input type="checkbox"/> Car, van, truck <input type="checkbox"/> Motorcycle or moped <input type="checkbox"/> Bicycle <input type="checkbox"/> Taxi <input type="checkbox"/> Walk <input type="checkbox"/> School Bus <input type="checkbox"/> Service vehicle <input type="checkbox"/> Cargo transport vehicle <input type="checkbox"/> Transit Bus <input type="checkbox"/> Other _____ <hr/> Did you walk more than a block to get to the bus stop? 01=Yes 02=No Intersection where you get off the bus? _____ & _____ <hr/> If you used a car, van, or truck for this trip . . . Were you the . . . ? <input type="checkbox"/> driver <input type="checkbox"/> 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 . . . ? <input type="checkbox"/> Carpool <input type="checkbox"/> Vanpool <input type="checkbox"/> Neither Please indicate the following about the vehicle: Year _____ Make/Model _____ Was this your household's vehicle? <input type="checkbox"/> Yes <input type="checkbox"/> No	What did you do at this location? (check all that apply) <input type="checkbox"/> Return Home from your primary job <input type="checkbox"/> Return Home for another reason <input type="checkbox"/> Meal/Eat <input type="checkbox"/> Work <input type="checkbox"/> Work Related <input type="checkbox"/> School <input type="checkbox"/> Personal Business: _____ <input type="checkbox"/> Volunteer/Civic <input type="checkbox"/> Shop <input type="checkbox"/> Social/Recreation/Entertainment <input type="checkbox"/> Pick-Up/Drop-Off Passenger <input type="checkbox"/> Change Mode (e.g., car to bus): <input type="checkbox"/> Other: _____ <hr/> When did you leave this location? _____ : _____ . AM . PM ----- OR ----- <input type="checkbox"/> 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 11: Where did you go next?	How did you get to Location 11?	What did you do here?
When did you arrive at this location? _____ : _____ • AM • PM <hr/> What is the Name of this Location? _____ <hr/> What Type of Place/Business Is This? _____ <hr/> Street Address (be as specific as possible) - OR - & Nearest Intersecting Streets _____ <hr/> City _____ State _____ County _____ <hr/> Zip Code (if known) _____ <hr/> Where did you park? _____ <hr/> Did you pay to park? 01=Yes 02=No How much did you pay to park? \$ _____ Pay Method: 01=Hourly 02=Daily 03=Weekly 04=Monthly 05=Annually 96=Other _____	What was the primary type of transportation you used? <input type="checkbox"/> Car, van, truck <input type="checkbox"/> Motorcycle or moped <input type="checkbox"/> Bicycle <input type="checkbox"/> Taxi <input type="checkbox"/> Walk <input type="checkbox"/> School Bus <input type="checkbox"/> Service vehicle <input type="checkbox"/> Cargo transport vehicle <input type="checkbox"/> Transit Bus <input type="checkbox"/> Other _____ <hr/> Did you walk more than a block to get to the bus stop? 01=Yes 02=No <hr/> Intersection where you get off the bus? _____ & _____ <hr/> If you used a car, van, or truck for this trip . . . <hr/> Were you the . . .? <input type="checkbox"/> driver <input type="checkbox"/> passenger Including yourself, how many TOTAL people were in the vehicle? _____ <hr/> Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____ <hr/> Was this a . . .? • Carpool • Vanpool • Neither Please indicate the following about the vehicle: Year _____ Make/Model _____ <hr/> Was this your household's vehicle? • Yes • No	What did you do at this location? (check all that apply) <input type="checkbox"/> Return Home from your primary job <input type="checkbox"/> Return Home for another reason <input type="checkbox"/> Meal/Eat <input type="checkbox"/> Work <input type="checkbox"/> Work Related <input type="checkbox"/> School <input type="checkbox"/> Personal Business: _____ <input type="checkbox"/> Volunteer/Civic <input type="checkbox"/> Shop <input type="checkbox"/> Social/Recreation/Entertainment <input type="checkbox"/> Pick-Up/Drop-Off Passenger <input type="checkbox"/> Change Mode (e.g., car to bus): <input type="checkbox"/> Other: _____ <hr/> 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 12, Provide the Information Below:

For what reason did you stop between Location 11 and 12? _____ 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 . . . ?

<input type="checkbox"/> At Home Street Address (be as specific as possible) _____ _____ City _____ County _____ State _____ <hr/> Zip Code (if known) _____ <hr/> _____ & _____ Nearest Intersecting Streets <input type="checkbox"/> If you did not have any travel today, mark here and tell us why in the space below. NO TRAVELS Why no travels? _____ If you did travel, please continue as instructed below.	<input type="checkbox"/> Traveling (you were driving or flying at 3:00 am today) What type of transportation were you using? <input type="checkbox"/> Car, van, truck <input type="checkbox"/> Motorcycle or moped <input type="checkbox"/> Bicycle <input type="checkbox"/> Taxi <input type="checkbox"/> Walk <input type="checkbox"/> School Bus <input type="checkbox"/> Service vehicle <input type="checkbox"/> Cargo transport vehicle <input type="checkbox"/> Transit Bus (Specify Route: _____) <input type="checkbox"/> Other _____ <hr/> Were you the . . .? <input type="checkbox"/> driver <input type="checkbox"/> passenger Including yourself, how many TOTAL people were in the vehicle? _____ <hr/> Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? _____ <hr/> Was this a . . .? • Carpool • Vanpool • Neither Please indicate the following about the vehicle: Year _____ Make/Model _____ <hr/> Was this your household's vehicle? • Yes • No	<input type="checkbox"/> At Work, or <input type="checkbox"/> At Another Location What is the Name of this Location? _____ <hr/> What Type of Place/Business Is This? _____ <hr/> Street Address (be as specific as possible) _____ _____ City _____ County _____ State _____ <hr/> Zip Code (if known) _____ <hr/> _____ & _____ Nearest Intersecting Streets If this location was out of the region and you were there for the entire diary day, mark here and stop the survey. Otherwise, please continue as instructed below. <input type="checkbox"/> Out of Region All Day
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At what time did you leave your starting location? _____ AM PM
Please proceed to "Location 1" on the next page

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

Additional Instructions	Work Location
<ul style="list-style-type: none">• If you travel by bus please include the bus stop as its own location.• If you stopped to at a gas station or drive-thru, please record that stop as its own location.• Each time you return home, remember to record that as its own location.• If someone stays home all day – Mark the Start Location "No Travel" and provide the reason why there was no travel.• If someone is out of town or away from the residence for the entire day and night – Mark the Start Location "Out of Region all day" and stop the survey. <p>If you have any questions, please call: ETC Institute 1-844-755-8511</p>	<p>If employed, please provide the following information about your work location:</p> <hr/> <p>Name of Employer</p> <hr/> <p>Address of Workplace</p> <hr/> <p>City _____ State _____</p> <hr/> <p>County _____ Zip Code _____</p>

Additional Locations	Questions?
<p>Use the additional sheets provided if you have more than 11 Locations where you made a stop.</p>	<p>If you have any questions, please call 1-844-755-8511 toll-free.</p> <p>ETC Institute 725 W. Frontier Circle Olathe, KS 66061</p>

Comments
<hr/> <hr/> <hr/> <hr/>

Thank you for your participation in this important survey.

**** **Example** ****

Location 2: Where did you go next?	How did you get to Location 2?	What did you do here?
When did you arrive at this location? 6 : 36 AM <input checked="" type="checkbox"/> M FedEx What is the Name of this Location? shipping What Type of Place/Business Is This? Street Address (be as specific as possible) Sherwood Way ^{OR} Sunset Dr Nearest Intersecting Streets San Angelo TX Tom Green City State County 76901 Zip Code (if known) Where did you park? Did you pay to park? 01=Yes 02=No How much did you pay to park? \$ 0 Pay Method: 01=Hourly 02=Daily 03=Weekly 04=Monthly 05=Annually 96=Other _____	What was the primary type of transportation you used? <input checked="" type="checkbox"/> Car, van, truck <input type="checkbox"/> Motorcycle or moped <input type="checkbox"/> Bicycle <input type="checkbox"/> Taxi <input type="checkbox"/> Walk <input type="checkbox"/> School Bus <input type="checkbox"/> Service vehicle <input type="checkbox"/> Cargo transport vehicle <input type="checkbox"/> Transit Bus <input type="checkbox"/> Other _____ Did you walk more than a block to get to the bus stop? 01=Yes 02=No Intersection where you get off the bus? _____ & _____ If you used a car, van, or truck for this trip . . . Were you the . . .? <input checked="" type="checkbox"/> driver <input type="checkbox"/> passenger Including yourself, how many TOTAL people were in the vehicle? 2 Including yourself, how many people from YOUR HOUSEHOLD were in the vehicle? 2 Was this a . . .? • Carpool • Vanpool <input checked="" type="checkbox"/> Neither Please indicate the following about the vehicle: Year 2003 Make/Model Chevy Impala Was this your household's vehicle? <input checked="" type="checkbox"/> Yes • No	What did you do at this location? (check all that apply) <input type="checkbox"/> Return Home from your primary job <input type="checkbox"/> Return Home for another reason <input type="checkbox"/> Meal/Eat <input checked="" type="checkbox"/> Work <input type="checkbox"/> Work Related <input type="checkbox"/> School <input type="checkbox"/> Personal Business: _____ <input type="checkbox"/> Volunteer/Civic <input type="checkbox"/> Shop <input type="checkbox"/> Social/Recreation/Entertainment <input type="checkbox"/> Pick-Up/Drop-Off Passenger <input type="checkbox"/> Change Mode (e.g., car to bus): <input type="checkbox"/> Other: _____ When did you leave this location? 7 : 43 AM <input checked="" type="checkbox"/> M ----- 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



Texas Department of Transportation San Angelo Household Activity/Travel Survey

Instructions

Please tell us about ALL locations you traveled to, what you did, and how you got there. 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 long you were there. For example, if you stop to get gas on your way to work, please record the gas station and your work location as separate entries. 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 1-844-755-8511
ETC Institute**

Each person in the household completes an activity/travel diary for **ONE** day

See Example on back page

Person's age: _____ Gender: Male Female

Write your travel date: _____

Circle your travel day: Monday Tuesday Wednesday Thursday Friday

- 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.

**APPENDIX B:
HOUSEHOLD SURVEY DATA FILE FORMATS**

**SAN ANGELO HOUSEHOLD / ACTIVITY SURVEY
DATA FILE FORMAT
Record Type 1 – Household Information**

This file contains information about each household in the Household Survey. The data in this record should be submitted as a comma-delimited file (Rec1.CSV) with information for each household entered in a separate row. Commas should not be used within individual fields.

<u>Data Field</u>	<u>Type</u>	<u>Description</u>
1. Record Type	Numeric	Code indicating type of record. Here it should be 1.
2. Sample Number	Numeric	Unique number assigned to each household participating in survey. This number should match the sample number used for this household in all other files.
3. Phone	Alphanumeric	Phone number of household.
4. Survey Month	Numeric	Two-digit month survey travel occurred.
5. Survey Day	Numeric	Two-digit day survey travel occurred.
6. Survey Year	Numeric	Four-digit year survey travel occurred.
7. Day of Week	Numeric	Day of the week survey travel occurred: 1-Monday, 2-Tuesday, 3-Wednesday, 4-Thursday, 5-Friday.
8. Advance Letter	Numeric	Code indicating if household received advance letter: 1-Yes, 2-No, 3-No letter sent, 98-Don't Know, 99-Refused.
9. HH address	Alphanumeric	Street address or nearest cross streets to household.
10. HH City	Alphanumeric	City where household is located.
11. HH State	Alphanumeric	State where household is located.
12. HH Zip Code	Numeric	Zip code of household address.
13. HH County	Numeric	Code indicating county in which household is located: 1-Tom Green County.
14. HH Study Area	Alphanumeric	Use "TG" to indicate household is in the Tom Green County study area.
15. HH Zone	Numeric	This field should be left blank-TxDOT or TTI will complete.
16. HH Longitude	Numeric	Longitude of household address to six decimal places. If unknown, it should be coded 888.888888.
17. HH Latitude	Numeric	Latitude of household address to six decimal places. If unknown, it should be coded 888.888888.
18. Number Persons	Numeric	Number of persons living in residence.
19. Number Employed	Numeric	Number of persons in household that are employed either full or part time.
20. Vehicles Available	Numeric	Number of cars, vans, light trucks, motorcycles available for use by the HH. 98-Don't Know, 99-Refused.
21. Vehicles Owned/Leased	Numeric	Combined number of cars, vans, light trucks, motorcycles owned or leased by members of the household. 98-Don't know, 99-Refused.
22. Bikes	Numeric	Number of working bicycles available for use by members of the household. 98-Don't know, 99-Refused.
23. Residence	Numeric	Code indicating the type of residence. 1-Unattached Single Family Home, 2-Condo, 3-Duplex, 4-Apartment, 5-Mobile Home, 96-Other, 98-Don't Know, 99-Refused.
24. Other Residence	Alphanumeric	If residence is coded as "other", this field contains a description of the type of residence.
25. Tenure	Numeric	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	Numeric	If tenure was less than five years, this code indicates if previous residence was in Tom Green County: 1-Yes, 2-No, 98-Don't Know, and 99-Refused.
27. Previous Zip Code	Numeric	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	Alphanumeric	Code indicating factors that influenced their decision to locate in their current household. If more than one, separate code numbers by semicolon. 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.

Record Type 1, Continued

29. Other Factors	Alphanumeric	If HH Factors field is coded as "other," this is a description of other factors influencing decision to locate in current household.
30. Income	Numeric	Code indicating combined annual income of all household members. 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
31. Day Visitors	Numeric	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	Numeric	Number of overnight visitors at this residence during their travel day. 98-Don't Know, 99-Refused.
33. Delivery Vehicle	Numeric	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	Numeric	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	Numeric	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	Numeric	Code indicating if household vehicles had GPS equipment installed for GPS survey: 1-Yes, 2-No.
37. Total HH Trips	Numeric	The total combined number of trips made by all persons in the household on the assigned travel day.

Record Type 2 – Person Information

This file contains information about each person in the Household Survey. The data in this record should be submitted as a comma-delimited file (Rec2.CSV) with information for each person entered in a separate row. Commas should not be used within individual fields.

<u>Data Field</u>	<u>Type</u>	<u>Description</u>
1. Record Type	Numeric	Code indicating type of record, here it should be 2.
2. Sample Number	Numeric	Unique number assigned to each household participating in survey.
3. Person Number	Numeric	Number assigned to each person in the household.
4. Relationship	Numeric	Code indicating relationship of person to the head of household. 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
5. Gender	Numeric	Gender of person: 1-Male, 2-Female, 98-Don't Know, 99-Refused.
6. Ethnicity	Numeric	Race or ethnicity of person. 1-Black/African American, 2-Hispanic/Mexican American, 3-Asian/Pacific Islander, 4-Native American, 5-White/Caucasian, 96-Other, 98-Don't Know, 99-Refused.
7. Other Ethnicity	Alphanumeric	Description of ethnicity if it is coded as "other."
8. Age	Numeric	Age of person. 998-Don't know, 999-Refused.
9. Licensed Driver	Numeric	Code indicating if person is a licensed driver (regardless of age): 1-Yes, 2-No, 98-Don't Know, 99-Refused.
10. Employment	Numeric	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	Numeric	If person is employed, this is a code indicating the person's 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.
12. Hours	Numeric	On average, the number of hours worked per week: 996-Varies from week to week, 998-Don't Know, 999-Refused.
13. Not Employed	Numeric	Code indicating status if person is 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.
14. Other Not Employed	Alphanumeric	Description of not employed status if coded as "other."
15. Commercial Vehicle Driver	Numeric	Code indicating if person is a commercial vehicle driver: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
16. Commercial Vehicle Type	Numeric	If person drives a 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 Commercial Vehicle Type	Alphanumeric	If commercial vehicle type is coded as "other," this field contains a description of the type of commercial vehicle.
18. Flex Time	Numeric	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	Numeric	Code indicating if person has more than one paying job: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
20. Employer Name	Alphanumeric	Name of person's primary employer.
21. Work Place Type	Numeric	Code indicating type of work place where person is employed. 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 or other school, 8-Residential, 9-Airport, 10-Eating Establishment, 96-Other, 98-Don't Know ,99-Refused.

Record Type 2, Continued

22. Other Work Place	Alphanumeric	Description if work place type is coded as "other."
23. Home Office	Numeric	Code indicating if work place is a home office or business operated out of the home: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
24. Telecommute	Numeric	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	Alphanumeric	Street address of work place or nearest intersecting street names.
26. Work Place City	Alphanumeric	City where work place is located.
27. Work Place State	Alphanumeric	State where work place is located.
28. Work Place County	Numeric	Code indicating county in which work place is located: 1-Tom Green County, 96-Other, 98-Don't Know, 99-Refused.
29. Other Work Place County	Alphanum LJ	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	Numeric	Zip code of work place address.
31. Work Place Study Area	Alphanumeric	Code indicating study area in which work address is located. Use "TG" if address is in the Tom Green County study area. If work address is outside the study area but in Texas, "TX" should be entered in this field. If the work address is outside Texas, "XX" should be entered in this field.
32. Work Zone	Numeric	This field should be left blank-TxDOT or TTI will complete.
33. Work Place Longitude	Numeric	Longitude of work place location to six decimal places. If within the study area being surveyed, but unknown it should be coded 888.888888. If outside the study area being surveyed but within Texas and unknown, it should be coded as 666.666666. Locations in Mexico should be coded 777.777777 and addresses outside of Texas and Mexico should be coded 999.999999.
34. Work Place Latitude	Numeric	Latitude of work place location to six decimal places. If within the study area being surveyed, but unknown it should be coded 888.888888. If outside the study area being surveyed but within Texas and unknown it should be coded as 666.666666. Locations in Mexico should be coded 777.777777 and addresses outside of Texas and Mexico should be coded 999.999999.
35. Days Worked	Numeric	Number of days per week person typically works. 98-Don't Know, 99-Refused.
36. Work at Home	Numeric	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	Numeric	Code indicating type of work place if person is employed at second job. 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 or other school, 8-Residential, 9-Airport, 10-Eating Establishment, 96-Other, 98-Don't Know, 99-Refused.
38. Other Second Job	Alphanumeric	Description of work place type for second job if it is coded as "other."
39. Second Job Employment Status	Numeric	If person is employed in a second job, this is a code indicating the person's employment status related to the second job. 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.
40. Total Hours	Numeric	Total hours on average person works per week at all jobs. 998-Don't Know, 999-Refused.
41. Primary Occupation	Numeric	Code indicating the type of occupation for primary job. 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-Other/Not applicable (unemployed/student/retired) 98-Don't know 99-Refused

Record Type 2, Continued

42. Primary Industry	Numeric	Code indicating the type of industry worked in for primary job. 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 service 12-Other services (except public administration) 13-Public Administration 96-Not Applicable-(unemployed, student, retired) 98-Don't Know 99-Refused
43. Secondary Occupation	Numeric	Code indicating the type of occupation for secondary job. 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-Other/Not applicable (unemployed/student/retired) 98-Don't know 99-Refused
44. Secondary Industry	Numeric	Code indicating the type of industry worked in for secondary job. 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 service 12-Other services (except public administration) 13-Public Administration 96-Not Applicable-(unemployed, student, retired) 98-Don't Know 99-Refused
45. Student Status	Numeric	Code indicating if person is enrolled in any type of school: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
46. School Type	Numeric	Code indicating type of school attended. 1-Day Care/Pre-School, 2-K-12th, 3-Post Secondary/College/Trade, 96-Other, 98-Don't Know, 99-Refused.
47. Other School Type	Alphanumeric	Description of school type if coded as "other."
48. Hours Enrolled	Numeric	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	Numeric	Number of days person rode bike in last seven days. 98-Don't Know, 99-Refused.
50. Bike Purpose	Numeric	Code indicating the most common trip purpose for person's bike trips. 1-Work, 2-School, 3-Shopping, 4-Visiting, 5-Recreation/Exercise, 96-Other, 98-Don't Know, 99-Refused.
51. Disability	Numeric	Code indicating if person has transportation disability: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
52. Travel	Numeric	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.

Record Type 2, Continued

53. Person trips	Numeric	The total number of trips the person made on his/her travel day.
54. Why No Travel	Alphanumeric	Description of why the person did not make any trips on the travel day (if applicable).
55. Diary Use	Numeric	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	Numeric	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	Numeric	This item identifies the person by person number who provided the information. 98-Don't know, 99-Refused.
58. Date data were retrieved	Numeric	Six-digit date (MMDDYY) that the travel data were retrieved (e.g., 013014).
59. Travel to Austin-San Antonio	Numeric	Code indicating frequency of travel to Austin-San Antonio. 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
60. Travel to Dallas-Ft. Worth	Numeric	Code indicating frequency of travel to Dallas-Ft. Worth. 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
61. Travel to Houston	Numeric	Code indicating frequency of travel to Houston. 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
62. Passenger Rail to Houston, Austin-San Antonio or Dallas-Ft. Worth	Numeric	Code indicating whether respondent would use passenger rail service to Houston, Austin-San Antonio or Dallas-Ft. Worth: 1-Yes, 2-No, 3-Possibly.

Record Type 3 – Vehicle Information

This file contains information about each vehicle in the Household Survey. The data in this record should be submitted as a comma-delimited file (Rec3.CSV) with information for each vehicle entered in a separate row. Commas should not be used within individual fields.

<u>Data Field</u>	<u>Type</u>	<u>Description</u>
1. Record Type	Numeric	Code indicating type of record, here it should be 3.
2. Sample Number	Numeric	Unique number assigned to each household participating in survey.
3. Vehicle Number	Numeric	Unique number assigned to each household vehicle in survey.
4. Type of Vehicle	Numeric	Code indicating type of vehicle. 1-Motorcycle (includes mopeds), 2-Car (includes station wagons), 3-Van (mini and passenger), 4-Sport Utility Vehicle, 5-Pickup Truck, 6-Cargo Van, 7-Service Vehicle, 96-Other, 98-Don't Know, 99-Refused.
5. Other Vehicle Type	Alphanumeric	Description of type of vehicle if coded as "other."
6. Year	Numeric	Four-digit year vehicle was manufactured. 9998-Don't Know, 9999-Refused.
7. Make	Numeric	Make of vehicle. See vehicle make codes below.
8. Other Make	Alphanumeric	Make of vehicle if coded as "other."
9. Model	Alphanumeric	Model of vehicle.
10. Type of Fuel	Numeric	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	Alphanumeric	Description of fuel type if coded as "other."
12. Commercial Use	Numeric	Code indicating if vehicle is used for commercial purposes: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
13. Commercial Type of Use	Numeric	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 Type of Use	Alphanumeric	If commercial type of use is coded as "other," this field contains a description of the type of commercial use.
15. Odometer	Numeric	Odometer reading on vehicle at beginning of travel day. 99999998-Don't Know, 99999999-Refused,
16. Ownership	Numeric	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	Numeric	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.

Record Type 3, Continued

VEHICLE MAKE CODES

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

Record Type 4 – Trip Information

This file contains information about each trip in the Household Survey. The data in this record should be submitted as a comma-delimited file (Rec4.CSV) with information for each trip entered in a separate row. Commas should not be used within individual fields.

<u>Data Field</u>	<u>Type</u>	<u>Description</u>
1. Record Type	Numeric	Code indicating type of record. Here it should be 4.
2. Sample Number	Numeric	Unique number assigned to each household participating in survey.
3. Month	Numeric	Two-digit month survey travel occurred.
4. Day	Numeric	Two-digit day survey travel occurred.
5. Year	Numeric	Four-digit year survey travel occurred.
6. Person Number	Numeric	Number assigned to the person doing this activity.
7. Activity/Trip Number	Numeric	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	Numeric	Code indicating the type of activity. For activity 0 (where day began), this should be coded as 1 if it began at home, 4 if day began at work, or as 96 if it began at another location. 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, kinder, 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 98-Don't Know 99-Refused
9. Other Activity Description	Alphanumeric	Description of activity if coded as "other activity."
10. Location	Alphanumeric	Name of location where activity took place.
11. Location Address	Alphanumeric	Street address of location or names of nearest intersecting streets.
12. Location City	Alphanumeric	City where activity took place.
13. Location State	Alphanumeric	State where activity took place.
14. Location County	Numeric	Code indicating county of location where activity took place: 1-Tom Green County, 96-Other, enter name of county in next field, 98-Don't Know, 99-Refused.
15. Other County Location	Alphanumeric	If county location is coded as "other," this field should contain the name of the county where location is.
16. Location Zip Code	Numeric	Zip code of location address.
17. Exit Route Name	Alphanumeric	If location is outside of the study area being surveyed, this is the name of the highway/route/road used to exit the study area. After the facility name, please indicate the side of the study area that the facility is on (N,S,E,W,NE,SE,SW,NE).
18. External Zone	Numeric	This field should be left blank-TxDOT or TTI will complete.
19. Location Study Area	Alphanumeric	Code indicating study area in which activity address is located. Use "TG" if address is in Tom Green County. If location is outside the study area being surveyed but within Texas, this field should be coded "TX". If location is outside Texas, "XX" should be coded in this field.

Record Type 4, Continued

20. Location Zone Number	Numeric	This field should be left blank-TxDOT or TTI will complete.
21. Location Longitude	Numeric	Longitude of location to six decimal places. If within the study area being surveyed, but unknown it should be coded 888.888888. If outside the study area being surveyed but within Texas and unknown it should be coded as 666.666666. Locations in Mexico should be coded 777.777777 and addresses outside of Texas and Mexico should be coded 999.999999.
22. Location Latitude	Numeric	Latitude of location to six decimal places. If within the study area being surveyed, but unknown it should be coded 888.888888. If outside the study area being surveyed but within Texas and unknown it should be coded as 666.666666. Locations in Mexico should be coded 777.777777 and addresses outside of Texas and Mexico should be coded 999.999999.
23. Type of Place	Numeric	Code indicating the type of place at this location. 1-Residential 2-Residential Type Work Place 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-Gov/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
24. Other Type of Place	Alphanumeric	Description of type of place where activity occurred if coded as "other."
25. Purpose	Numeric	Purpose of trip, generated based on the activity type. 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 96) 98-Don't Know 99-Refused

Record Type 4, Continued

26. Mode of Travel	Numeric	Code indicating mode used to travel to this location. 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
27. Other Mode of Travel	Alphanumeric	Description of mode of travel if coded as "other."
28. Number of People	Numeric	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, bicycle, walk, etc.) should be coded 96.
29. HH Members	Numeric	Of those in the vehicle, how many were household members. Field should be blank if number of people was coded 96.
30. Persons on Trip	Alphanumeric	Who was/were the household member(s) traveling with you? Code person numbers separated by semicolons (e.g., 2; 3).
31. Non HH Members	Numeric	Compute non household members as number of people minus number of household members. If number of people is coded as 96, this field should be blank.
32. HH Vehicle	Numeric	Was a HH vehicle used to make this trip? 1=Yes, 2=No, 98-Don't Know, 99-Refused.
33. Vehicle Used	Numeric	If a household vehicle was used for travel, this is the vehicle number (this number should match the number used for corresponding vehicle in Record Type 3.). If other vehicle is used, this should be coded as 96.
34. Body Type of Other Vehicle	Numeric	Body type if non-household vehicle was used. 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
35. Other Body Type	Alphanumeric	Description of body type if coded as "other."
36. Year of Other Vehicle	Numeric	Year of other vehicle used for trip. 9998-Don't Know, 9999-Refused.
37. Make of Other Vehicle	Numeric	Make of other vehicle used for trip. See codes listed in Record 3.
38. Other Make Description	Alphanumeric	If make of other vehicle is coded as "other", this field contains a description of the vehicle make.
39. Model of Other Vehicle	Alphanumeric	Model of other vehicle used for trip.
40. Fuel for Other Vehicle	Numeric	Type of fuel used by other 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 Type	Alphanumeric	Description of fuel for other vehicle, if coded as "other."

Record Type 4, Continued

42. Commercial Use of Other Vehicle	Numeric	Code indicating if other vehicle is used for commercial purposes: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
43. Commercial Type of Use of Other Vehicle	Numeric	If other vehicle is used for commercial purposes, this field indicates 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. Other Commercial Type of Use	Alphanumeric	If commercial type of use code above is coded as "other," this field contains a description of the commercial type of use.
45. To Bus Stop	Numeric	If person took the bus when coming to this location, this code indicates if they walked more than one block to get to bus stop: 1-Yes, 2-No, 98-Don't Know, 99-Refused. Populate this field if Bus mode 12 or 13 was used.
46. Off Bus Location	Alphanumeric	Street address or names of nearest intersecting streets where person got off of bus. Populate this field if Bus mode 12 or 13 was used. This location may be different from that indicated in item 11.
47. Parking Location	Alphanumeric	If a vehicle was used to arrive at this location and the vehicle was parked, this field should contain the street address or the names of the nearest intersecting streets where vehicle was parked.
48. Pay Parking	Numeric	Code indicating if person paid to park vehicle at this location: 1-Yes, 2-No, 98-Don't Know, 99-Refused.
49. Parking Cost	Numeric	If person paid to park vehicle at this location, enter amount paid for parking in dollars and cents (e.g., 2.50).
50. Parking Payment Method	Numeric	If person paid to park vehicle at this location, enter time period for parking cost payment: 1-Hourly, 2-Daily, 3-Weekly, 4-Monthly, 5-Annually, 96-Other, 98-Don't Know, 99-Refused.
51. Arrival Hour	Numeric	Two-digit hour that person arrived at this location (in military time e.g., 08). For activity 0, this field should be left blank.
52. Arrival Minute	Numeric	Two-digit minute that person arrived at this location (e.g., 56). For activity 0, field should be left blank.
53. Departure Hour	Numeric	Two-digit hour that person departed this location. Hour should be expressed in terms of military time (e.g., 18). If this was the last location of the day, this field should be blank.
54. Departure Minute	Numeric	Two-digit minute that person departed this location (e.g., 00). If this was the last location of the day, this field should be blank.

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

This file contains information about each GPS-equipped vehicle in the Household Survey. The data in this file should be submitted as a comma-delimited file (GpsAdmin.CSV) with information for each GPS-equipped vehicle entered in a separate row. Commas should not be used within individual fields.

<u>Data Field</u>	<u>Type</u>	<u>Description</u>
1. Data File Name	Alphanumeric	Name assigned to the data file containing the GPS data for this vehicle. Naming convention is MMDDYY_XXXX where MM is the survey month, DD is the survey day, YY is the last two digits of the survey year, and XXXX is the identification number assigned to the GPS unit installed in the vehicle.
2. Sample Number	Numeric	Unique number assigned to each household participating in survey.
3. Vehicle Number	Numeric	Unique number assigned to each household vehicle in survey. This number should match the number used for this vehicle in Record Type 3.
4. Survey Year	Numeric	Four-digit year survey travel occurred.
5. Vehicle Year	Numeric	Year vehicle was manufactured. 9998-don't know, 9999-Refused.
6. Vehicle Make	Alphanumeric	Make of vehicle.
7. Vehicle Model	Alphanumeric	Model of vehicle.
8. Begin Odometer	Numeric	Odometer reading on vehicle when GPS unit was installed.
9. End Odometer	Numeric	Odometer reading on vehicle when GPS unit was removed.
10. GPS Installation Date	Numeric	Six-digit date (MMDDYY) that the GPS unit was installed (e.g. 012814)
11. GPS Installation Time	Numeric	Time GPS unit was installed (4 digits in military time e.g. 1354).
12. GPS Removal Date	Numeric	Six-digit date (MMDDYY) that the GPS unit was removed (e.g. 013014)
13. GPS Removal Time	Numeric	Time GPS unit was removed (4 digits in military time e.g. 0906).

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

These files contain the second-by-second travel data for each GPS unit deployed in the Household Survey. These files should be submitted in a comma-delimited format with the 6-digit survey date (MMDDYY) and GPS Unit Number included in the file name (e.g. 012914_1234.CSV). The travel data obtained from each GPS unit must be provided in a separate file. Commas should not be used within individual fields.

<u>Data Field</u>	<u>Type</u>	<u>Description</u>
1. GPS Unit Number	Numeric	Unique number assigned to the GPS unit used to collect the data.
2. Sample Number	Numeric	Unique non-zero number assigned to each household participating in survey.
3. Vehicle Number	Numeric	Unique number assigned to each household vehicle in survey. This number should match the number used for this vehicle in Record Type 3.
4. GMT Date	Alphanumeric	Greenwich mean date stamp. MM/DD/YYYY with leading zeros for single digit values.
5. GMT Time	Alphanumeric	Greenwich mean time stamp. HH:MM:SS with leading zeros for single digit values.
6. Local Date	Alphanumeric	Local date stamp. MM/DD/YYYY with leading zeros for single-digit values.
7. Local Time	Alphanumeric	Local time stamp. HH:MM:SS with leading zeros for single digit values.
8. Latitude	Numeric	Latitude in degrees to 6 decimal places.
9. Longitude	Numeric	Longitude in degrees to 6 decimal places.
10. Elevation	Numeric	Elevation in feet
11. Velocity	Numeric	Speed in miles per hour to 2 decimal places (e.g., 34.26)
12. Heading	Numeric	Heading of vehicle in degrees to 2 decimal places (e.g., 228.91).