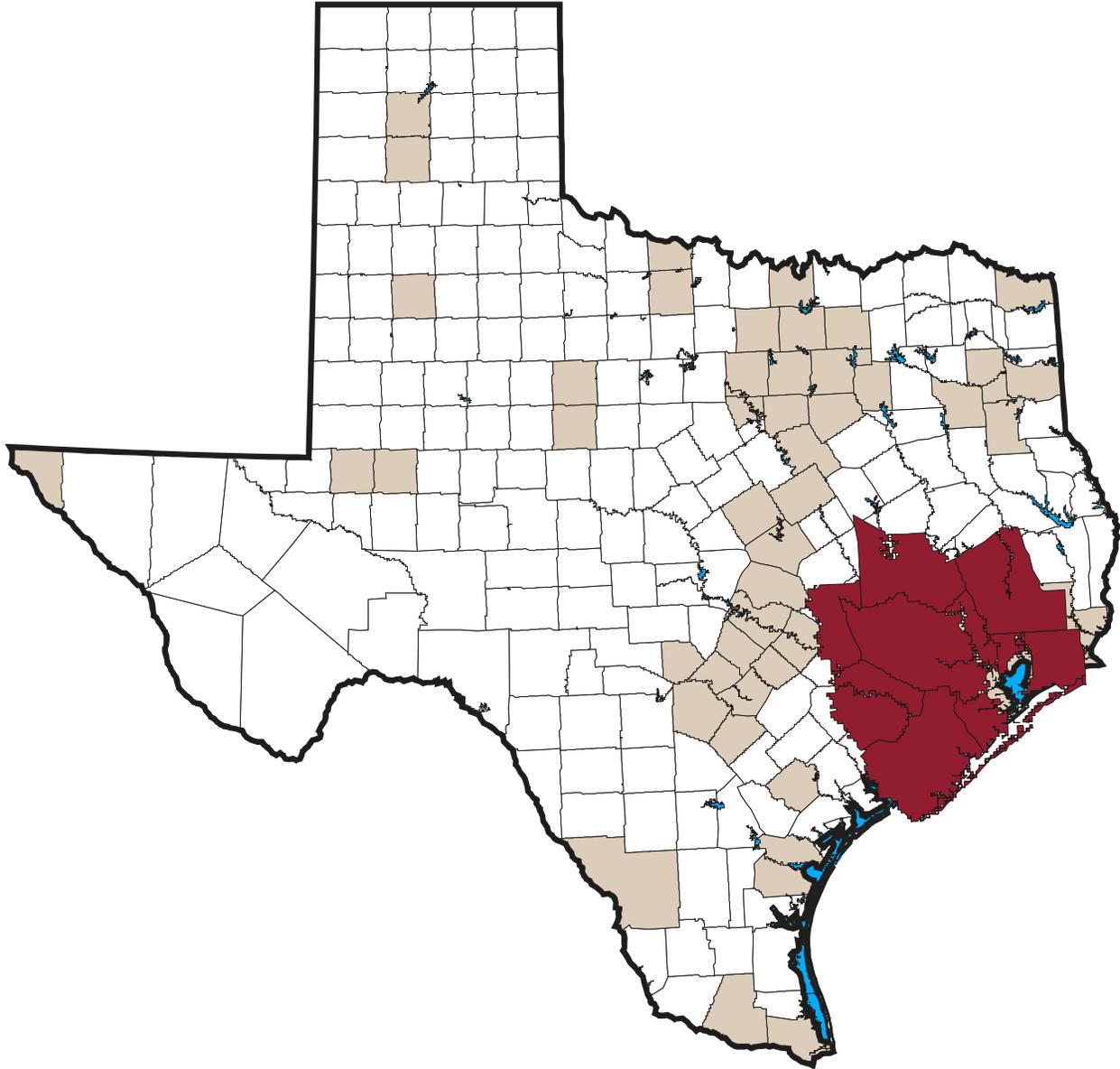


# 2007-2009 H-GAC MPO Household Travel Survey Technical Summary



Prepared by the  
Texas A&M Transportation Institute  
April 2013



**2007-2009 Houston-Galveston Area Council  
Metropolitan Planning Organization  
Household Travel Survey**

**TECHNICAL SUMMARY**

**Texas Department of Transportation Travel Survey Program**

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## **INTRODUCTION**

From 2007 to 2009, the Transportation Planning and Programming Division (TPP) of the Texas Department of Transportation (TxDOT) sponsored a comprehensive set of travel surveys in the Houston-Galveston Area Council (H-GAC) Metropolitan Planning Organization (MPO) planning study area, consisting of eight counties. The eight counties in the 2007-2009 travel survey study area included: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller.

The purpose of the surveys was to collect data and information needed as input to the H-GAC travel demand model for the H-GAC 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 the conformity or non-conformity status of transportation plans to federal clean air regulations, the use of accurate and up-to-date data from regional travel surveys is important to TxDOT and MPOs across the state.

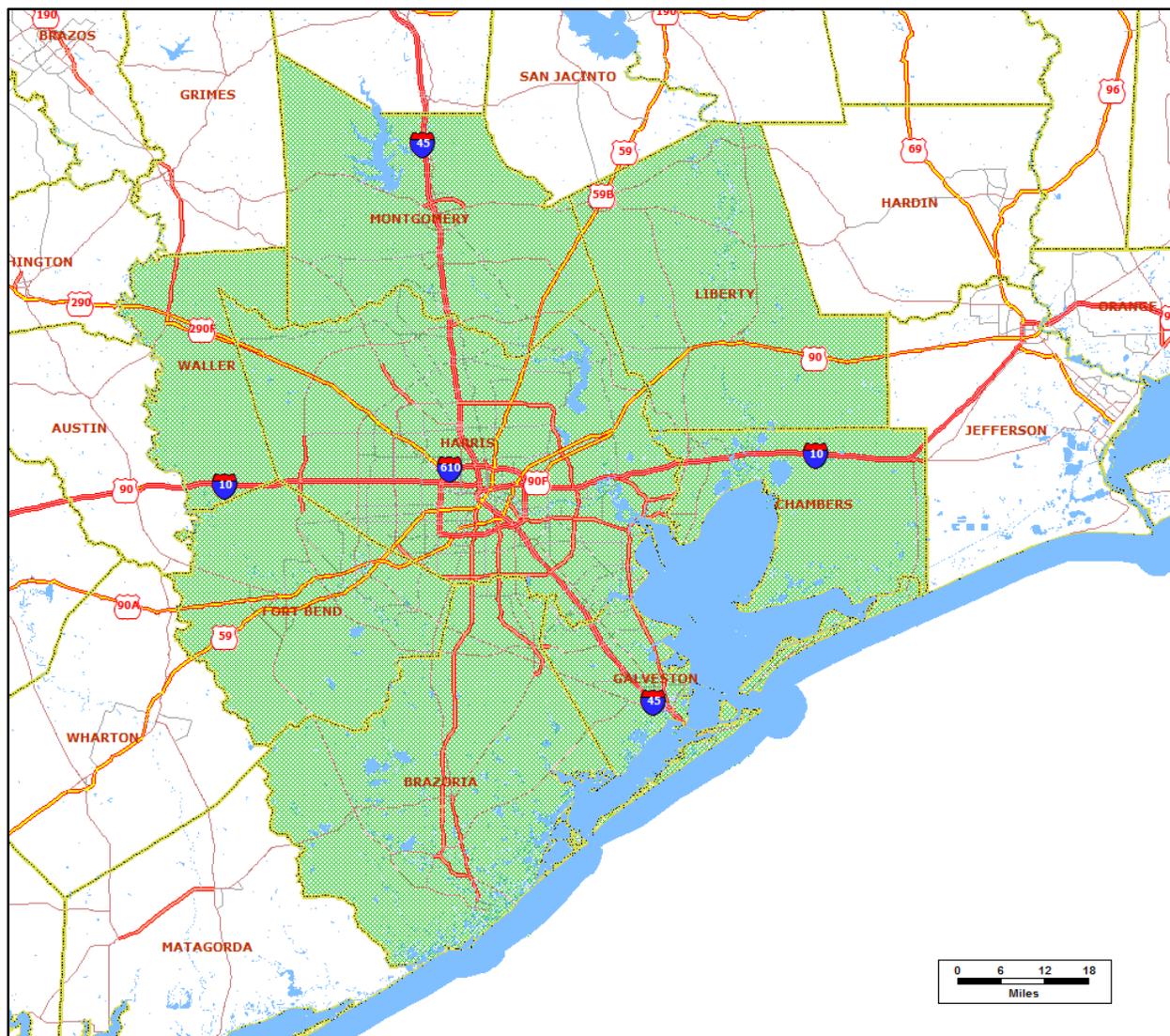
Three different types of origin-destination travel surveys were conducted in the H-GAC area, including a household survey, a work place survey, and a commercial vehicle survey. The household survey collected data on the amount and characteristics of travel generated by households within the area. The 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 H-GAC 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 was 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 was 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 H-GAC study area in 2008-2009 was estimated from the 2000 census and the Texas State Data Center (TSDC) population projections for the H-GAC eight-county planning area. Table 1 shows the estimated number of households in the study area in 2008-2009, the number of households surveyed, and the distribution of the number of households surveyed stratified by household size and household income range.



**Figure 1. H-GAC MPO Household Survey Area.**

A total of 5,807 households were surveyed. The minimum number of households surveyed in any household size/income range cell was 79 and the maximum number surveyed was 412. 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 1,976,775 households in the eight-county H-GAC planning area, 23 percent are households with one person and 29 percent are households with two persons — 52 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					Total
	1	2	3	4	5+	
<b>Estimated 2008-2009 Number of Households</b>						
\$0 to \$22,499	170,398	88,757	52,187	42,303	37,164	<b>390,809</b>
\$22,500 to \$39,999	121,769	95,873	55,547	50,210	45,070	<b>368,469</b>
\$40,000 to \$64,999	85,989	115,839	69,977	66,025	57,920	<b>395,750</b>
\$65,000 to \$99,999	42,303	117,223	72,548	70,570	61,478	<b>364,122</b>
\$100,000 +	35,384	161,305	94,688	91,130	75,118	<b>457,625</b>
<b>Totals</b>	<b>455,843</b>	<b>578,997</b>	<b>344,947</b>	<b>320,238</b>	<b>276,750</b>	<b>1,976,775</b>
<b>Number of Households Surveyed</b>						
\$0 to \$22,499	178	380	231	165	167	<b>1,121</b>
\$22,500 to \$39,999	161	412	232	244	248	<b>1,297</b>
\$40,000 to \$64,999	132	313	262	238	242	<b>1,187</b>
\$65,000 to \$99,999	97	312	261	261	235	<b>1,166</b>
\$100,000 +	79	218	242	254	243	<b>1,036</b>
<b>Totals</b>	<b>647</b>	<b>1,635</b>	<b>1,228</b>	<b>1,162</b>	<b>1,135</b>	<b>5,807</b>
<b>Percent of Households Surveyed</b>						
\$0 to \$22,499	3.1	6.5	4.0	2.8	2.9	<b>19.3</b>
\$22,500 to \$39,999	2.8	7.1	4.1	4.2	4.3	<b>22.5</b>
\$40,000 to \$64,999	2.3	5.4	4.5	4.1	4.2	<b>20.5</b>
\$65,000 to \$99,999	1.3	5.4	4.5	4.6	4.1	<b>19.9</b>
\$100,000 +	1.4	3.6	4.2	4.4	4.2	<b>17.8</b>
<b>Totals</b>	<b>10.9</b>	<b>28.0</b>	<b>21.3</b>	<b>20.1</b>	<b>19.7</b>	<b>100.0</b>

## **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 2007, the spring 2008, and the spring of 2009. Completion of data collection for the survey was delayed due to Hurricane Ike, which occurred in the fall of 2008. For participating households, each member of the household was provided a diary to record his or her travel. The survey data was retrieved from participants by telephone at a pre-arranged call-back time within two days after their specified travel date. Every attempt was made to interview all persons within each of the 5,807 randomly-selected households that participated in the survey. In many cases, a proxy provided information for household members who were not available. Adult members of the household usually reported the activities and trips for minors in the household. A small number of households chose to return their completed diaries by mail, in lieu of providing their trip information over the telephone. Figure 1 shows the eight-county HGAC MPO planning area.

### **Key Points Regarding Household Survey Data**

- The survey data is for an average weekday in the fall of 2008, the spring of 2008, and the spring of 2009.
- 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 eight-county H-GAC MPO planning area. It does not include trips that began inside the eight-county planning area and ended outside the planning area or vice versa.

## **Findings of the Survey**

For the H-GAC MPO planning 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 1.42 persons per vehicle;
- Over 93 percent of all person trips were made in a personal-use vehicle;
- Of the household population that traveled, 93 percent drove a vehicle, less than 3 percent walked, slightly less than 4 percent rode on a school bus, and less than 1 percent rode a bicycle for transportation;
- Slightly less than 20 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 3.3 person trips per day and each household made 9.1 person trips per day; and
- The peak hour for household travel was from 7:01 a.m. to 8:00 a.m. during which 10 percent of the trip starts occurred. The second highest hour for household trip starts was from 3:01 p.m.-to-4:00 p.m. when over 9 percent of the daily trip starts occurred.

## **HOUSEHOLD CHARACTERISTICS**

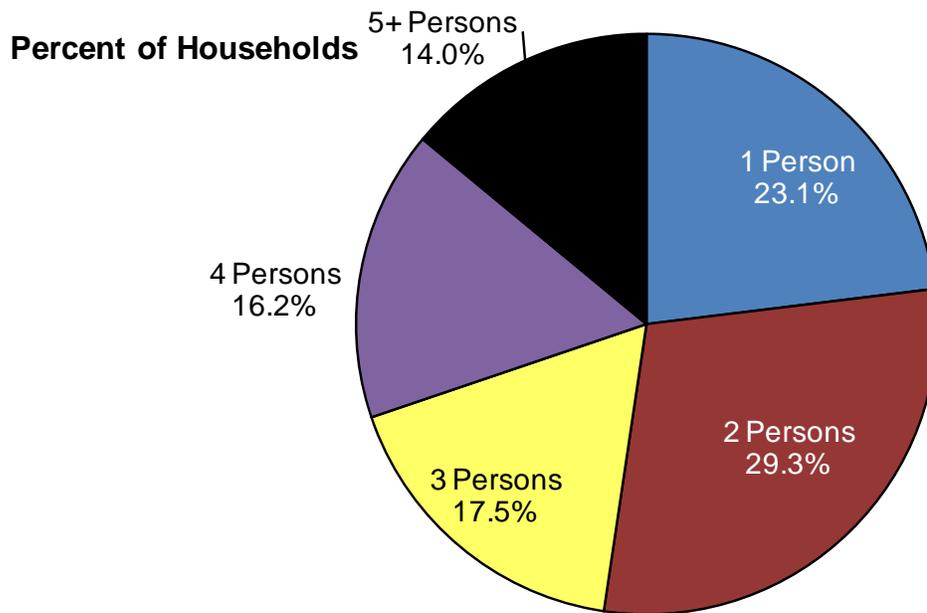
Characteristics of the household influence travel behavior. For example, household size, income, vehicles available, number of persons employed, and family life cycle affect the amount and the time-of-day that trips are made. For this survey, households include only those persons living in residences, 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 2007-2009. 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 H-GAC MPO study area in 2007-2009 estimated from the survey was 2.8 persons per household, nearly equal to the 2.7 persons per household in the 1995 survey. For the H-GAC planning area travel model, three variables — household size, household income, and the number of persons employed in the household — were used to stratify trip rates for the home-based work (HBW) trip purpose. For the home-based non-work (HBNW) and the non-home based (NHB) trip purposes, two variables — household size and household income — were used to stratify trip rates.

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.

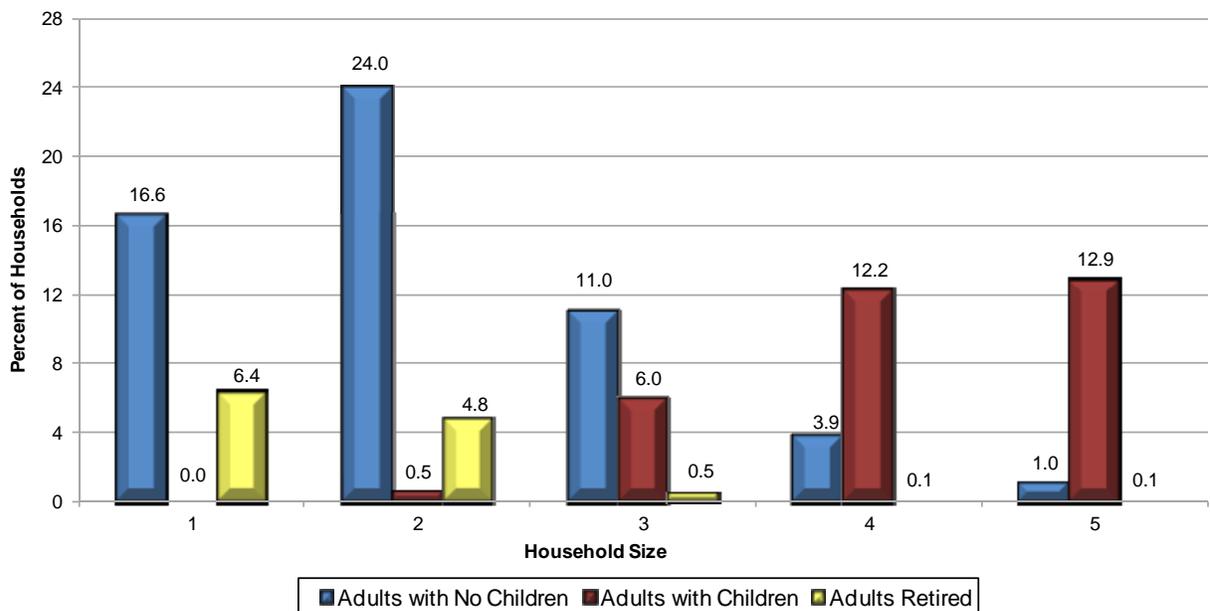


Source: 2007-2009 H-GAC MPO Household Travel Survey.

**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 1,976,776 households in the H-GAC MPO travel area in 2007-2009. Figure 3 shows the distribution of these 1,976,776 households by those with no children and not retired, those with children, and those with only retired persons. The statistical distribution of the 1,976,776 households include the following: slightly less than one-third of the households (32 percent) have children, more than half of the households (56 percent) have no children, and 12 percent of the households were retired persons.

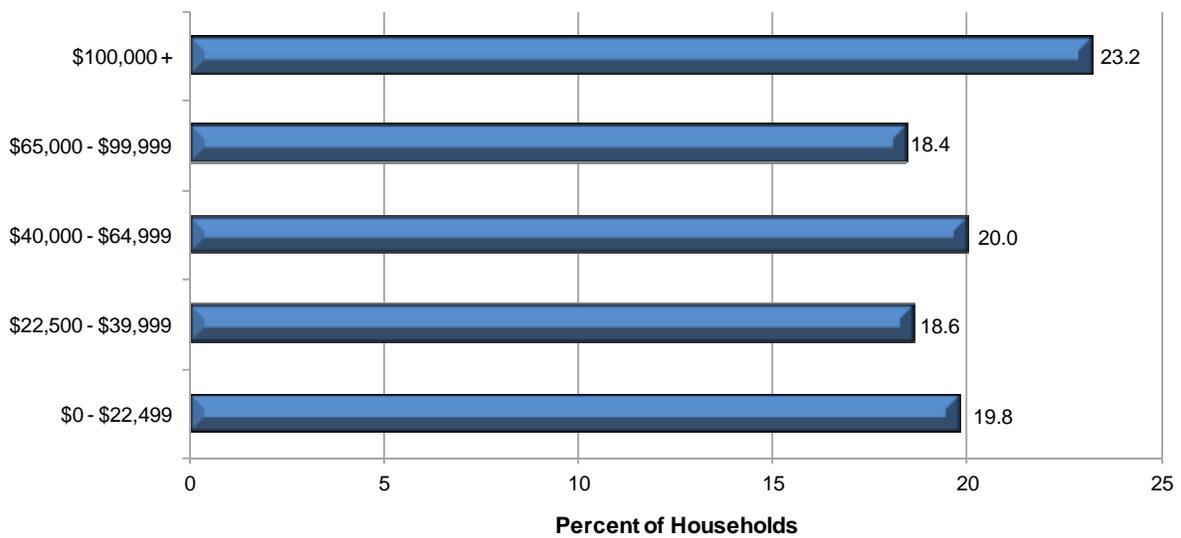


Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis. Note: The data represent households within the H-GAC MPO travel survey area. The data does not include residents who did not report age. Adults are persons 18 years of age and older. Retired households have only retired persons. If 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. Commonly, as household income increases, the amount of household travel tends to increase. In addition, 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 1,976,776 expanded households in the survey by the combined annual household income range.

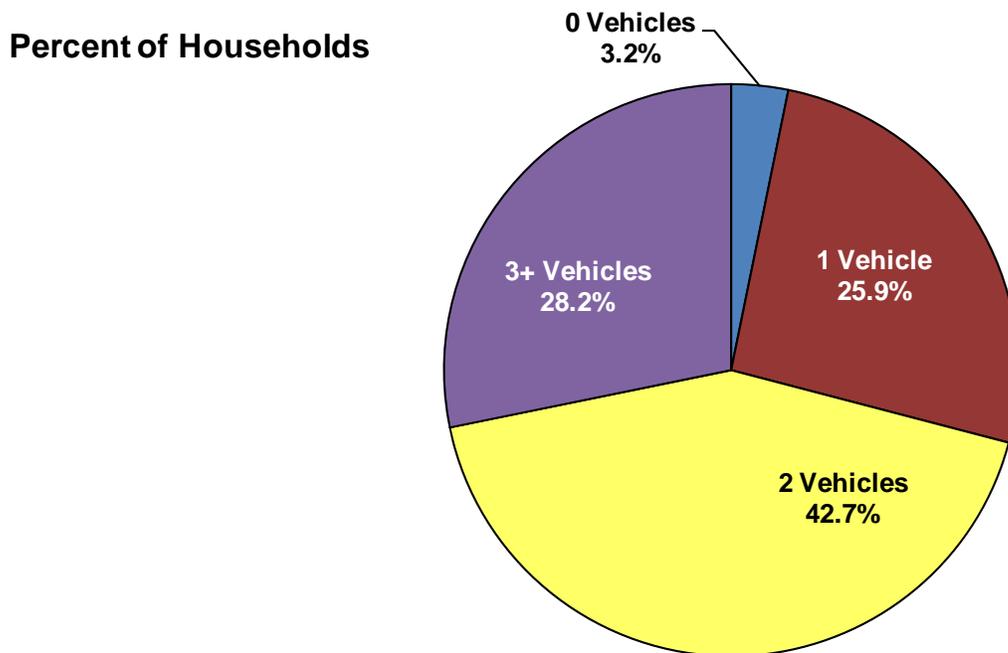


Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

**Figure 4. Distribution of Households by Household Income Range.**

## Household Vehicle Availability and Licensed Drivers

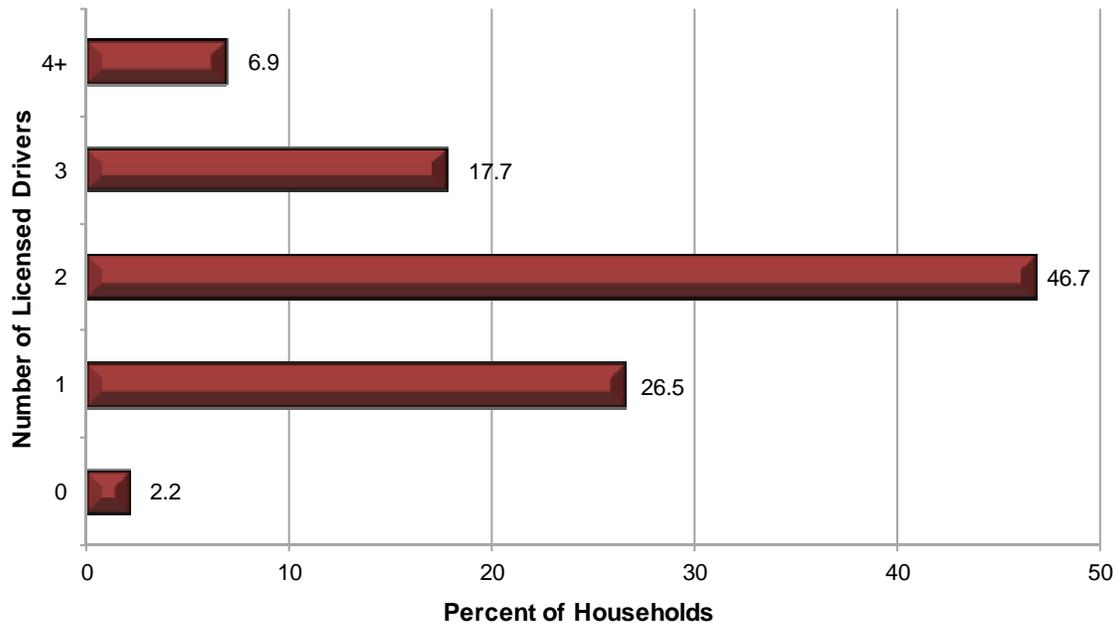
In general, as the number of vehicles available to the household increases, daily household travel increases. This household characteristic also impacts forecasting the demand for public transportation. As household vehicle availability increases, the household demand for public transportation tends to decrease. Figure 5 shows the distribution of the 1,976,776 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 2.1.



Source: 2007-2009 H-GAC MPO 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.**

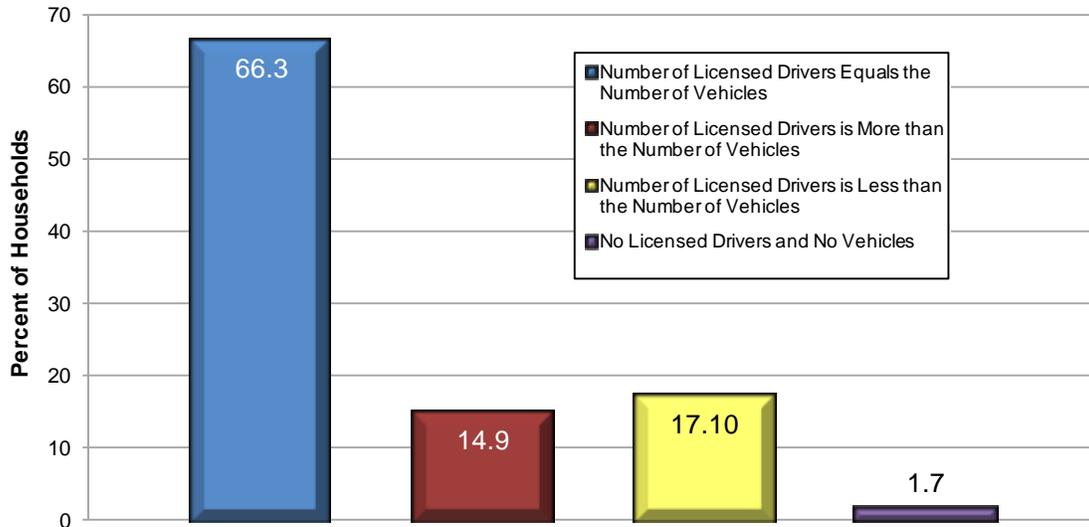
Figure 6 shows the distribution of the 1,976,776 expanded households by the number of licensed drivers per household. More than 2 percent of the households did not have a licensed driver.



Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

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

Figure 7 shows the distribution of the 1,976,776 expanded households by the number of licensed drivers and the number of vehicles available. For the majority of households (66 percent), the number of licensed drivers and the number of vehicles available is equal. For 17 percent of the households, the number of licensed drivers is less than the number of vehicles available, and for slightly less than 15 percent of the households, the number of licensed drivers is greater than the number of vehicles available. Slightly less than 2 percent of the households have neither a licensed driver nor a vehicle available.

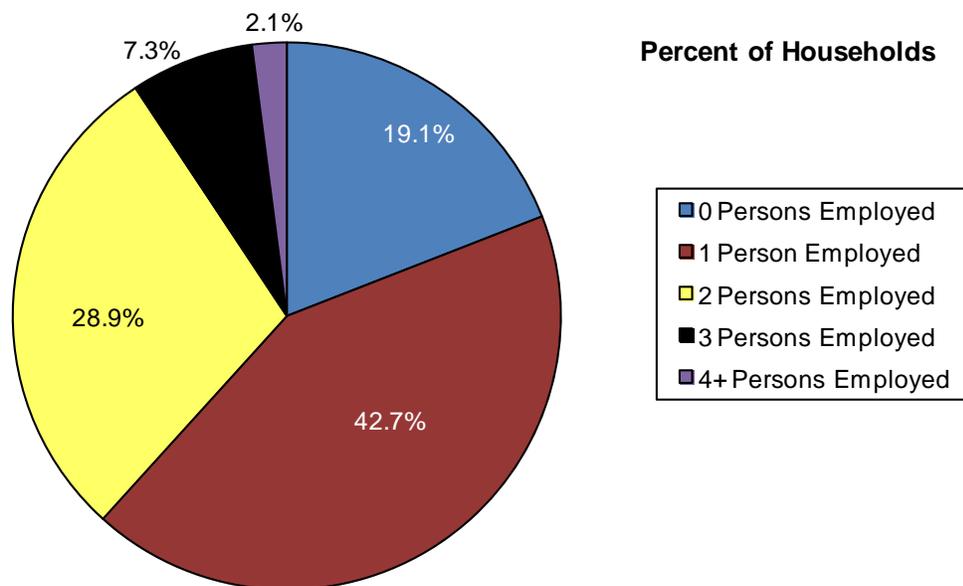


Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

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

### Household Employment

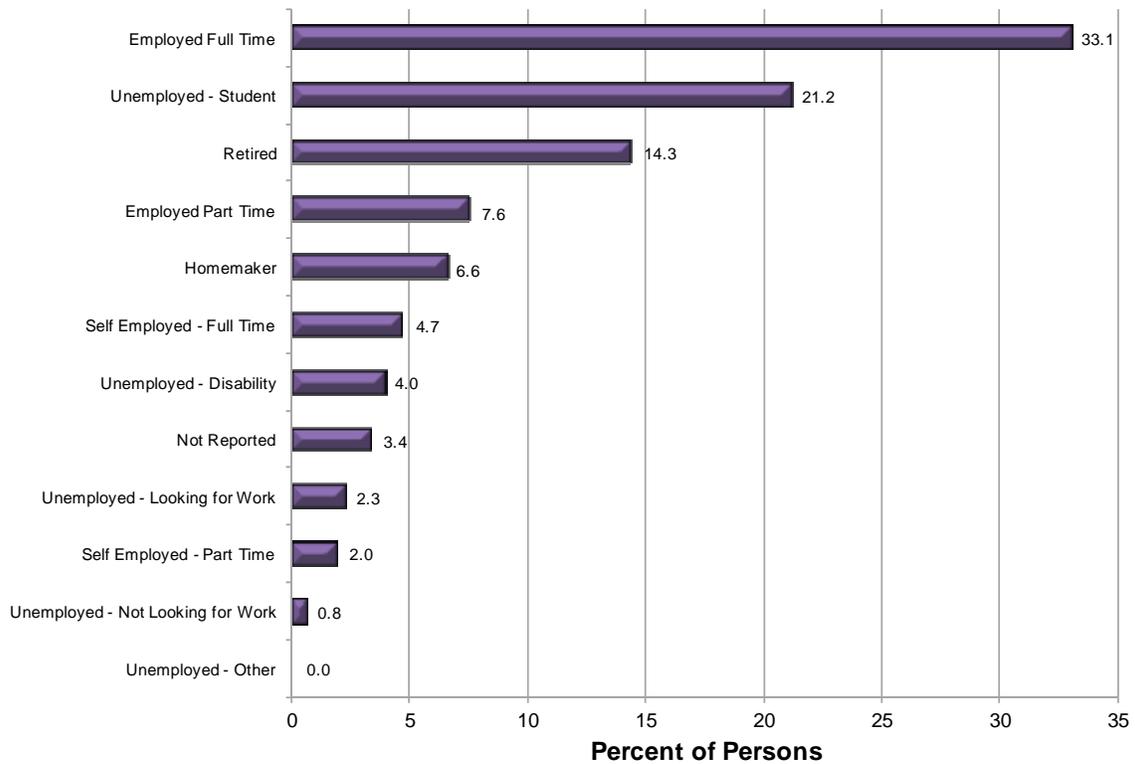
The 1,976,776 expanded households included 5,481,363 persons for an average of 2.8 persons per household. Figure 8 shows the distribution of the 1,976,776 expanded households by the number of persons employed.



Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

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

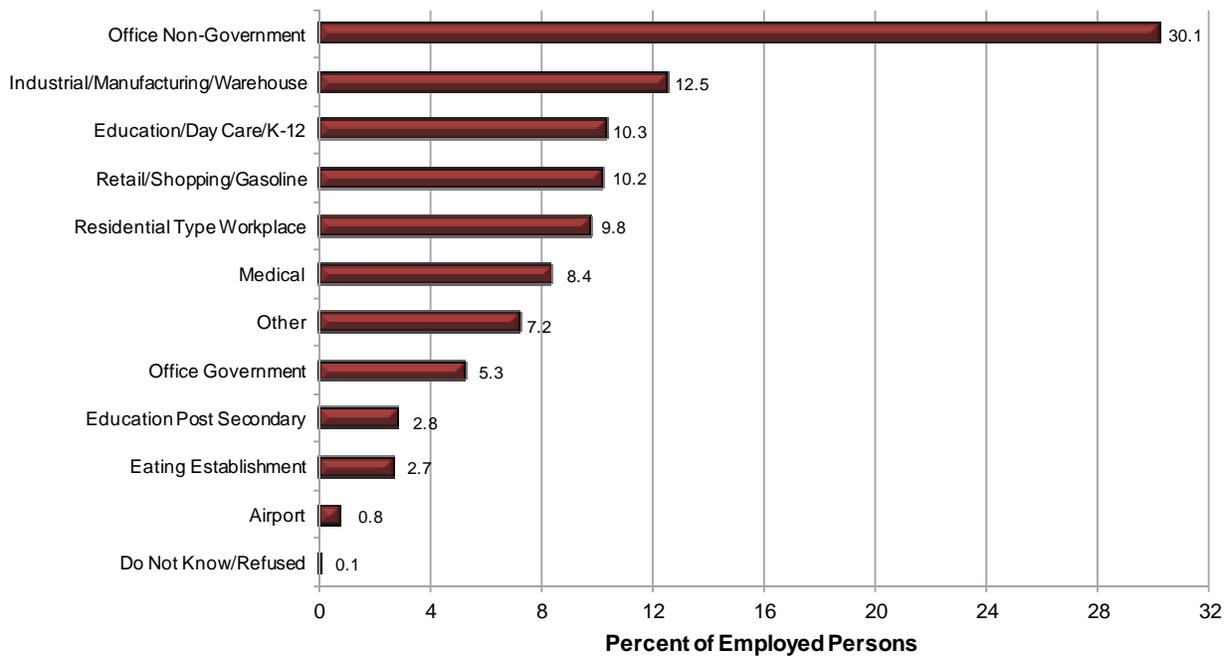
Figure 9 shows the distribution of all persons regardless of age by employment status. Slightly more than one-third (33.1 percent) of the population is employed full time and over 20 percent (21.2) of the population is students. More than 14 percent of the population is retired.



Source: 2007-2009 H-GAC MPO 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 1,976,776 households had 2,590,522 employed persons for an average of 1.31 employed persons per household. The “Office Non-government” employer type accounted for the largest percentage of employed persons, at more than 30 percent. The employer-type “Industrial/Manufacturing/Warehouse” includes the second largest percentage of employed persons, having slightly more than 12 percent of those employed.

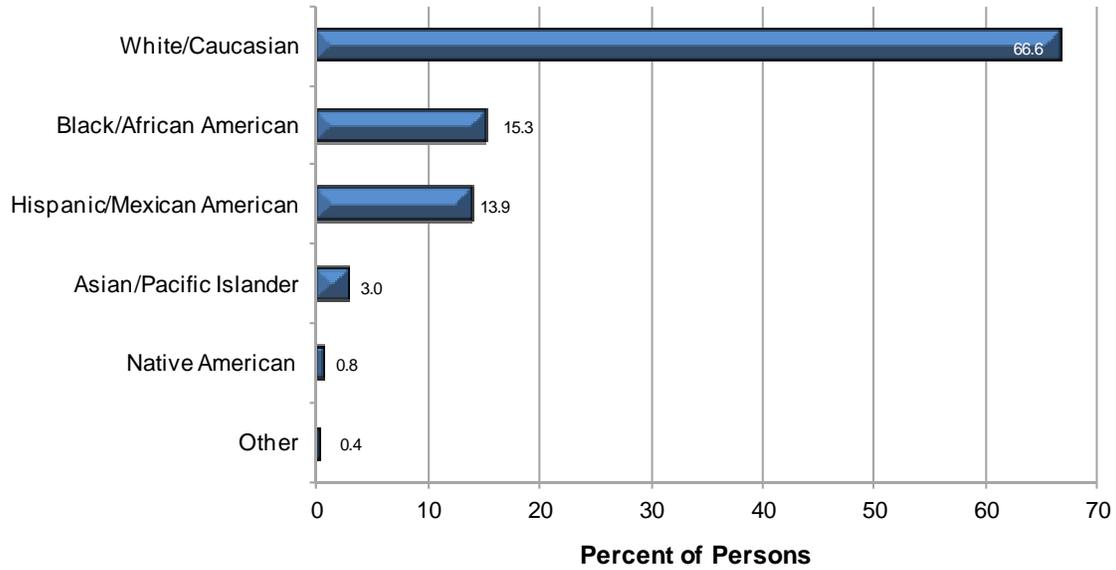


Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

**Figure 10. Distribution of Employed Persons by Employer Type.**

## Ethnicity

Figure 11 shows the distribution of the 5,481,363 persons by ethnicity.



Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

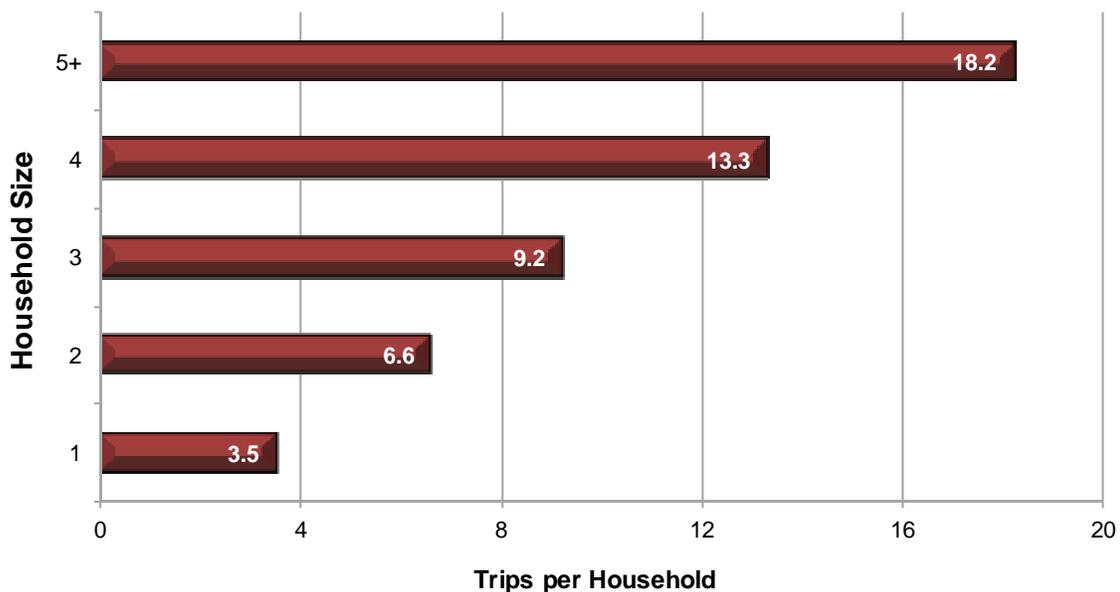
**Figure 11. Distribution of Persons by Ethnicity.**

## 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.

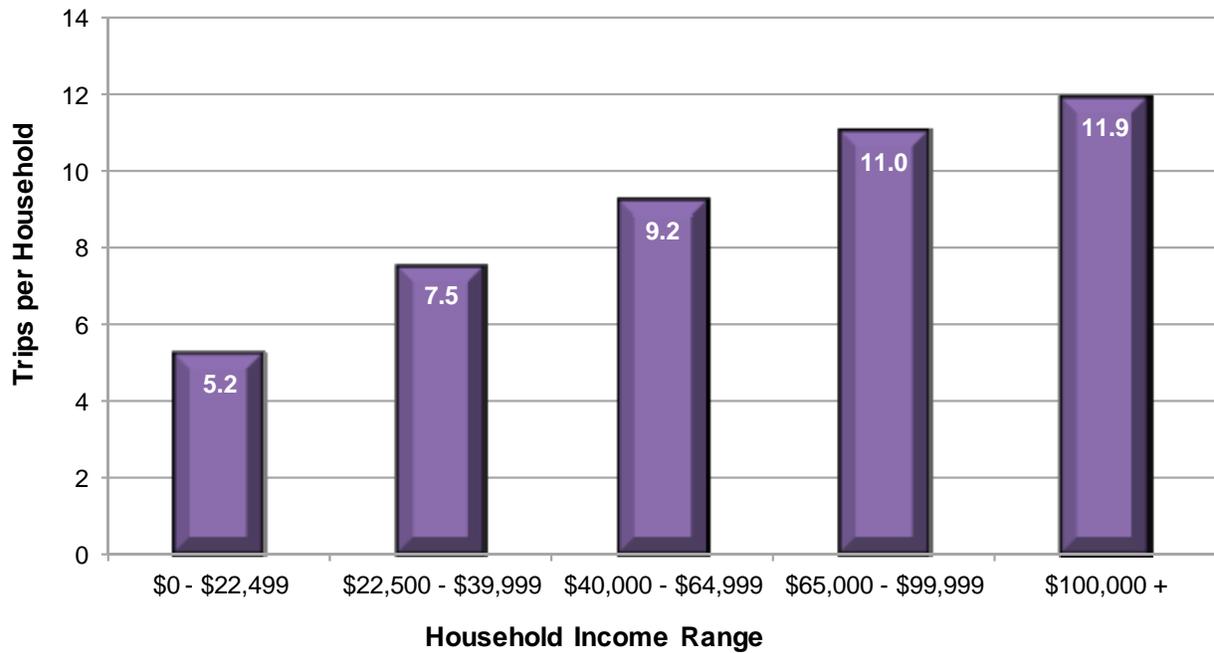
### Household Trip Rates and Vehicle Occupancy

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: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

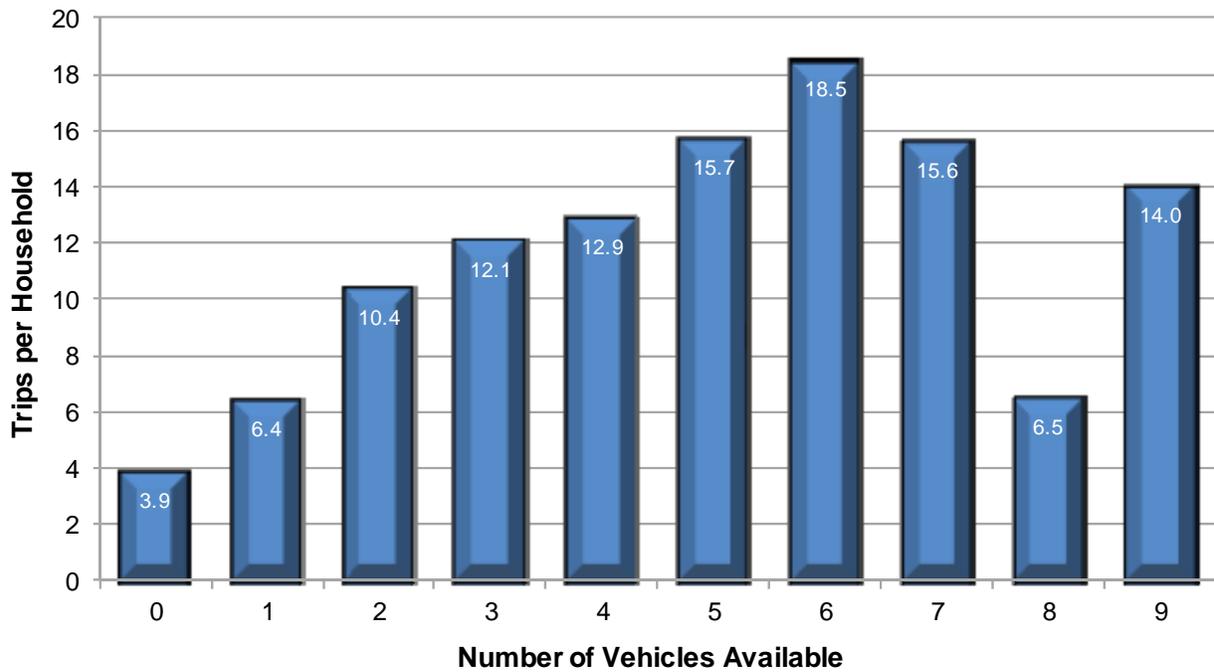
**Figure 12. Household Trip Rates by Household Size.**



Source: 2007-2009 H-GAC MPO 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 seven or more vehicles available can be attributed to small sample sizes for these categories.



Source: 2007-2009 H-GAC MPO 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 eight-county H-GAC MPO planning area) person trip rate for all households was 9.1 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 to \$22,499	2.61	4.61	6.17	8.57	13.65
\$22,500 to \$39,999	3.98	5.92	8.30	10.94	15.65
\$40,000 to \$64,999	3.95	6.61	8.53	13.49	18.30
\$65,000 to \$99,999	4.43	7.19	10.25	14.36	19.68
\$100,000 +	3.56	7.70	11.03	15.94	20.71

Source: 2007-2009 H-GAC MPO 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 1.42 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 to \$22,499	1.13	1.42	1.45	1.62	1.99
\$22,500 to \$39,999	1.28	1.30	1.39	1.57	1.82
\$40,000 to \$64,999	1.11	1.26	1.32	1.58	1.89
\$65,000 to \$99,999	1.09	1.16	1.33	1.47	1.73
\$100,000 +	1.17	1.24	1.26	1.47	1.62

Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

### **Travel by Age Cohort**

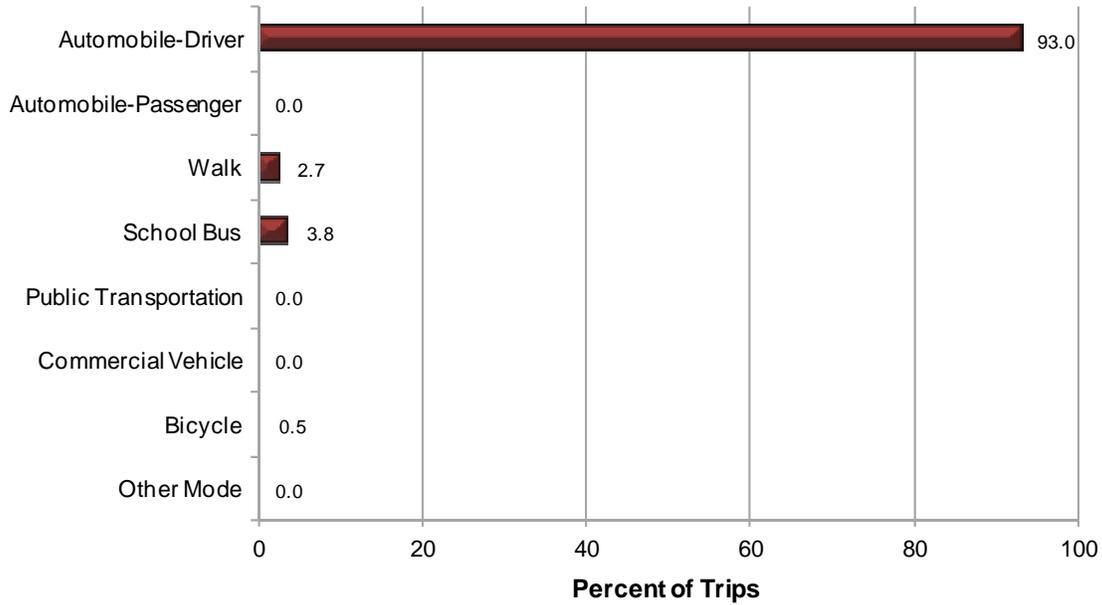
A total of 5,481,363 persons were represented in the expanded household survey, based on persons in the survey who reported their age. Table 4 shows the number of persons and distribution of persons by age cohort that did not make any internal trips on their survey day. As expected, older persons are less likely to travel than are younger persons, but the older population is mobile and 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.**

<b>Age Cohort</b>	<b>Number of Persons</b>	<b>Percent of Persons</b>	<b>Number of Persons Making Trips</b>	<b>Number of Persons Making Zero Internal Trips</b>	<b>Percent of Persons Making Zero Internal Trips</b>
0-14	1,079,482	19.69	943,128	136,344	12.63
15-19	297,634	5.43	259,423	38,210	12.83
20-24	248,467	4.53	180,392	68,075	27.39
25-29	208,768	3.81	160,094	48,673	23.31
30-34	202,642	3.70	162,684	39,959	19.72
35-39	251,574	4.59	206,932	44,642	17.75
40-44	311,306	5.68	256,301	55,006	17.67
45-49	391,863	7.15	324,462	67,401	17.20
50-54	510,951	9.32	414,501	96,450	18.88
55-59	514,677	9.39	420,764	93,913	18.25
60-64	474,483	8.66	373,810	100,672	21.22
65-69	371,527	6.78	262,828	108,699	29.26
70-74	262,937	4.80	172,014	90,924	34.58
75-79	187,398	3.42	124,543	62,855	33.54
80 +	167,655	3.05	77,968	89,686	53.49
<b>Total</b>	<b>5,481,363</b>	<b>100</b>	<b>4,339,843</b>	<b>1,141,509</b>	<b>20.82</b>

## **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 93 percent of the person trips. Bicycle trips account for less than 1 percent of the person trips and walk accounted for 2.7 percent of the person trips. The surveyed households indicated zero person trips on public transportation.



Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

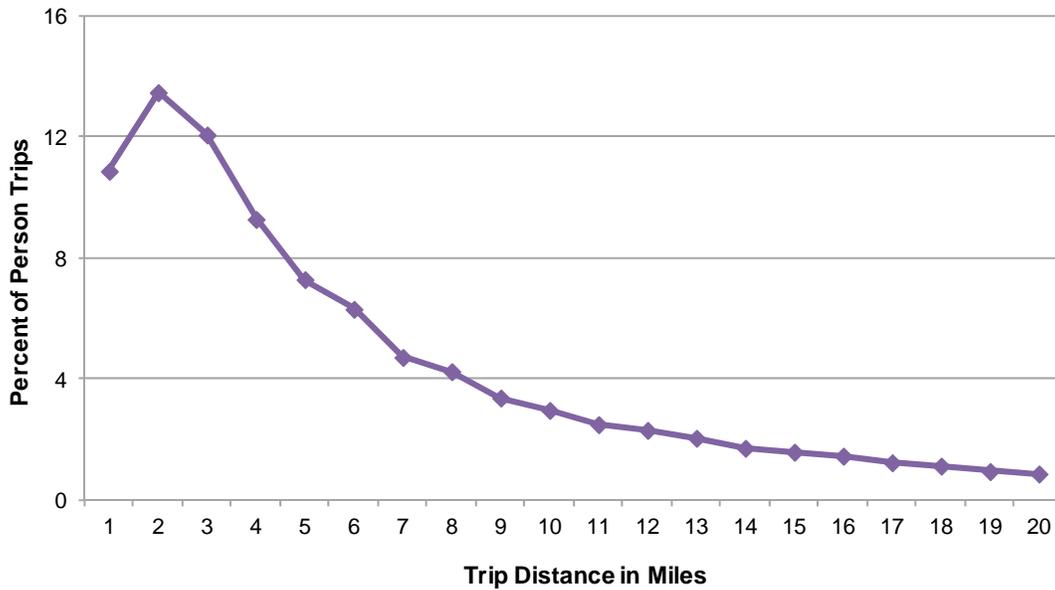
**Figure 15. Distribution of Person Trips by Mode of Travel.**

## 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 vehicle miles of travel (VMT).

### Trip Distance

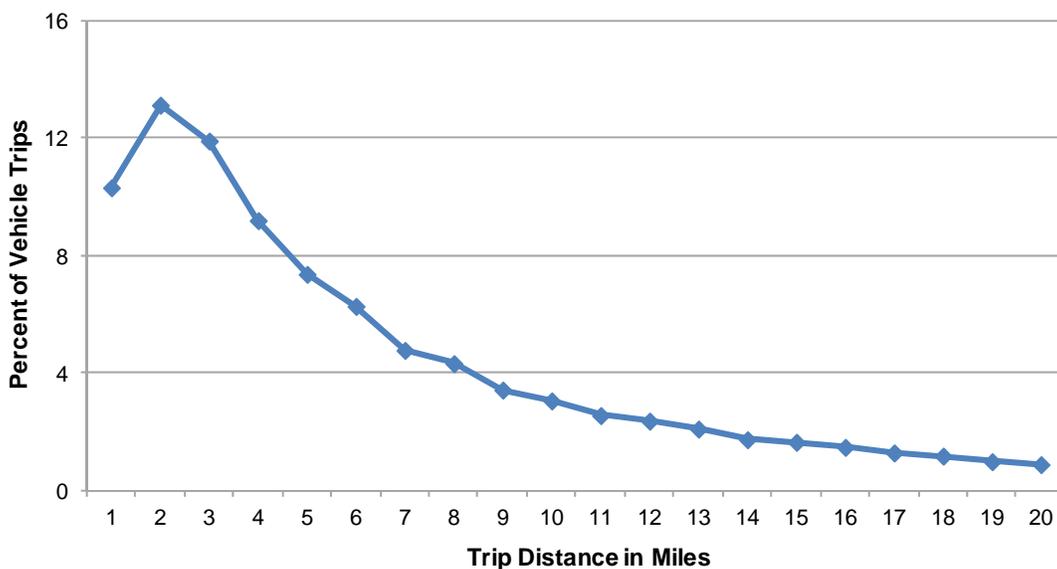
Figure 16 shows the distribution of person trips by the length of the trip in miles. The distribution is for internal person trips, trips beginning and ending inside the eight-county study area. The average person trip length was 8.4 miles.



Source: 2007-2009 H-GAC MPO 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 8.6 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.

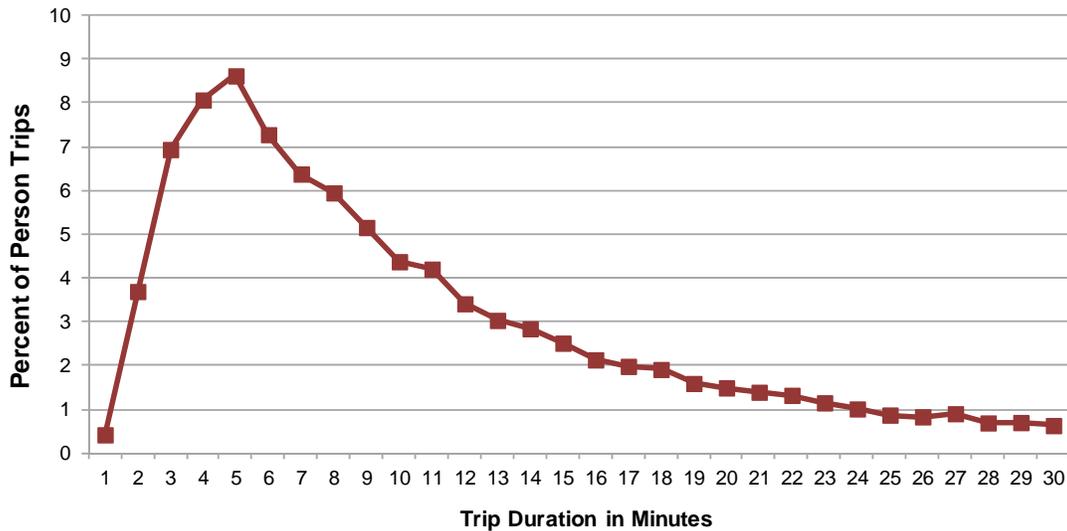


Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

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

## Trip Duration

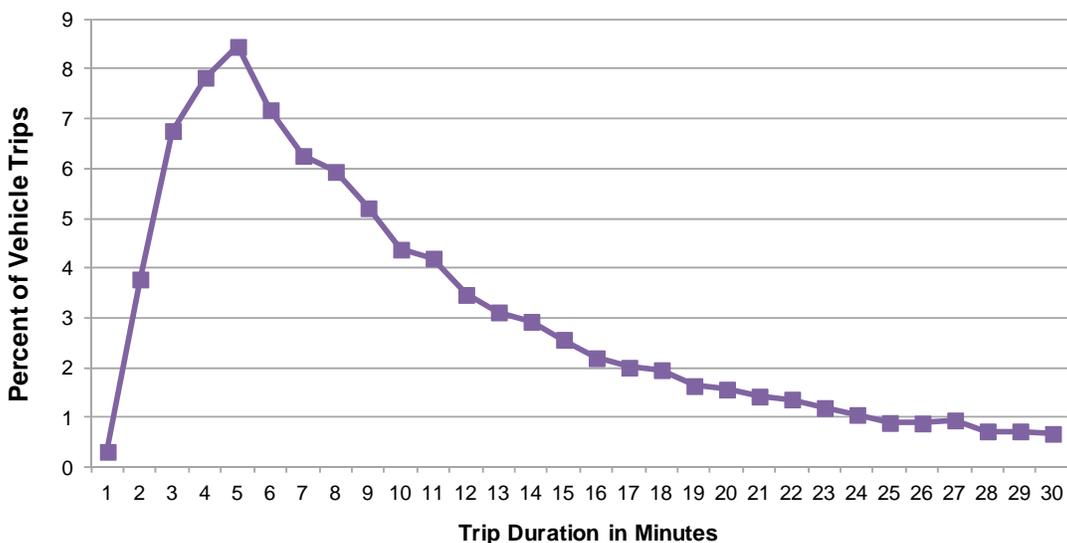
Figure 18 shows the distribution of person trips by the duration of the trip in minutes. The distribution is for internal person trips, trips beginning and ending inside the eight-county study area. The average person trip duration was 12.9 minutes.



Source: 2007-2009 H-GAC MPO 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 13.2 minutes.



Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

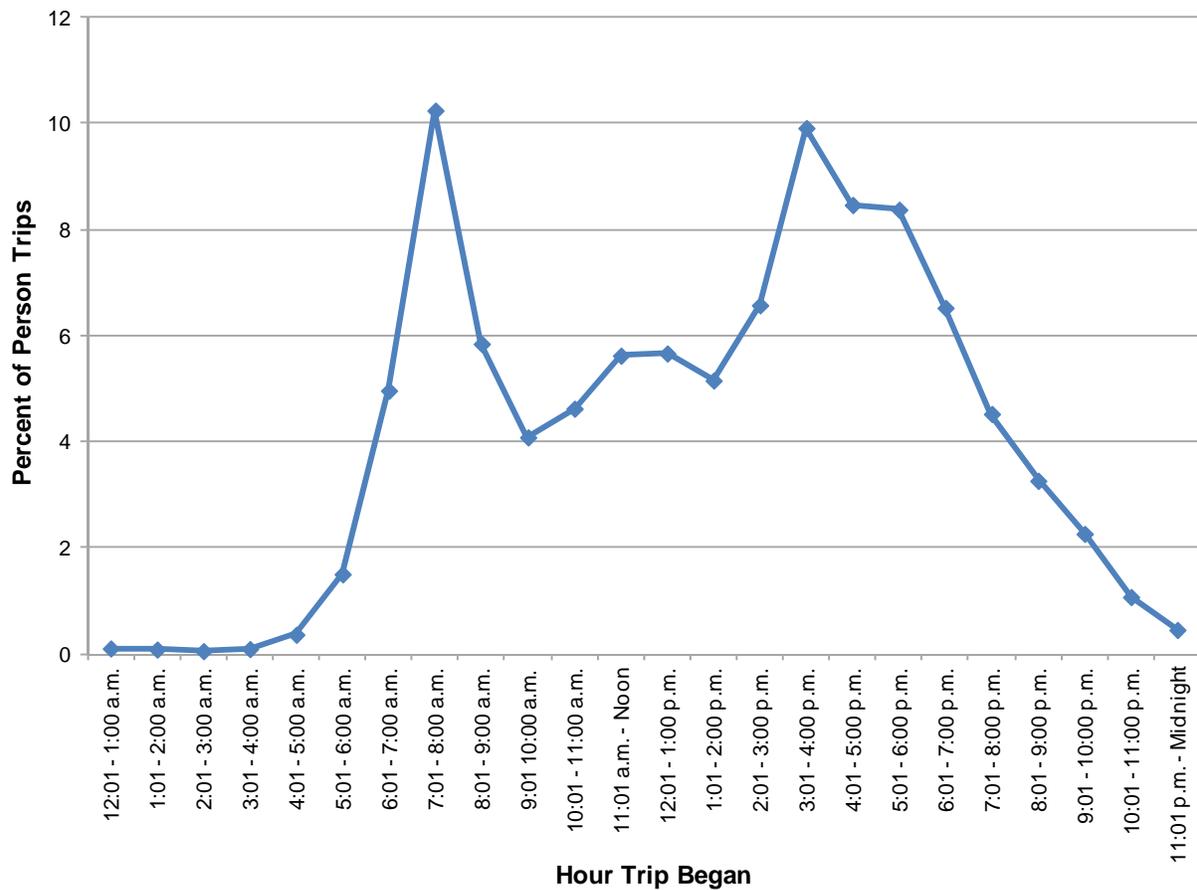
**Figure 19. Distribution of Vehicle Trips by Trip Duration in Minutes.**

## **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 eight-county study area, the estimated VMT is 142.2 million miles per school-year weekday. This is not the total VMT for the study area, as the VMT associated with external-local, external-through, commercial vehicle, visitor travel, and intrazonal trips are not included in the estimate.

## **TIME OF TRAVEL**

The time of travel is a function of the activity to be accomplished. The start times for trips to work and to school are dictated by the time that work and school begin. For other activities, such as trips to shop or for recreation, the trip start times are flexible. As travel during peak periods becomes more congested, some drivers choose to make trips earlier or later to avoid the most congested travel 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 (10.3) 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 (9.9) of trip starts occur during the hour from 3:01 p.m. to 4:01 p.m. During this hour, trips from school to home are the primary destinations. Trip starts during the hours 4:01 p.m. to 5:00 p.m. and 5:01 to 6:00 p.m., which are trips from work to home, have the third and fourth highest percentages (8.5) and (8.4) respectively, of daily trip starts.

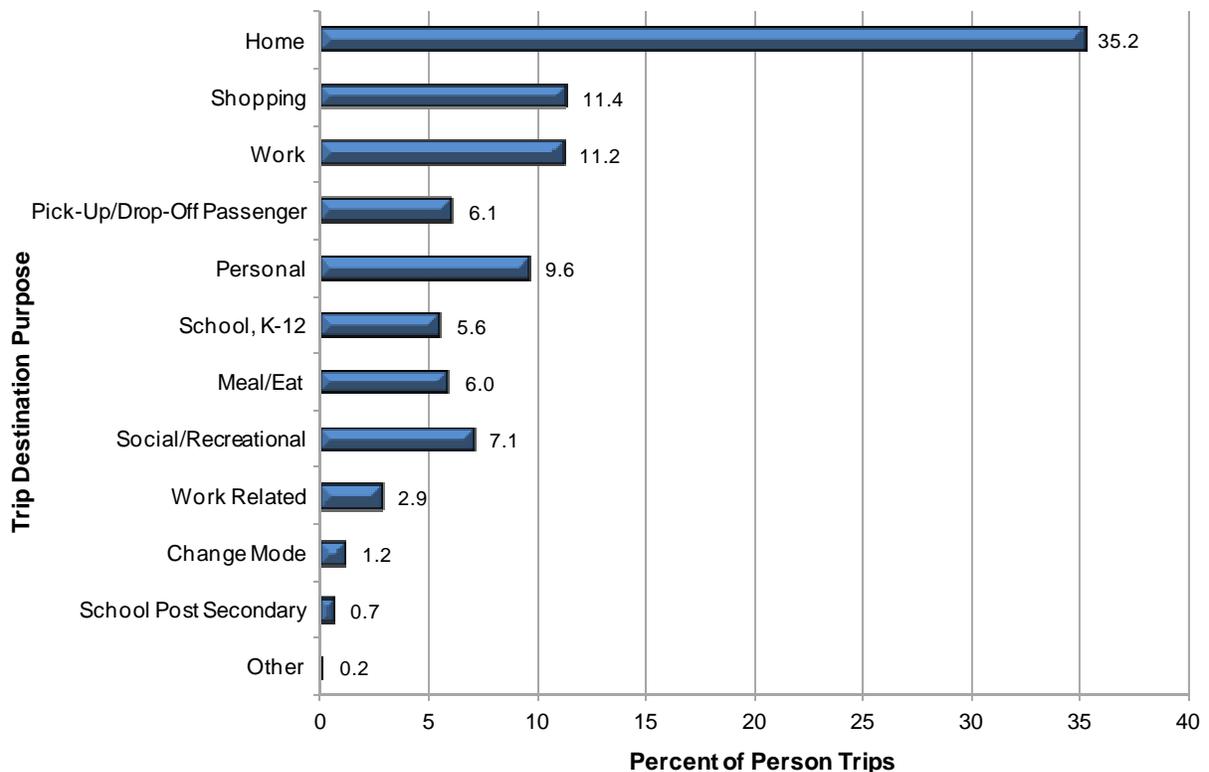


Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

**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: 2007-2009 H-GAC MPO 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 as the destination end of the trip.

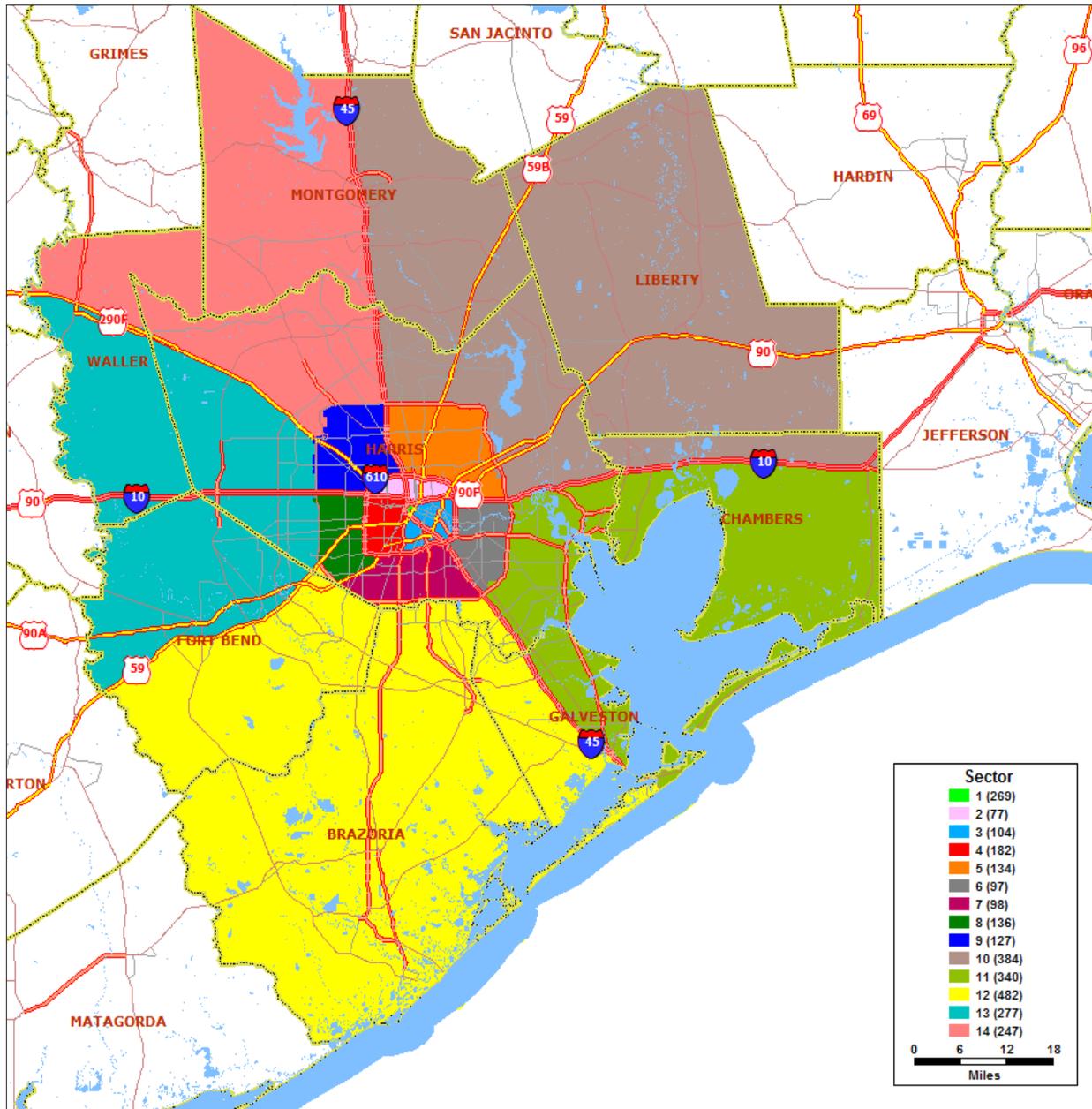
**Table 5. Number of Person Trips and Distribution of Person Trips by Type of Place at Trip Destination.**

Type of Place	Person Trips	Percent of Person Trips
Residential	1,542,972	8.6
Residential Type Work Place	89,593	0.5
Construction Site	66,092	0.3
Transportation Stop	260,183	1.4
Automotive Dealer/Repair	213,520	1.2
Bank/Financial Institution	352,947	2.0
Barber/Beauty/Nail Salon	154,116	0.9
Bookstore/Newsstand	31,927	0.2
Convenience/Drug Store	363,318	2.0
Government Offices	476,479	2.7
Offices Non-Government	1,247,399	7.0
Grocery	1,091,785	6.1
Health Club	361,728	2.0
Medical Facility/Hospital	1,026,006	5.7
Movie Theater/Cinema	37,077	0.2
Restaurant/Fast food, Bar and Grill	1,726,499	9.7
Educational – 12 <sup>th</sup> Grade or Lower	3,907,777	21.9
Educational – College, Trade, Etc.	333,742	1.9
Shopping Mall/Department Store	1,936,335	10.8
Gas Station	353,491	2.0
Airport	79,481	0.4
Other	2,230,061	12.5
Do Not Know	641	0.0
<b>Total</b>	<b>17,883,169</b>	<b>100.0</b>

Source: 2007-2009 H-GAC MPO Household Travel Survey and TTI Analysis.

## WHERE PEOPLE TRAVELED

Figure 23 through Figure 36 shows the geographic distribution of internal person trips within the study area sub-regions. Figure 22 shows the H-GAC MPO study area and the 14 sub-regions. Figure 37 shows the percent of person trips that remain within each sub-region.



**Figure 22. H-GAC MPO Household Travel Survey Study Area and Sub-Regions.**

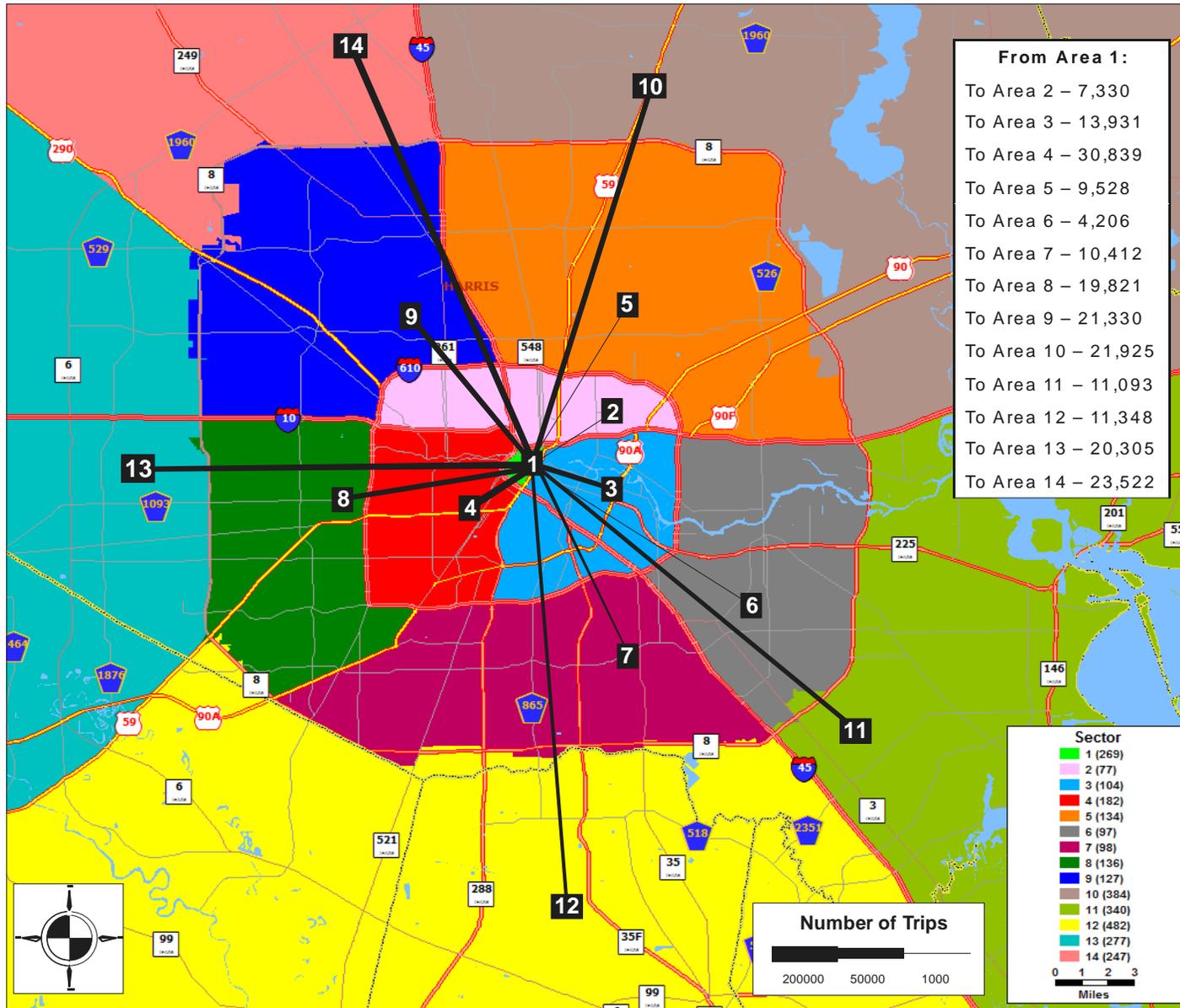


Figure 23. Person Trip Interchanges between Area 1 and Areas 2-14.

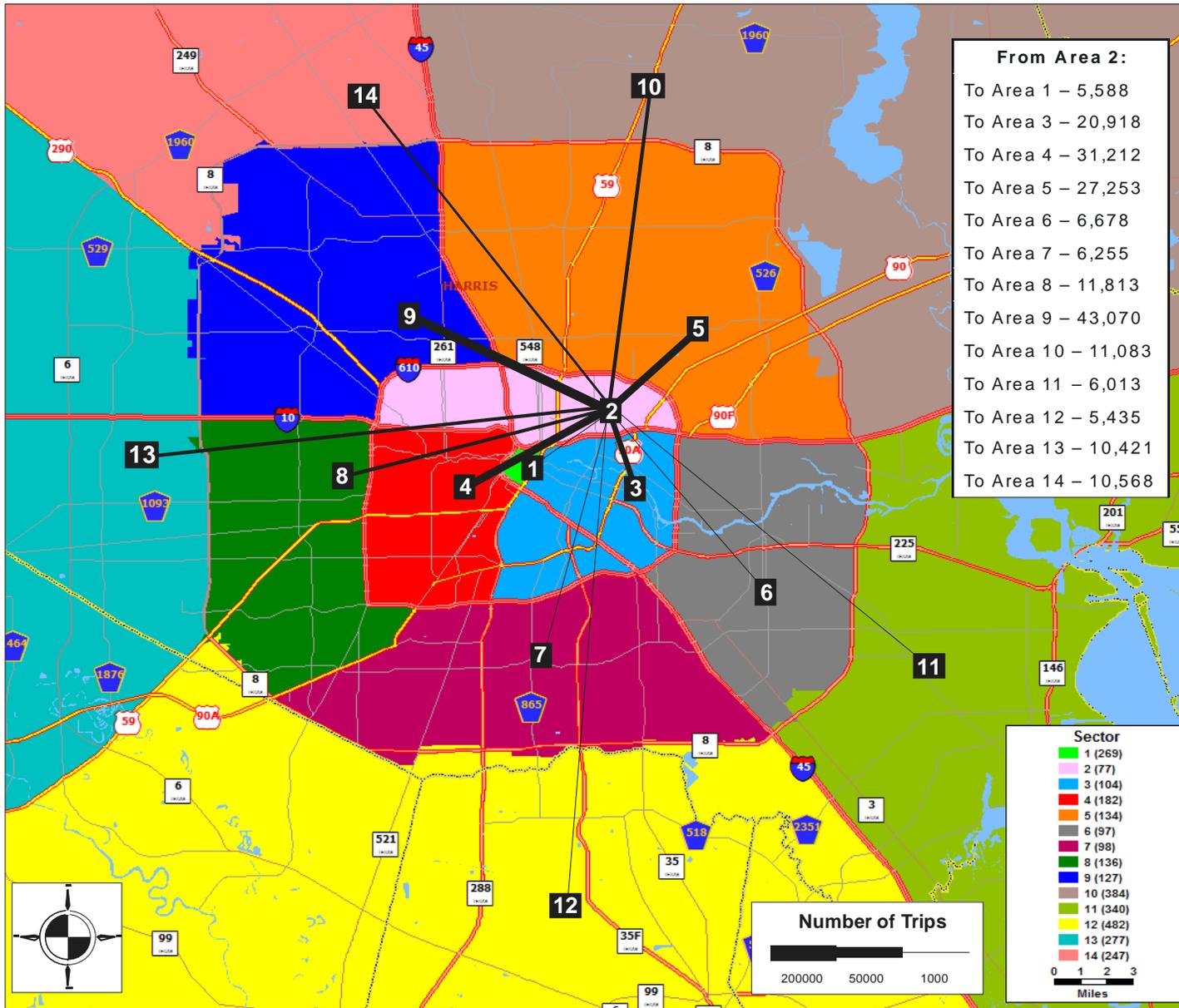


Figure 24. Person Trip Interchanges between Area 2 and Area 1 and Areas 3-14.

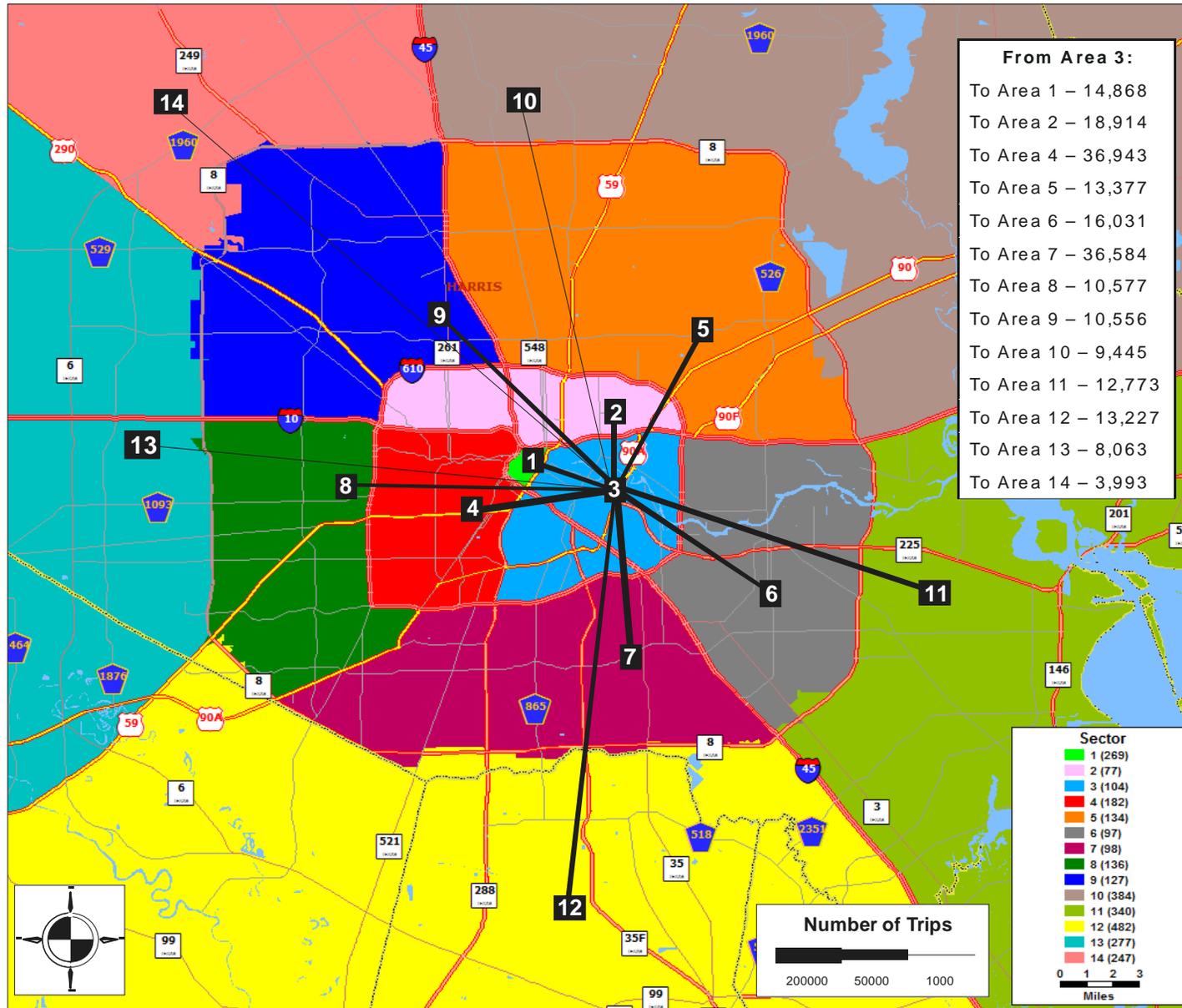


Figure 25. Person Trip Interchanges between Area 3 and Areas 1-2 and Areas 4-14.

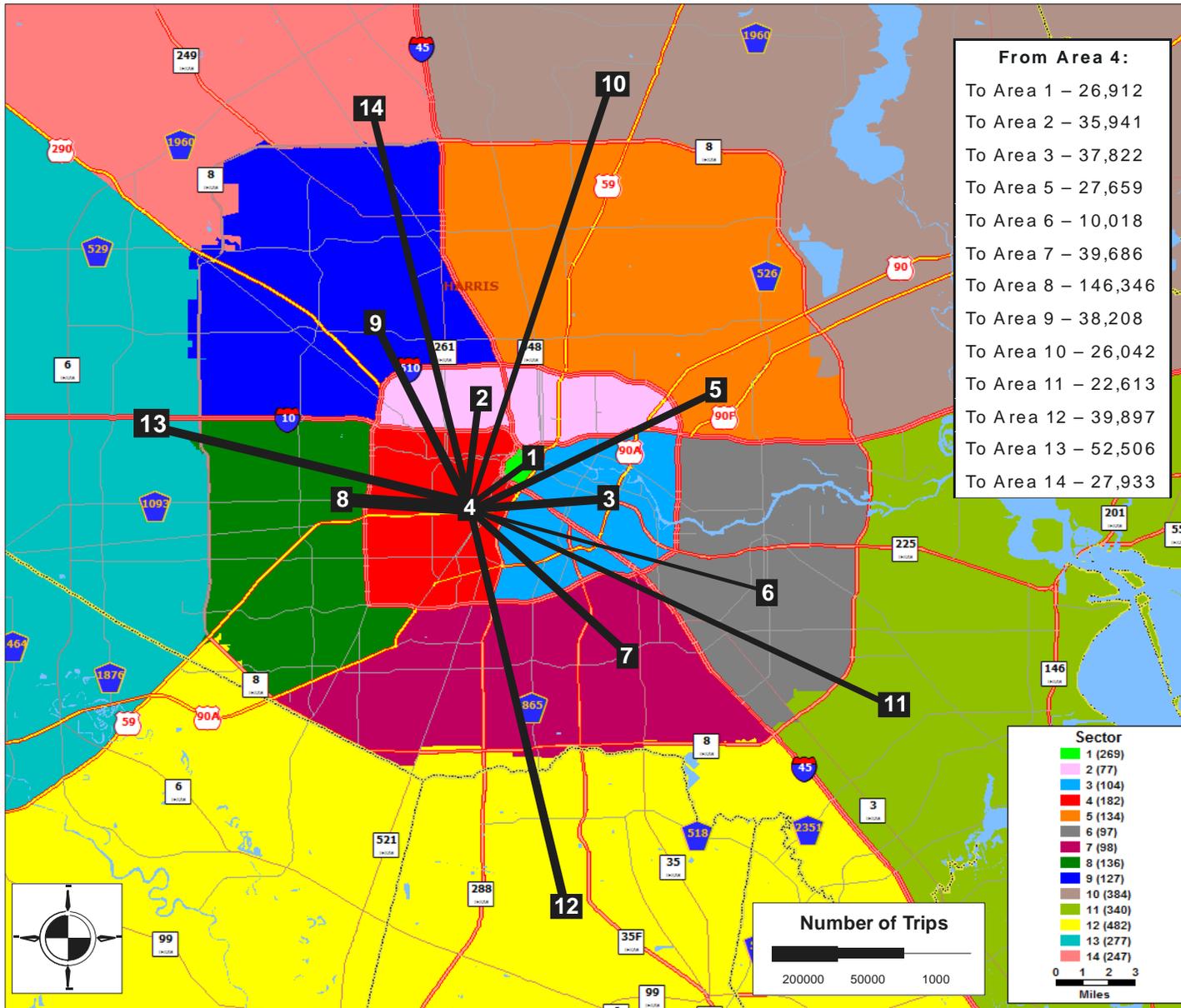


Figure 26. Person Trip Interchanges between Area 4 and Areas 1-3 and Areas 5-14.

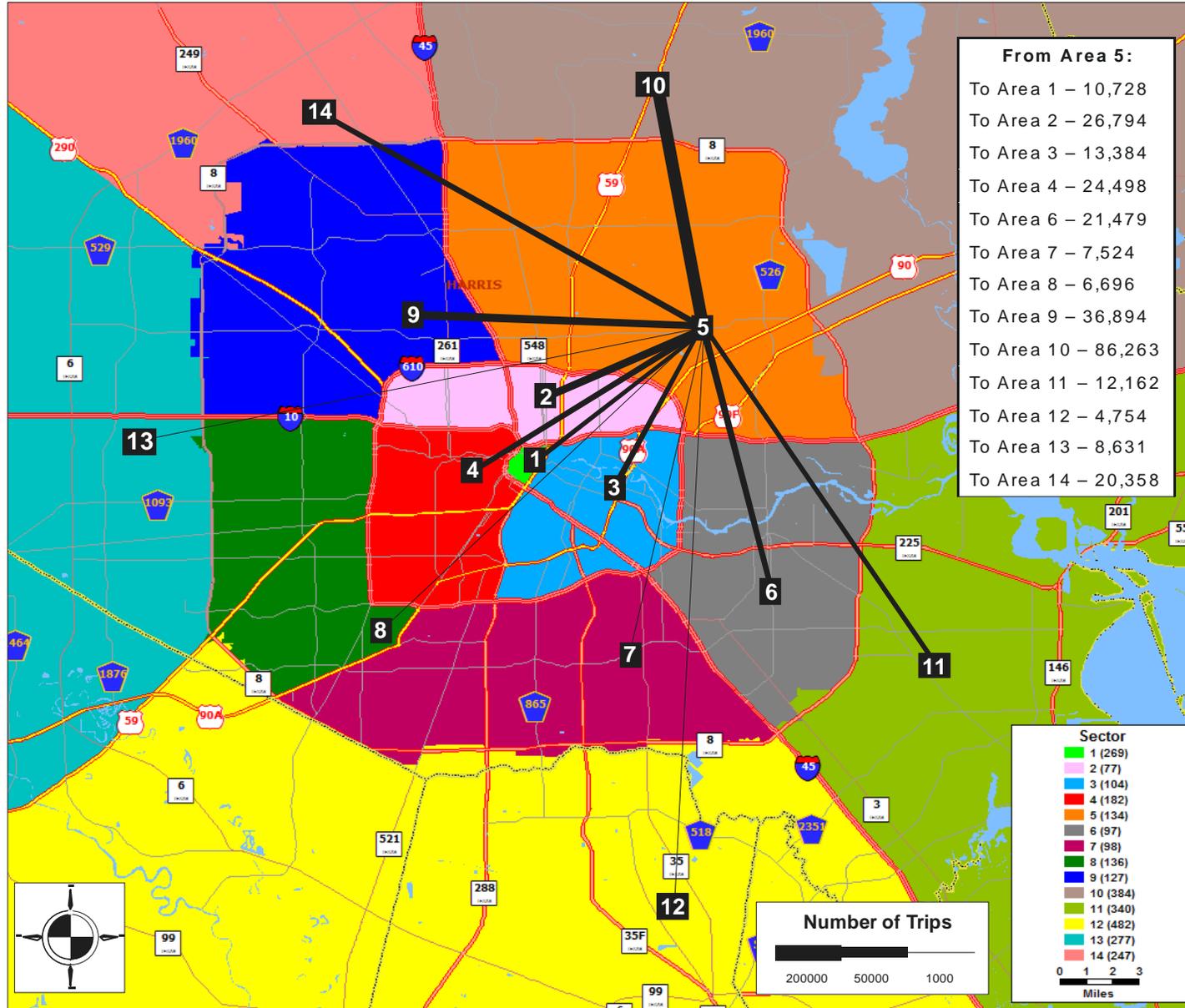


Figure 27. Person Trip Interchanges between Area 5 and Areas 1-4 and Areas 6-14.

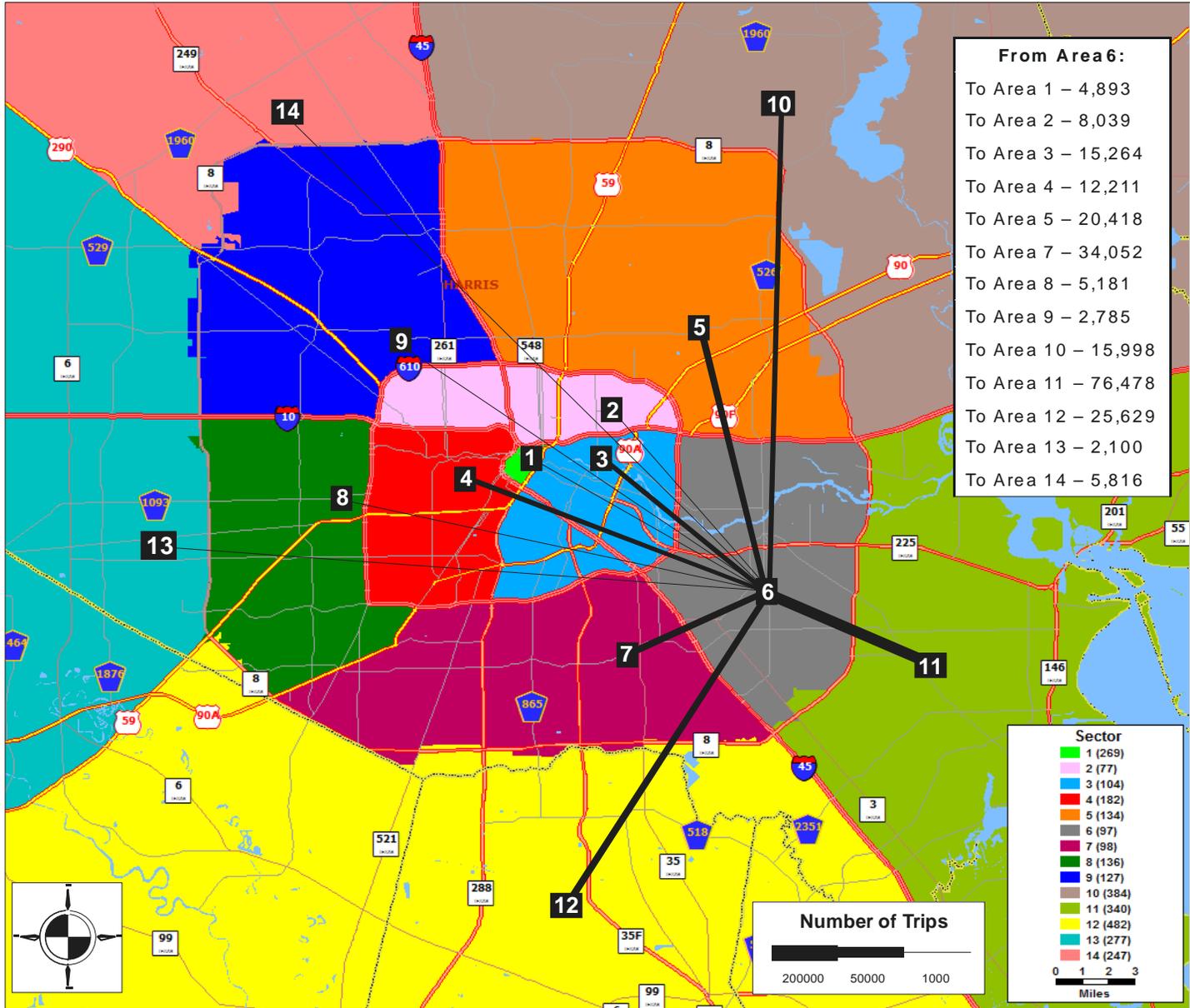


Figure 28. Person Trip Interchanges between Area 6 and Areas 1-5 and Areas 7-14.

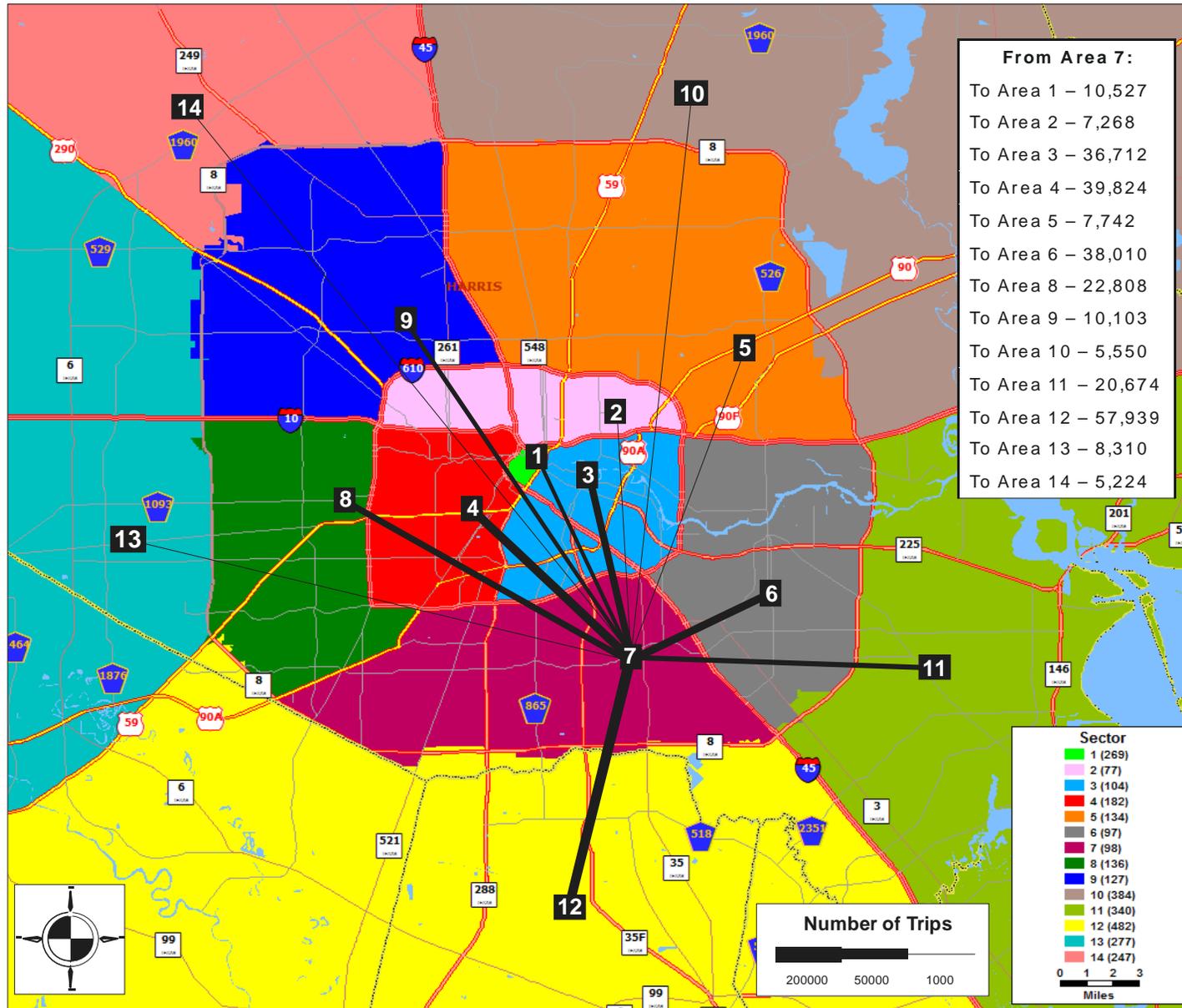


Figure 29. Person Trip Interchanges between Area 7 and Areas 1-6 and Areas 8-14.

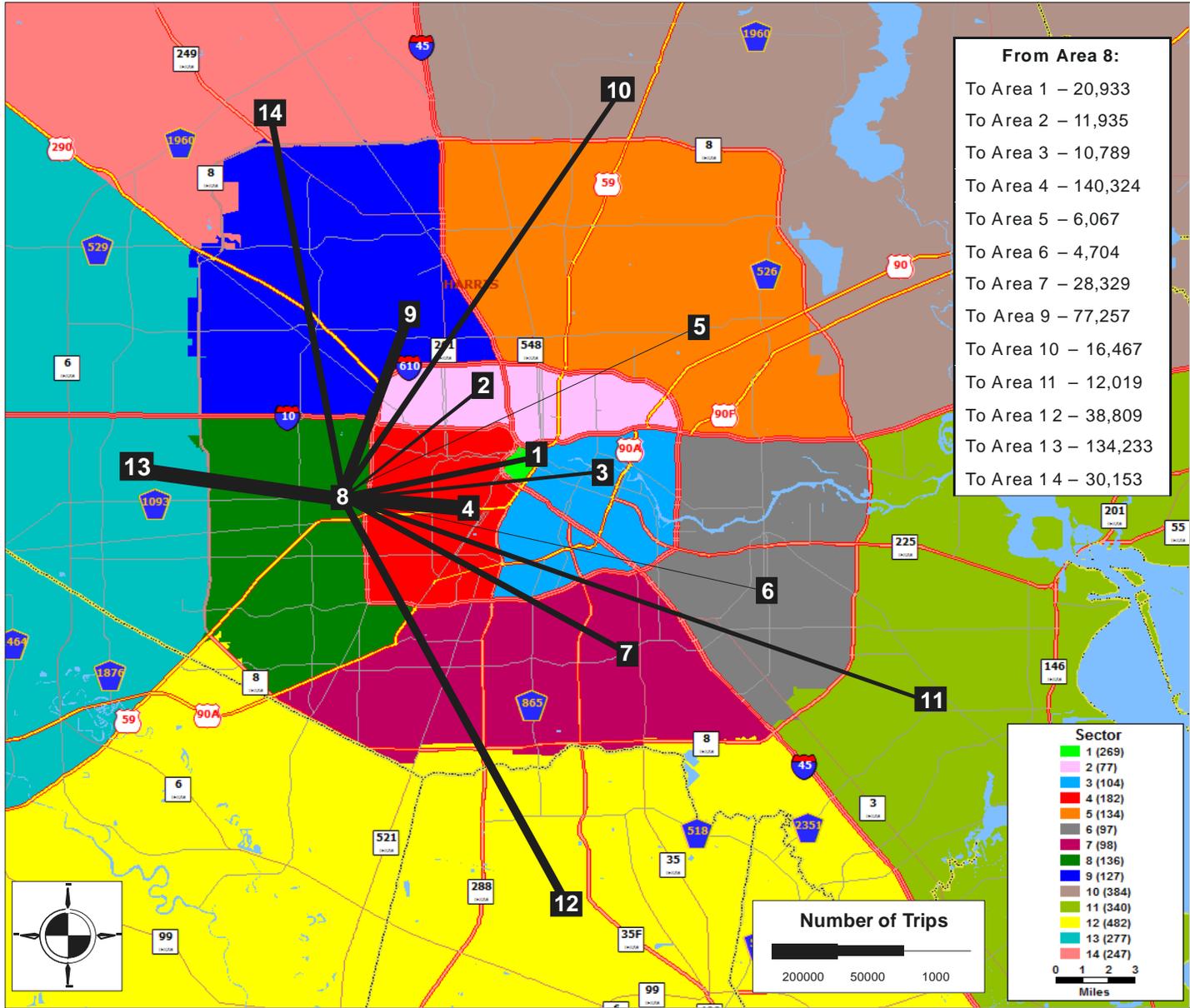


Figure 30. Person Trip Interchanges between Area 8 and Areas 1-7 and Areas 9-14.

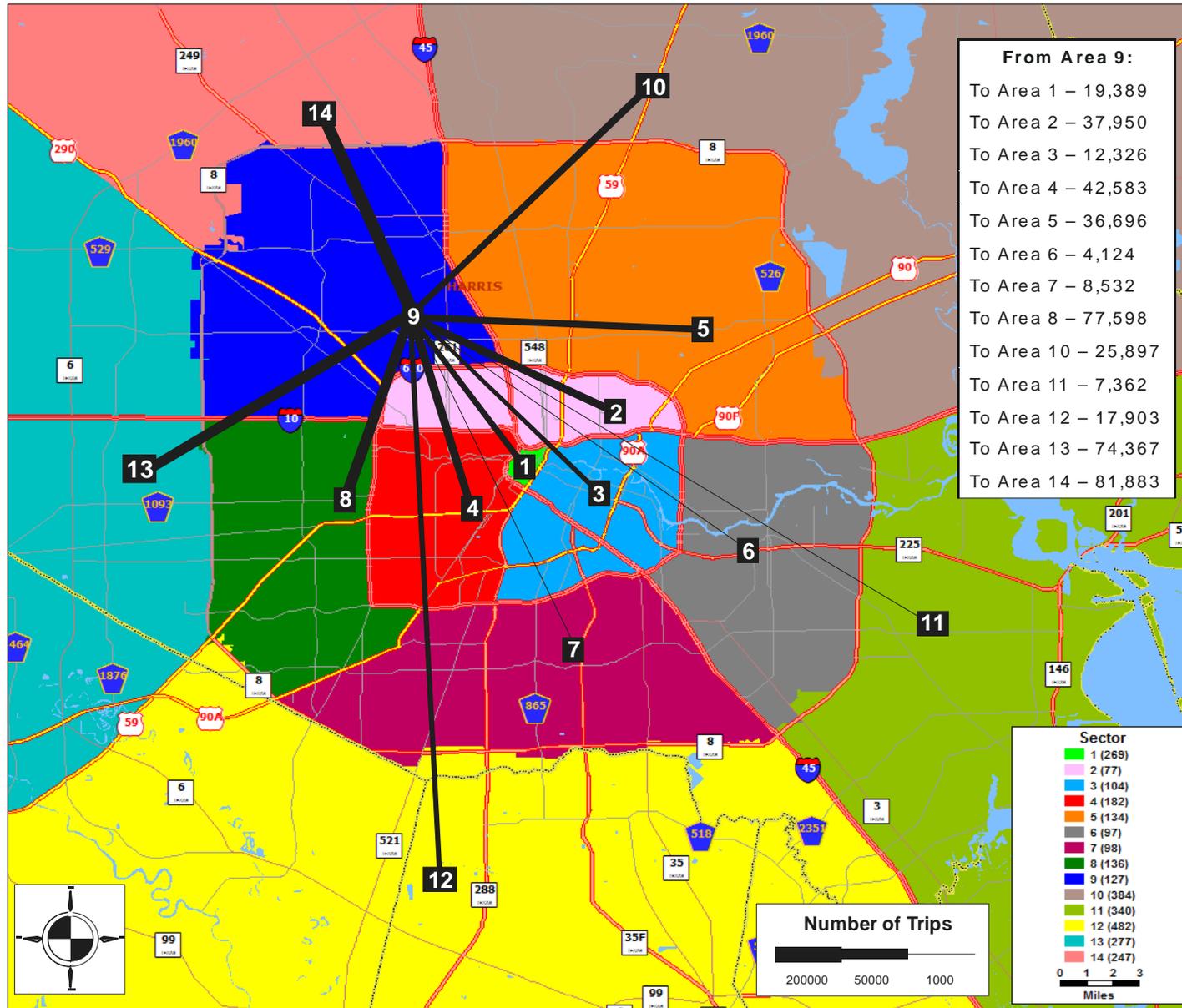


Figure 31. Person Trip Interchanges between Area 9 and Areas 1-8 and Areas 10-14.

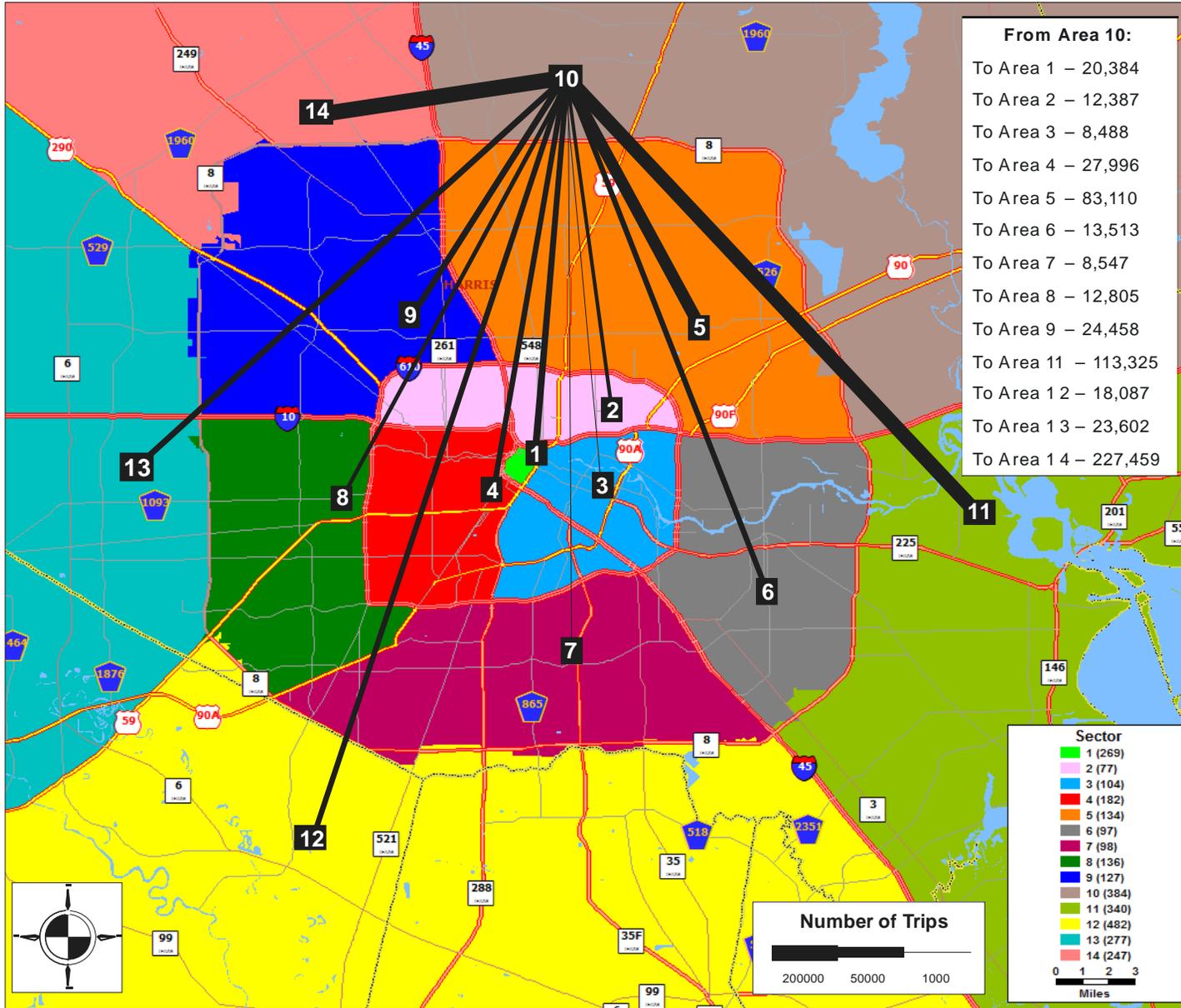


Figure 32. Person Trip Interchanges between Area 10 and Areas 1-9 and Area 11-14.

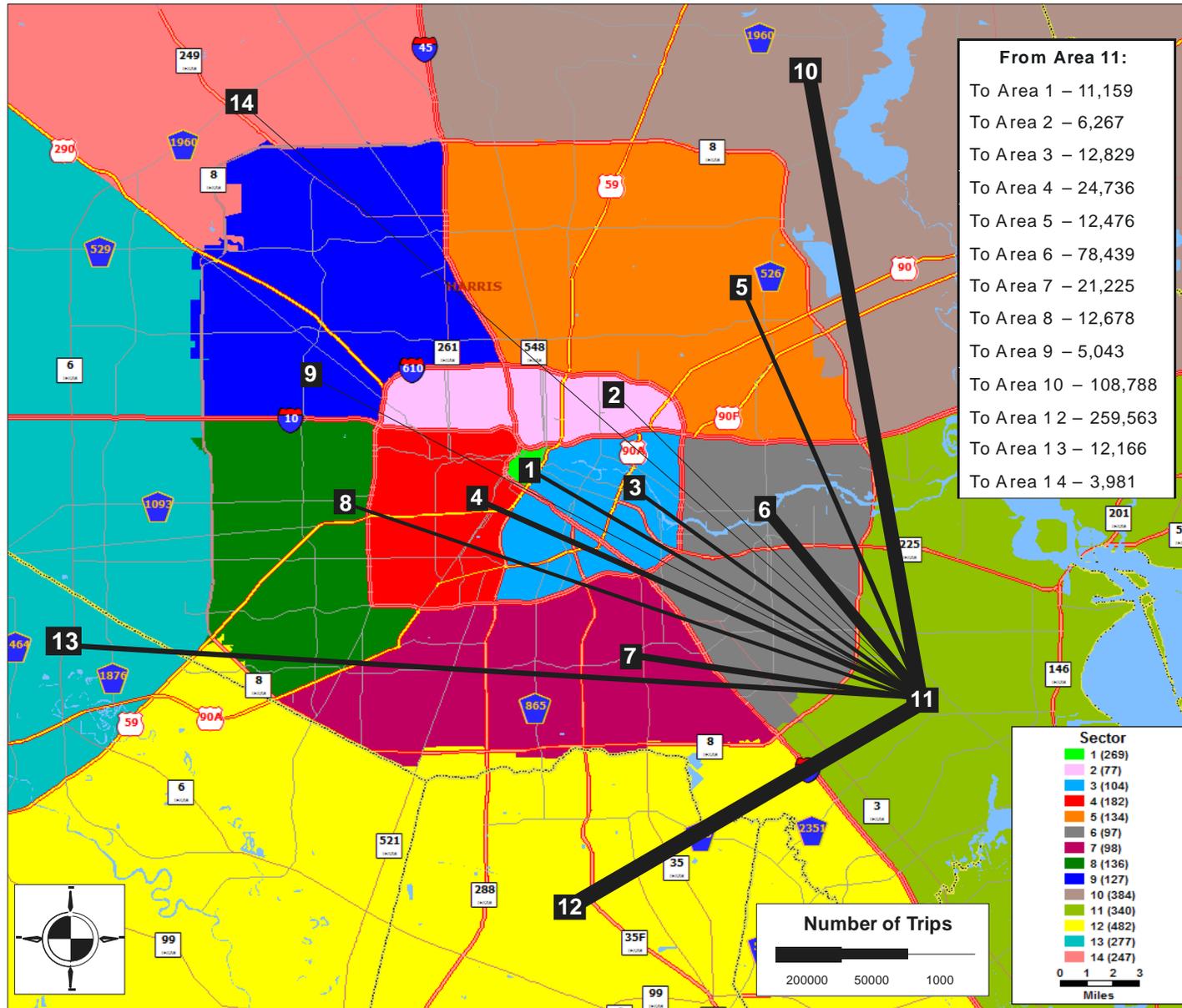


Figure 33. Person Trip Interchanges between Area 11 and Areas 1-10 and 12-14.

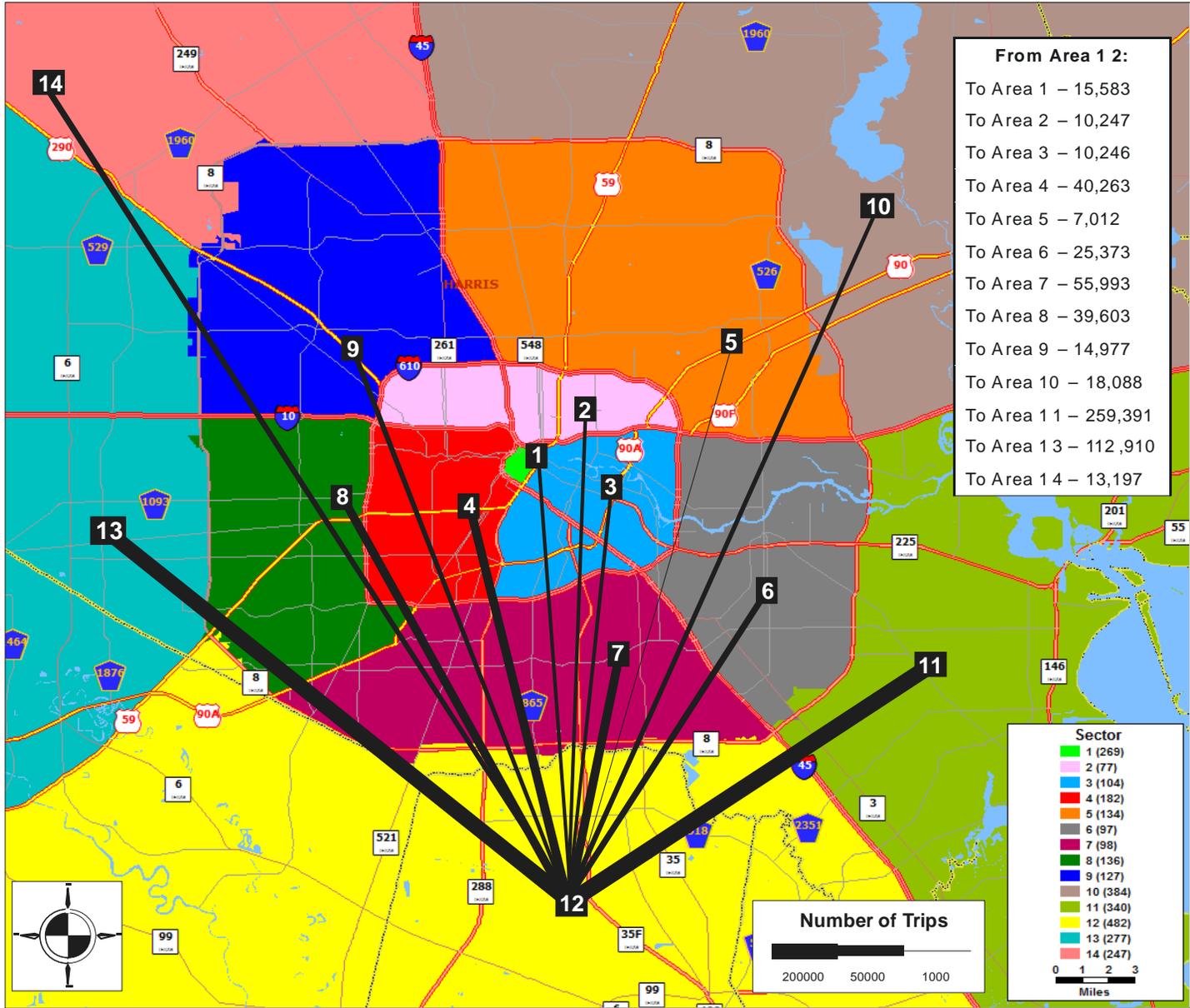


Figure 34. Person Trip Interchanges between Area 12 and Areas 1-11 and 13-14.

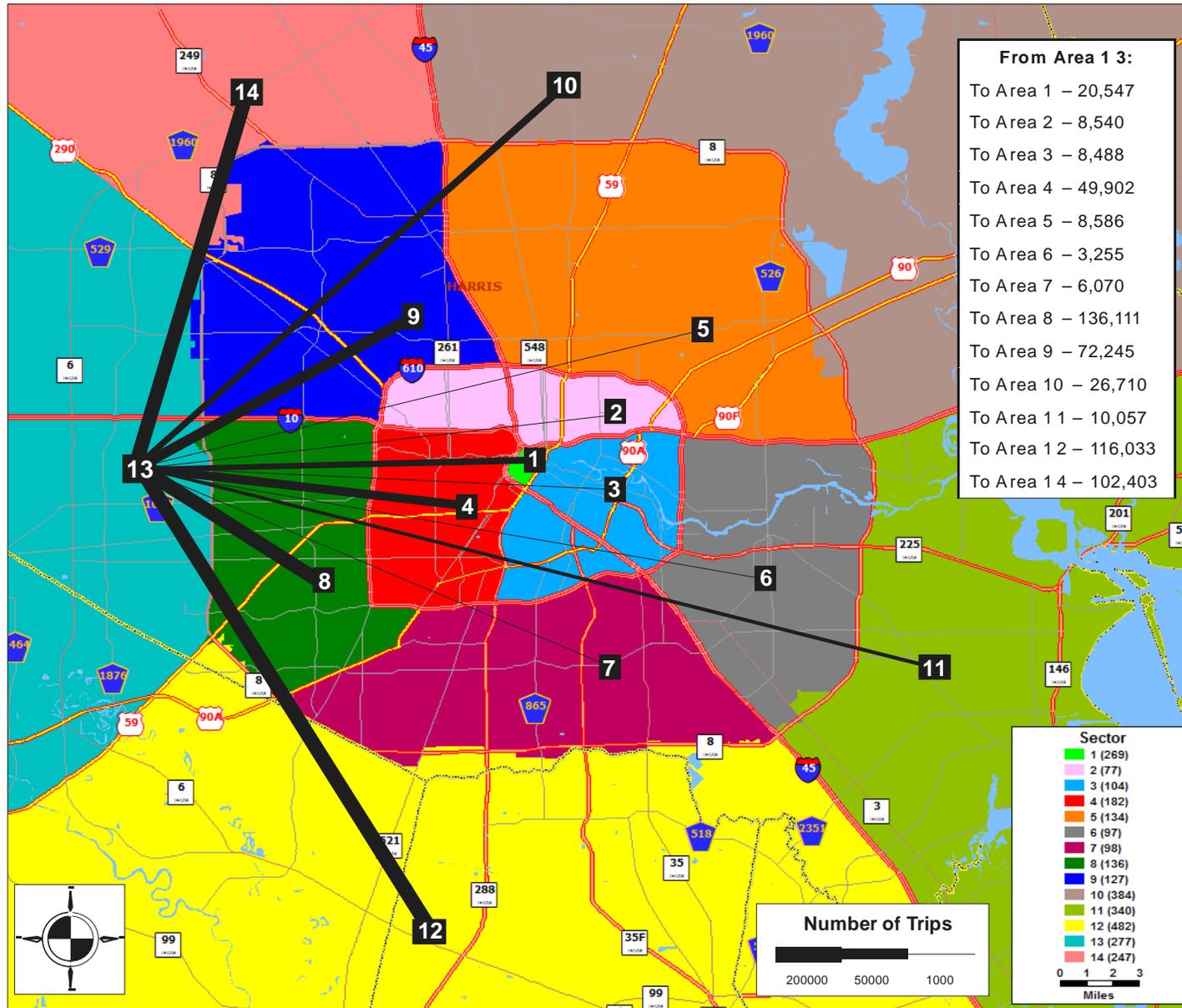


Figure 35. Person Trip Interchanges between Area 13 and Areas 1-12 and 14.

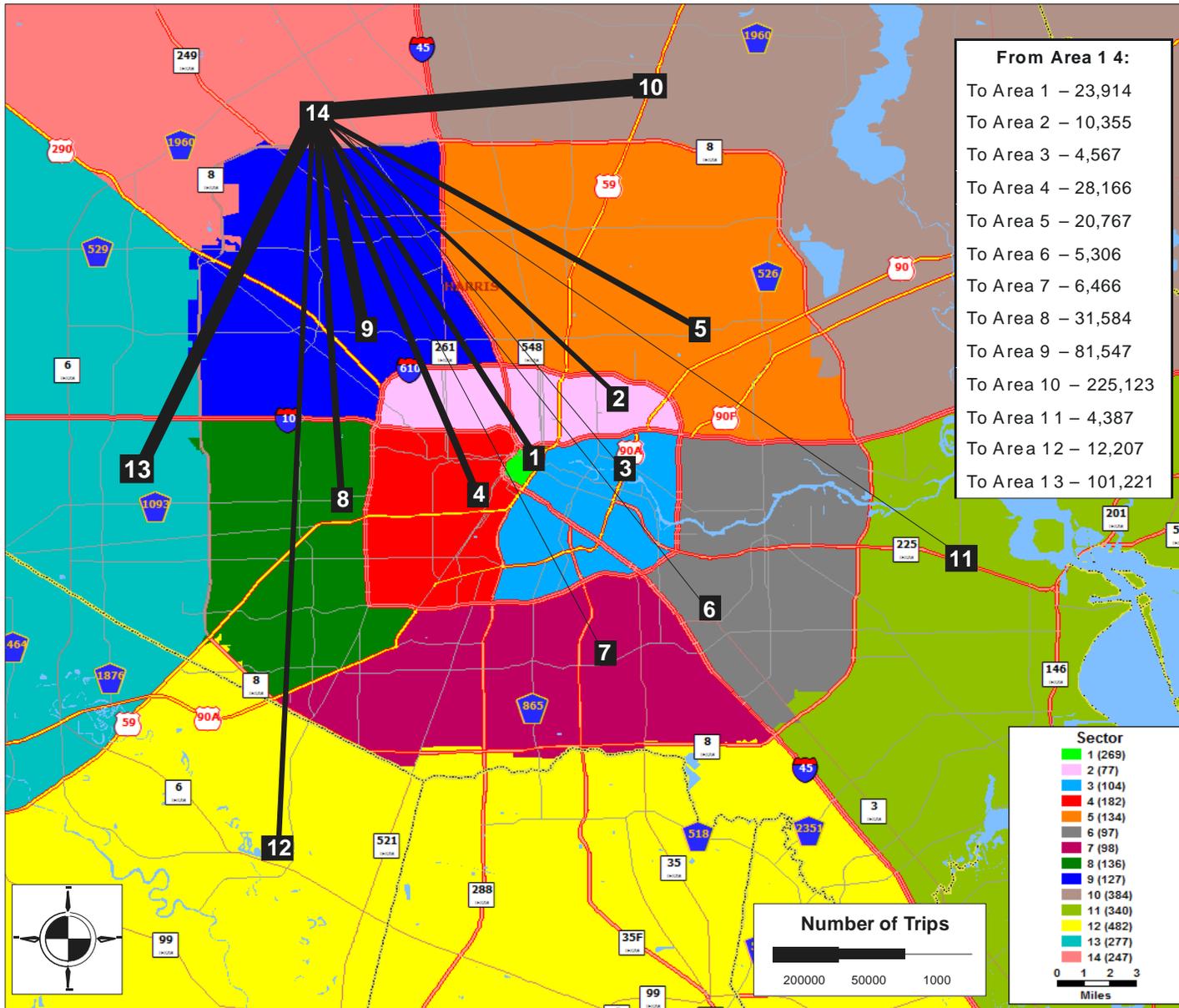


Figure 36. Person Trip Interchanges between Area 14 and Areas 1-13.

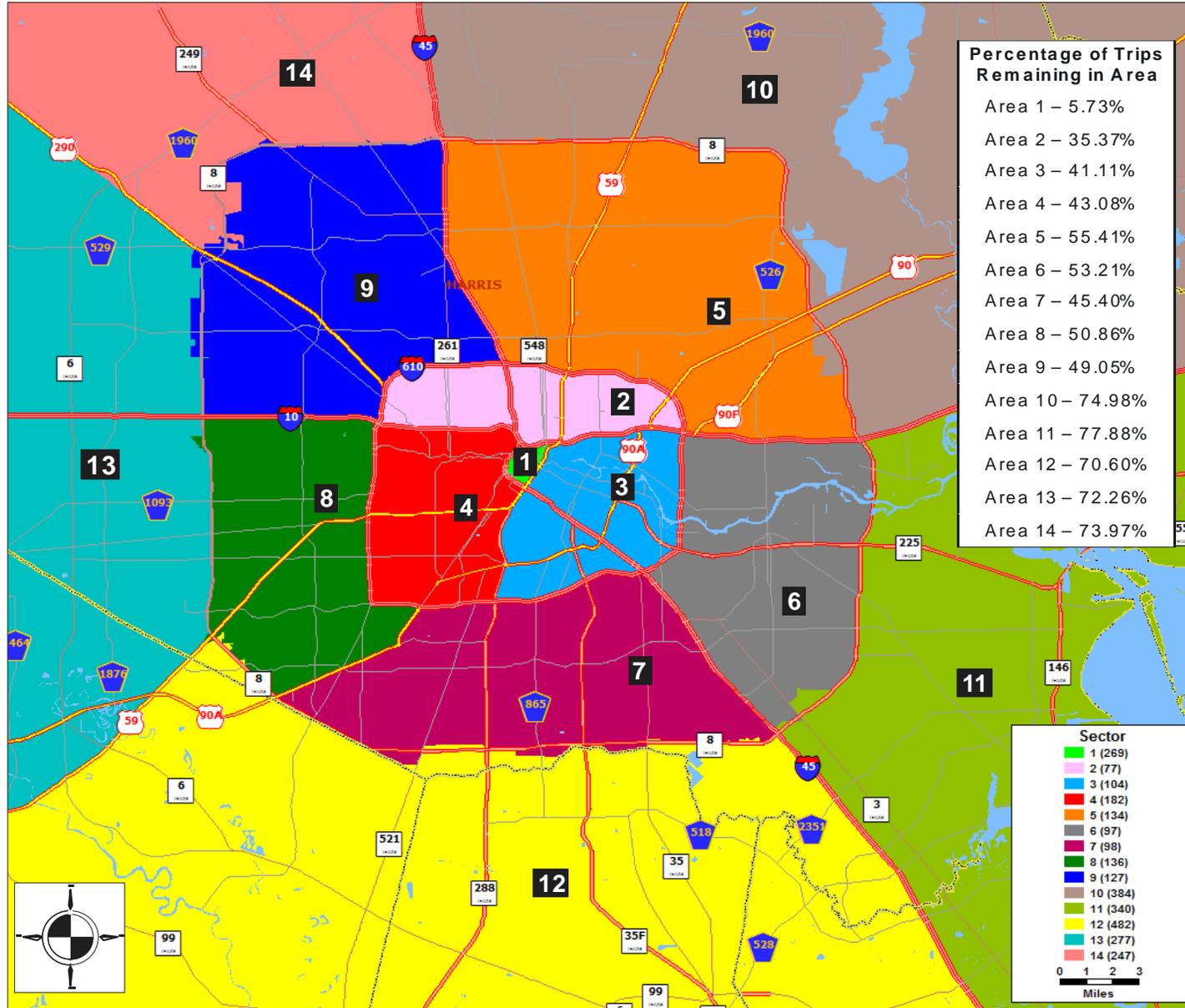


Figure 37. Percent of Person Trips that Remain in Each Sub-Region.

## **SUMMARY DATA**

Table 6 provides household survey summary data for travel surveys conducted in the H-GAC MPO planning area consisting of the following eight counties: Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller. More detailed data than that provided in this report, has been provided to TxDOT's TPP Division for their use in updating the H-GAC MPO study area travel demand model.

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

<b>Urban Area</b>	<b>Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties</b>	<b>Bexar, Comal, Guadalupe, Kendall, and Wilson Counties</b>	<b>Cameron and Hidalgo Counties</b>	<b>Bastrop, Caldwell, Hays, Travis, and Williamson Counties</b>
<b>Demographics</b>				
Household Population	5,481,355	1,791,418	1,030,139	1,486,117
Licensed Drivers	3,990,870	1,187,489	585,035	1,060,436
Number of Households	1,976,775	641,487	294,825	574,225
Average Household Size	2.77	2.76	3.49	2.59
Number of Motor Vehicles	4,111,692	1,237,425	555,443	1,065,898
Motor Vehicles per Household	2.08	1.84	1.88	1.86
<b>Number of Daily Trips by Mode</b>				
Total Person Trips	17,883,176	5,935,476	3,583,480	5,093,023
Motor Vehicle Trips	16,624,867	5,474,918	3,291,115	4,727,634
School Bus Trips	683,774	216,088	188,781	138,951
Walk Trips	485,108	221,605	93,337	189,256
Bicycle Trips	79,620	11,993	6,571	31,470
Other Modes/Taxi	9,807	9,137	3,709	5,712
<b>Number of Daily Trips by Destination/Purpose</b>				
Trips to Home	6,287,453	2,193,323	1,322,199	1,866,466
Trips to Work	2,006,484	614,988	353,105	661,624
Trips Work Related	510,300	162,585	109,126	158,955
Trips to Shop	2,030,940	625,747	333,674	489,085
Trips to Pick-Up/Drop Off Passenger	1,632,989	592,170	410,936	434,359
Trips for Personal Business	1,723,731	573,779	228,654	356,953
Trips for Social/Recreation	1,263,891	329,141	276,680	359,071
Trips for School K-12	998,071	399,655	292,203	302,415
Trips for School Post-Secondary	118,756	56,547	46,762	56,962
Trips for Meal/Eat	1,065,038	330,357	171,603	325,699
Trips to Change Mode	214,523	56,550	24,622	76,436
Other Trips	31,056	588	3,596	4,986
<b>Daily Trip Rates</b>				
Person Trips per Person	3.26	3.31	3.48	3.42
Person Trips per Household	9.05	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 end 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**



Household#: \_\_\_\_\_

Questions: Call 1-888-801-5368

**2007 HOUSTON-GALVESTON REGIONAL HOUSEHOLD ACTIVITY TRAVEL DIARY**

What is your age? \_\_\_\_\_ Your gender: Male Female Your Travel Date: \_\_\_\_\_ Your Travel Day: Mon Tues Wed Thurs

**BIKE USE:** Of the last seven days, how many days did you ride a bike? \_\_\_\_\_ days

If you rode a bike: What was the most common purpose of your bike trip(s)?  Work  School  Recreation/Exercise  
 Visiting  Shopping  Other: \_\_\_\_\_

**SCHOOL:** Do you attend school? YES NO

If Yes: What type of school do you attend?  Day Care/Preschool  K-12 (Elementary – High School)  Vocational or trade school  
 Post-secondary (College, professional school)  Other: \_\_\_\_\_

Are you enrolled for 12 or more hours? YES NO

Answer the Questions Below only if YOU are employed on a regular basis

How many different jobs do you have? \_\_\_\_\_ In which type of industry do you work? \_\_\_\_\_

Of the last seven days, how many days did you work at home? \_\_\_\_\_ days

What is the name and exact address of your place of employment: Name of Employer: \_\_\_\_\_

Type of Business: \_\_\_\_\_ Street Address: \_\_\_\_\_

City: \_\_\_\_\_ County: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Is this location an office in the home or a business operated out of a home? Yes No

**Where were you at 3:00 am today?** Street Address: \_\_\_\_\_

**START HERE**

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_ County: \_\_\_\_\_

Type of Place (e.g., Your Home, Other Person's Home, Work, Hotel, Store): \_\_\_\_\_

What time did you leave this place for the first time today? \_\_\_\_\_:\_\_\_\_\_ am/pm

Place #	WHERE DID YOU GO? (List the address for each place you visit even if you only stop there briefly)	WHAT TYPE OF PLACE DID YOU VISIT? AND DID YOU DRIVE?	WHAT DID YOU DO AT THIS LOCATION? (check all that apply)	WHEN DID YOU ARRIVE & LEAVE?	WHAT WAS THE PRIMARY TYPE OF TRANSPORTATION YOU USED?	HOW MANY PEOPLE TRAVELED WITH YOU?
#1 The First Place I Went	What is the Name of this Location?  Address (or nearest intersection) include suffix (St., Ave., lane, etc.)  City _____ State _____  County _____ Zip (if known) _____	What type of place or business is this? (store, office, hospital, etc.)  Did you drive to get to this place? YES NO  Did you use one of your household's vehicles? YES NO  How much did you pay to park? \$ _____	<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 time did You <b>ARRIVE</b> at this location?  _____ am/ pm  What time did <b>LEAVE</b> this location?  _____ am/ pm	<input type="checkbox"/> Car, van, truck Year: _____ Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	Including you, how many people were in the vehicle? _____  Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Place #	WHERE DID YOU GO? (List the address for each place you visit even if you only stop there briefly)	WHAT TYPE OF PLACE DID YOU VISIT? AND DID YOU DRIVE?	WHAT DID YOU DO AT THIS LOCATION? (check all that apply)	WHEN DID YOU ARRIVE & LEAVE?	WHAT WAS THE PRIMARY TYPE OF TRANSPORTATION YOU USED?	HOW MANY PEOPLE TRAVELED WITH YOU?
#2 The Next Place I Went	<p>What is the Name of this Location? _____</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.) _____</p> <p>City _____ State _____</p> <p>County _____ Zip (if known) _____</p>	<p>What type of place is this? _____</p> <p>Did you drive to get to this place? YES NO</p> <p>Did you use one of your household's vehicles? YES NO</p> <p>How much did you pay to park? \$ _____</p>	<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)	<p>What time did You <b>ARRIVE</b> at this location? ____:____ am/ pm</p> <p>What time did <b>LEAVE</b> this location? ____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>
#3 The Next Place I Went	<p>What is the Name of this Location? _____</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.) _____</p> <p>City _____ State _____</p> <p>County _____ Zip (if known) _____</p>	<p>What type of place is this? _____</p> <p>Did you drive to get to this place? YES NO</p> <p>Did you use one of your household's vehicles? YES NO</p> <p>How much did you pay to park? \$ _____</p>	<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)	<p>What time did You <b>ARRIVE</b> at this location? ____:____ am/ pm</p> <p>What time did <b>LEAVE</b> this location? ____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>
#4 The Next Place I Went	<p>What is the Name of this Location? _____</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.) _____</p> <p>City _____ State _____</p> <p>County _____ Zip (if known) _____</p>	<p>What type of place is this? _____</p> <p>Did you drive to get to this place? YES NO</p> <p>Did you use one of your household's vehicles? YES NO</p> <p>How much did you pay to park? \$ _____</p>	<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)	<p>What time did You <b>ARRIVE</b> at this location? ____:____ am/ pm</p> <p>What time did <b>LEAVE</b> this location? ____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>
#5 The Next Place I Went	<p>What is the Name of this Location? _____</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.) _____</p> <p>City _____ State _____</p> <p>County _____ Zip (if known) _____</p>	<p>What type of place is this? _____</p> <p>Did you drive to get to this place? YES NO</p> <p>Did you use one of your household's vehicles? YES NO</p> <p>How much did you pay to park? \$ _____</p>	<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)	<p>What time did You <b>ARRIVE</b> at this location? ____:____ am/ pm</p> <p>What time did <b>LEAVE</b> this location? ____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>

Place #	WHERE DID YOU GO? (List the address for each place you visit even if you only stop there briefly)	WHAT TYPE OF PLACE DID YOU VISIT? AND DID YOU DRIVE?	WHAT DID YOU DO AT THIS LOCATION? (check all that apply)	WHEN DID YOU ARRIVE & LEAVE?	WHAT WAS THE PRIMARY TYPE OF TRANSPORTATION YOU USED?	HOW MANY PEOPLE TRAVELED WITH YOU?
#6 The Next Place I Went	<p>What is the Name of this Location? _____</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.) _____</p> <p>City _____ State _____</p> <p>County _____ Zip (if known) _____</p>	<p><b>What type of place is this?</b> _____</p> <p><b>Did you drive to get to this place?</b> YES NO</p> <p><b>Did you use one of your household's vehicles?</b> YES NO</p> <p><b>How much did you pay to park?</b> \$ _____</p>	<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)	<p><b>What time did You ARRIVE at this location?</b> ____:____ am/ pm</p> <p><b>What time did LEAVE this location?</b> ____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>
#7 The Next Place I Went	<p>What is the Name of this Location? _____</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.) _____</p> <p>City _____ State _____</p> <p>County _____ Zip (if known) _____</p>	<p><b>What type of place is this?</b> _____</p> <p><b>Did you drive to get to this place?</b> YES NO</p> <p><b>Did you use one of your household's vehicles?</b> YES NO</p> <p><b>How much did you pay to park?</b> \$ _____</p>	<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)	<p><b>What time did You ARRIVE at this location?</b> ____:____ am/ pm</p> <p><b>What time did LEAVE this location?</b> ____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>
#8 The Next Place I Went	<p>What is the Name of this Location? _____</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.) _____</p> <p>City _____ State _____</p> <p>County _____ Zip (if known) _____</p>	<p><b>What type of place is this?</b> _____</p> <p><b>Did you drive to get to this place?</b> YES NO</p> <p><b>Did you use one of your household's vehicles?</b> YES NO</p> <p><b>How much did you pay to park?</b> \$ _____</p>	<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)	<p><b>What time did You ARRIVE at this location?</b> ____:____ am/ pm</p> <p><b>What time did LEAVE this location?</b> ____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>
#9 The Next Place I Went	<p>What is the Name of this Location? _____</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.) _____</p> <p>City _____ State _____</p> <p>County _____ Zip (if known) _____</p>	<p><b>What type of place is this?</b> _____</p> <p><b>Did you drive to get to this place?</b> YES NO</p> <p><b>Did you use one of your household's vehicles?</b> YES NO</p> <p><b>How much did you pay to park?</b> \$ _____</p>	<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)	<p><b>What time did You ARRIVE at this location?</b> ____:____ am/ pm</p> <p><b>What time did LEAVE this location?</b> ____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>

Place #	WHERE DID YOU GO? (List the address for each place you visit even if you only stop there briefly)	WHAT TYPE OF PLACE DID YOU VISIT? AND DID YOU DRIVE?	WHAT DID YOU DO AT THIS LOCATION? (check all that apply)	WHEN DID YOU ARRIVE & LEAVE?	WHAT WAS THE PRIMARY TYPE OF TRANSPORTATION YOU USED?	HOW MANY PEOPLE TRAVELED WITH YOU?
# 10 The Next Place I Went	What is the Name of this Location?  Address (or nearest intersection) include suffix (St., Ave., lane, etc.)  City _____ State _____  County _____ Zip (if known) _____	What type of place is this?  Did you drive to get to this place? YES NO  Did you use one of your household's vehicles? YES NO  How much did you pay to park? \$ _____	<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 time did You <b>ARRIVE</b> at this location?  ____:____ am/ pm  What time did <b>LEAVE</b> this location?  ____:____ am/ pm	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____ ) <input type="checkbox"/> Other: _____	Including you, how many people were in the vehicle? _____  Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____
# 11 The Next Place I Went	What is the Name of this Location?  Address (or nearest intersection) include suffix (St., Ave., lane, etc.)  City _____ State _____  County _____ Zip (if known) _____	What type of place is this?  Did you drive to get to this place? YES NO  Did you use one of your household's vehicles? YES NO  How much did you pay to park? \$ _____	<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 time did You <b>ARRIVE</b> at this location?  ____:____ am/ pm  What time did <b>LEAVE</b> this location?  ____:____ am/ pm	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____ ) <input type="checkbox"/> Other: _____	Including you, how many people were in the vehicle? _____  Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____
# 12 The Next Place I Went	What is the Name of this Location?  Address (or nearest intersection) include suffix (St., Ave., lane, etc.)  City _____ State _____  County _____ Zip (if known) _____	What type of place is this?  Did you drive to get to this place? YES NO  Did you use one of your household's vehicles? YES NO  How much did you pay to park? \$ _____	<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 time did You <b>ARRIVE</b> at this location?  ____:____ am/ pm  What time did <b>LEAVE</b> this location?  ____:____ am/ pm	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____ ) <input type="checkbox"/> Other: _____	Including you, how many people were in the vehicle? _____  Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____
# 13 The Next Place I Went	What is the Name of this Location?  Address (or nearest intersection) include suffix (St., Ave., lane, etc.)  City _____ State _____  County _____ Zip (if known) _____	What type of place is this?  Did you drive to get to this place? YES NO  Did you use one of your household's vehicles? YES NO  How much did you pay to park? \$ _____	<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 time did You <b>ARRIVE</b> at this location?  ____:____ am/ pm  What time did <b>LEAVE</b> this location?  ____:____ am/ pm	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____ ) <input type="checkbox"/> Other: _____	Including you, how many people were in the vehicle? _____  Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____

Place #	WHERE DID YOU GO? (List the address for each place you visit even if you only stop there briefly)	WHAT TYPE OF PLACE DID YOU VISIT? AND DID YOU DRIVE?	WHAT DID YOU DO AT THIS LOCATION? (check all that apply)	WHEN DID YOU ARRIVE & LEAVE?	WHAT WAS THE PRIMARY TYPE OF TRANSPORTATION YOU USED?	HOW MANY PEOPLE TRAVELED WITH YOU?
# The Next Place I Went	<p>What is the Name of this Location?</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.)</p> <p>City State</p> <p>County Zip (if known)</p>	<p>What type of place is this?</p> <p>Did you drive to get to this place? YES NO</p> <p>Did you use one of your household's vehicles? YES NO</p> <p>How much did you pay to park? \$_____</p>	<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)	<p>What time did You <b>ARRIVE</b> at this location?</p> <p>____:____ am/ pm</p> <p>What time did <b>LEAVE</b> this location?</p> <p>____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>
# The Next Place I Went	<p>What is the Name of this Location?</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.)</p> <p>City State</p> <p>County Zip (if known)</p>	<p>What type of place is this?</p> <p>Did you drive to get to this place? YES NO</p> <p>Did you use one of your household's vehicles? YES NO</p> <p>How much did you pay to park? \$_____</p>	<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)	<p>What time did You <b>ARRIVE</b> at this location?</p> <p>____:____ am/ pm</p> <p>What time did <b>LEAVE</b> this location?</p> <p>____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>
# The Next Place I Went	<p>What is the Name of this Location?</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.)</p> <p>City State</p> <p>County Zip (if known)</p>	<p>What type of place is this?</p> <p>Did you drive to get to this place? YES NO</p> <p>Did you use one of your household's vehicles? YES NO</p> <p>How much did you pay to park? \$_____</p>	<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)	<p>What time did You <b>ARRIVE</b> at this location?</p> <p>____:____ am/ pm</p> <p>What time did <b>LEAVE</b> this location?</p> <p>____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>
# The Next Place I Went	<p>What is the Name of this Location?</p> <p>Address (or nearest intersection) include suffix (St., Ave., lane, etc.)</p> <p>City State</p> <p>County Zip (if known)</p>	<p>What type of place is this?</p> <p>Did you drive to get to this place? YES NO</p> <p>Did you use one of your household's vehicles? YES NO</p> <p>How much did you pay to park? \$_____</p>	<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)	<p>What time did You <b>ARRIVE</b> at this location?</p> <p>____:____ am/ pm</p> <p>What time did <b>LEAVE</b> this location?</p> <p>____:____ am/ pm</p>	<input type="checkbox"/> Car, van, truck Make: _____ Model: _____ <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 (which route: _____) <input type="checkbox"/> Other: _____	<p>Including you, how many people were in the vehicle? _____</p> <p>Including you, how many people from YOUR HOUSEHOLD were in the vehicle? _____</p>



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



**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>	<b>FIELD COLUMNS</b>				
	<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 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- Brazoria, 2- Chambers, 3- Fort Bend, 4- Galveston, 5- Harris, 6- Liberty, 7- Montgomery, 8- Waller, 9- Jefferson, 10- Orange, 11- Hardin 98 – Unknown, 99- Refused
12. HH Study Area	126	126	Alphanum LJ	A1	Code indicating study area in which household address/TAZ zone is located. Use 'H' if zone is in the H-GAC study area, and 'B' if the zone is in the JOHRTS 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 MPO 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 10 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, Continued**

<u>Item</u>	<u>FIELD COLUMNS</u>				<u>Description</u>
	<u>Begin</u>	<u>End</u>	<u>Type</u>	<u>Format</u>	
26. HH Factors	197	216	Alphanumeric 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 on 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
- 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>	<u>FIELD COLUMNS</u>				
	<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 assigned 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 0 should be assigned 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. Flex Time	157	158	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.
18. Job	159	160	Numeric RJ	I2	Code indicating if person has more than one paying job; 1-Yes, 2-No, 98-Don't Know, 99-Refused.
19. Employer Name	161	220	Alphanum. LJ	A60	Name of person's primary employer.
20. Workplace Type	221	222	Numeric RJ	I2	Code indicating type of workplace where person is employed. See code definitions below.
21. Other Workplace	223	252	Alphanum. LJ	A30	Description of workplace type if "other" is coded.
22. Home Office	253	254	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.
23. Telecommute	255	256	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.
24. Workplace Address	257	316	Alphanum. LJ	A60	Street address of workplace or nearest intersecting street names.
25. Workplace City	317	346	Alphanum. LJ	A30	City where workplace is located.
26. Workplace County	347	348	Numeric RJ	I2	Code indicating county in which work place is located: 1- Brazoria, 2- Chambers, 3- Fort Bend, 4- Galveston, 5- Harris, 6- Liberty, 7- Montgomery, 8- Waller, 9- Jefferson, 10- Orange, 11- Hardin 98 – Unknown, 99- Refused
27. Zip Code	349	353	Numeric RJ	I5	Zip code or workplace address.
28. Work Study Area	354	354	Alphanum LJ	A1	Code indicating study area in which work address and TAZ zone is located. Use 'H' if zone is in the H-GAC study area, and 'B' if the zone is in the JOHRTS study area. Field should be left blank if location is not within one of these two MPO study areas.

**Record Type 2, Continued**

<u>Item</u>	FIELD COLUMNS				<u>Description</u>
	<u>Begin</u>	<u>End</u>	<u>Type</u>	<u>Format</u>	
29. Work Zone	355	359	Numeric RJ	I5	Zone where workplace is located. Those in one of the MPOs modeling area counties should be coded to an urban 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.
30. Longitude	360	369	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 666.6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.
31. Latitude	370	379	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 666.6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.
32. Days Worked	380	381	Numeric RJ	I2	Number of days per week person typically works. 98-Don't Know, 99-Refused.
33. Work at Home	382	383	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.
34. Second Job Type	384	385	Numeric RJ	I2	Code indicating type of workplace where person works at second job. See code definitions below.
35. Second Job Other	386	445	Alphanum. LJ	A60	Description of workplace type for second job if "other" is coded.
36. Second Job Employment Status	446	447	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.
37. Total Hours	448	450	Numeric RJ	I3	Total hours on average person works per week at all jobs. 888-Don't know, 999-Refused.
38. Primary Occupation	451	452	Numeric RJ	I2	Code indicating the type of occupation for primary job. See code definitions below
39. Primary Industry	453	454	Numeric RJ	I2	Code indicating the type of industry worked in for primary job. See code definition below.
40. Secondary Occupation	455	456	Numeric RJ	I2	Code indicating the type of occupation for secondary job. See code definitions below
41. Secondary Industry	457	458	Numeric RJ	I2	Code indicating the type of industry worked in for secondary job. See code definition below.
42. Student Status	459	460	Numeric RJ	I2	Code indicating if person is enrolled in any type of school; 1-Yes, 2-No, 98-Don't Know, 99-Refused.
43. School Type	461	462	Numeric RJ	I2	Code indicating type of school attended. See code definitions below.
44. School Type Other	463	522	Alphanum. LJ	A60	Description of 'other' if other is coded as school type.
45. Hours Enrolled	523	524	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.
46. Bike Use	525	526	Numeric RJ	I2	Number of days person rode bike in last seven days. 98-Don't Know, 99-Refused.
47. Bike Purpose	527	528	Numeric RJ	I2	Code indicating the most common trip purpose for person's bike trips. See code definitions below.
48. Disability	529	530	Numeric RJ	I2	Code indicating if person has transportation disability; 1-Yes, 2-No, 98-Don't Know, 99-Refused.
49. Travel	531	532	Numeric RJ	I2	Code indicating if person traveled on the designated travel day; 1-Yes, 2-No, 96-Indicates person was out of town or away from the residence for the entire day and night of their travel day.

**Record Type 2, Continued**

<u>Item</u>	<u>Begin</u>	<u>End</u>	<b>FIELD COLUMNS</b>			<u>Description</u>
			<u>Type</u>	<u>Format</u>		
50 Person trips	533	535	Numeric RJ	I3		The total number of trips the person made on his/her travel day.
51. Why No Travel	536	595	Alphanum LJ	A60		Description of why the person did not make any trips on the travel day.
52. Diary Use	596	597	Numeric RJ	I2		Code indicating if person used diary or if information is based on memory. 1 – yes, used diary; 2 – no, did not use diary; 3 – Did not receive diary; 4 – Based on memory; 98 – Don't Know; 99 – Refused
53. Data Retrieval	598	599	Numeric RJ	I2		Code indicating how data was retrieved. 01 – from respondent, 02 – by proxy, 03 – mailed diary, 04 – internet, 98 – Don't know; 99 – Refused
54. Proxy ID	600	601	Numeric RJ	I2		This item identifies the person by person number who provided the information by proxy. 98 – Don't know; 99 – Refused
55. Date Data was Retrieved.	602	605	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 <sup>st</sup> 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-12<sup>th</sup>
- 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>	<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 Cargo Use	191	192	Numeric RJ	I2	Code indicating if vehicle is used for commercial cargo transport 1-Yes, 2-No, 98-Don't Know, 99-Refused.
13. Commercial Service Use	193	194	Numeric RJ	I2	Code indicating if vehicle is a commercial service vehicle; 1-Yes, 2-No, 98-Don't Know, 99-Refused.
14. Beginning Mileage	194	202	Numeric RJ	I8	Odometer reading on vehicle at beginning of travel day. Don't Know, 99999998. Refused, 99999999.
15. Ending Mileage	203	210	Numeric RJ	I8	Odometer reading on vehicle at end of travel day. Don't Know, 99999998. Refused, 99999999.
16. Ownership	211	212	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
17. Non HH Vehicle Number	213	214	Numeric RJ	I2	If one or more household vehicles used by non-household member, this is the number of the vehicle that was used.
18. Non HH Use	215	215	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.

#### 4. Type of Vehicle Codes

- 1 – Motorcycle (includes mopeds)
- 2 – Car (includes station wagons)
- 3 – Van (mini and passenger)
- 4 – Sport Utility Vehicle
- 5 – Pick-up Truck
- 6 – Cargo Van
- 7 – Commercial Cargo Transport Vehicle
- 8 – Commercial Service Vehicle
- 9 – 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>Field Columns</u>				
	<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 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 that activity took place. 1- Brazoria, 2- Chambers, 3- Fort Bend, 4- Galveston, 5- Harris, 6- Liberty, 7- Montgomery, 8- Waller, 9- Jefferson, 10- Orange, 11- Hardin 98 – Unknown, 99- Refused
13. Zip Code	202	206	Numeric RJ	I5	Zip code of location address.
14. Exit Route Name	207	256	Alphanum LJ	A50	If location is outside of the H-GAC or JOHRTS modeling area, this is the name of the highway/route/road used to exit the applicable study area.
15. Study Area	260	260	Alphanum LJ	A1	Code indicating study area in which activity address/TAZ zone is located. Use 'H' if zone is in the H-GAC study area, and 'B' if the zone is in the JOHRTS study area. Field should be left blank if location is not within one of these two MPO study areas.
16. Zone Number	261	265	Numeric RJ	I5	Zone number of location address. If in a H-GAC or JOHRTS modeling area county but location unknown, it should be coded 8888. Locations in Mexico should be coded 7777 and addresses outside of H-GAC and JOHRTS modeling area counties, but within Texas should be coded using the Statewide Zone System and preceded by the number 1 in column 261. Unknown locations outside of H-GAC and JOHRTS modeling area counties but within the state of Texas should be coded 6666. Addresses outside of Texas and Mexico should be coded using 9999.
17. Longitude	266	275	Numeric RJ	F10.6	Longitude of location. If within H-GAC and JOHRTS modeling area counties, but unknown it should be coded 888.8888. If outside H-GAC and JOHRTS modeling area counties but within Texas and unknown it should be coded as 666.6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.
18. Latitude	276	285	Numeric RJ	F10.6	Latitude of location. If within H-GAC and JOHRTS modeling area counties, but unknown it should be coded 888.8888. If outside H-GAC and JOHRTS modeling area counties but within Texas and unknown it should be coded as 666.6666. Locations in Mexico should be coded 777.7777 and addresses outside of Texas and Mexico should be coded 999.9999.

**Record Type 4, Continued**

<u>Item</u>	FIELD COLUMNS				<u>Description</u>
	<u>Begin</u>	<u>End</u>	<u>Type</u>	<u>Format</u>	
19. Type of Place	286	287	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.
20. Other Place	288	307	Alphanum. LJ	A20	Description of "other" type of place where activity occurred.
21. Purpose	308	309	Numeric RJ	I2	Purpose of trip, developed based on the activity type in Item 7. See code definitions below.
22. Mode of Travel	310	311	Numeric RJ	I2	Code indicating mode of travel used in traveling to this location. See travel mode code definitions below.
23. Other Mode	312	341	Alphanum. LJ	A30	If "other" is coded in mode of travel, this is the description of the "other" mode.
24. Number of People	342	343	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..
25. HH Members	344	345	Numeric RJ	I2	Of those in the vehicle, how many were HH members.
26. Persons on Trip	346	355	Alphanum LJ	A10	Who was/were the HH members traveling with you? Code person numbers separated by commas.
27. Non HH Members	356	357	Numeric RJ	I2	Compute Non HH Members using information from items 24 and 25.
28.HH Vehicle	358	358	Numeric RJ	I1	Was a HH vehicle used to make this trip? 1=Yes, 2=No, 8-Don't Know, 9-Refused.
29. Vehicle Used	359	360	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.
30. Body Type	361	362	Numeric RJ	I2	See code set for body type.
31.Other Body Type	363	397	Alphanum LJ	A35	If body type is not in code set, describe body type.
32. Other Vehicle Year	398	401	Numeric RJ	I4	Year of "other" vehicle used for trip. 9998-Don't Know, 9999-Refused.
33. Other Vehicle Make	402	403	Numeric RJ	I2	Make of "other" vehicle used for trip. See code set.
34. Other Vehicle Make Description	404	463	Alphanum. LJ	A60	If make of other vehicle is coded as other, this field contains a description of the vehicle make
35.Other Vehicle Model	464	523	Alphanum. LJ	A60	Model of "other" vehicle used for trip.
36. Other Vehicle Fuel	524	525	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.
37. Other Fuel	526	540	Alphanum. LJ	A15	Description of "other" fuel for "other" vehicle, if not in fuel code above.
38. Other Vehicle Classification	541	542	Numeric RJ	I2	Code indicating EPA classification of other vehicle. See code definitions below.
39. Other Vehicle Commercial Use	543	544	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	545	546	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	547	548	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	549	598	Alphanum. LJ	A50	Street address or nearest intersecting streets where person got off of bus.
43. Parking Location	599	648	Alphanum. LJ	A50	Street address of nearest intersecting streets where vehicle was parked.
44. Parking Cost	649	655	Numeric RJ	F7.2	Amount paid for parking.
45. Payment Method	656	657	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	658	659	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	660	661	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	662	663	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	664	665	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 <sup>th</sup> Grade or Lower |
| 6 – Bank / Financial Institution                          | 18 – Educational - College, Trade, Etc.            |
| 7 – Barber / Beauty / Nail Salon                          | 19 – Shopping Mall / Department Store              |
| 8 – Bookstore / Newsstand                                 | 20 – Convenience Store / 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 Cargo Transport Vehicle Driver
- 9 – Commercial Cargo Transport Vehicle Passenger
- 10 – Commercial Service Vehicle Driver
- 11 – Commercial Service Vehicle Passenger
- 12 – Bus
- 13 – School Bus 13 – Bicycle
- 14 – Taxi / Paid Limo 14 – Motorcycle / Moped
- 15 – Bicycle 15 – Other
- 16 – Motorcycle / Moped 98 – Don't Know
- 17 – Other 99 – Refused
- 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	Justification	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 <sup>st</sup> Vehicle Start Time	I	RJ	4		HHMM (Military time – include leading zero for single digit hour or minute)
GC-16		1 <sup>st</sup> Vehicle Stop time	I	RJ	4		HHMM (Military time – include leading zero for single digit hour or minute)
GC-17		2 <sup>nd</sup> Vehicle Start Time	I	RJ	4		HHMM (Military time – include leading zero for single digit hour or minute)
GC-18		2 <sup>nd</sup> Vehicle Stop Time	I	RJ	4		HHMM (Military time – include leading zero for single digit hour or minute)
“		“	“	“	“	“	“
GC-N		Nth Vehicle Stop Time	I	RJ	4		HHMM (Military time – include leading zero for single digit hour or minute)

**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 (Military Time – include leading zero for single hour or minute)	
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 (Military Time – include leading zero for single hour or minute)	
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