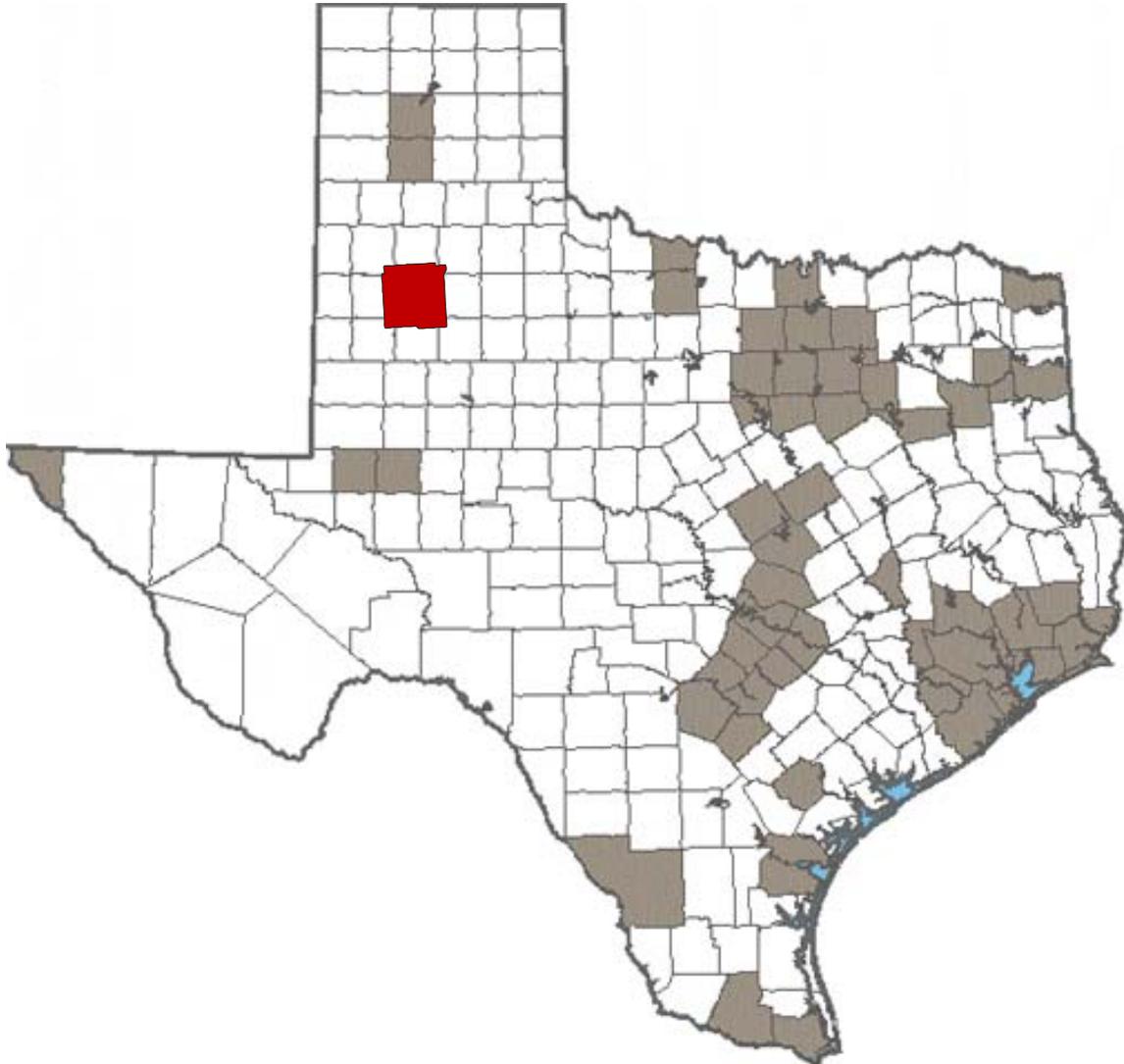


2006 - 2007 Lubbock MPO Household Travel Survey Technical Summary



Prepared by the
Texas Transportation Institute
April 2012

**2006-2007 Lubbock Metropolitan Planning Organization
Household Travel Survey
Technical Summary**

Texas Department of Transportation Travel Survey Program

by

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Performed in cooperation with the
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and the

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INTRODUCTION

From 2005 to 2010, the Transportation Planning and Programming Division (TPP) of the Texas Department of Transportation (TxDOT) sponsored a comprehensive set of travel surveys in the Lubbock Metropolitan Planning Organization (MPO) study area, located in Lubbock County in Northwest Texas. The purpose of the surveys was to collect data and information needed as input to the Lubbock travel demand model for the Lubbock MPO planning area. The model is an important planning tool used to forecast future traffic levels on area roadways, evaluate the region's transportation plan, and aid 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 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 origin-destination travel surveys were conducted in the JOHRTS area, including a household survey, a work place survey, 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 the travel demand model. All surveys were designed to capture characteristics of weekday travel during the school year.

This report summarizes the results of the household survey for the Lubbock MPO study 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 pre-determined 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 was 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 for the total person trips in the survey area. Figure 1 shows the survey area. The number of households in the Lubbock County area in 2006-2007 was estimated from the 2000 census and the Texas State Data Center (TSDC) population projections for Lubbock County. Table 1 shows the estimated number of households in the study area in 2006-2007, the number of households surveyed, and the distribution of the number of households surveyed stratified by household size and household income range.



Figure 1. Lubbock MPO Household Survey Area.

A total of 1,506 households were surveyed. The minimum number of households surveyed in any household size/income range cell was 29 and the maximum number surveyed was 120. The higher number of households surveyed in household sizes one and two is desirable due to the

high number of households with one or two persons. Of the estimated 97,598 households in Lubbock County, 26 percent are households with one person and 33 percent are households with two persons — 59 percent of the households are one- or two-person households.

Table 1. Estimated Number of 2006 Households, Number of Households Surveyed, and Percent of Surveyed Households Stratified by Household Size and Income Range.

Income Range	Household Size					
	1	2	3	4	5+	Total
Estimated 2006-2007 Number of Households						
\$0 to \$14,999	10,869	4,537	2,000	1,181	751	19,338
\$15,000 to \$29,999	6,684	5,961	2,908	1,971	1,405	18,929
\$30,000 to \$49,999	4,937	7,708	4,098	3,395	2,527	22,665
\$50,000 to \$74,999	1,912	5,698	3,210	2,927	2,205	15,952
\$75,000 +	1,161	8,450	4,439	3,805	2,859	20,714
Totals	25,563	32,354	16,655	13,279	9,747	97,598
Number of Households Surveyed						
\$0 to \$14,999	38	54	49	39	38	218
\$15,000 to \$29,999	37	85	63	63	50	298
\$30,000 to \$49,999	30	103	72	65	50	320
\$50,000 to \$74,999	29	91	71	75	39	305
\$75,000 +	33	120	82	84	46	365
Totals	167	453	337	326	223	1,506
Percent of Households Surveyed						
\$0 to \$14,999	2.5	3.6	3.3	2.6	2.5	14.5
\$15,000 to \$29,999	2.5	5.6	4.2	4.2	3.3	19.8
\$35,000 to \$49,999	2.0	6.8	4.8	4.3	3.3	21.2
\$50,000 to \$74,999	1.9	6.0	4.7	5.0	2.6	20.2
\$75,000 +	2.2	8.0	5.4	5.6	3.1	24.3
Totals	11.1	30.0	22.4	21.7	14.8	100.0

HOUSEHOLD SURVEY RESULTS

This survey represents a sample of household demographic and travel characteristics for a Monday through Friday weekday during the school year in the fall of 2006 and the spring of 2007. The survey data was collected from travel diaries completed on a specified travel day for all occupants of 1,506 households located in the Lubbock County area, as shown in Figure 1.

Key Points Regarding Household Survey Data

- The survey data is for an average weekday in the Fall of 2006 and the Spring of 2007.
- 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, or in households without phone service 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 or tourists or persons staying in hotels.
- The estimates for 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 is for trips that began and ended within the Lubbock County area. Trips that began inside the county area and ended outside the planning area or vice versa are summarized in the external station survey report.

Findings of the Survey

For the Lubbock County area:

- 97 percent of the households had a vehicle available;
- 98 percent of the households had a licensed driver;
- Trip rates per household increased with household size, with household income, and with vehicle availability;
- The average vehicle occupancy was 1.44 persons per vehicle;
- Over 95 percent of all person trips were made in a personal-use vehicle;

- Of the household population that traveled, 67 percent drove a vehicle, 29 percent rode as a passenger in a vehicle, less than 2 percent walked, and less than 1 percent used public transportation;
- Slightly less than 16 percent of the total household population did not make an internal trip within the planning area on their survey day;
- On average, each person made 3.8 person trips per day and each household made 9.7 person trips per day; and
- The peak hour for household travel was from 7:01 a.m.-to-8:00 a.m. during which 11 percent of the trip starts occurred. The second highest hour for household trip starts was from 5:01 p.m.-to-6:00 p.m. when 10 percent of the daily trip starts occurred.

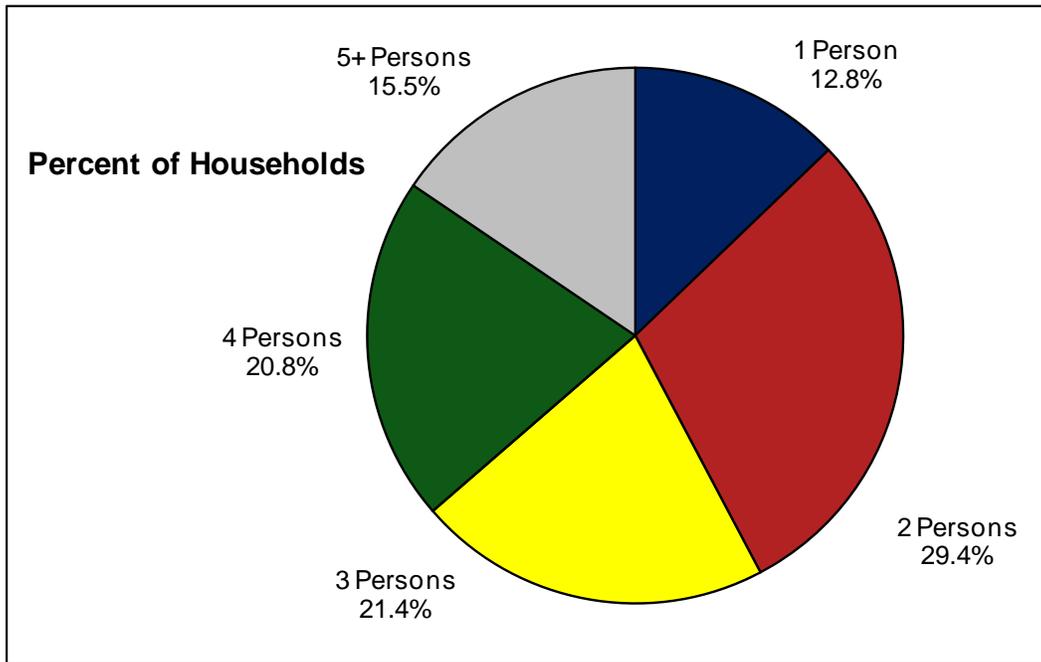
HOUSEHOLD CHARACTERISTICS

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 the time-of-day that trips are made. For this survey, households include only those 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 2 shows the distribution of households by household size for 2006-2007. 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. Average household size in the Lubbock County study area in 2006-2007 estimated from the survey was 2.6 persons per household, equal to the 2.6 persons per household in 1990. For the Lubbock County travel model, three variables — household size, household income, and the number of persons employed in the household — were used to stratify trip rates for the home-based work (HBW) trip purpose. For the home-based non-work (HBNW) and the non-home based (NHB) trip purposes, two variables — household size and household income — were used to stratify trip rates.

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.

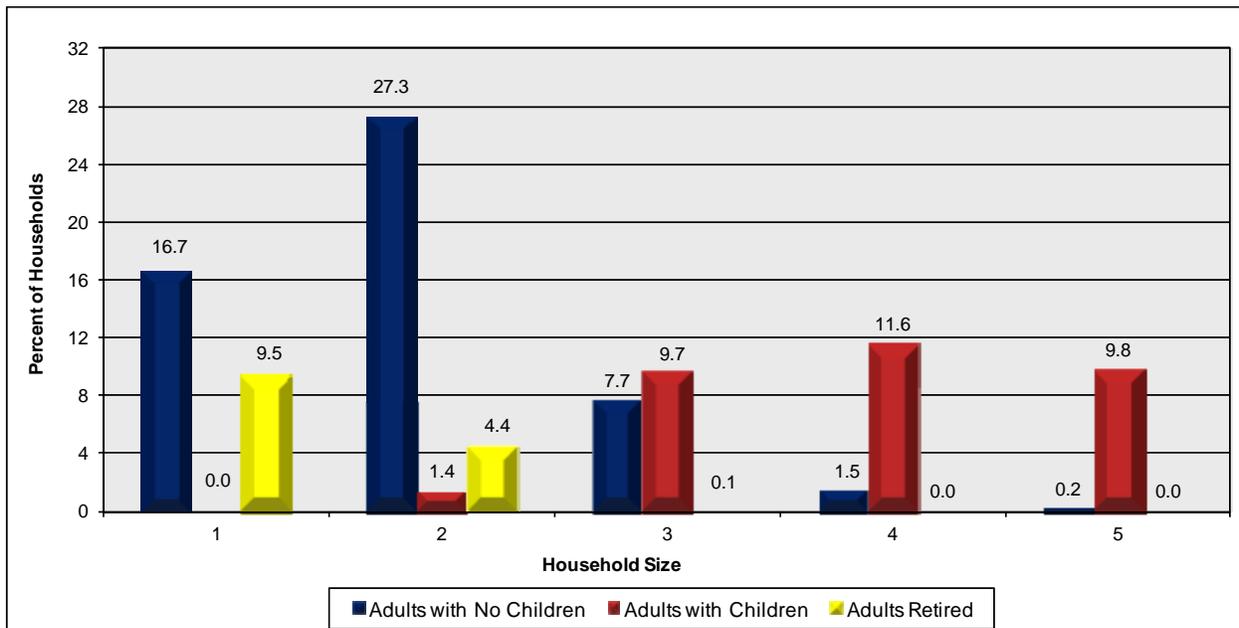


Source: Lubbock County Household Travel Survey.

Figure 2. Distribution of Households by Household Size.

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 97,598 households in the Lubbock County travel area in 2006-2007. Figure 3 shows the distribution of these 97,598 households by those with no children and not retired, those with children, and those with only retired persons. The statistical distribution of the 97,598 households include the following: one-third of the households (33 percent) have children, 53 percent of the households have no children, and 14 percent of the households were retired persons.

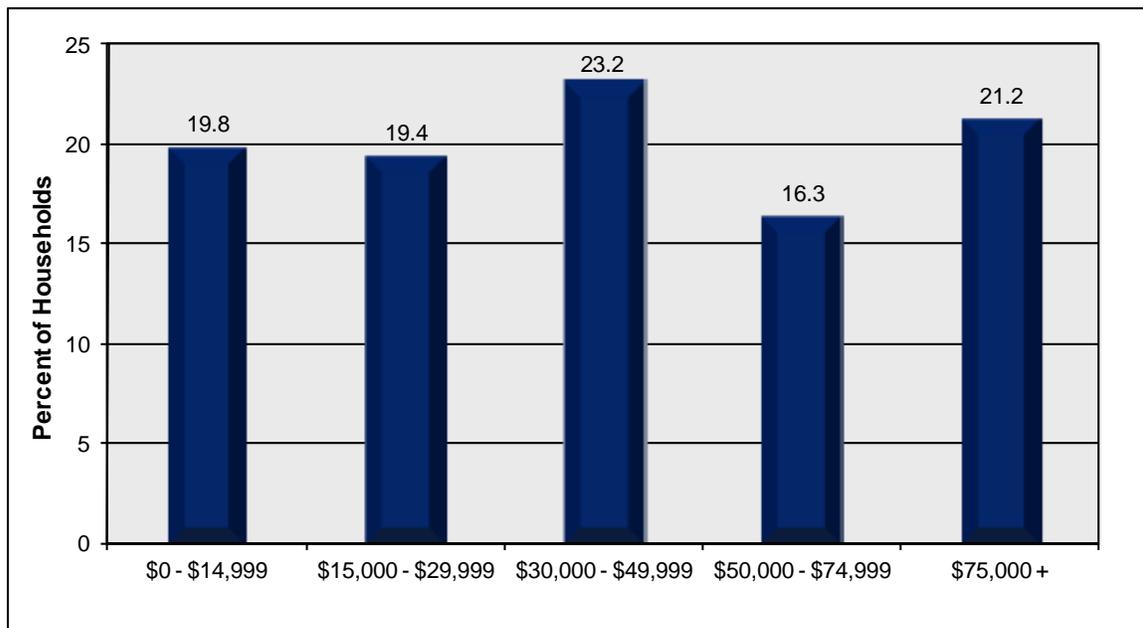


Source: Lubbock County Household Travel Survey and TTI Analysis. Note: The data represent households within the Lubbock County travel survey area. The data does not include residents who did not report age. Adults are persons 18 years of age and older. Retired households have only retired persons. If one person in the household was retired and the other adult was employed, that household was not counted as a retired household.

Figure 3. Distribution of Households by 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 4 shows the distribution of the 97,598 expanded households in the survey by the combined annual household income range.

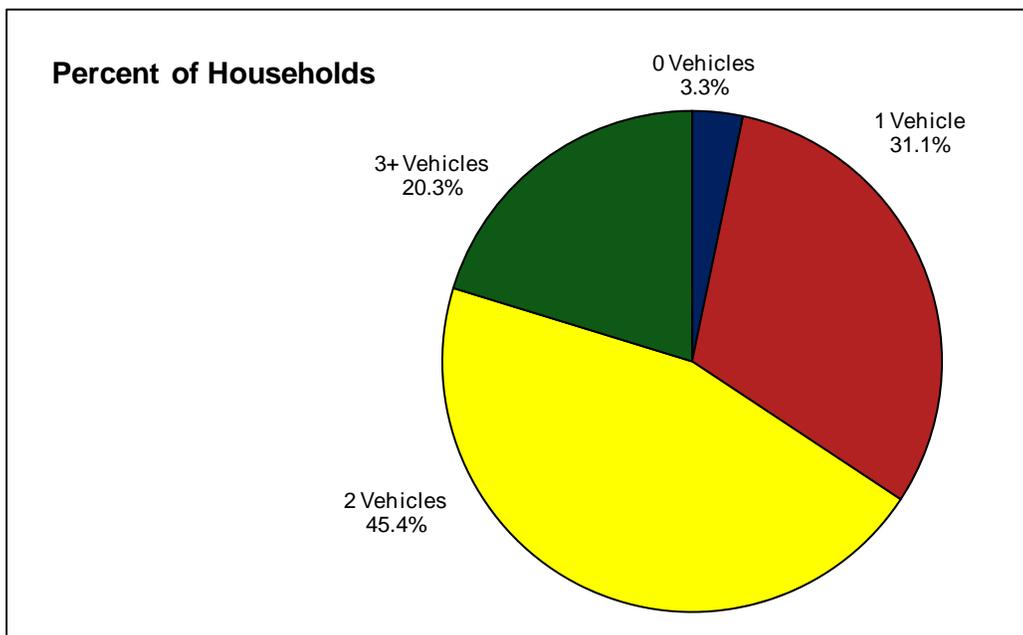


Source: Lubbock County Household Travel Survey and TTI Analysis.

Figure 4. Distribution of Households by Household Income Range.

Household Vehicle Availability and Licensed Drivers

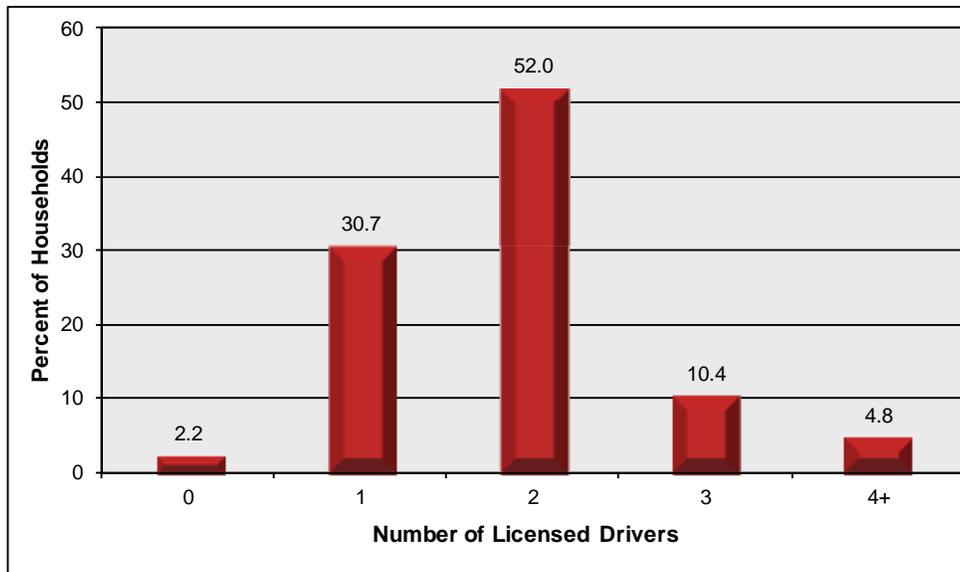
In general, as the number of vehicles available to the household increases, daily household travel increases. This household characteristic also impacts forecasting the demand for public transportation. As household vehicle availability increases, the household demand for public transportation tends to decrease. Figure 5 shows the distribution of the 97,598 expanded households in the survey by the number of vehicles available. More than 3 percent of the households did not have a vehicle available. The average number of vehicles available per household was 1.9.



Source: Lubbock County Household Travel Survey and TTI Analysis. Note: A household vehicle is any motorized vehicle available to a household for travel including motorcycles, trucks, vans, automobiles, sport utility vehicles, etc.

Figure 5. Distribution of Households by Number of Vehicle Available.

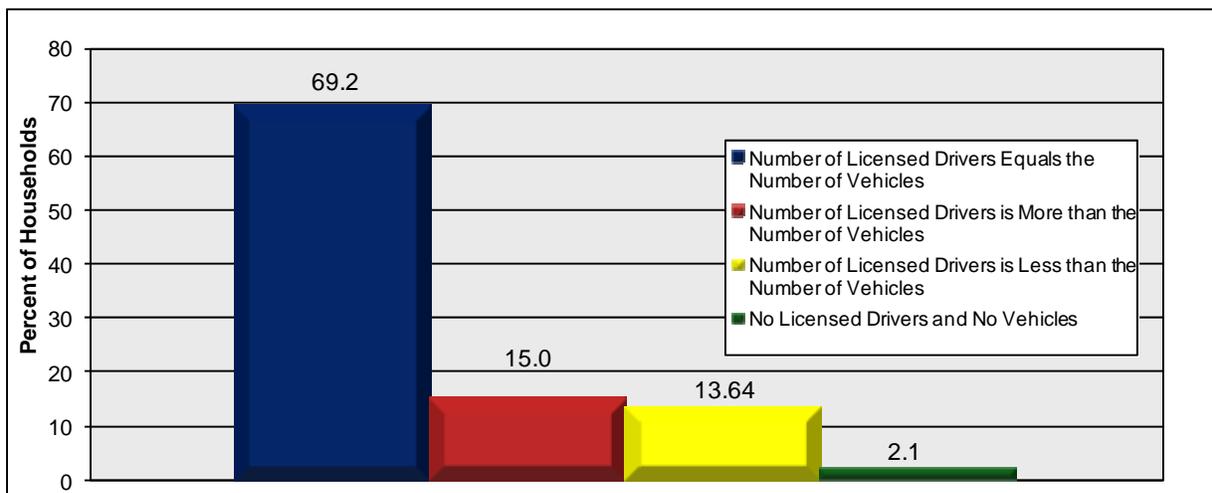
Figure 6 shows the distribution of the 97,598 expanded households by the number of licensed drivers per household. More than 2 percent of the households did not have a licensed driver.



Source: Lubbock County Household Travel Survey and TTI Analysis.

Figure 6. Distribution of Households by Number of Licensed Drivers.

Figure 7 shows the distribution of the 97,598 expanded households by the number of licensed drivers and the number of vehicles available. For the majority of households (69 percent), the number of licensed drivers and the number of vehicles available is equal. For 15 percent of the households, the number of licensed drivers is less than the number of vehicles available, and for slightly less than 14 percent of the households, the number of licensed drivers is greater than the number of vehicles available. Only 2 percent of the households have neither a licensed driver nor a vehicle available.

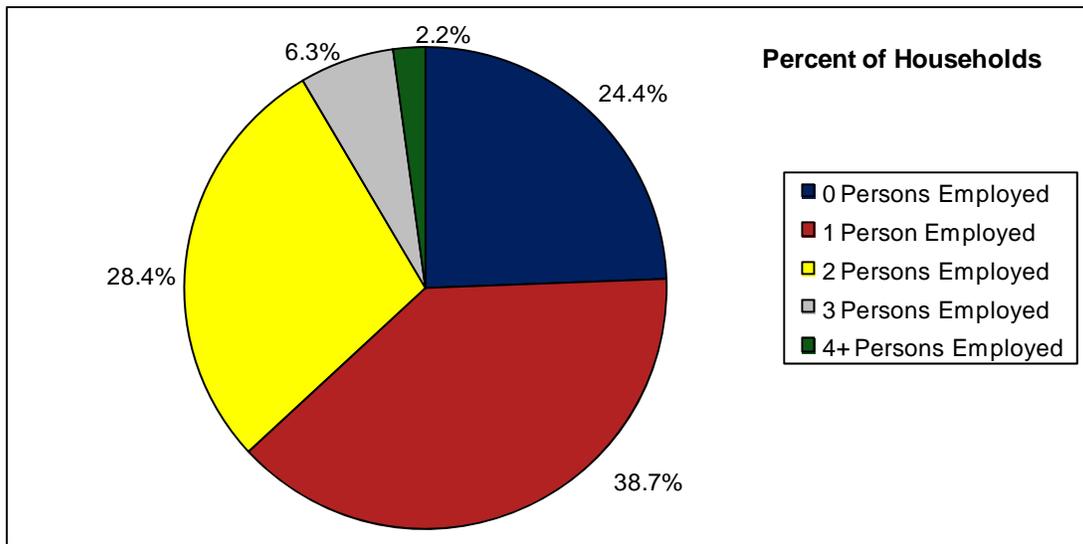


Source: Lubbock County Household Travel Survey and TTI Analysis.

Figure 7. Distribution of Households by Licensed Drivers and Vehicle Availability.

Household Employment

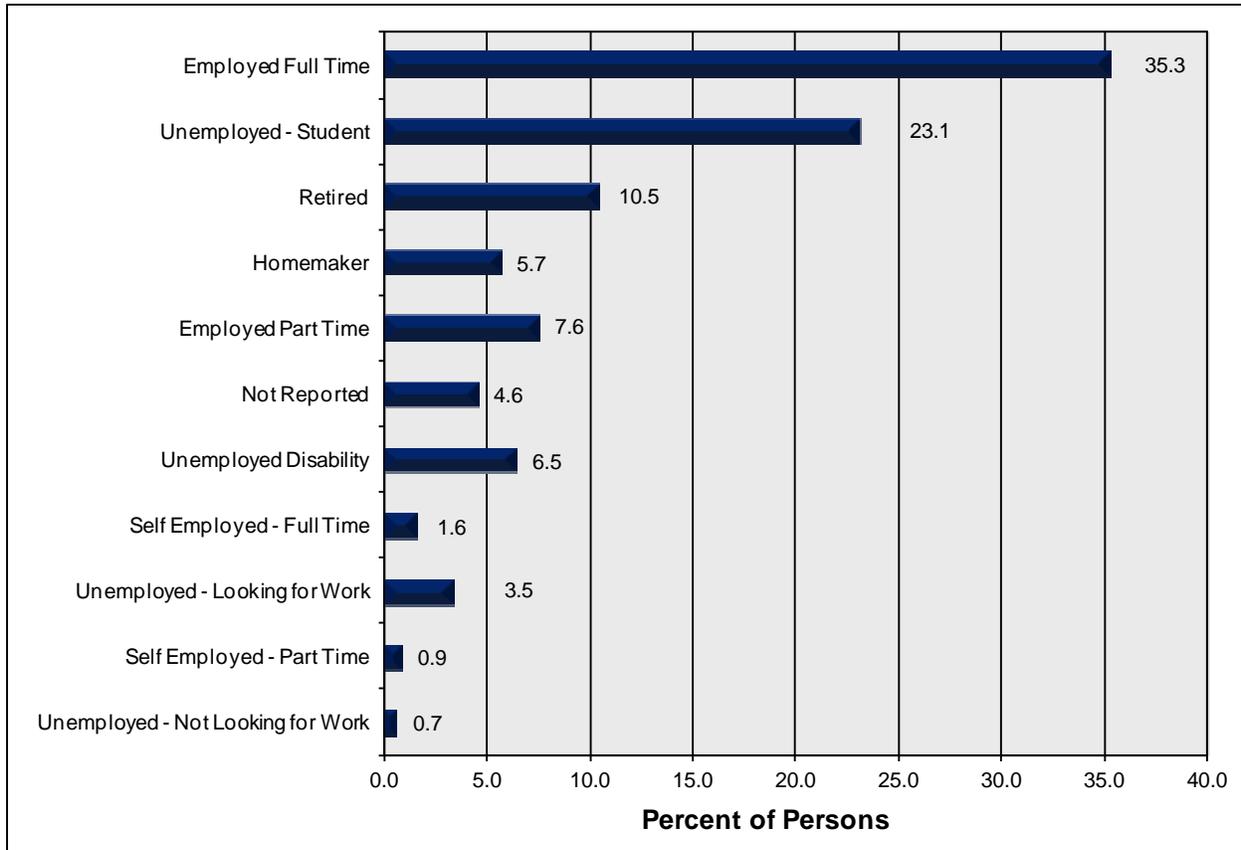
The 97,598 expanded households included 249,909 persons for an average of 2.6 persons per household. Figure 8 shows the distribution of the 97,598 expanded households by the number of persons employed.



Source: Lubbock County Household Travel Survey and TTI Analysis.

Figure 8. Distribution of Households by Number of Persons Employed.

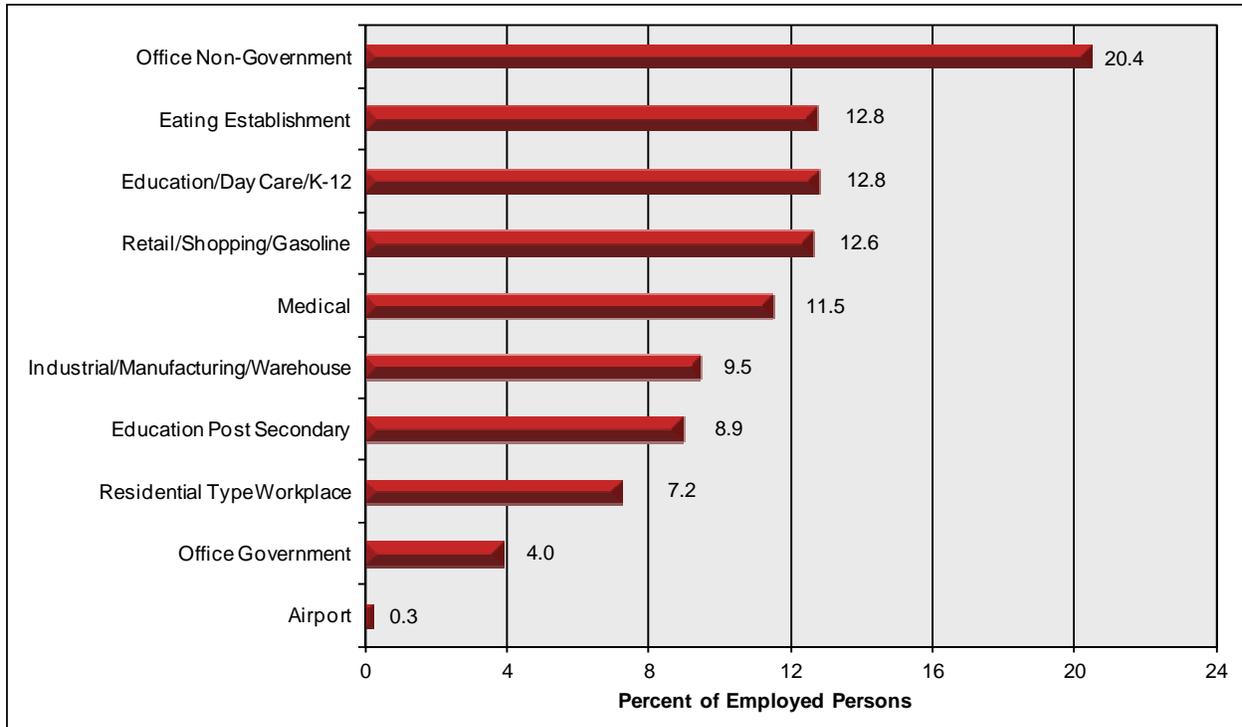
Figure 9 shows the distribution of all persons regardless of age by employment status. More than 35 percent of the population is employed full time and over 23 percent of the population is students. More than 10 percent of the population is retired.



Source: Lubbock County Household Travel Survey and TTI Analysis.

Figure 9. Distributions of Persons by Employment Status.

Figure 10 shows the distribution of the employed persons by the type of employer. The 97,598 households had 120,890 employed persons for an average of 1.24 employed persons per household. The “Office Non-government” employer type accounted for the largest percentage of employed persons, reporting more than 20 percent. The employer-type “Education Day Care & K-12th” includes the second largest percentage of employed persons, having slightly less than 13 percent of those employed.

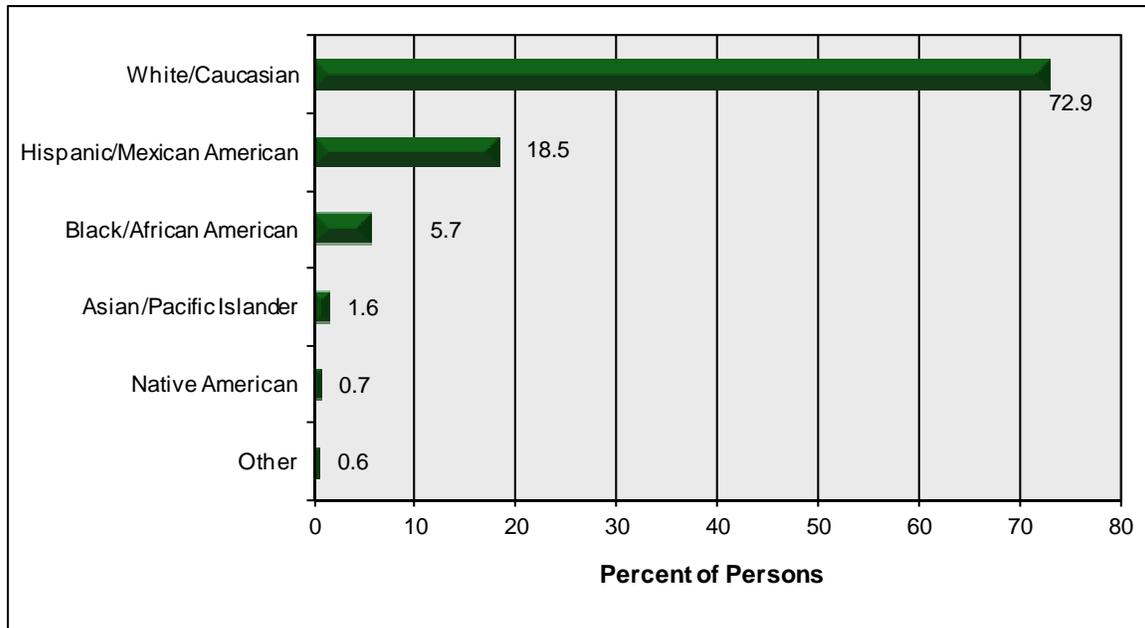


Source: Lubbock County Household Travel Survey and TTI Analysis.

Figure 10. Distribution of Employed Persons by Employer Type.

Ethnicity

Figure 11 shows the distribution of the 249,909 persons by ethnicity.



Source: Lubbock County Household Travel Survey and TTI Analysis.

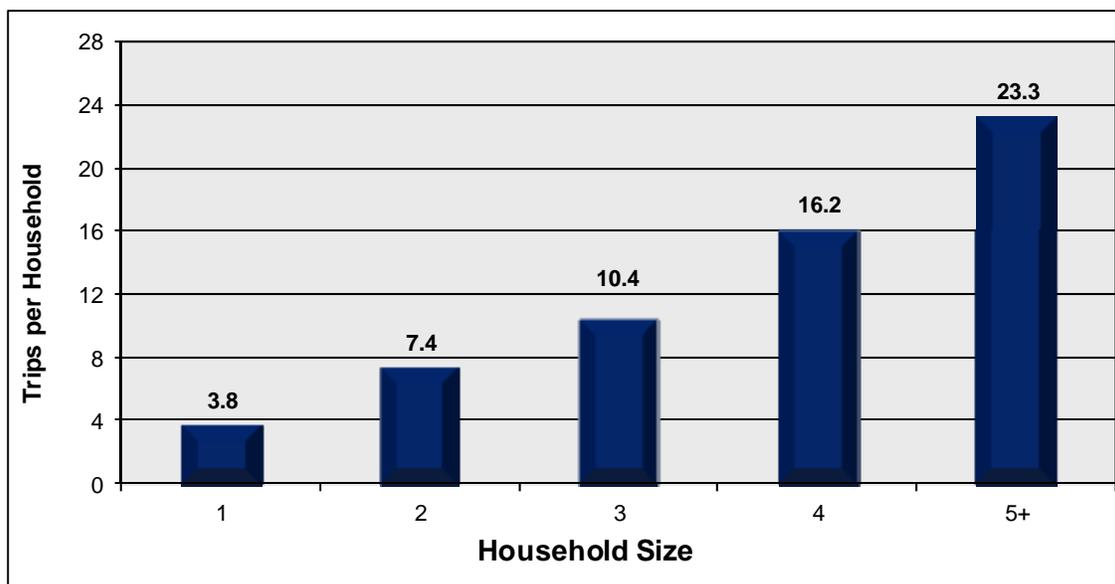
Figure 11. Distribution of Persons by Ethnicity.

TRAVELER CHARACTERISTICS

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

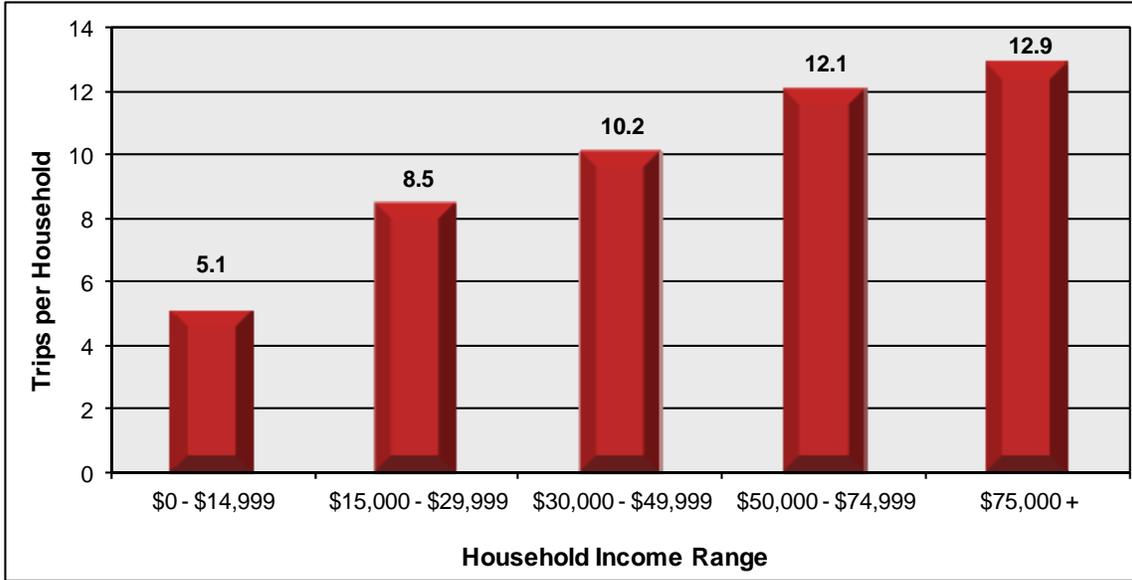
Household Trip Rates and Vehicle Occupancy

The household trip rates in this section are for person trips made in a vehicle either as the driver or as a passenger. Figure 12 shows household trip rates as a function of household size. As the household size increases, household trip rates increase and become high for large household sizes. For travel forecasting applications, households with five or more household members are grouped and an average trip rate is used for the group. Figure 13 shows the household trip rates as a function of the household income range. As expected, as household income increases, the household trip rate increases.



Source: Lubbock County Household Travel Survey and TTI Analysis.

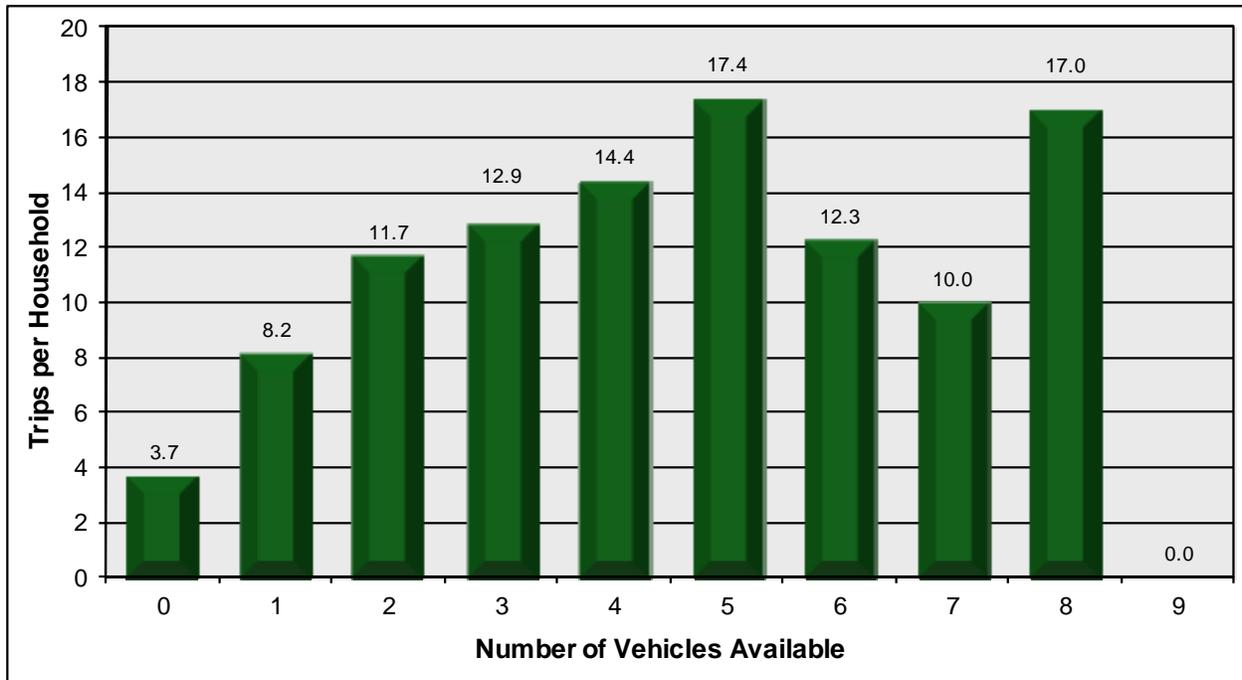
Figure 12. Household Trip Rates by Household Size.



Source: Lubbock County Household Travel Survey and TTI Analysis.

Figure 13. Household Trip Rates by Household Income Range.

Figure 14 shows the household trip rates as a function of the number of vehicles available to household members for travel. Again, as expected, as the number of vehicles available to the household increase, the household trip rate increases, but the rate increases at a lower rate after two vehicles. Note that households with no vehicle available do make a meaningful number of trips. The inconsistency in trip rates for households with six or more vehicles available can be attributed to small sample sizes for these categories.



Source: Lubbock County Household Travel Survey and TTI Analysis.

Figure 14. Household Trip Rates by Number of Vehicles Available.

Table 2 shows the person trip rates cross classified by household size and household income for all internal trip purposes combined for trips that began and ended inside the household travel survey area. These trip rates are for all trips by all modes including transit, bicycle, and walk trips. For travel forecasting applications, the cross-classified trip rates are disaggregated by trip purpose into HBW trips, HBNW trips, and NHB trips. (See the terminology section for the definitions of these terms.) As a part of the travel forecasting process, the person trips are divided among the modes during the mode split step. The average, internal to the Lubbock County area, person trip rate for all households was 9.7 trips per household.

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

Household Income Range	Household Size				
	1	2	3	4	5 +
\$0 - \$14,999	2.93	5.64	7.29	13.3	14.69
\$15,000 - \$29,999	4.44	7.58	9.99	11.97	23.82
\$30,000 - \$49,999	4.66	7.42	10.06	17.75	19.34
\$50,000 - \$74,999	4.31	6.98	10.57	15.09	31.23
\$75,000 +	3.61	8.63	12.30	18.80	23.15

Source: Lubbock County Household Travel Survey and TTI Analysis.

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 for all households was 1.44 persons per vehicle.

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

Household Income Range	Household Size				
	1	2	3	4	5 +
\$0 - \$14,999	1.44	1.24	1.76	2.35	2.10
\$15,000 - \$29,999	1.08	1.32	1.55	1.56	2.36
\$30,000 - \$49,999	1.08	1.22	1.36	1.76	1.69
\$50,000 - \$74,999	1.19	1.23	1.30	1.55	2.30
\$75,000 +	1.28	1.21	1.25	1.59	1.64

Source: Lubbock County Household Travel Survey and TTI Analysis.

Travel by Age Cohort

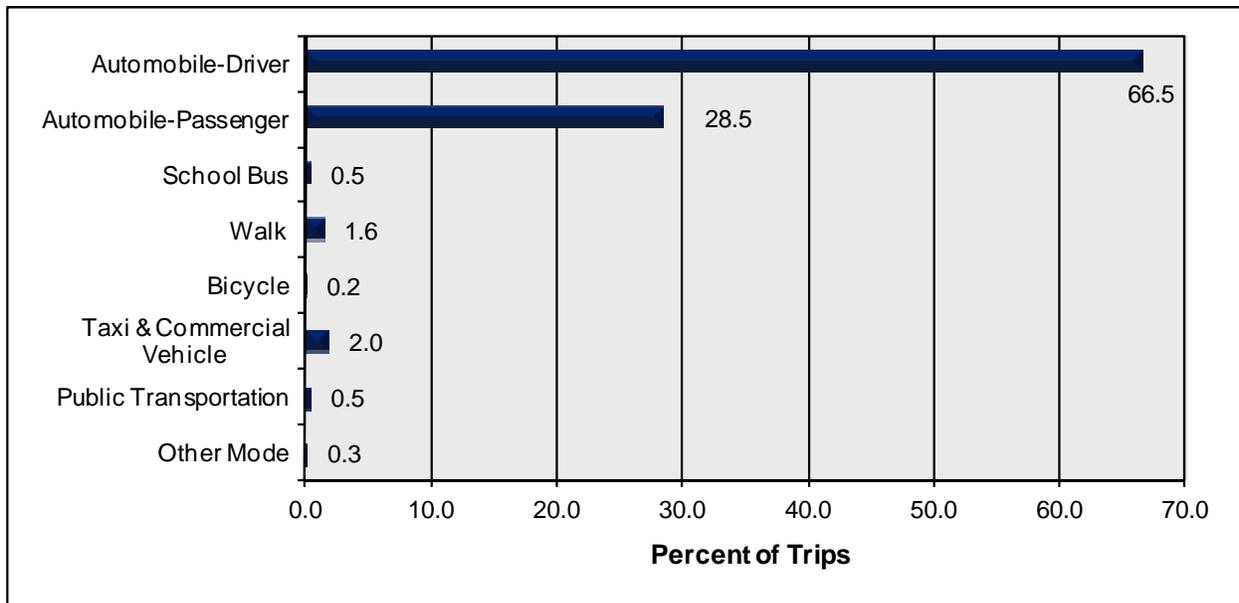
A total of 249,909,693 persons who reported their age were represented in the expanded household survey. Table 4 shows the number of persons and distribution of persons by age cohort that did not make any internal trips on their survey day. As expected, older persons are less likely to travel than are younger persons, but the older population is mobile and contribute significantly to the amount of household travel. The rather high percentage of persons making zero internal trips in the 20-24 age cohort is probably due to under reporting or not reporting of trips by this age cohort.

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

Age Cohort	Number of Persons	Percent of Persons	Number of Persons Making Trips	Number of Persons Making Zero Internal Trips	Percent of Persons Making Zero Internal Trips
0-14	52,593	21.05	46,551	6,042	11.49
15-19	19,874	7.95	17,370	2,504	12.60
20-24	29,771	11.91	24,345	5,427	17.62
25-29	22,600	9.04	20,417	2,183	9.66
30-34	17,096	6.84	14,670	2,426	14.19
35-39	14,640	5.86	13,517	1,123	7.67
40-44	15,728	6.29	13,326	2,403	15.28
45-49	15,743	6.30	13,729	2,014	12.79
50-54	14,507	5.81	11,953	2,554	17.61
55-59	11,791	4.72	9,672	2,119	19.97
60-64	8,907	3.56	7,037	1,870	20.99
65-69	7,206	2.88	5,847	1,359	18.86
70-74	6,586	2.64	4,570	2,016	30.61
75-79	5,430	2.17	3,193	2,237	41.20
80 +	7,437	2.98	3,851	3,586	48.22
Total	249,909	100	210,048	39,863	15.95

MODE OF TRAVEL

The modes of travel were household automobile-driver, household automobile-passenger, school bus, walk, public transportation, bicycle, carpool/vanpool, and commercial vehicle. Figure 15 shows the distribution of person trips by mode. Automobile travel accounted for 95 percent of the person trips. Commercial vehicle trips accounted for 2 percent of the person trips and walk accounted for 1.5 percent of the person trips. The surveyed households made little use of public transportation, accounting for less than 1 percent of the person trips.



Source: Lubbock County Household Travel Survey and TTI Analysis.

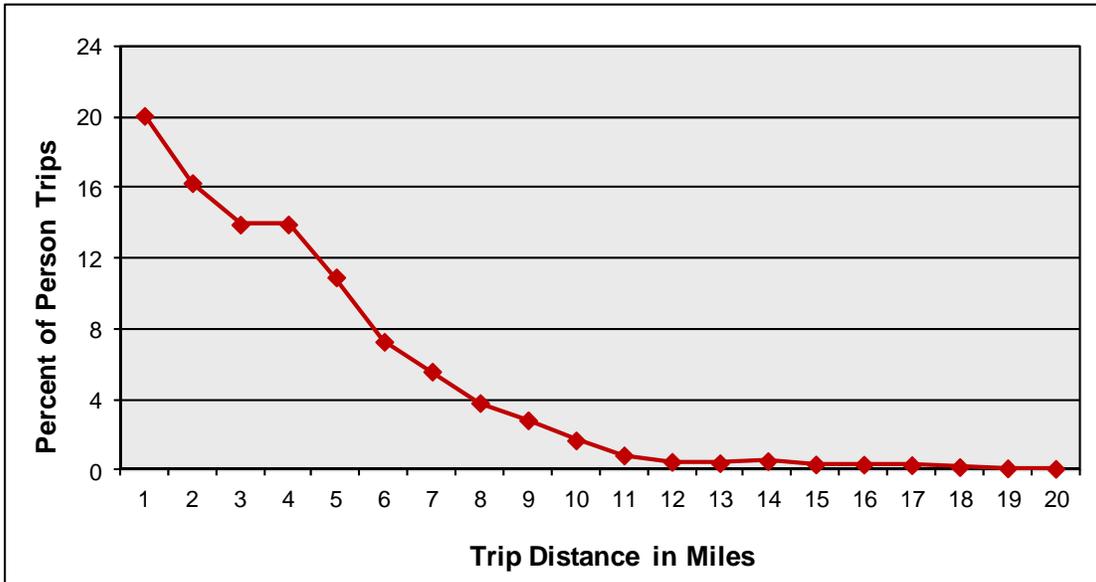
Figure 15. Distribution of Person Trips by Mode of Travel.

AMOUNT OF TRAVEL

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

Trip Distance

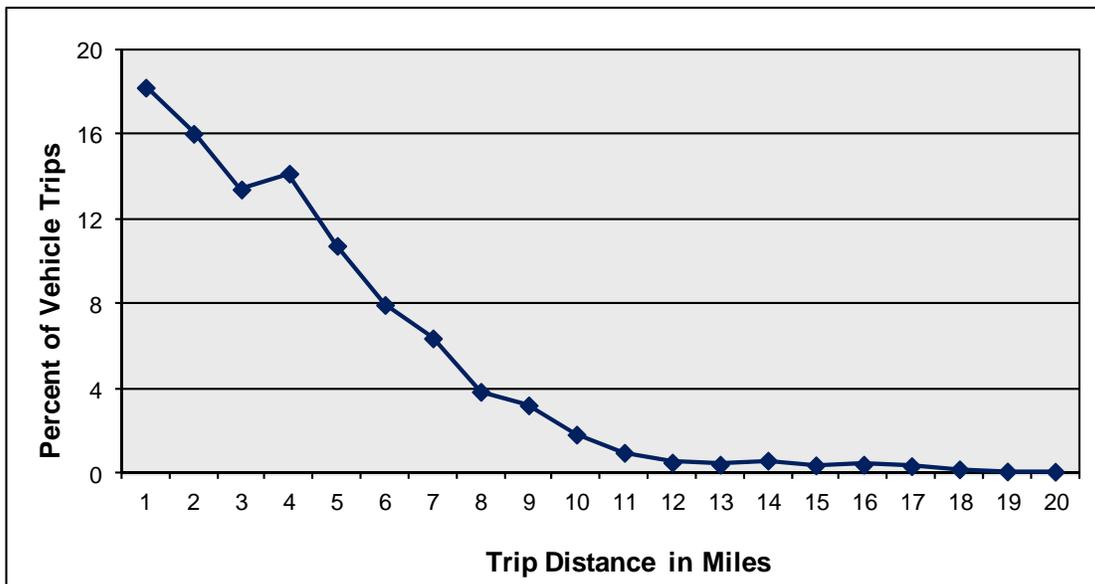
Figure 16 shows the distribution of person trips by the length of the trip in miles. The distribution is for internal person trips, trips beginning and ending inside the two-county study area. The average person trip length was 5.9 miles.



Source: Lubbock County Household Travel Survey and TTI Analysis.

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

Figure 17 shows the distribution of vehicle trips by the length of the trip in miles. The average vehicle trip length was 6.1 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. Distributions similar to Figure 17 are prepared for each internal trip purpose.

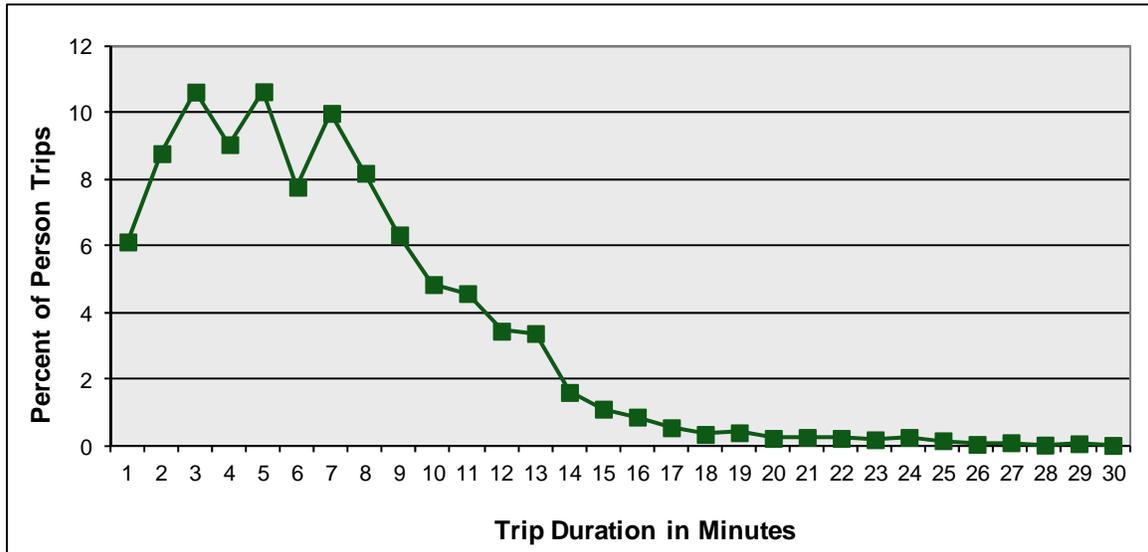


Source: Lubbock County Household Travel Survey and TTI Analysis.

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

Trip Duration

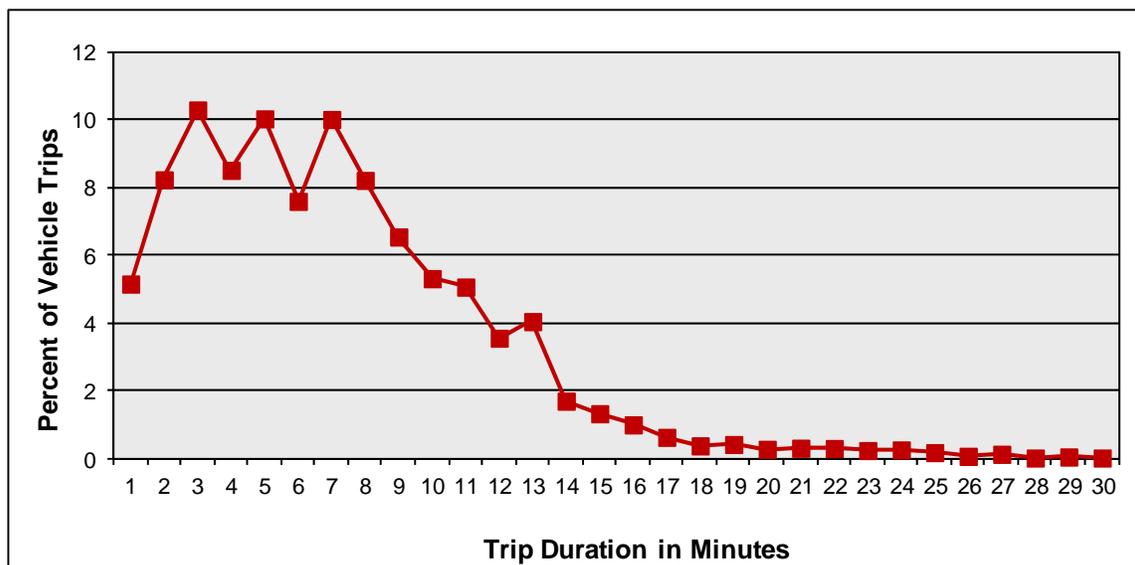
Figure 18 shows the distribution of person trips by the duration of the trip in minutes. The distribution is for internal person trips, trips beginning and ending inside the two-county study area. The average person trip duration was 4.7 minutes.



Source: Lubbock County Household Travel Survey and TTI Analysis.

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

Figure 19 shows the distribution of vehicle trips by the duration of the trip in minutes. The average vehicle trip duration was 5.0 minutes.



Source: Lubbock County Household Travel Survey and TTI Analysis.

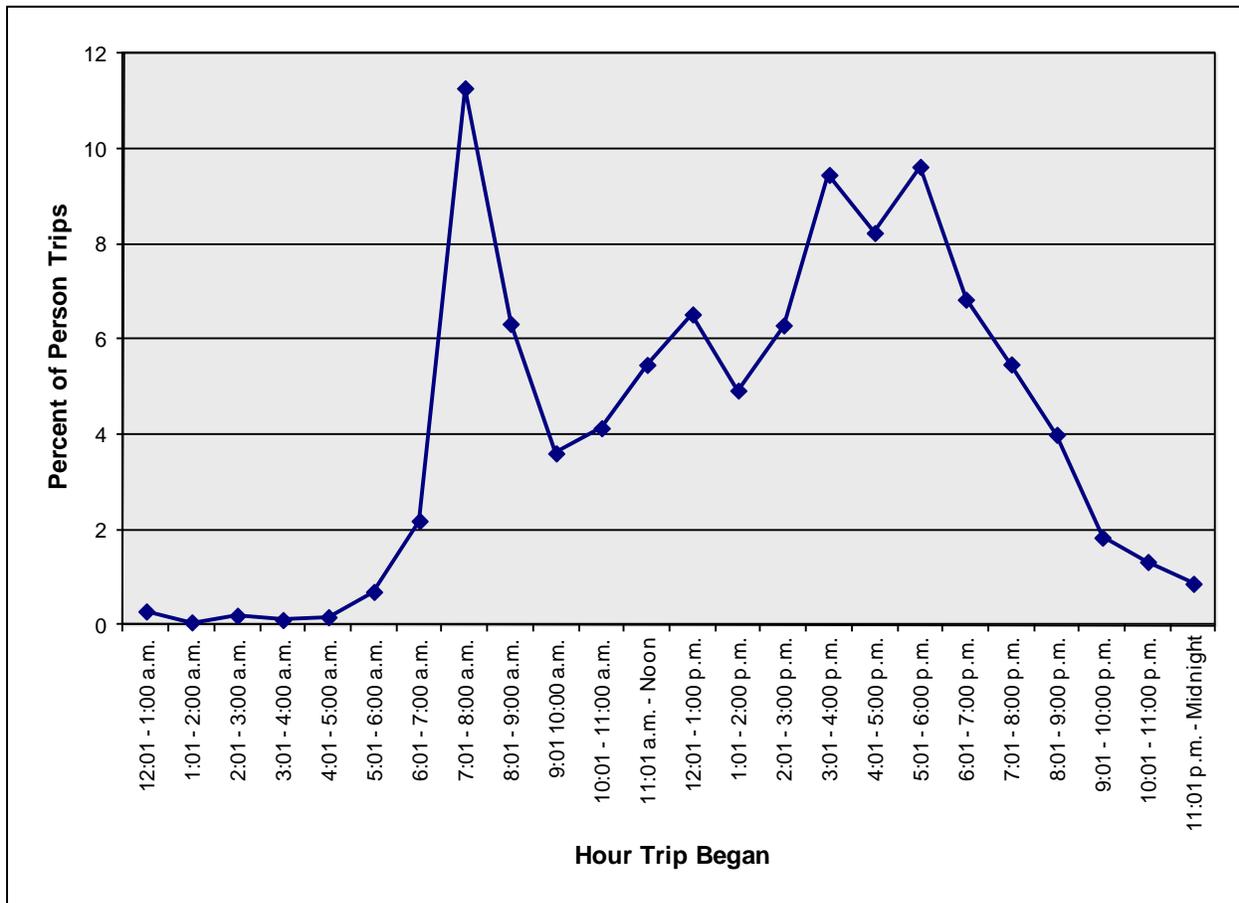
Figure 19. Distribution of Vehicle Trips by Trip Duration in Minutes.

Vehicle Miles of Travel

VMT is calculated as the product of the average vehicle trip length in miles and the number of vehicle trips. For household trips internal to the two-county study area, the estimated VMT is 2,977,558 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 time. Figure 20 shows the distribution of trip start times for a 24-hour weekday during the school year. The morning peak period, 7:01 a.m. to 8:00 a.m., has the highest percentage (11.3) of daily trip starts. During the morning peak period, trips from home to work and from home to school are the primary destinations. The second highest percentage (9.6) of trip starts occur during the hour of 5:01 p.m. to 6:00 p.m., which are trips from work to home. Trip starts during the hour from 3:01 p.m. to 4:01 p.m., has the third highest percentage (9.5) of daily trip starts. During this hour, trips from school to home are the primary destinations.

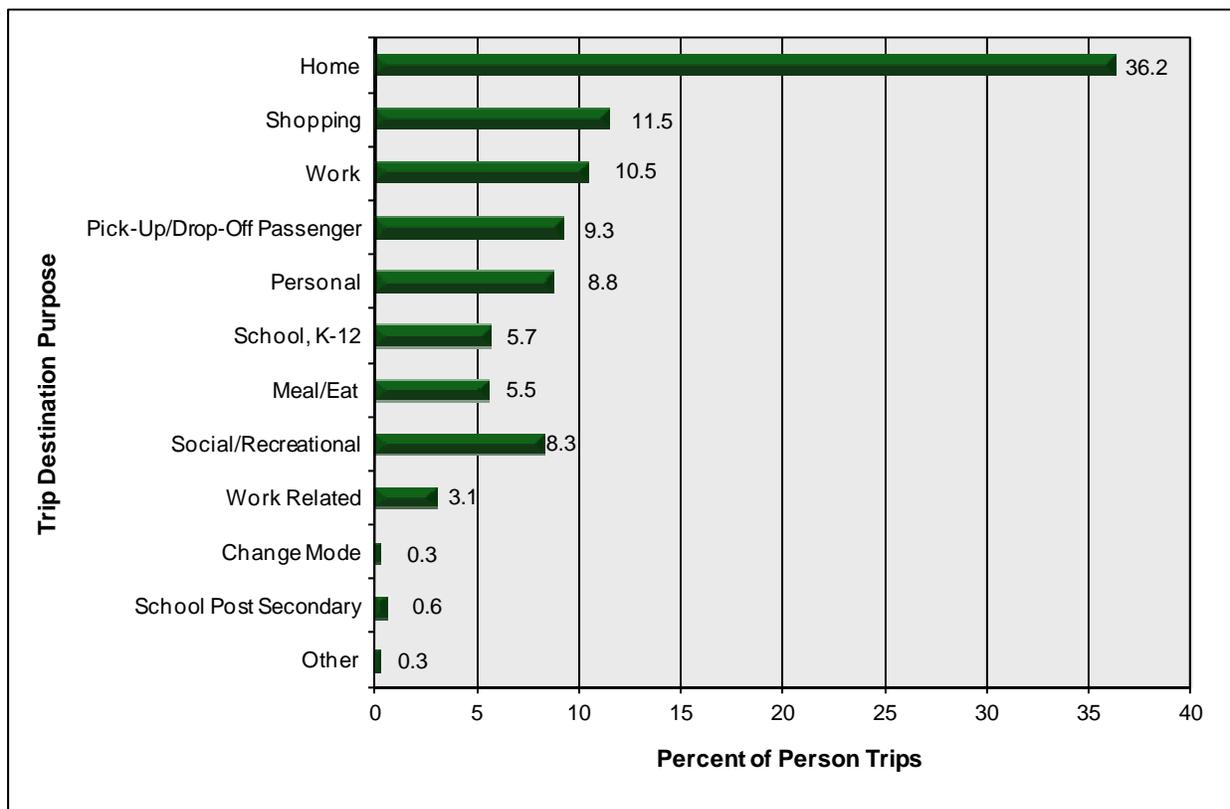


Source: Lubbock County Household Travel Survey and TTI Analysis.

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

TRAVEL PURPOSE

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



Source: Lubbock County Household Travel Survey and TTI Analysis.

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

Type of Place at Trip Destination

Closely related to the travel purpose and what the traveler did at the destination end of the trip is information on the type of place or business that was at the destination end of the trip. This information is used by the travel demand modeler to develop trip attraction rates for various types of land use. In travel demand modeling, attractions are typically grouped into three

categories — basic, retail, and service. 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	88,004	9.3
Residential Type Work Place	4,231	0.4
Construction Site	3,313	0.3
Transportation Stop	2,467	0.3
Automotive Dealer/Repair	14,889	1.6
Bank/Financial Institution	29,432	3.1
Barber/Beauty/Nail Salon	7,295	0.8
Bookstore/Newsstand	1,752	0.2
Convenience/Drug Store	13,115	1.4
Government Offices	18,259	1.9
Offices Non-Government	52,589	5.5
Grocery	61,025	6.4
Health Club	14,743	1.6
Medical Facility/Hospital	50,891	5.4
Movie Theater/Cinema	3,477	0.4
Restaurant/Fast food, Bar and Grill	109,819	11.6
Educational – 12 th Grade or Lower	195,746	20.6
Educational – College, Trade, Etc.	55,946	5.9
Shopping Mall/Department Store	93,399	9.8
Gas Station	10,494	1.1
Airport	2,604	0.3
Other	116,115	12.2
Do Not Know	1,027	1.1
Total	950,628	101.2

Source: Lubbock County Travel Survey and TTI Analysis.

WHERE PEOPLE TRAVELED

Figure 23 through Figure 33 shows the geographic distribution of internal person trips within the study area and within the sub-regions. Figure 22 shows the Lubbock County study area and the 11 sub-regions. Figure 34 shows the percent of person trips that remain within each sub-area.

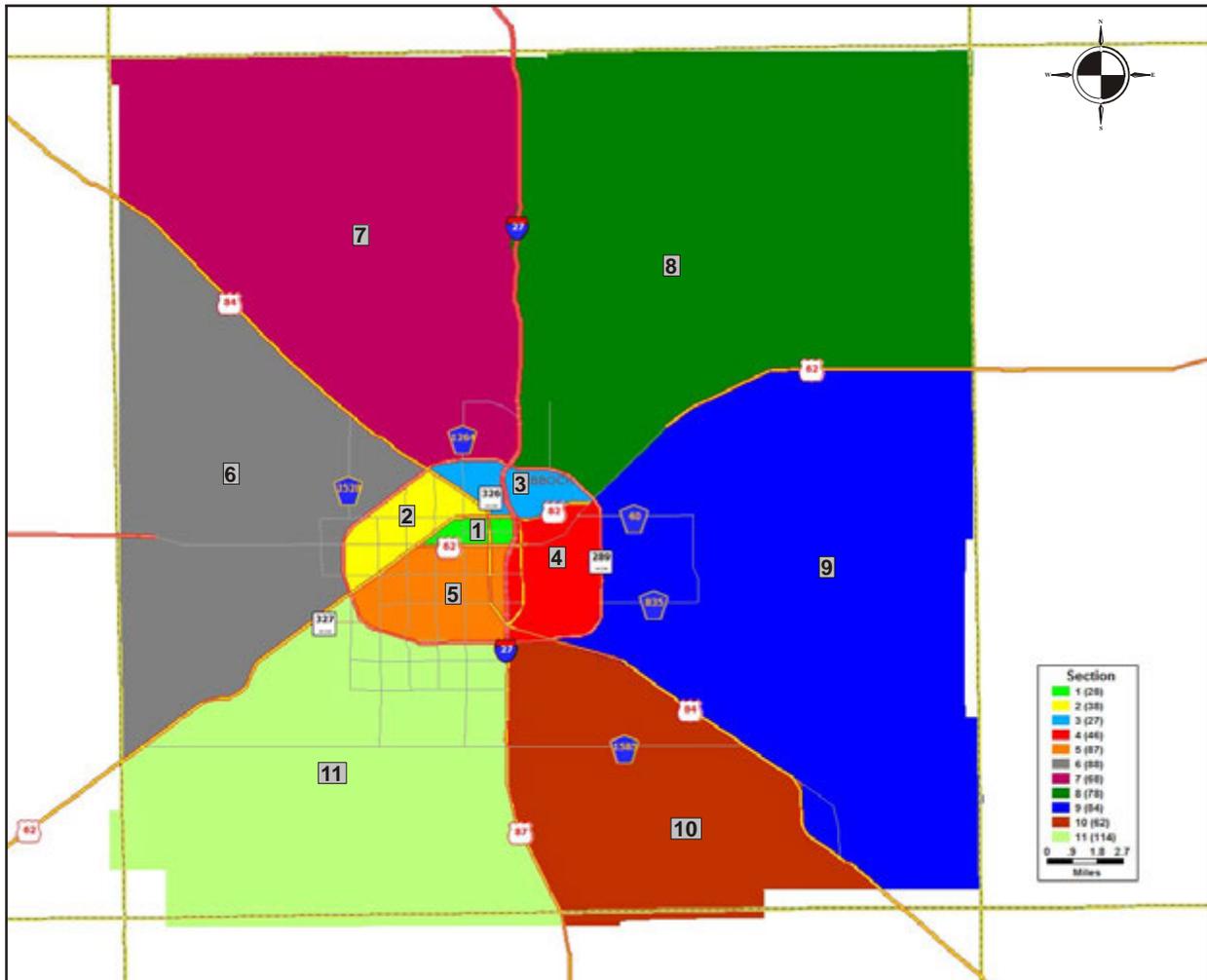


Figure 22. Lubbock Household Travel Survey Study Area and Sub-Regions.

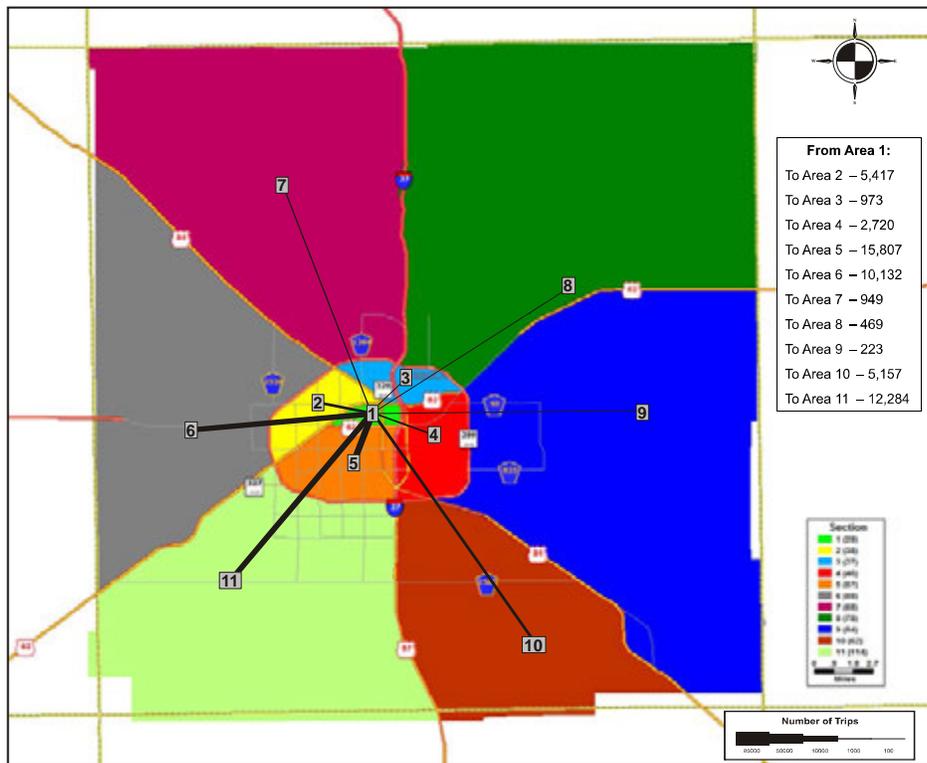


Figure 23. Person Trip Interchanges between Area 1 and Areas 2-11.

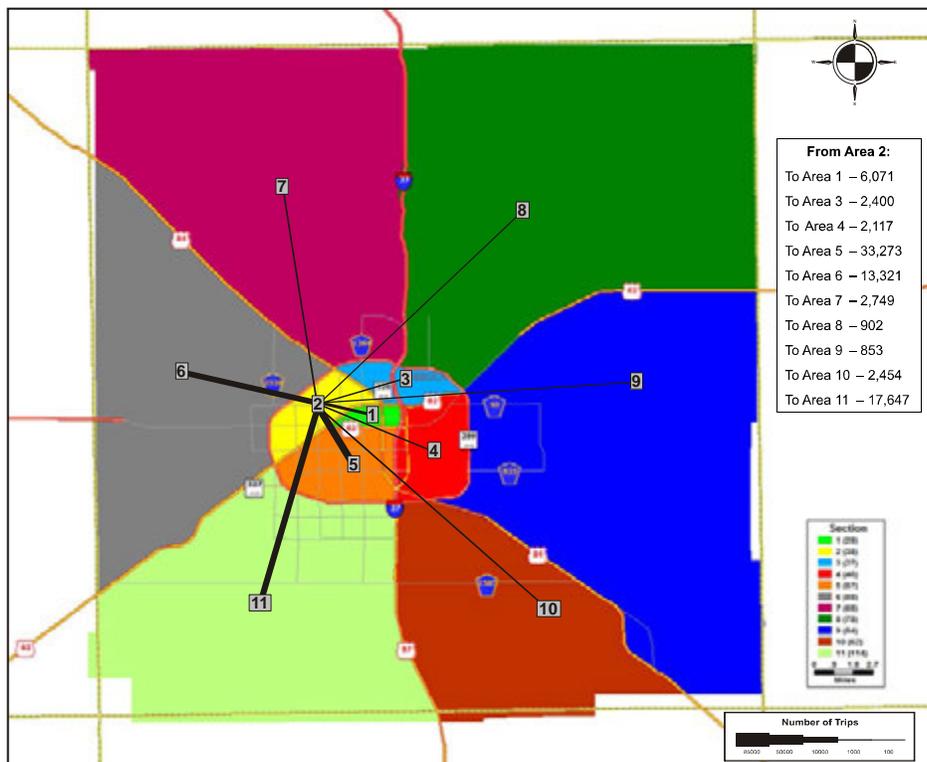


Figure 24. Person Trip Interchanges between Area 2 and Area 1 and Areas 3-11.

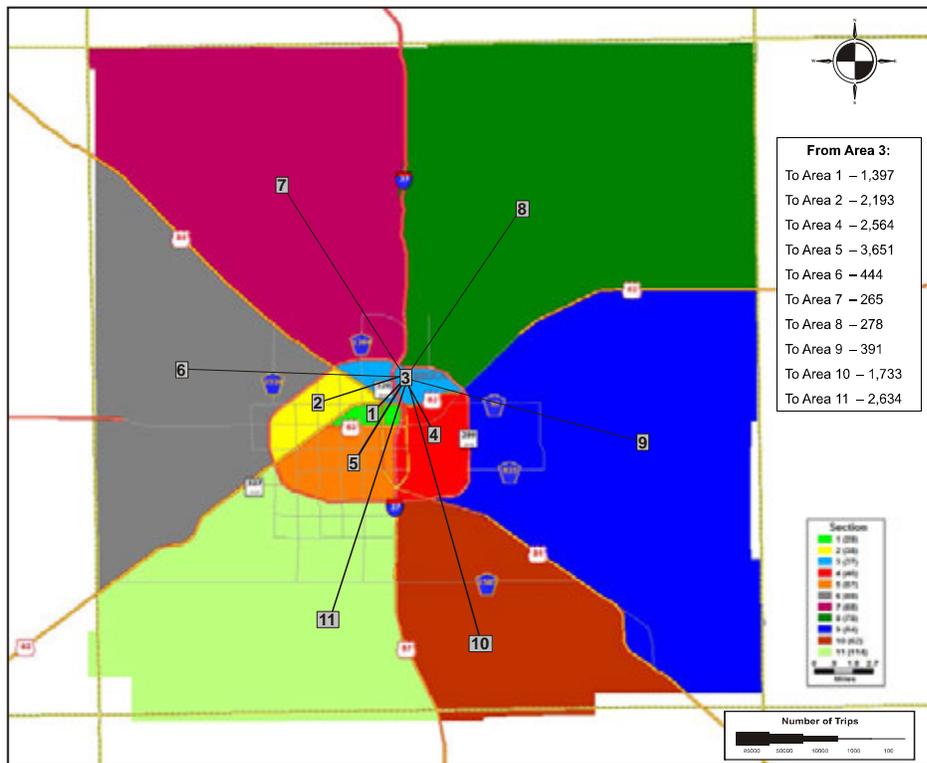


Figure 25. Person Trip Interchanges between Area 3 and Areas 1-2 and Areas 4-11.

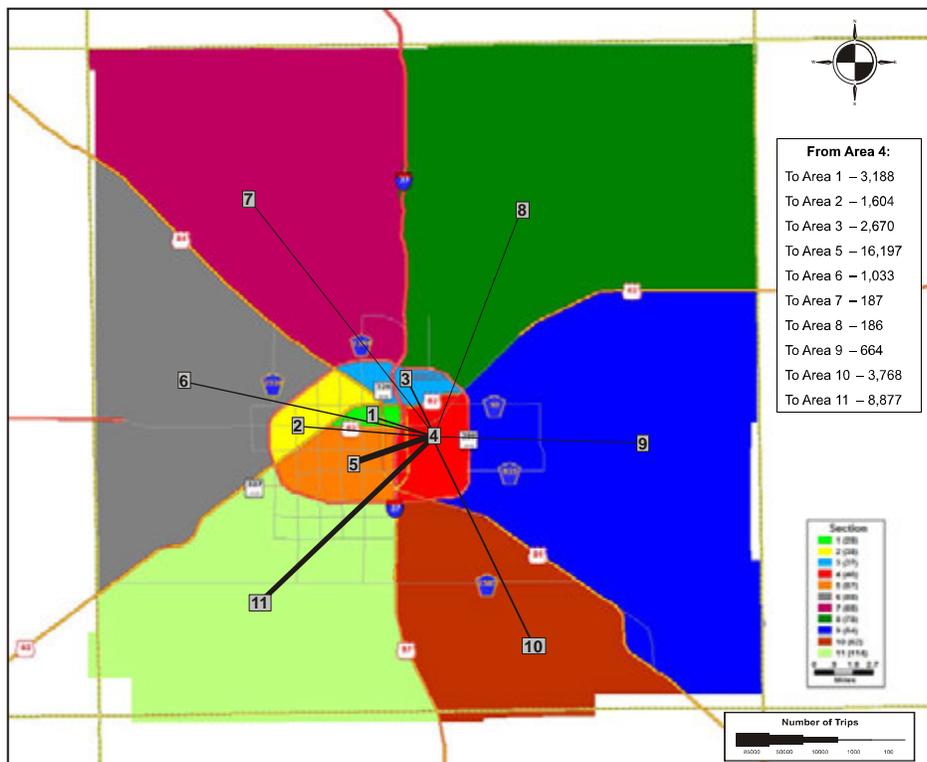


Figure 26. Person Trip Interchanges between Area 4 and Areas 1-3 and Areas 5-11.

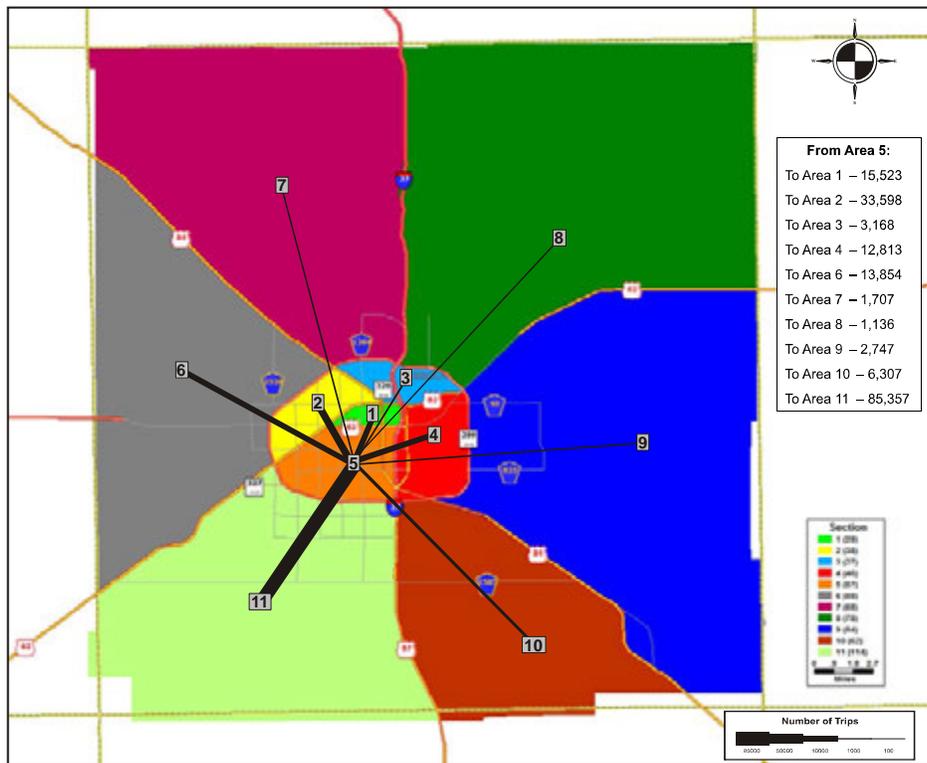


Figure 27. Person Trip Interchanges between Area 5 and Areas 1-4 and Areas 6-11.

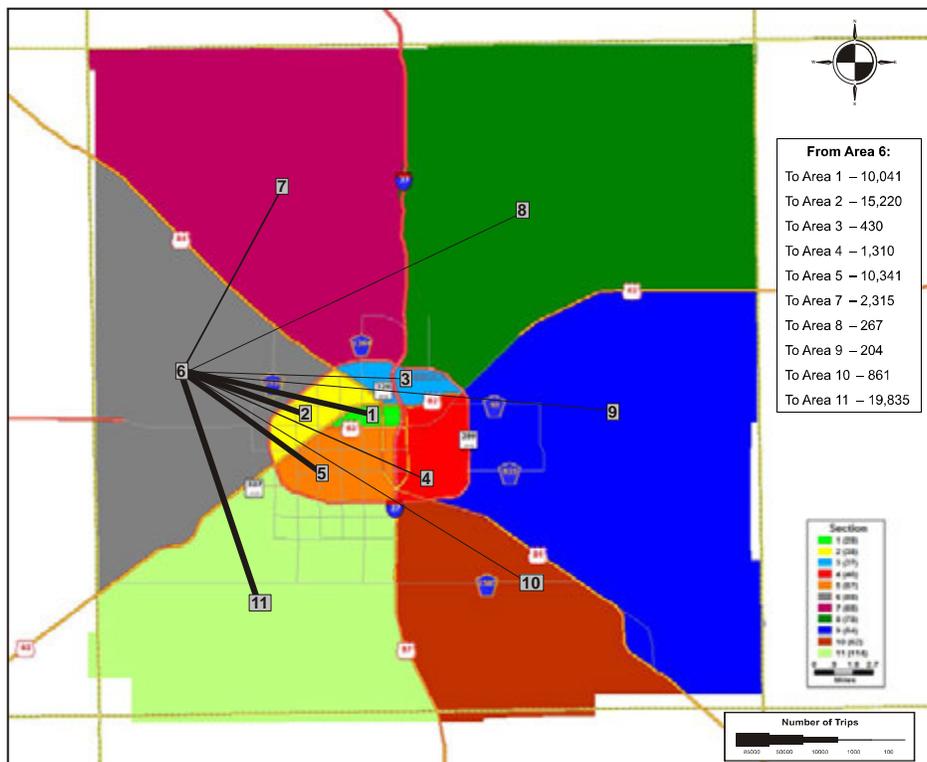


Figure 28. Person Trip Interchanges between Area 6 and Areas 1-5 and Areas 7-11.

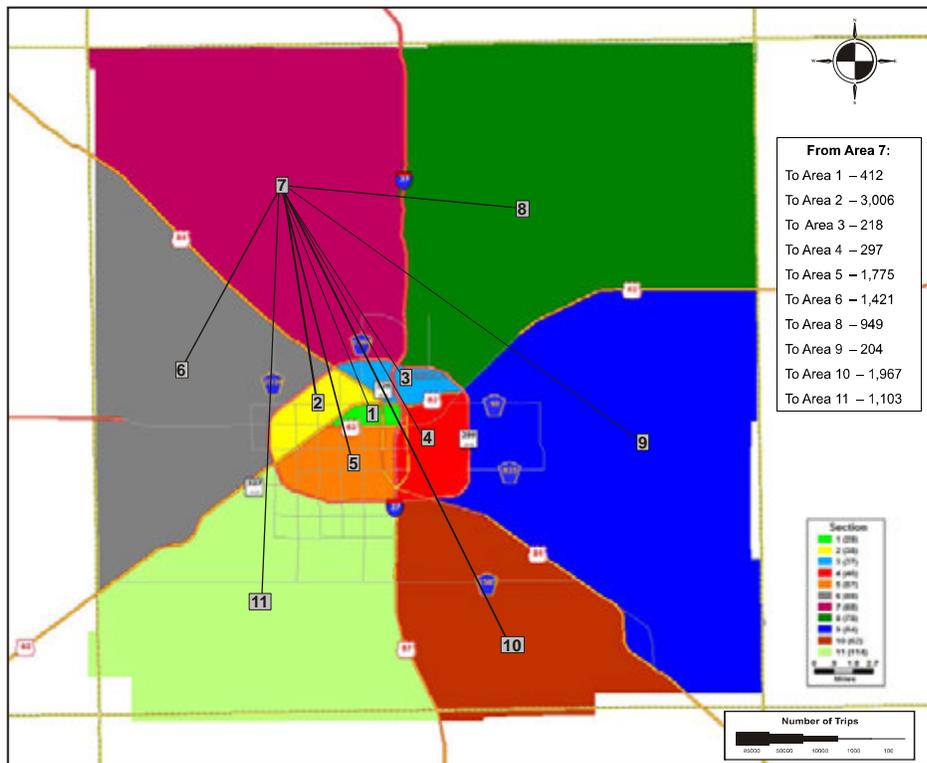


Figure 29. Person Trip Interchanges between Area 7 and Areas 1-6 and Areas 8-11.

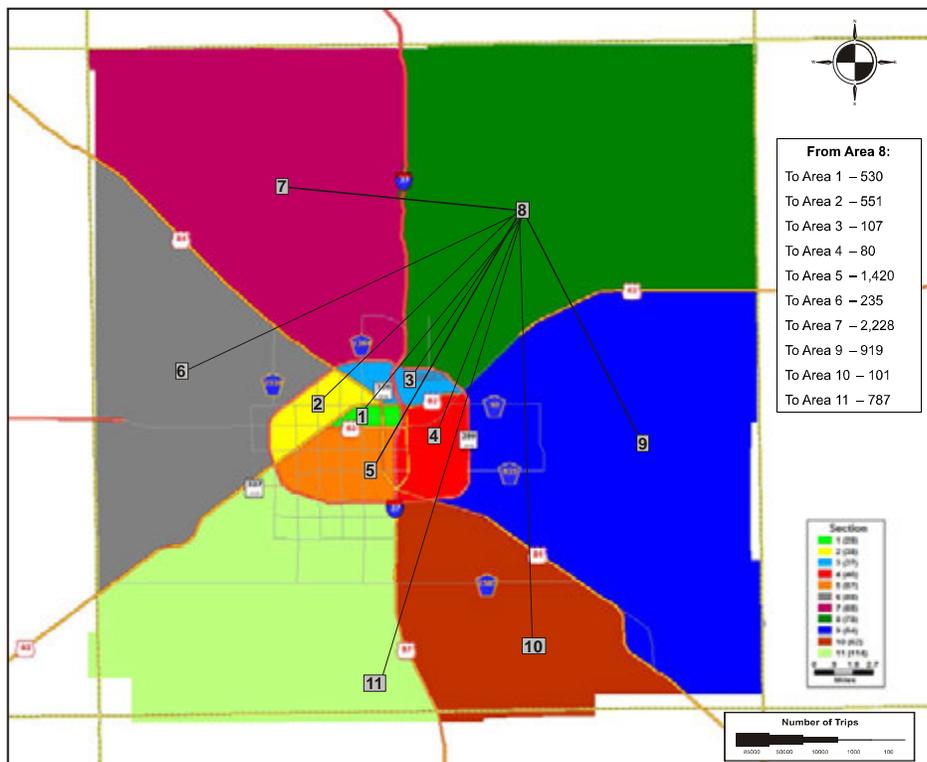


Figure 30. Person Trip Interchanges between Area 8 and Areas 1-7 and Areas 9-11.

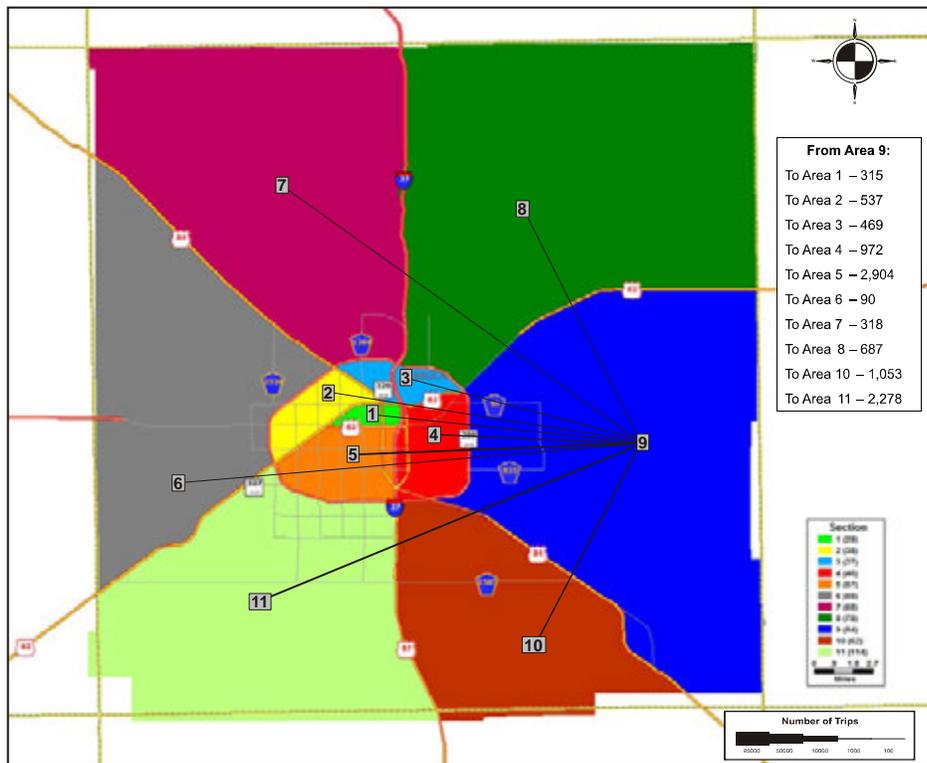


Figure 31. Person Trip Interchanges between Area 9 and Areas 1-8 and Areas 10-11.

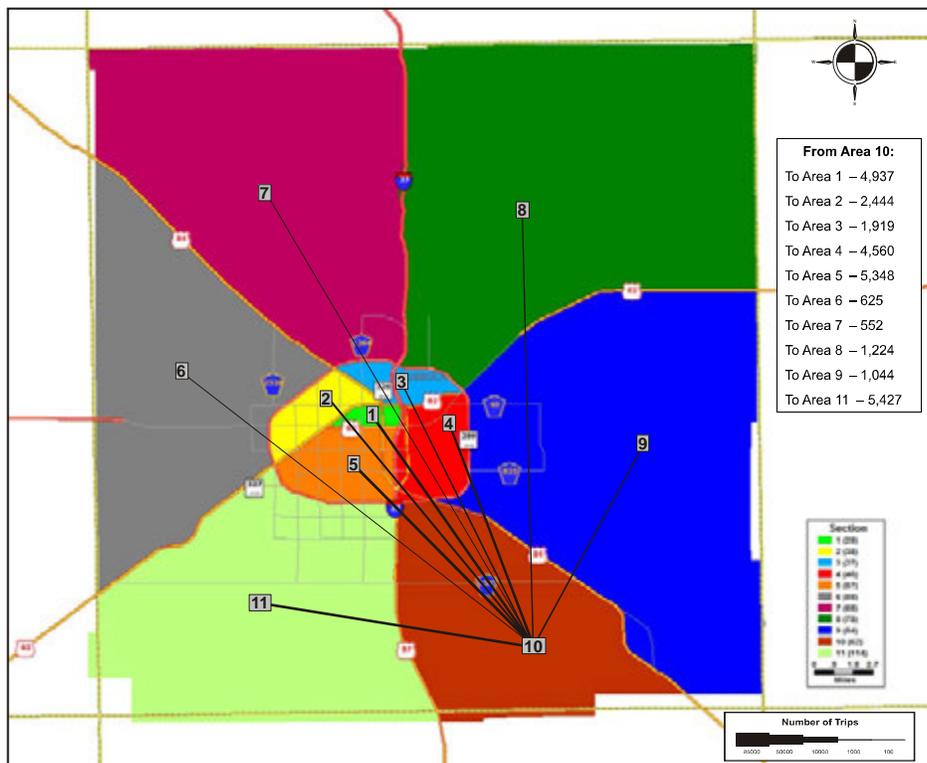


Figure 32. Person Trip Interchanges between Area 10 and Areas 1-9 and Area 11.

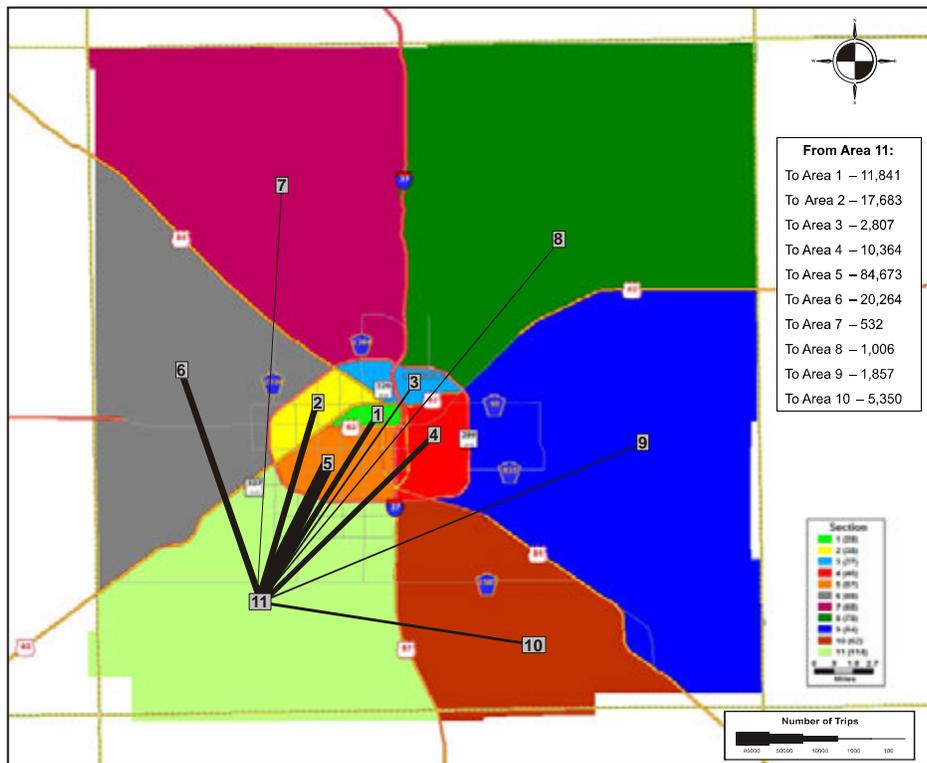


Figure 33. Person Trip Interchanges between Area 11 and Areas 1-10.

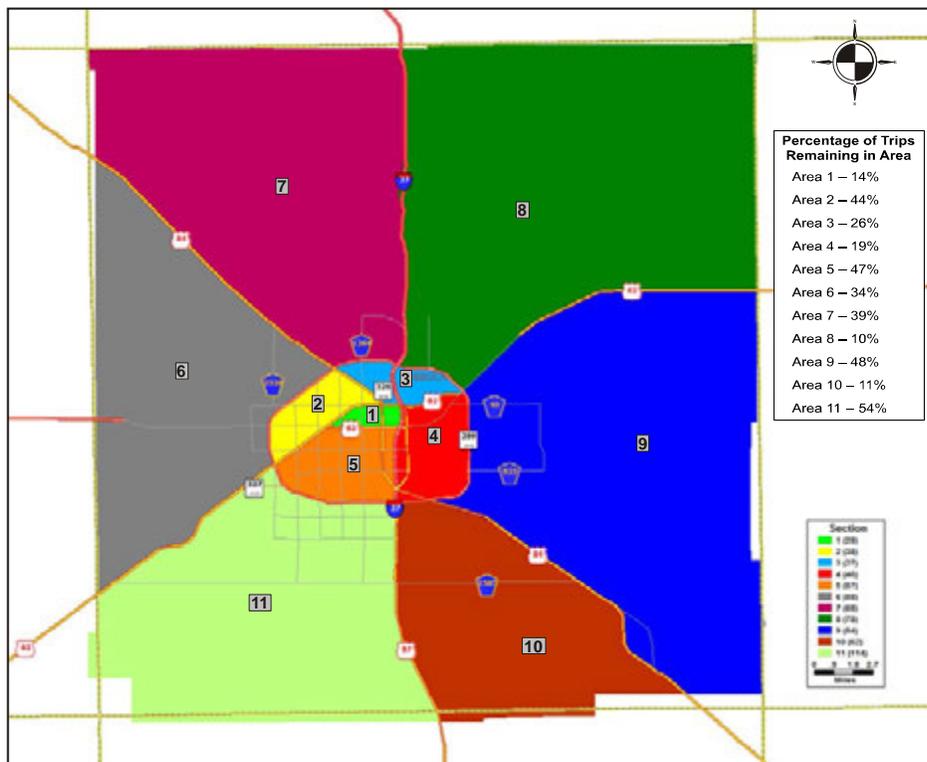


Figure 34. Percent of Person Trips that Remain in Each Sub-Region.

SUMMARY DATA

Table 6 provides household survey summary data for Lubbock County and for travel surveys conducted in the San Antonio MPO planning area (Bexar, Comal, Guadalupe, Kendall, and Wislon counties), the Rio Grand Valley Region (Cameron and Hidalgo counties), and the Austin area (CAMPO - Capital Area Metropolitan Planning Area) comprised of Bastrop, Caldwell, Hays, Travis, and Williamson counties. More detailed data than that provided in this report, has been provided to TxDOT's TPP Division for their use in updating the Lubbock County study area travel demand model.

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

Urban Area	Lubbock County	Bexar, Comal, Guadalupe, Kendall, and Wilson Counties	Cameron and Hidalgo Counties	Bastrop, Caldwell, Hays, Travis, and Williamson Counties
Demographics				
Household Population	249,909	1,791,418	1,030,139	1,486,117
Licensed Drivers	185,436	1,187,489	585,035	1,060,436
Number of Households	97,598	641,487	294,825	574,225
Average Household Size	2.60	2.76	3.49	2.59
Number of Motor Vehicles	186,412	1,237,425	555,443	1,065,898
Motor Vehicles per Household	1.91	1.84	1.88	1.86
Number of Daily Trips by Mode				
Total Person Trips	950,628	5,935,476	3,583,480	5,093,023
Automobile-Driver Trips	628,352	3,720,350	2,023,295	3,353,404
Motor Vehicle Passenger Trips	268,711	1,677,538	1,243,681	1,292,793
School Bus Trips	4,957	216,088	188,781	138,951
Walk Trips	14,964	221,605	93,337	189,256
Public Transit Trips	4,957	42,868	9,889	43,475
Bicycle Trips	1,829	11,993	6,571	31,470
Commercial Vehicle Trips	18,051	34,162	14,250	37,962
Other Modes/Taxi	2,907	9,137	3,709	5,712
Number of Daily Trips by Destination/Purpose				
Trips to Home	328,343	2,193,323	1,322,199	1,866,466
Trips to Work	111,325	614,988	353,105	661,624
Trips Work Related	43,807	162,585	109,126	158,955
Trips to Shop	94,199	625,747	333,674	489,085
Trips to Pick-Up/Drop Off Passenger	82,822	592,170	410,936	434,359
Trips for Personal Business	73,200	573,779	228,654	356,953
Trips for Social/Recreation	82,872	329,141	276,680	359,071
Trips for School K-12	45,823	399,655	292,203	302,415
Trips for School Post Secondary	17,321	56,547	46,762	56,962
Trips for Meal/Eat	57,574	330,357	171,603	325,699
Trips to Change Mode	6,083	56,550	24,622	76,436
Other Trips	7,261	588	3,596	4,986
Daily Trip Rates				
Person Trips per Person	3.8	3.31	3.48	3.42
Person Trips per Household	9.7	9.25	12.15	8.87

Source: Selected Texas Travel Surveys and TTI Analysis.

TERMINOLOGY

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

Person Trip – A person trip is 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.

Automobile Driver Trip – An automobile driver trip is 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.

Trip Purpose – The trip purpose is 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 were 11 trip purposes used in the household survey.

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

Vehicle Availability – Vehicle availability is the number of vehicles available to members of a household for making trips.

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

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

Home-Based Work (HBW) Trip – An HBW trip is 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.

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

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

Trip Productions – Trip productions are 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 Attractions – Trip attractions are 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.

**APPENDIX A:
HOUSEHOLD TRAVEL SURVEY FORMS**

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? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> 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) _____ & Nearest Intersecting Streets _____ City _____ County _____ State _____ Zip Code (if known) _____	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 (Specify Route: _____) <input type="checkbox"/> Other _____ <hr/> <i>If you used a car, van, or truck for this trip . . .</i> 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 How much did you pay to park? \$ _____	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): _____ <hr/> When did you leave this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> PM ----- OR ----- <input type="checkbox"/> This was the last place I went today

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

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

Where did you stop? _____

Name of Stop Location Address or Nearest Intersection City, County, and State

Location 5: Where did you go next?	How did you get to Location 5?	What did you do here?
When did you arrive at this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> 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) _____ & Nearest Intersecting Streets _____ City _____ County _____ State _____ Zip Code (if known) _____	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 (Specify Route: _____) <input type="checkbox"/> Other _____ <hr/> <i>If you used a car, van, or truck for this trip . . .</i> 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 How much did you pay to park? \$ _____	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 (car to bus): _____ <hr/> When did you leave this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> PM ----- OR ----- <input type="checkbox"/> This was the last place I went today

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

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

Where did you stop? _____

Name of Stop Location Address or Nearest Intersection City, County, and State

Location 6: Where did you go next?	How did you get to Location 6?	What did you do here?
When did you arrive at this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> 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) _____ & _____ Nearest Intersecting Streets <hr/> City _____ County _____ State _____ <hr/> Zip Code (if known) _____ <hr/> Did you walk more than a block from a parking lot or bus stop to get to this location? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES: where did you park? _____ <input type="checkbox"/> Yes <input type="checkbox"/> No _____	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 (Specify Route: _____) <input type="checkbox"/> Other _____ <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? _____ 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 How much did you pay to park? \$ _____	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 (car to bus): _____ <hr/> When did you leave this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> PM ----- OR ----- <input type="checkbox"/> This was the last place I went today
If You <u>Forgot</u> a Stop <u>Anywhere</u> Between This Location and Location 7, Provide the Information Below:		
For what reason did you stop between Location 6 and 7? _____		Number of minutes stopped: _____
Where did you stop? Name of Stop Location _____ Address or Nearest Intersection _____		City, County, and State _____

Location 3: Where did you go next?	How did you get to Location 3?	What did you do here?
When did you arrive at this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> 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) _____ & _____ Nearest Intersecting Streets <hr/> City _____ County _____ State _____ <hr/> Zip Code (if known) _____ <hr/> Did you walk more than a block from a parking lot or bus stop to get to this location? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES: where did you park? _____ <input type="checkbox"/> Yes <input type="checkbox"/> No _____	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 (Specify Route: _____) <input type="checkbox"/> Other _____ <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? _____ 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 How much did you pay to park? \$ _____	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 (car to bus): _____ <hr/> When did you leave this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> PM ----- OR ----- <input type="checkbox"/> This was the last place I went today
If You <u>Forgot</u> a Stop <u>Anywhere</u> Between This Location and Location 4, Provide the Information Below:		
For what reason did you stop between Location 3 and 4? _____		Number of minutes stopped: _____
Where did you stop? Name of Stop Location _____ Address or Nearest Intersection _____		City, County, and State _____

Location 8: Where did you go next?	How did you get to Location 8?	What did you do here?
When did you arrive at this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> 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 (Specify Route: _____) <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 (car to bus): _____
What is the Name of this Location? _____	If you used a car, van, or truck for this trip . . .	When did you leave this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> PM ----- OR ----- <input type="checkbox"/> This was the last place I went today
What Type of Place/Business Is This? _____	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? _____	
Street Address (be as specific as possible) _____ & Nearest Intersecting Streets _____	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 _____	
City _____ County _____ State _____	Was this your household's vehicle? <input type="checkbox"/> Yes <input type="checkbox"/> No How much did you pay to park? \$ _____	
Zip Code (if known) _____		
Did you walk more than a block from a parking lot or bus stop to get to this location? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES: where did you park? _____		

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

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

Where did you stop? _____

Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State _____

Location 1: Where did you go first?	How did you get to Location 1?	What did you do here?
When did you arrive at this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> 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 (Specify Route: _____) <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): _____
What is the Name of this Location? _____	If you used a car, van, or truck for this trip . . .	When did you leave this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> PM ----- OR ----- <input type="checkbox"/> This was the last place I went today
What Type of Place/Business Is This? _____	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? _____	
Street Address (be as specific as possible) _____ & Nearest Intersecting Streets _____	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 _____	
City _____ County _____ State _____	Was this your household's vehicle? <input type="checkbox"/> Yes <input type="checkbox"/> No How much did you pay to park? \$ _____	
Zip Code (if known) _____		
Did you walk more than a block from a parking lot or bus stop to get to this location? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES: where did you park? _____		

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

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

Where did you stop? _____

Name of Stop Location _____ Address or Nearest Intersection _____ City, County, and State _____

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

At Home

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

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

What type of transportation were you using?

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

Were you the . . . ? driver passenger

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

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

Was this a . . . ? Carpool Vanpool Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? Yes No

At Work, or

At Another Location

What is the Name of this Location? _____

What Type of Place/Business Is This? _____

Street Address (be as specific as possible) _____

City _____ County _____ State _____

Zip Code (if known) _____

_____ & _____
Nearest Intersecting Streets

At what time did you leave your starting location? _____

Location 9: Where did you go next?

When did you arrive at this location?

____ : ____ AM PM

What is the Name of this Location? _____

What Type of Place/Business Is This? _____

Street Address (be as specific as possible) _____

_____ & _____
Nearest Intersecting Streets

City _____ County _____ State _____

Zip Code (if known) _____

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

Yes If YES: where did you park? _____
 No

How did you get to Location 9?

What was the primary type of transportation you used?

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

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

Were you the . . . ? driver passenger

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

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

Was this a . . . ? Carpool Vanpool Neither

Please indicate the following about the vehicle:

Year _____ Make/Model _____

Was this your household's vehicle? Yes No

How much did you pay to park? \$ _____

What did you do here?

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

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

When did you leave this location?

____ : ____ AM PM

----- OR -----

This was the last place I went today

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

For what reason did you stop between Location 9 and 10? _____

Number of minutes stopped: _____

Where did you stop?

Name of Stop Location _____

Address or Nearest Intersection _____

City, County, and State _____

Location 10: Where did you go next?	How did you get to Location 10?	What did you do here?
When did you arrive at this location? _____ : _____ <input type="checkbox"/> AM <input type="checkbox"/> 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) _____ & _____ Nearest Intersecting Streets _____ City _____ County _____ State _____ <hr/> Zip Code (if known) _____ <hr/> Did you walk more than a block from a parking lot or bus stop to get to this location? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES: where did you park? _____ <input type="checkbox"/> No _____	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 (Specify Route: _____) <input type="checkbox"/> Other _____ <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 How much did you pay to park? \$ _____	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 (car to bus): _____ <hr/> When did you leave this location? _____ : _____ <input type="checkbox"/> AM <input type="checkbox"/> PM ----- OR ----- <input type="checkbox"/> This was the last place I went today
If You <u>Forgot</u> a Stop <u>Anywhere</u> Between This Location and the "Additional Locations" Provide the Information Below:		
For what reason did you stop between Location 10 and 11? _____ Number of minutes stopped: _____ Where did you stop? _____ <div style="display: flex; justify-content: space-between;"> Name of Stop Location Address or Nearest Intersection City, County, and State </div>		

Work Information	
Do you currently work on a regular basis? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If you do <u>not</u> currently work, please go to the "Start Location" section.</i> How many different jobs do you have? _____ If you have more than one job, please refer to the job at which you spend the most hours for the following questions. In which type of industry do you work? <input type="checkbox"/> Agriculture, forestry, fishing and hunting, mining <input type="checkbox"/> Construction <input type="checkbox"/> Manufacturing <input type="checkbox"/> Wholesale trade <input type="checkbox"/> Retail Trade <input type="checkbox"/> Transportation, warehousing, utilities <input type="checkbox"/> Information <input type="checkbox"/> Finance, insurance, real estate, rental, leasing <input type="checkbox"/> Professional, scientific, management, administrative, and water management services <input type="checkbox"/> Education, health, social services <input type="checkbox"/> Arts, entertainment, recreation, accommodation, and food service <input type="checkbox"/> Other services (except public administration) <input type="checkbox"/> Public administration Of the last seven days, how many did you work at home? ___ days	What is the location of your workplace? _____ Name of Employer _____ Type of Business _____ Street Address _____ City, _____ County _____ State _____ _____ Zip Code _____ & _____ Nearest Intersecting Streets Is this location an office in the home or a business operated out of the home? <input type="checkbox"/> Yes <input type="checkbox"/> No

Instructions

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

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

ETC Institute

School Information

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

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

What type of school do you attend?

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

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

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

Are you enrolled for 12 or more hours? Yes No

Bike Use

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

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

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

Additional Locations

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

Questions?

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

ETC Institute
725 W. Frontier Circle
Olathe, KS 66061

Comments

Thank you for your participation in this important survey.

**** **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? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> PM What is the Name of this Location? _____ What Type of Place/Business Is This? _____ Street Address (be as specific as possible) _____ & _____ Nearest Intersecting Streets City _____ County _____ State _____ Zip Code (if known) _____ Did you walk more than a block from a parking lot or bus stop to get to this location? <input type="checkbox"/> Yes <input type="checkbox"/> No If YES: where did you park? _____ <input type="checkbox"/> Yes <input type="checkbox"/> No _____	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 (Specify Route: _____) <input type="checkbox"/> Other _____ <i>If you used a car, van, or truck for this trip . . .</i> 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 How much did you pay to park? \$ _____	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 (car to bus): _____ When did you leave this location? ____ : ____ <input type="checkbox"/> AM <input type="checkbox"/> PM ----- OR ----- <input type="checkbox"/> This was the last place I went today

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

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

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

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

Circle your travel day: Monday Tuesday Wednesday Thursday Friday

Write your travel date: _____

Person's age: _____ Gender: Male Female

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

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

2006-2007 Lubbock Regional HOUSEHOLD ACTIVITY/TRAVEL SURVEY

**2006-2007
Lubbock
Metropolitan
Planning
Organization**



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

DATA FILE FORMATS

Household / Activity Travel Survey	8 pages
- Record Type 1, Household Information Data	
- Record Type 2, Personal Information Data	
- Record Type 3, Vehicle Information Data	
- Record Type 4, Activity/Trip Data	
GPS Data	
- Part 1, GPS Administrative Data File Matrix	1 page
- Part 2, Matrix of GPS Data Items	1 page

HOUSEHOLD / ACTIVITY SURVEY
DATA FILE FORMAT

This file will contain information collected for each household: Record Type 1 - Household Information, Record Type 2 – Person Information, Record Type 3 – Vehicle Information, and Record Type 4 – Trip/Activity Information

RECORD TYPE 1 – HOUSEHOLD INFORMATION

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

<u>Item</u>	<u>Begin</u>	<u>End</u>	<u>Type</u>	FIELD COLUMNS	
				<u>Format</u>	<u>Description</u>
1. Record Type	1	2	Numeric RJ	I2	Code indicating type of record. Here it should be 1.
2. Sample Number	3	9	Numeric RJ	I7	Unique non-zero number assigned to each household participating in survey.
3. Phone	10	21	Alphanum. LJ	A12	Phone number of household.
4. Month	22	23	Numeric RJ	I2	Month of travel day.
5. Day	24	25	Numeric RJ	I2	Day of the month of travel.
6. Day of Week	26	26	Numeric RJ	I1	Day of the week travel was recorded; 1-Monday, 2-Tuesday, 3-Wednesday, 4-Thursday, 5-Friday.
7. Advance Letter	27	28	Numeric RJ	I2	Code indicating if household received advance letter; 1- Yes, 2-No, 98-Don't Know, 99-Refused.
8. Address	29	88	Alphanum. LJ	A60	Street address or nearest cross streets of household.
9. City	89	118	Alphanum. LJ	A30	City where household is located.
10. Zip Code	119	123	Numeric RJ	I5	Zip code of household address.
11. HH County	124	125	Numeric RJ	I2	Code indicating county in which household is located: 1-Randall, 2 – Potter, 3 – Lubbock, 98 – Unknown, 99-Refused
12. HH Study Area	126	126	Alphanum	I1	Code indicating study area in which household address/TAZ zone is located. Use 'A' if zone is in the Amarillo study area, and 'L' if the zone is in the Lubbock study area. Field should be left blank if location is not within one of these two MPO study areas.
13. HH Zone	127	131	Numeric RJ	I5	TAZ number where household is located. The HH address must be coded to a zone in one of the MPOs modeling areas. Unknown zones should be coded 8888.
14. Longitude	132	141	Numeric RJ	F10.6	Longitude of household address. If unknown, it should be coded 888.8888.
15. Latitude	142	151	Numeric RJ	F10.6	Latitude of household address. If unknown, it should be coded 888.8888.
16. Number Persons	152	153	Numeric RJ	I2	Number of persons living in residence.
17. Number Employed	154	155	Numeric RJ	I2	Number of persons in household that are employed either full or part time.
18. Vehicles Available	156	157	Numeric RJ	I2	Number of cars, vans, light trucks, motorcycles available for use by the HH; 98-Don't Know, 99-Refused.
19. Vehicles Owned / Leased	158	159	Numeric RJ	I2	Combined number of cars, vans, light trucks, motorcycles owned or leased by members of the household, 98-Don't know 99-Refused.
20. Bikes	160	161	Numeric RJ	I2	Number of working bicycles available for use by members of household; 98-Don't know, 99-Refused.
21. Residence	162	163	Numeric RJ	I2	Code indicating the type of residence. See below for code definitions.
22. Other Residence	164	188	Alphanum. LJ	A25	If residence is coded as "other", this field contains a description of the type of residence.
23. Tenure	189	190	Numeric RJ	I2	Code indicating number of years at residence; 0-<1yr, 1-one year, 2-two years, 3-three years, 4-four years, 5-five or more years.
24. Previous Residence	191	191	Numeric RJ	I1	If tenure was less than five years, this code indicates if previous residence was in one of the 9 modeling area counties; 1-Yes, 2-No.
25. Previous Zip Code	192	196	Numeric RJ	I5	If tenure was less than five years, this is the zip code of the previous residence.

RECORD TYPE 1, FIELD COLUMNS – CONTINUED

<u>Item</u>	<u>Begin</u>	<u>End</u>	<u>Type</u>	<u>Format</u>	<u>Description</u>
26. HH Factors	197	216	Alphanum LJ	A20	Code indicating factors that influenced their decision to locate in their current household. If more than one, separate code numbers by comma. See code definitions.
27. Other Factors	217	246	Numeric RJ	A30	Other factors influencing their decision to locate in their current household.
28. Income	247	248	Numeric RJ	I2	Code indicating combined annual income of all household members. See codes below.
29. Sample HH Income	249	250	Numeric RJ	I2	Household income stratification for sampling quota. 1=<20k, 2=20k - <35k, 3=35k - <50k, 4=50k - <75k, 5=75k or more.
30. Day Visitors	251	252	Numeric RJ	I2	Number of non-family persons that stopped at this residence for any reason on the travel day; 98-Don't Know, 99-Refused.
31. Overnight Visitors	253	254	Numeric RJ	I2	Number of overnight visitors at this residence during their travel day. 98-Don't Know, 99-Refused.
32. Delivery Vehicle	255	255	Numeric RJ	I1	Code indicating if someone in household drives a form of delivery vehicle; 1-Yes, 2-No, 98-Don't Know, 99-Refused.
33. Number Delivery Driver	256	257	Numeric RJ	I2	Number of persons in household that are delivery drivers or travel within study area as part of their work.
34. Phone Service	258	259	Numeric RJ	I2	Number of times within past 12 months household was without telephone service.
35. Time Without	260	261	Numeric RJ	I2	Code indicating the average length of time household was without phone service. See code definitions below.
36. HH Vehicle Use by Non HH Number	262	263	Numeric RJ	I2	Code indicating if one or more of the HH vehicles were used by a non-household member of the travel day. 1- Yes, 2-No, 3 – Zero vehicle household, 98-Don't Know, 99-Refused.
37. Share Phone	264	265	Numeric RJ	I2	Number of households that share a phone line with this household.
38. GPS House	266	266	Numeric RJ	I1	Code indicating if household vehicles had GPS equipment installed for GPS survey.
39. Total HH Trips	267	269	Numeric RJ	I3	The total combined number of all trips made by all persons in the household on the assigned travel day.

21. RESIDENCE

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

26. HH FACTORS

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

35. TIME WITHOUT

- 1 – Less than one week
- 2 – One week to less than two weeks
- 3 – Two weeks to less than three month
- 4 – One month to less than four months
- 5 – Three months to less than six months
- 6 – Six months to less than one year
- 7 – One year or more
- 98 – Don't know
- 99 – Refused

28. HOUSEHOLD INCOME CODES

- 1 – Less than \$5,000
- 2 – \$5,000 to \$9,999
- 3 – \$10,000 to \$14,999
- 4 – \$15,000 to \$19,999
- 5 – \$20,000 to \$24,999
- 6 – \$25,000 to \$29,999

- 7 – \$30,000 to \$34,999
- 8 – \$35,000 to \$39,999
- 9 – \$40,000 to \$49,999
- 10 – \$50,000 to \$59,999
- 11 – \$60,000 to \$74,999
- 12 – \$75,000 to \$99,999

- 13 – \$100,000 to \$124,999
- 14 – \$125,000 to \$149,999
- 15 – \$150,000 or more
- 16 – Below \$35,000
- 17 – \$35,000 or above
- 98 – Don't Know
- 99 – Refused

RECORD TYPE 2 – PERSON INFORMATION

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

<u>Item</u>	FIELD COLUMNS				
	<u>Begin</u>	<u>End</u>	<u>Type</u>	<u>Format</u>	<u>Description</u>
1. Record Type	1	2	Numeric RJ	I2	Code indicating type of record, here it should be 2.
2. Sample Number	3	9	Numeric RJ	I7	Unique non-zero number assigned to each household participating in survey. This number should match the sample number of the above record.
3. Person Number	10	12	Numeric RJ	I3	Number assigned to each person in the household with 0 assumed to be the head of household.
4. Relationship	13	14	Numeric RJ	I2	Code indicating relationship of person to the head of household. See code definitions below.
5. Head of household	15	16	Numeric RJ	I2	Code indicating the person number in the household considered to be the head of household
6. Sex	17	18	Numeric RJ	I2	Sex of person; 1-Male, 2-Female, 98- Don't Know, 99 - Refused.
7. Ethnicity	19	20	Numeric RJ	I2	Race or ethnicity of person. See code definitions below.
8. Ethnicity Other	21	80	Alphanum RJ	A60	Description of other ethnicity which is not included in code definitions.
9. Age	81	83	Numeric RJ	I3	Age of person. 998-Don't know, 999 - Refused.
10. Licensed Driver	84	85	Numeric RJ	I2	Code indicating if person is a licensed driver; 1-Yes, 2-No, 98 - Don't Know, 99-Refused.
11. Employment	86	87	Numeric RJ	I2	Code indicating if person is employed in a paying or volunteer job; 1-Yes, 2-No, 98 – Don't Know, 99-Refused.
12. Employment Status	88	89	Numeric RJ	I2	If person is employed, this is a code number indicating the person's employment status. See code definitions.
13. Hours	90	92	Numeric RJ	I3	On average, the number of hours worked per week. 998 – don't know, 999-varies from week to week.
14. Not Employed	93	94	Numeric RJ	I2	Code indicating current status if person is not employed. See code definitions below.
15. Not Employed Other	95	154	Alphanum LJ	A60	Description of employment status if none of the options in the employment status code is applicable.
16. Delivery	155	156	Numeric RJ	I2	Code indicating if person is a delivery driver or not; 1-Yes, 2-No, 98 – Don't Know, 99-Refused.
17. Transporting Cargo	157	158	Numeric RJ	I2	Code indicating if cargo is being transported ; 1-Yes, 2-No, 98 – Don't Know, 99-Refused.
18. Providing Commercial Service	159	160	Numeric RJ	I2	Code indicating if vehicle is providing a commercial service; 1-Yes, 2-No, 98 – Don't Know, 99-Refused.
19. Flex Time	161	162	Numeric RJ	I2	Code indicating if person's employer allows them to work flexible hours or the hours are fixed; 1-Flexible / Variable, 2-Fixed / Unchanging, 98-Don't Know, 99-Refused.
20. Job	163	164	Numeric RJ	I2	Code indicating if person has more than one paying job; 1-Yes, 2-No, 98-Don't Know, 99-Refused.
21. Employer Name	165	224	Alphanum. LJ	A60	Name of person's primary employer.
22. Workplace Type	225	226	Numeric RJ	I2	Code indicating type of workplace where person is employed. See code definitions below.
23. Other Workplace	227	256	Alphanum. LJ	A30	Description of workplace type if "other" is coded.
24. Home Office	257	258	Numeric RJ	I2	Code indicating if workplace is a home office or business operated out of the home; 1 = Yes, 2-No, 98 – Don't Know, 99 - Refused.
25. Telecommute	259	260	Numeric RJ	I2	If employed 30 or more hours per week, code indicating if person works from home or telecommutes on a regular basis; 1 = Yes, 2-No, 98 – Don't Know, 99 – Refused.
26. Workplace Address	261	320	Alphanum. LJ	A60	Street address of workplace or nearest intersecting street names.
27. Workplace City	321	350	Alphanum. LJ	A30	City where workplace is located.
28. Workplace County	351	352	Numeric RJ	I2	Code indicating county in which household is located: 1-Randall, 2- Potter, 3- Lubbock, 98 – Unknown, 99-Refused
29. Zip Code	353	357	Numeric RJ	I5	Zip code or workplace address.
28. Work Study Area	358	358	Alphanum	I1	Code indicating study area in which work address and TAZ zone is located. Use 'A' if zone is in the Amarillo study area, and 'L' if the zone is in the Lubbock study area. Field should be left blank if location is not within one of these two MPO study areas.

RECORD TYPED 2, FIELD COLUMNS - CONTINUED

<u>Item</u>	<u>Begin</u>	<u>End</u>	<u>Type</u>	<u>Format</u>	<u>Description</u>
31. Work Zone	359	363	Numeric RJ	I5	Zone where workplace is located. Those in one of the MPOs modeling area counties should be coded to an urban or rural TAZ. If unknown but in one of the modeling area counties it should be coded 8888. Locations outside of either of the two modeling areas but within Texas should be coded using the Statewide Zone System and preceded by the number 1 in column 355. Unknown locations outside of the modeling area counties but within Texas should be coded 6666. Addresses in Mexico should be coded 7777. Addresses outside of Texas and Mexico should be coded using 9999.
32. Longitude	364	373	Numeric RJ	F10.6	Longitude of workplace location. If within either of the modeling area counties, but unknown it should be coded 888.8888. If outside either of the modeling area counties but within Texas and unknown it should be coded as 6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.
33. Latitude	374	383	Numeric RJ	F10.6	Latitude of workplace location. If within either of the modeling area counties, but unknown it should be coded 888.8888. If outside the modeling area counties, but within Texas and unknown it should be coded as 6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.
34. Days Worked	384	385	Numeric RJ	I2	Number of days per week person typically works. 98-Don't Know, 99-Refused.
35. Work at Home	386	387	Numeric RJ	I2	Out of the last seven days, the number of days worked at home instead of going to work. Valid responses 0-7, 98-Don't Know, 99-Refused.
36. Second Job Type	388	389	Numeric RJ	I2	Code indicating type of workplace where person works at second job. See code definitions below.
37. Second Job Other	390	449	Alphanum. LJ	A60	Description of workplace type for second job if "other" is coded.
38. Second Job Employment Status	450	451	Numeric RJ	I2	If person is employed in a second job, this is a code number indicating the person's employment status related to the second job. See code definitions below.
39. Total Hours	452	454	Numeric RJ	I3	Total hours on average person works per week at all jobs. 888-Don't know, 999-Refused.
40. Primary Occupation	455	456	Numeric RJ	I2	Code indicating the type of occupation for primary job. See code definitions below
41. Primary Industry	457	458	Numeric RJ	I2	Code indicating the type of industry worked in for primary job. See code definition below.
42. Secondary Occupation	459	460	Numeric RJ	I2	Code indicating the type of occupation for secondary job. See code definitions below
43. Secondary Industry	461	462	Numeric RJ	I2	Code indicating the type of industry worked in for secondary job. See code definition below.
44. Student Status	463	464	Numeric RJ	I2	Code indicating if person is enrolled in any type of school; 1-Yes, 2-No, 98-Don't Know, 99-Refused.
45. School Type	465	466	Numeric RJ	I2	Code indicating type of school attended. See code definitions below.
46. School Type Other	467	526	Alphanum. LJ	A60	Description of 'other' if other is coded as school type.
47. Hours Enrolled	527	528	Numeric RJ	I2	If person is enrolled in a college, trade school, etc., code indicates if person is enrolled for 12 or more hours; 1-Yes, 2-No, 98-Don't know, 99-Refused.
48. Bike Use	529	530	Numeric RJ	I2	Number of days person rode bike in last seven days. 98-Don't Know, 99-Refused.
49. Bike Purpose	531	532	Numeric RJ	I2	Code indicating the most common trip purpose for person's bike trips. See code definitions below.
50. Disability	533	534	Numeric RJ	I2	Code indicating if person has transportation disability; 1-Yes, 2-No, 98-Don't Know, 99-Refused.
51. Travel	535	536	Numeric RJ	I2	Code indicating if person traveled on the designated travel day; 1-Yes, 2-No, 96-Indication person was out of town or away from the residence for the entire day and night of their travel day.
52. Person trips	537	539	Numeric RJ	I3	The total number of trips the person made on his/her travel day.
53. Why No Travel	540	599	Alphanum LJ	A60	Description of why the person did not make any trips on the travel day.

RECORD TYPE 2, FIELD COLUMNS - CONTINUED

<u>Item</u>	<u>Begin</u>	<u>End</u>	<u>Type</u>	<u>Format</u>	<u>Description</u>
52. Diary Use	600	601	Numeric RJ	I2	Code indicating if person used diary or if information is based on memory or provided by a proxy. 1 – yes, used diary; 2 – no, did not use diary; 3 – Did not receive diary; 98 – Don't Know; 99 - Refused
54. Proxy	602	603	Numeric RJ	I2	01 – respondent, 02 – proxy, 03 – mailed diary, 04 – internet, 98 – Don't know; 99 – Refused
56. Proxy ID	604	605	Numeric RJ	I2	This item identifies the person by person number who provided the information by proxy. 98 – Don't know; 99 – Refused
57. Date data was retrieved.	606	609	Numeric RJ	I4	The month and day the data was retrieved. Record all months as 2 digits and all days as 2 digits with the month preceding the day. Example: April 1 st should be coded as 0401.

4. RELATIONSHIP

- 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 / Refused
- 99 – Refused

7. ETHNICITY

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

14. STATUS FOR NOT EMPLOYED

- 1 – Retired
- 2 – Disability Status
- 3 – Homemaker
- 4 – Looking for Work
- 5 – Not Looking for Work
- 6 – Student
- 7 – Other
- 98 – Don't Know
- 99 – Refused

20.34. TYPE OF WORK PLACE

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

43. SCHOOL TYPE

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

47. BIKE TRIP PURPOSE

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

12.36 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

RECORD TYPE 2 - CONTINUED

38. 40. OCCUPATION

- 01 – Management, professional, and related occupations
- 02 – Service occupations
- 03 – Sales and office occupations
- 04 – Farming, fishing, and forestry occupations
- 05 – Construction, extraction, and maintenance occupations
- 06 – Production, transportation, and material moving occupations
- 96 – Not applicable (unemployed / student / retired)
- 98 – Don't know
- 99 – Refused

39. 41. INDUSTRY

- 01 – Agriculture, forestry, fishing and hunting, mining
- 02 – Construction
- 03 – Manufacturing
- 04 – Wholesale trade
- 05 – Retail trade
- 06 – Transportation, warehousing, utilities
- 07 – Information
- 08 – Finance, insurance, real estate, rental and leasing
- 09 – Professional, scientific, management, administrative, and waste management services
- 10 – Education, health, and social services
- 11 – Arts, entertainment, recreation, accommodation, and food services
- 12 – Other services (except public administration)
- 13 – Public Administration
- 96 – Not Applicable – (unemployed, student, retired)
- 98 – Don't Know
- 99 – Refused

RECORD TYPE 3 - VEHICLE INFORMATION

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

<u>Item</u>	Field Columns				
	<u>Begin</u>	<u>End</u>	<u>Type</u>	<u>Format</u>	<u>Description</u>
1. Record Type	1	2	Numeric RJ	I2	Code indicating type of record, here it should be 3.
2. Sample Number	3	9	Numeric RJ	I7	Unique non-zero number assigned to each household participating in survey.
3. Vehicle Number	10	11	Numeric RJ	I2	Unique non-zero number assigned to vehicle.
4. Type of Vehicle	12	13	Numeric RJ	I2	Code indicating type of vehicle. See code definitions below.
5. Other Vehicle Type	14	48	Alphanum LJ	A35	Other vehicle type not listed in vehicle code below.
6. Year	49	52	Numeric RJ	I4	Year vehicle was manufactured; 9998-Don't Know, 9999-Refused.
7. Make	53	54	Numeric RJ	I2	Make of vehicle. See vehicle make code below.
8. Other Make	55	114	Alphanum LJ	A60	Specify other make of vehicle if not included in vehicle make code below.
9. Model	115	174	Alphanum. LJ	A60	Model of vehicle.
10. Type of Fuel	175	175	Numeric RJ	I1	Type of fuel used by vehicle; 1-Gasoline, 2-Diesel, 3-Propane, 4- Natural Gas, 5- Electricity, 6 – Other, 8-Don't Know, 9-Refused.
11. Other Fuel Type	176	190	Alphanum. LJ	A15	Other type of fuel specified..
12. Commercial Use	191	192	Numeric RJ	I2	Code indicating if vehicle is used for commercial purposes; 1-Yes, 2-No, 98-Don't Know, 99-Refused.
13. Odometer reading	193	200	Numeric RJ	I8	Odometer reading on vehicle at beginning of travel day. Don't Know, 99999998. Refused, 99999999.
14. Ownership	201	202	Numeric RJ	I2	Code indicating ownership of this vehicle. 1 – Owned or leased by HH or member of HH, 2 – Owned or leased by another person, 98-Don't Know, 99-Refused
15. Non HH Vehicle Number	203	204	Numeric RJ	I2	If one or more household vehicles used by non-household member, this is the number of the vehicle that was used.
16. Non HH Use	205	205	Numeric RJ	I1	Code indicating if vehicle was used by a non-household member on the travel day. 1 – Yes, 2 – No, 8 – Don't Know, 9 – Refused.
17. Lighter Working	206	206	Numeric RJ	I1	Code indicating if lighter in vehicle is working. 1 – Yes, 2 – No, 8 – Don't Know, 9 – Refused.

4. Type of Vehicle Codes

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

RECORD TYPE 3 - CONTINUED

7. Vehicle Make Codes

01 – Acura	29 – Plymouth	57 – Gillig
02 – Audi	30 – Pontiac	58 – Grumman
03 – BMW	31 – Porsche	59 – Imperial
04 – Buick	32 – Range/Land Rover	60 – International Harvester / Navistar
05 – Cadillac	33 – Saab	61 – Iveco / Magirus
06 – Chevrolet	34 – Saturn	62 – Kenworth
07 – Chrysler	35 – Subaru	63 – Lancia
08 – Dodge	36 – Suzuki	64 – Mack
09 – Ford	37 – Toyota	65 – MCI
10 – Geo	38 – Volkswagen	66 – Merkur
11 – GMC	39 – Volvo	67 – MG
12 – Harley Davidson	40 – Yamaha	68 – Moto-Guzzi
13 – Honda	41 – Daewoo	69 – Norton
14 – Hyundai	42 – Alfa Romeo	70 – Peterbuilt
15 – Infiniti	43 – AM General	71 – Peugeot
16 – Isuzu	44 – AMC	72 – Renault
17 – Jaguar	45 – Austin / Austin Healey	73 – Sterling
18 – Jeep	46 – Bluebird	74 – Thomas Built
19 – Kawasaki	47 – Brockway	75 – Triumph
20 – KIA	48 – BSA	76 – White / Autocar-White GMC
21 – Lexus	49 – Daihatsu	77 – Yugo
22 – Lincoln	50 – Diamond Reo / Reo	78 – Other Make Moped
23 – Mazda	51 – Ducati	79 – Other Make Motorcycle
24 – Mercury	52 – Eagle	97 – Other (specify)
25 – Mercedes-Benz	53 – Eagle Coach	98 – Don't Know
26 – Mitsubishi	54 – Fiat	99 – Refused
27 – Nissan/Datsun	55 – Freightliner	
28 – Oldsmobile	56 – FWD	

RECORD TYPE 4 - TRIP INFORMATION

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

<u>Item</u>	<u>Begin</u>	<u>End</u>	<u>Type</u>	<u>Field Columns</u>	
				<u>Format</u>	<u>Description</u>
1. Record Type	1	2	Numeric RJ	I2	Code indicating type of record. Here it should be 4.
2. Sample Number	3	9	Numeric RJ	I7	Unique non-zero number assigned to each household participating in survey. This number must match the number used for the same household and recorded in the Household Data File.
3. Month	10	11	Numeric RJ	I2	Month of survey day.
4. Day	12	13	Numeric RJ	I2	Day of the month of the survey.
5. Person Number	14	15	Numeric RJ	I2	Number assigned to the person doing this activity.
6. Activity/Trip Number	16	17	Numeric RJ	I2	The first trip/activity for each person will be recorded as 0 for where their day began. Each subsequent trip/activity should be numbered sequentially as 1, 2, 3, etc.
7. Activity Type Code	18	19	Numeric RJ	I2	Code indicating the type of activity. See activity codes below. This may be posted coded. For activity 0 (where day began), this should be coded as a 1 if it began at home, 4 if day began at work, or as 20 if it began at another location. If this is coded as 20, the activity description should be included in item 8.
8. Activity Description	20	79	Alphanum LJ	A60	Description of Activity.
9. Location	80	109	Alphanum. LJ	A30	Name of location where activity took place.
10. Location Address	110	169	Alphanum. LJ	A60	Street address of location or name of nearest intersecting streets.
11. Location City	170	199	Alphanum. LJ	A30	Name of city where location is.
12. Location County	200	201	Numeric RJ	I2	Code indicating county where location is; 1- Randall, 2- Potter, 3- Lubbock, 98 – Unknown, 99- Refused
13. Zip Code	202	206	Numeric RJ	I5	Zip code of location address.
14. Route description	207	256	Alphanum LJ	A50	If location is outside of the Amarillo or Lubbock modeling area, this is the name of the highway/route/road used to exit the applicable study area.
15. Route New	257	261	Alphanum LJ	A4	Unused field. Not used in data set.
16. Study Area	262	262	Alphanum	I1	Code indicating study area in which activity address/TAZ zone is located. Use 'A' if zone is in the Amarillo study area, and 'L' if the zone is in the Lubbock study area. Field should be left blank if location is not within one of these two MPO study areas.
17. Zone Number	263	267	Numeric RJ	I5	Zone number of location address. If in a Amarillo or Lubbock modeling area county but location unknown, it should be coded 8888. Locations in Mexico should be coded 7777 and addresses outside of Amarillo and Lubbock modeling area counties, but within Texas should be coded using the Statewide Zone System and preceded by the number 1 in column 210. Unknown locations outside of Amarillo and Lubbock modeling area counties but within the state of Texas should be coded 6666. Addresses outside of Texas and Mexico should be coded using 9999.
18. Longitude	268	277	Numeric RJ	F10.6	Longitude of location. If within Amarillo and Lubbock modeling area counties, but unknown it should be coded 888.8888. If outside Amarillo and Lubbock modeling area counties but within Texas and unknown it should be coded as 6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.
19. Latitude	278	287	Numeric RJ	F10.6	Latitude of location. If within Amarillo and Lubbock modeling area counties, but unknown it should be coded 888.8888. If outside Amarillo and Lubbock modeling area counties but within Texas and unknown it should be coded as 6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.

RECORD TYPE 4, FIELD COLUMNS - CONTINUED

<u>Item</u>	<u>Begin</u>	<u>End</u>	<u>Type</u>	<u>Format</u>	<u>Description</u>
20. Type of Place	288	289	Numeric RJ	I2	Code indicating the type of place at this location. If coded as "other", specify in the next field. See code definitions below.
21. Other Place	290	309	Alphanum. LJ	A20	Description of "other" type of place where activity occurred.
22. Purpose	310	311	Numeric RJ	I2	Purpose of trip, developed based on the activity type in Item 7. See code definitions below.
23. Mode of Travel	312	313	Numeric RJ	I2	Code indicating mode of travel used in traveling to this location. See travel mode code definitions below.
24. Other Mode	314	343	Alphanum. LJ	A30	If "other" is coded in mode of travel, this is the description of the "other" mode.
25. Number of People	344	345	Numeric RJ	I2	If travel was by private vehicle, this is the number of persons in the vehicle, including the person driving. Non-private vehicle modes should be coded 96.
26. HH Members	346	347	Numeric RJ	I2	Of those in the vehicle, how many were household (HH) members.
27. Persons on Trip	348	357	Alphanum LJ	A10	Who was/were the HH members traveling with you? Code person numbers separated by commas.
28. Non HH Members	358	359	Numeric RJ	I2	Compute Non HH Members using information from items 24 and 25.
29.HH Vehicle	360	360	Numeric RJ	I1	Was a HH vehicle used to make this trip? 1=Yes, 2=No, 8-Don't Know, 9-Refused.
30. Vehicle Used	361	362	Numeric RJ	I2	If household vehicle was used for travel, this is the vehicle number (must correspond with vehicle number in household record). If other vehicle is used, this should be coded as 99.
31. Body Type	363	364	Numeric RJ	I2	See code set for body type.
32.Other Body Type	365	399	Alphanum LJ	A35	If body type is not in code set, describe body type.
33. Other Vehicle Year	400	403	Numeric RJ	I4	Year of "other" vehicle used for trip. 9998-Don't Know, 9999-Refused.
34. Other Vehicle Make	404	405	Numeric RJ	I2	Make of "other" vehicle used for trip. See code set.
35. Other Vehicle Make Description	406	465	Alphanum. LJ	A60	If make of other vehicle is coded as other, this field contains a description of the vehicle make
36.Other Vehicle Model	466	525	Alphanum. LJ	A60	Model of "other" vehicle used for trip.
37. Other Vehicle Fuel	526	527	Numeric RJ	I2	Code indicating type of fuel used by "other" vehicle; 1- Gasoline, 2-Diesel, 3- Propane, 4- Natural Gas, 5- Electricity, 6 – Other, 98-Don't Know, 99-Refused.
38. Other Fuel	528	544	Alphanum. LJ	A15	Description of "other" fuel for "other" vehicle, if not in fuel code above.
39. Other Vehicle Commercial Use	545	546	Numeric RJ	I2	Code indicating if "other" vehicle used for commercial purposes; 1-Yes, 2-No, 98-Don't Know, 99-Refused.
40. To Bus Stop	547	548	Numeric RJ	I2	Code indicating if they walked more than one block to get to bus stop; 1-Yes, 2-No, 98-Don't Know, 98-Refused.
41. To Activity	549	550	Numeric RJ	I2	Code indicating if they parked or got off bus more than one block from this activity; 1-Yes, 2-No, 98-Don't Know, 99- Refused.
42. Off Bus Location	551	600	Alphanum. LJ	A50	Street address or nearest intersecting streets where person got off of bus.
43. Parking Location	601	650	Alphanum. LJ	A50	Street address of nearest intersecting streets where vehicle was parked.
44. Parking Cost	651	657	Numeric RJ	F7.2	Amount paid for parking.
45. Payment Method	658	659	Numeric RJ	I2	Time period for parking cost payment; 1-Hourly, 2-Daily, 3-Weekly, 4-Monthly, 5-Annually, 98-Other, 99-Don't Know / Refused.
46. Arrival Hour	660	661	Numeric RJ	I2	Hour that person arrived at this location. This hour should be in terms of military time. If this is activity 0, this should be blank since this is where they began their day.
47. Arrival Minute	662	663	Numeric RJ	I2	Minute that person arrived at this location. If this is activity 0, this should be blank since this is where they began their day.
48. Departure Hour	664	665	Numeric RJ	I2	Hour that person departed this location. This hour should be in terms of military time. If this is the last activity, this should be blank.
49. Departure Minute	666	667	Numeric RJ	I2	Minute that person departed this location. If this is the last activity for this person, this should be blank.

RECORD TYPE 4 - CONTINUED

TYPE OF PLACE CODES

- | | |
|---|--|
| 1 – Residential | 13 – Health Club |
| 2 – Residential Type Workplace | 14 – Medical Facility/Hospital |
| 3 – Construction Site | 15 – Movie Theater/Cinema |
| 4 – Transportation stop (Bus, Train) | 16 – Restaurant/Fast Food, Bar&Grill |
| 5 – Automotive Dealer/Repair | 17 – Educational – 12 th Grade or lower |
| 6 – Bank / Financial Institution | 18 – Educational – college, trade, etc. |
| 7 – Barber/Beauty/Nail Salon | 19 – Shopping Mall/ Department Store. |
| 8 – Bookstore/Newstand | 20 – Gas Station |
| 9 – Convenience / Drug Store | 21 – Airport |
| 10 – Government/City/County/State/Federal Offices | 22 – Other |
| 11 – Offices (Non-Government) | 98 – Don't Know |
| 12 – Grocery | 99 – Refused |

ACTIVITY TYPES

- | | |
|--|---|
| 1 – At Home; primary job related | 12– Other Services |
| 2 – At Home; other | 13– Social / Recreational |
| 3 – At Home; job and non-job related | 14– Eat Out |
| 4 – Work | 15– Civic Activities (including church) |
| 5 – Work Related | 16 – Pick-up / Drop-off Person at Work |
| 6 – School; post secondary, college, trade | 17 – Pick-up / Drop-off Person at School / Day Care |
| 7 – School; secondary-day care, kindergarten, elementary, middle, high | 18 – Pick-up / Drop-off Person at Other |
| 8 – Incidental Shopping; gas, groceries, etc. | 19 – Change Mode of Travel |
| 9 – Major Shopping; clothes, appliances, etc. | 20 – Other Activity (specify) |
| 10 – Banking | 98 – Don't Know |
| 11– Personal Business; laundry, dry cleaning, barber, medical, etc | 99 – Refused |

TRIP PURPOSE CODES

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

MODE OF TRAVEL CODES

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

HOUSEHOLD/ACTIVITY SURVEY
GPS DATA PART 1 – GPS ADMINISTRATIVE DATA FILE MATRIX

Item #	Variable Name	Variable Description	Data Type	Justificat	Field Width	Collection Stage	Values
GC-1	UNIT_ID	ID link to Admin File	I	RJ	3	GPS	Ordinal Variable
GC-2	HH_ID	Household ID Number	I	RJ	6	Admin	
GC-3	FILE	File Name	A	LJ	8	Admin	Travel Date_Box#(e.g.,0511_b2)
GC-4	VEHNUM	Vehicle Number	I	RJ	2	REC	
GC-5	YEAR	Vehicle X – Year	I	RJ	4	REC	
GC-6	MAKE	Vehicle X – Make	A	LJ	20	REC	
GC-7	MODEL	Vehicle X – Model	A	LJ	20	REC	
GC-8	BEG_OD	Odometer Reading when GPS Installed	I	RJ	8	GPS	#####.#
GC-9	END_OD	Odometer Reading when GPS Unit Removed	I	RJ	8	GPS	#####.#
GC-10	INST_DATE	Date GPS Unit Installed	I	RJ	6	GPS	
GC-11	INS_TIME	Time GPS Unit Installed	I	RJ	4	GPS	HHMM (Military Time – include leading zero for single digit hour or minute)
GC-12	REM_DATE	Date GPS Unit Removed	I	RJ	6	GPS	
GC-13	REM_TIME	Time GPS Unit Removed	I	RJ	4	GPS	HHMM (Military time – include leading zero for single digit hour or minute)
GC-14	POWER	Power Source	I	RJ	1	GPS	1=Switched; 2=Continuous
GC-15		1 st Vehicle Start Time	I	RJ	6		HHMMSS (Military time – include leading zero for single digit hour, minute, or second)
GC-16		1 st Vehicle Stop time	I	RJ	6		HHMMSS (Military time – include leading zero for single digit hour
GC-17		2 nd Vehicle Start Time	I	RJ	6		HHMMSS (Military time – include leading zero for single digit hour
GC-18		2 nd Vehicle Stop Time	I	RJ	6		HHMMSS (Military time – include leading zero for single digit hour
“		“	“	“	“	“	“
GC-N		Nth Vehicle Stop Time	I	RJ	6		HHMMSS (Military time – include leading zero for single digit hour, minute, or second)

HOUSEHOLD/ACTIVITY TRAVEL SURVEY
GPS DATA PART 2 – MATRIX OF GPS DATA ITEMS

Item #	Variable Name	Variable Description	Data Type	Just.	Field Width	Coll. Stage	Verify Stage	Values	Formal and Full Text
GR-1	RECTYPE	Record Type	I	RJ	2	A	NA	GPS Record Type =5	CORRECTED DATA
GR-2	GPS_ID	GPS Receiver Unit ID Number	A	LJ	20	GPS	NA	AAA1234567	
GR-3	Unit_ID	ID Number Linked to Admin. ID File	I	RJ	3	A	NA		
GR-4	GMT_DATE	Greenwich Mean Time Date Stamp	I	RJ	10	GPS	NA	MM/DD/YYYY (include leading zero for sinel month or day)	
GR-5	GMT_TIME	Greenwich Mean Time Time Stamp	I	RJ	8	GPS	NA	HH:MM:SS (Military Time – include leading zero for single hour , minute, or second)	
GR-6	LOC_DATE	Local Date Stamp	I	RJ	10	GPS	NA	MM/DD/YYYY (include leading zero for sinel month or day)	
GR-7	LOC_TIME	Local Time Stamp	I	RJ	8	GPS	NA	HH:MM:SS (Military Time – include leading zero for single hour , minute, or second)	
GR-8	LAT_RAW	Latitude	F	RJ	16	GPS	NA	Degrees	XXX.XXXXXX deg
GR-9	LONG_RAW	Longitude	F	RJ	16	GPS	NA	Degrees	XXX.XXXXXX deg.
GR-10	ELEV_RAW	Elevation	F	RJ	16	GPS	NA	Meters	
GR-11	VELOCITY	Velocity	F	RJ	8	GPS	NA	Meters/second	0..514.00m/s
GR-12	HEADING	Direction of Vehicle	F	RJ	6	GPS	NA	True north	0.0 ..359.9 deg