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Mid-Region Council of Governments 2013 Household Travel Survey

Final Report

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Executive Summary

The Mid-Region Council of Governments' (MRCOG) goal is to adopt the 2040 Metropolitan Transportation Plan (MTP) in April 2015. In anticipation of the MTP analytical needs, MRCOG requires an update to the current travel demand model and the data that are used as inputs for transportation planning, project analysis, and air quality analysis. A significant input to the model and planning and analysis tools include data from a regional household travel survey. The last time MRCOG conducted a household travel survey was in 1993. Since then, the Albuquerque region has changed significantly. Updated socio-demographic and travel behavior data are required as the region moves to the 2040 MTP.

MRCOG contracted with Westat to conduct the 2013 Mid-Region Travel Survey (MRTS). This HTS consisted of 4,266 households recruited from an address based sampling frame (ABS) using web and computer assisted telephone interviews (CATI) to recruit households. A total of 2,471 completed the reporting of travel details by one of either web, CATI or mail-back options. The survey also included a random selection of a 20 percent subsample of households to take part in a Global Positioning System (GPS) technology-based component of the study, which was used to assess the level of trip under-reporting from the self-reported component of the survey. There were 701 households recruited into the survey of which 523 completed both (GPS and log reporting) phases of the survey. Each GPS participating household agreed to have all household members between the ages of 16 and 75 carry a GPS device to passively record travel details for three full days.

The survey included the collection of socio-demographic data and one-day (24-hour) period of household travel behavior collected during weekdays (Monday through Friday). The planning region covered by the survey was the Albuquerque Metropolitan Planning Area (AMPA), which is comprised of Bernalillo County, Valencia County, and the southern portion of Sandoval County. The Region also includes the cities of Albuquerque, Rio Rancho, Los Lunas, and Belen, as well as some Tribal Land areas.

The dataset was weighted and expanded to match 2012 American Community Survey 5-Year estimates (2008-2012) and the results of the data match those control totals. That process yielded the following socio-demographic results:

- There was a slight under-representation of Native American, Hispanic, young, and large households. Even with focused efforts to target these households, achieving the same distributions as the Census among them was challenging.
- Larger households (4 or more persons) were more prevalent in Valencia County (28%) than in Bernalillo County (20%).
- Sandoval County (1%) had a lower percentage of zero-vehicle households compared to Bernalillo County (6%) and Valencia County (4%). Valencia County had nearly double the percentage points (13%) of households that had 4 or more vehicles available compared to their counterparts in Bernalillo (6%) and Sandoval (8%) counties.
- Valencia County had a slightly higher percentage of households with no workers in the household at 31% compared to Bernalillo and Sandoval counties at 26% each.
- Valencia County (22%) had a higher percentage of households with an annual income of less than $15,000 compared to Sandoval (6%) and Bernalillo (13%).
- Bernalillo (63%) and Sandoval (64%) counties had a slightly higher percentage of White respondents than Valencia County (60%). However, Sandoval (8%) and Valencia (9%) counties had a higher percentage of Native American/Alaskan Natives participating in the survey than Bernalillo County (4%). Among Hispanic participating households, Valencia (54%) had a higher percentage than Bernalillo (48%) and Sandoval (38%).

Based on this weighted data key survey travel behavior characteristics were observed:

- Regarding residence types, for persons living in multi-family home structures (e.g., apartments/condominiums), Bernalillo County (21%) had a higher proportion of these residents compared to Sandoval (4%) and Valencia (5%) counties.
- Sandoval County households (84%) had a higher percentage of home ownership (with or without a mortgage) than those in Bernalillo (65%) and Valencia (74%) counties.
- All three counties had nearly an equal percentage of households with at least one licensed driver (asked among those 16 years of age or older) from 96% to 99% of the households.
- Sandoval County (66%) had a slightly higher percentage of educated households (with 'at least some college') compared to Bernalillo County (62%) and significantly higher than Valencia County (51%).
- Sandoval County generated slightly more trips (mean household trip rate of 9.1) than Valencia (8.9) and Bernalillo (8.4) counties.
- At the mean person trip rate level, Bernalillo (3.8) and Sandoval (3.8) counties generated slightly more trips than Valencia County (3.6).
- Among households with no workers, Sandoval County (6.8) generated more trips than their cohorts in Bernalillo (6.1) and Valencia (5.6) counties.

- Regarding traveling party size, Valencia County (53%) had a higher percentage of households with two or more persons on the trip compared to Bernalillo (44%) and Sandoval (46%) counties.
- When traveling by automobile (as the driver), a slightly higher percentage of persons in Valencia County (64%) made longer trips (longer than 10 minutes in duration) than those in Bernalillo (60%) and Sandoval (57%) counties.
- The percentage of trips made by walking was higher in the more urban Bernalillo County (8%) than in Sandoval and Valencia counties (4% each).

GPS Sample, Missed Trip Analysis, and Trip Rate Correction Factors.

The 20 percent subsample that participated in the GPS study yielded the following observations:

- 12,269 GPS trips detected from the 523 GPS/survey completed households over the 3 days of data collection.
- 483 GPS/log complete households were included in the Missed Trip Analysis to compare the trips detected by GPS against those trips reported during the retrieval survey.
- An overall rate of underreporting of approximately 18% of trips detected by GPS but not reported by participants; removing commonly un-reported trip types, the rate of under-reporting fell to approximately 14%.

To further leverage the data collected by the GPS subsample, a statistical model was tested using the trips database and key socio-demographic variables to generate Trip Rate Correction Factors. The results indicated that household vehicle ownership, trip duration, and household size were significantly associated with trip under-reporting. The analysis suggested that likely misreporters were respondents between 40-49 years of age, respondents who were either not employed or were students, and households with 0-1 vehicles. Trip duration was also a significant variable in reporting accuracy. In this study, trips greater than 7 minutes in length were more likely to be reported than trips less than 7 minutes in duration.

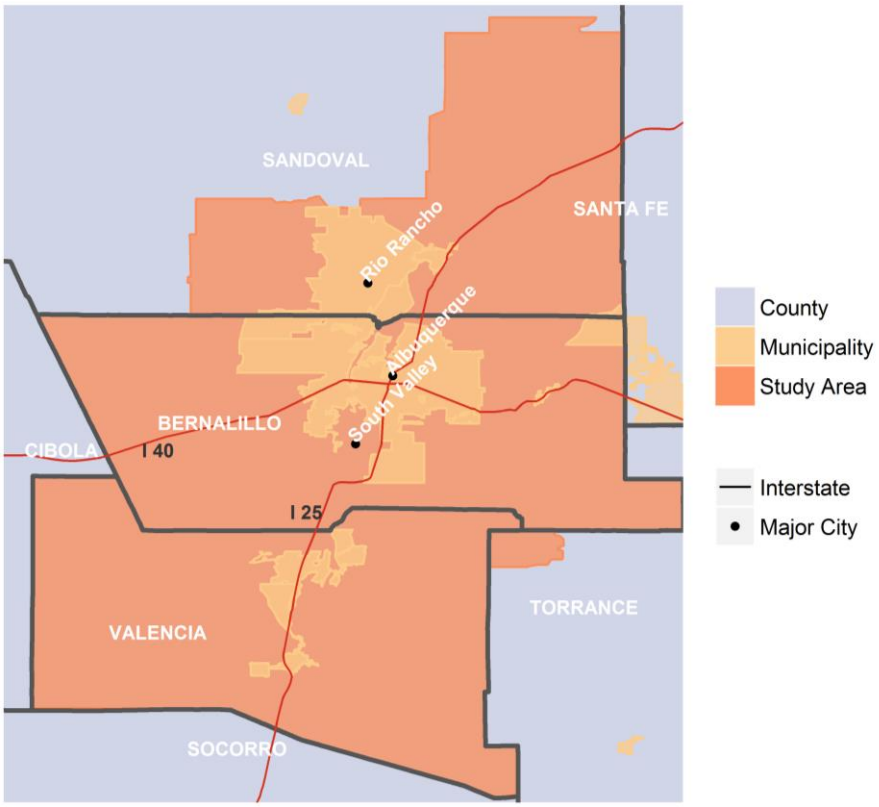
MRCOG staff played a significant role in the success of the project from survey design, public outreach, project monitoring, and data review. Although their involvement in each of these tasks was critical, the most impactful was the public outreach. MRCOG secured a local public outreach and research firm to provide public outreach to local Native American Tribal leaders to promote survey participation by all invited citizens. MRCOG staff members were also involved in developing and distributing a press release announcing the project, conducting interviews on local television stations, securing an agreement with a local movie theater to show a message about the survey prior to the start of the movie, and placing advertisements and generating news segments on local print media and radio stations.

1. Introduction

The Mid-Region Council of Governments' (MRCOG) goal is to adopt the 2040 Metropolitan Transportation Plan (MTP) in April 2015. In anticipation of the MTP analytical needs, MRCOG requires an update to the current travel demand model and the data that are used as inputs for transportation planning, project analysis, and air quality analysis. A significant input to the model and planning and analysis tools include data from a regional household travel survey. The last time MRCOG conducted a household travel survey was in 1993. Since then, the Albuquerque region has changed significantly. Updated socio-demographic and travel behavior data are required as the region moves to the 2040 MTP.

In support of their data needs, MRCOG contracted with Westat to conduct the 2013 Mid-Region Travel Survey (MRTS). This household travel survey (HTS) included the collection of household and person level socio-demographic data, one-day (24-hours) of household travel behavior and three days of Global Positioning System (GPS) data for a subset of the sample. The planning region covered by the survey is the Albuquerque Metropolitan Planning Area (AMPA), which is comprised of Bernalillo County, Valencia County, and the southern portion of Sandoval County, and includes the cities of Albuquerque, Rio Rancho, Los Lunas, Belen, and some Tribal Land areas. Figure 1 below provides a graphical representation of the study area boundary.

Figure 1. Survey Study Area



The survey data collection effort included interviews with more than 2,400 households, and was conducted from late October 2013 to mid-February 2014. The survey population consisted of residents within the AMPA region noted above. In addition to the one-day, the travel behavior survey, a randomly selected 20 percent subsample of households was offered the opportunity to take part in a GPS technology-based study. Each household participating in the technology subsample agreed to have all household members between the ages of 16 and 75 carry a GPS device that passively recorded travel details for three full days.

Tables in this report will present data in two ways, either unweighted only or both unweighted and weighted. The unweighted results show the distribution of raw survey responses. The weighted data show the final weighted results.

2. Branding and Public Outreach

Over the past decade, survey research has experienced declining participation rates. HTSs have not been immune to these challenges. In fact, the focus that many regional efforts have on ensuring that the data represents the "harder-to-survey" or "harder-to-reach" populations like low-income, larger households creates even more of a challenge. Because household travel surveys rely on data from all types of households, and especially those that are more difficult to reach, a highly focused level of effort is needed to ensure that a representative sample is obtained.

At the onset of the MRTS, the implementation of best practices in survey branding, public communications, and targeted outreach, especially among the regions' Spanish-speaking only and Native American households was identified as a critical component to the project's success.

The initial step of the communications plan was to brand the survey. Branding includes developing an official survey name to be used on all printed materials and on the public website. Creating a logo that is recognizable and consistent with the region is also key. MRCOG adopted "Mid-Region Travel Survey" as the project name and "Keep New Mexico Moving" as the tag line to be used on all survey related materials. This tagline was also used as the MRTS public website URL (www.KeepNewMexicoMoving.com). The public website served two primary functions. The general public and sampled households could obtain information about the survey. The website also served as the survey access point for sampled households. Figure 2 shows the final artwork for the MRTS logo. Because MRCOG is well known and respected in the region, all participant materials also included the MRCOG logo.

Figure 2. Study Logo

Public communications was another integral component of the MRTS outreach plan. The MRTS project team utilized multiple approaches to communicate with households across the region. The first of these efforts was, a press release announcing the survey. This press release was distributed to various media outlets by MRCOG on October 10, 2013, was posted to the MRCOG's website, and placed on the survey's public website. Outreach efforts continued through early November,

including two media segments (KRQE News 13 on October 1, 2013 and 770 KKOB on October 15, 2013). MRCOG Communications Director, Augusta Meyers, appeared on a 15-minute segment that aired on GOV TV that first aired on November 7, 2013. These news segments were posted on the survey's public website and provided information about the purpose of the survey, survey procedures, and its importance to transportation planning. In addition to the extended TV and radio segments, advertising spots ran in newspapers (Albuquerque Journal, Rio Rancho Observer, Valencia County News-Bulletin), on radio (KKOB traffic announcements), and on local movie theater screens prior to the start of a film.

Concerted efforts were made to include the "hard-to-reach" segments of the population and different approaches were used to make contact with each of these hard-to-reach segments. To begin with, each of the survey instruments and all of the public website content were made available in Spanish. To encourage Spanish speaking households to participate, sampled addresses were mailed a postcard that was primarily written in Spanish (see Appendix 6.1.2.5), and Spanish speaking interviewers were available to conduct the survey in Spanish for those that required or preferred this option.

Southwest Planning, an Albuquerque-based public outreach and research firm, was contracted to provide outreach to Native American tribal leaders in the study area. Southwest Planning provided information about the study to the tribe's members, encouraged tribal leaders to speak to their community about the importance and legitimacy of the study, and encouraged participation in the survey if they received a letter inviting them to do so.

3. Survey Methodology

The MRTS design included a multi-mode survey approach to collect socio-demographic (household and person) level data, as well as individual travel behavior over a one-day (24-hour) period, for a sample of 2,400 households across the AMPA region. This goal included 480 households participating in a GPS data collection component of the survey. This section of the report describes the survey methodology employed in the completion of the MRTS.

3.1. Sample Design

3.1.1. Sample Frame and Selection

An address-based sample (ABS) frame was developed to identify all residential addresses in the study area and then randomly select a representative sample of those addressed to be invited to participate in the MRTS. The ABS was selected from the United States Postal Service (USPS) Computerized Delivery Sequence File and included all street addresses in the geographic region that included the cities of Albuquerque, Rio Rancho, Los Lunas, Belen, and some Tribal Land areas. An attempt was made to match each sampled address with a landline telephone number. In cases where an address was matched to a telephone number, the phone number may have been used to contact a non-responding sampled address during the data collection process. All sampled addresses were eligible to participate in the study.

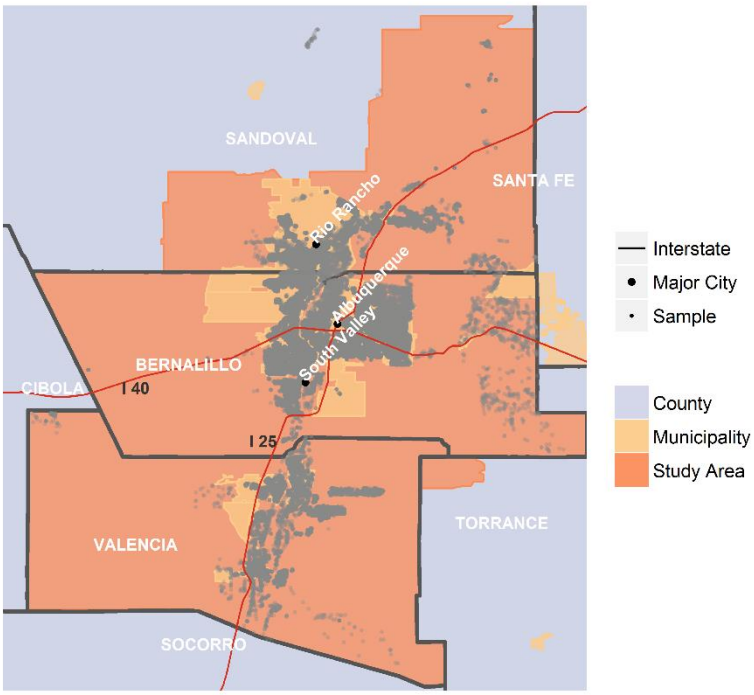
Based on pre-survey response rate assumptions, a sample of 88,802 residential addresses were selected for inclusion in the MRTS. Because response rates were higher than anticipated during the data collection phase, only 77,365 of the sampled addresses were required to obtain the targeted 2,400 completed surveys. The smaller sample release (87 percent of initial plan) resulted in the completion of 2,471 surveys (2.9 percent above the target number of completes).

3.1.2. Sample Preparation

Prior to the beginning of data collection, the sampled addresses were assigned to release groups. Each release group was comprised of addresses that were representative of the entire sample region. Release groups are used to control the timing and amount of sample released. Multiple release groups were mailed to simultaneously. Each release group contained approximately 1,000 addresses, allowing the release of the sample to be managed at a discrete level.

The ABS sampling strategy is designed to provide the best opportunity to effectively and efficiently achieve the sample objectives for geographic and socio-demographic distributions. Figure 3**Error! Reference source not found.** shows the locations of all sampled addresses, including those outside the survey's study area.

Figure 3. Sampled Household Locations



To achieve a balanced day-of-week distribution, the sample was also randomly assigned a specified weekday (Monday to Friday) travel day with the sample within each release group balanced to reflect 20 percent assigned each of the five travel days. The actual travel date was assigned during the recruitment survey.

The next step was to randomly select addresses to be invited to participate in the GPS subsample. A total of 20 percent of all sampled addresses were selected to be invited to participate in this part of the study. Prior to the completion of the recruitment survey, flagged addresses were evaluated to ensure that they were eligible to participate in the technology survey before being invited to do so. Details about eligibility for the technology subsample are discussed in Section 3.6 of this report.

3.2. Survey Design

The MRTS was designed to collect travel behavior data from 2,400 households in the AMPA region beginning in the winter of 2013 and continuing through early 2014. The study was designed as a

mixed-mode survey design providing web, telephone, and mail participation options. In addition to the traditional self-report one-day travel survey, a three-day GPS subsample was included in the MRTS. This section of the report describes the survey instruments design and the data elements captured in the survey instruments.

3.2.1. Survey Recruitment and Retrieval Instruments

The MRTS instrument was designed to collect key analytic data required to support the MTP travel demand and forecasting models. The survey instrument collected specific data items for each person age 5 and older in the household, including the travel behavior data for one-day (24-hour period).

While these data are important, it is critical that they be collected in a way that minimizes respondent burden. The recruitment and retrieval surveys were administered using an integrated web survey software system that was used for both computer-assisted self-interviews (CASI) and computer-assisted telephone interviewing (CATI). The surveys completed by web or telephone methods used the same underlying questions, branching, format, and logic checks. The web-based recruitment and retrieval instruments were accessible to participants via the project-specific public website. Each household was assigned a unique PIN during the initial outreach mailings allowing secure access to both questionnaires. Survey staff entered data contained on the travel logs received by mail into this same database, using the same web system.

The recruitment questionnaire collected general demographic information about each household including income, household size, type of housing, and information about vehicle ownership. This questionnaire also asked for demographic characteristics about each member of the household. At the conclusion of the recruitment survey, households were assigned a travel date. Households were also asked to indicate their preferred mode of contact for future reminders; options included telephone calls, text messages, and emails. This information allowed Westat to tailor the reminder and subsequent re-contact attempts to the participant's preference.

Travel day details were collected through the TripBuilder™ component of the web survey software system, with an integrated online map that enabled real-time geocoding to collect accurate travel details. Travel details were collected in two steps. The first step was the creation of a sequential list of places visited and basic attributes, including arrival and departure times, mode of travel, place

type, location information, and travel companions. The second step collected additional place details, such as activities engaged in at each place, and parking and transit fare information.

The following sections list the key information that was verified, collected, or derived about each completed household.

3.2.1.1. Household Data

Household-level details were collected for each household in the final dataset. Among the variables reported in the data are:

- Home address
- Residence type
- Owner/Renter status
- Household size
- Household income
- Number of vehicles
- Number of bicycles in working condition

3.2.1.2. Vehicle Data

For each household that had vehicles owned, leased, or available for regular use by the current household members we asked for the:

- Year
- Body type (e.g., SUV)
- Fuel type

3.2.1.3. Person Data

Specific questions were asked about each household member living in the home on the date the recruitment survey was completed. Key person-level variables collected about household members include:

- Age
- Gender
- Relationship of all household members to the recruit survey respondent
- Disability status and type (if applicable)
- Licensed driver status (age eligible)
- Employment status (age eligible)
- If employed, additional data items related to work
- Student status
- If a student, additional data items related to school
- Highest level of education earned
- Hispanic origin
- Race

3.2.1.4. Travel Day Trip Data

The travel day began at 3 a.m. on the assigned date of travel. Data were collected for each trip made by each household member (age 5 and older) throughout the day until 2:59 a.m. the following day. Key trip-related details collected include:

- Trip start and end locations
- Trip start and end times
- Mode of travel
- If household vehicle was used, additional data items related to the vehicle and passengers
- Primary activity at each location (trip purpose)
- Parking information
- Transit fare information

3.3. Data Collection

The data collection began with letters of invitation being mailed in October 2013 and ended with final travel data collection in late January 2014. The official study travel dates were October 28, 2013 through January 31, 2014.

The survey data collection process included the recruitment of participants, various reminder contacts distributed across the field period, and the retrieval of the travel day data. The following sections describe this process in more detail.

3.3.1. Recruitment Process

Recruitment began by mailing a letter of invitation to participate in the survey to sampled addresses. The letter informed the recipient about the purpose of the study and encouraged participants to self-recruit online and provided the website URL and a personal identification number (PIN) to gain access to the survey associated with the address. The letter also informed the recipient that each participating household would be eligible for various incentives. (See Appendix 6.1.1 for the advance letter.)

Invitation letters were mailed to 77,365 addresses in the region. This represents 87 percent of the original sample of addresses selected for the study. A letter was sent regardless of whether or not the sampled address had a phone match. The letter was addressed to "city" resident (e.g., Albuquerque Resident), printed on project branded letterhead and signed by Dewey Cave, Executive Director MRCOG. All mailed materials included a toll-free number to reach the study team if respondents had questions or preferred to participate by phone.

Up to three reminder postcards were mailed to each sampled addresses across the region. Mailed materials included a toll-free number to be used to reach the study team if participants had questions or preferred to participate by phone. The third postcard was a targeted postcard, used to improve the recruitment of Spanish-speaking households. This postcard included a unique toll-free number that was dedicated to field incoming Spanish inquiries.

Attempts to recruit sampled households into the study also included telephone contacts. Recipients of the mailed materials were given the option to self-recruit themselves or speak with one of

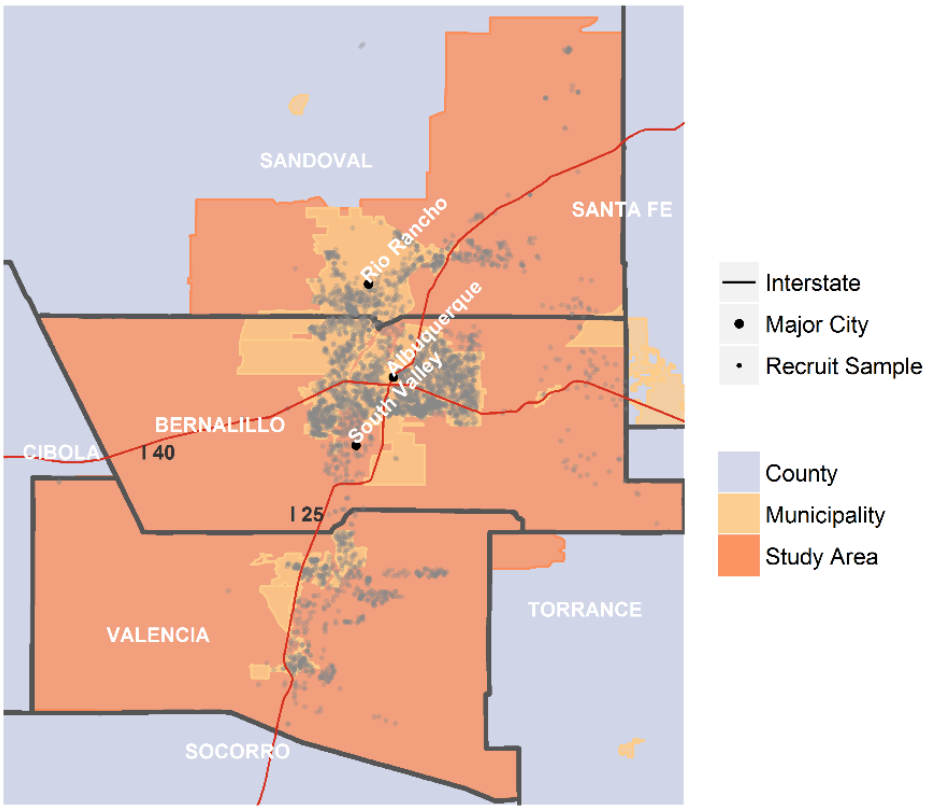
Westat's survey team over the phone. Most households (83 percent) completed the recruitment process online. If a household had not self-recruited, and a telephone number was available, telephone interviewers attempted to recruit households until the targeted recruitment goals had been met. Table 1 shows the target and actual number of recruitment responses for each of the three primary geographic sample regions.

Table 1. Target and Actual Recruited Households by Sample Region

Sample Region	Recruitment		
	Target	Actual	Percentage
Bernalillo	2,540	2,785	110%
Sandoval	635	791	125%
Valencia	635	690	109%
Total	3,810	4,266	112%

The locations of all recruited households are shown in Figure 4.

Figure 4. Participant Household Locations – Recruited Households



3.3.1.1. Recruitment Reminder Contacts (Postcards)

The study protocol included sending each address in the sample a reminder postcard seven days after the advance letter was sent. Up to three postcards were sent to each sampled address. Responding households were purged from the reminder files (see Appendix 6.1.2 for reminder postcards).

3.3.1.2. Travel Date Assignment

When the sample was initially selected, each address was randomly assigned to a day of the week (Monday through Friday). Specific travel dates were assigned at the time the household was recruited into the study based on the day of week that they were assigned when sampled. The goal was to

have an even distribution of 20% of households to each of the five days of the week. During the recruitment survey, households agreeing to participate were assigned the next available date that fell on the pre-assigned day of the week, beginning seven days after the recruitment date. Travel days were scheduled seven days after the recruitment interview to allow sufficient time for individualized travel logs to be prepared and mailed to each household. Households were also given the option to print the travel logs themselves. There was no delay in the assignment of the travel date when this option was selected. Table 2 shows the distribution of recruited households by day of week.

Table 2. Distribution of Recruited Households by Day of Week

Day of Week	Unweighted	
	Frequency	Percentage
Monday	780	18%
Tuesday	884	21%
Wednesday	895	21%
Thursday	842	20%
Friday	865	20%
Total	4,266	100%

3.3.1.3. Recruitment Confirmation

When a recruited household provided an email address or text message contact number, they received an automated recruitment confirmation message via their preferred contact mode. This message confirmed that their recruitment survey data were successfully received and provided a phone number to reach a study team member if they had questions.

3.3.2. Travel Log and Pre-Travel Date Contacts

Between recruitment into the study and the actual travel behavior data collection, other steps were taken to enhance household participation and provide materials to assist in the process. These efforts are presented next.

3.3.2.1. Travel Log Mailing

Once recruited, each household was mailed a travel log packet. The mailing included a letter thanking the household for agreeing to participate, instructions regarding how to participate,

individualized travel logs for each household member age 5 and older, and an example log that showed how to complete the log. These materials were available online for those who chose to download the materials, rather than receive them through the mail.

The instructions asked household members to use the travel log (on the assigned travel day) as a tool to help each household member record all trips made beginning at 3 a.m. on that date through 2:59 a.m. the following day. Instructions were provided regarding how to report travel online or over the phone. The letter indicated that all completed households would receive a $10 incentive. (See Appendices 6.1.3 and 6.1.4 for the letter and travel log.)

3.3.2.2. Pre-Travel Day Reminder Contacts

The day before the assigned travel day, each household was contacted by their preferred method to be reminded of their travel day (phone, email or text message). If contacted by phone, Westat verified that all travel day materials had been received and ensured any questions were answered. Email reminders allowed participants to respond to the email with questions. Study team members responded to each participant email in a timely manner.

3.3.3. Retrieval Process

In total, there were 2,471 completed households in the sampled AMPA region. Households were encouraged to self-report their data online; however, a traditional telephone interview option was also available.

3.3.3.1. Post-Travel Day Reminder Contacts

A series of electronic reminders were delivered to recruited households in an attempt to improve survey response. Beginning the day after the travel date, up to five reminder prompts were sent as text messages or emails depending on the contact preference requested by the household. These reminders included the households' PIN and links to the public website.

3.3.3.2. Retrieval Details

Households were able to begin reporting their travel day trip and activity details by web or CATI beginning the day after the travel day. Households preferring to complete by telephone with an interviewer were called the first day after their assigned travel day. Those preferring to complete by web were called if the household had not reported their travel by the third day after the travel day. Some households required rescheduling of their travel date. These requests were accommodated whenever possible.

The retrieval questionnaire data was collected using Westat's TripBuilder™ (TBW) web-based software that enabled all participants regardless of response mode to provide travel and activity details while geocoding each reported locations in real-time. TBW uses a built-in Google Maps interface.

3.3.4. Sample Monitoring

Recruitment and retrieval results were monitored daily. Each sample mail group was monitored to assess sample yields. As noted earlier, fewer addresses were required than originally estimated to reach the targeted completes; therefore, the sample release plan was adjusted accordingly.

Figure 5 shows the percentage of recruited households by recruitment mode. Although participants were encouraged to self-recruit online, providing response choices allowed each participant the option to select the mode of participation that best suited him or her without recruiting more households than necessary. Overall, 83 percent of all recruited households took advantage of the self-recruiting option.

Figure 5. Recruitment Response Mode (CATI & Web)

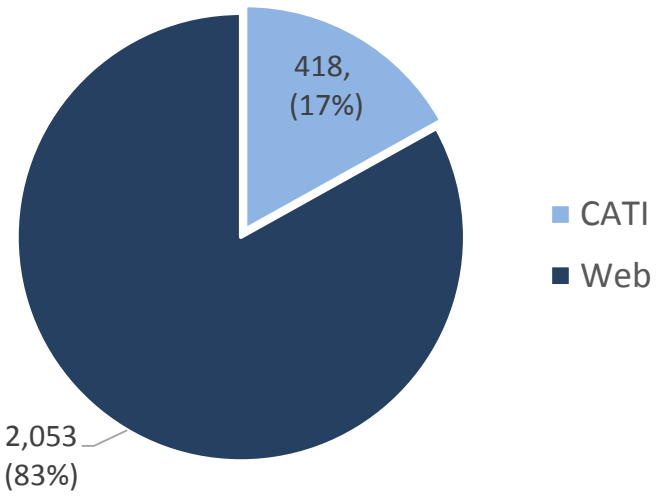


Table 2 presented the distribution of recruited households across day of week and Table 3 presents the completed households by day of week. The retrieved household percentages presented here are similar to the recruited results presented in Table 2. The weighted figures in Table 3 show that the weighting process did not substantially change the distribution of travel across the five days of the week as compared to the unweighted results, i.e., close to 20% of the total count of households were assigned to travel on each of the five days.

Table 3. Distribution of Retrieved Households by Day of Week

Household Travel Day	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Monday	470	19%	66,443	20%
Tuesday	492	20%	65,769	19%
Wednesday	526	21%	70,363	21%
Thursday	490	20%	65,926	20%
Friday	493	20%	69,271	21%
Total	2,471	100%	337,771	100%

Retrieval percentages by response mode are presented in Figure 6 and show the use of each of the modes was generally well distributed across the final sample.

Figure 6. Retrieval Response Mode (CATI, Mail & Web)

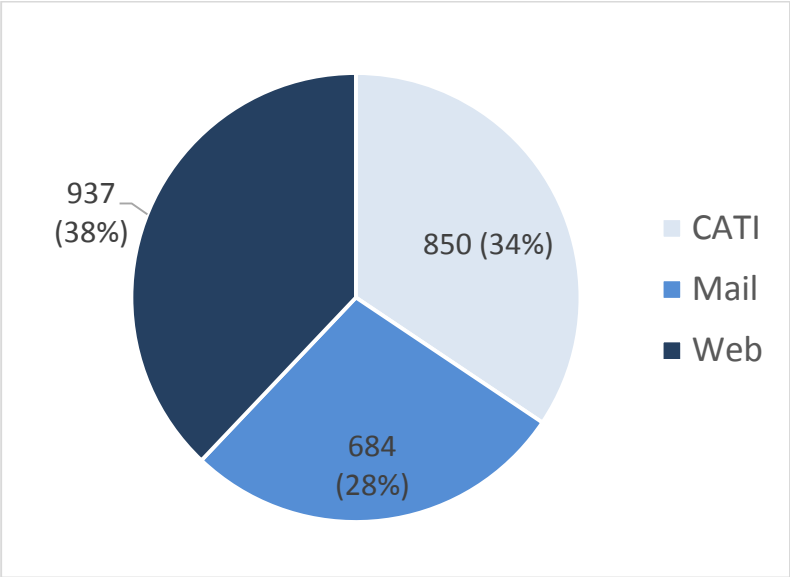


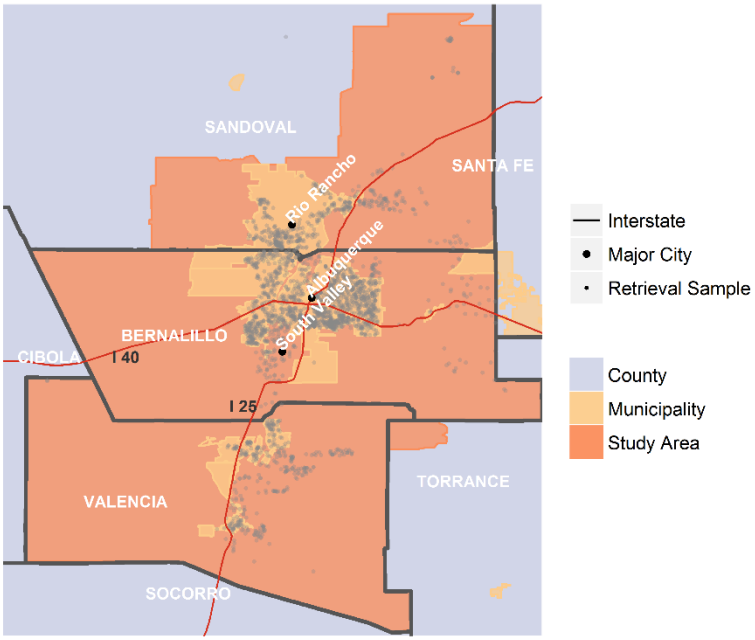
Table 4 shows the county level completion goals for the study. Sample in Valencia County performed less well than that in Bernalillo and Sandoval despite efforts to over-sample in that area.

Table 4. Overall Retrieved Households Summary by Region

Sample Region	Retrieval		
	Target	Actual	Percentage
Bernalillo	1,600	1,658	104%
Sandoval	400	464	116%
Valencia	400	349	87%
Total	2,400	2,471	103%

Figure 7 shows how the participating households are distributed across the region.

Figure 7. Participant Household Locations – Retrieved Households



3.3.5. Demographic Characteristics of Survey Participants

In Table 5, several unweighted demographic variables captured in the survey are compared to those same variables reported in the 2008 – 2012 American Community Survey (ACS) 5-Year Estimates for the AMPA region. Consistent with most survey samples, many of the hard-to-survey populations are underrepresented in the MRTS data (e.g., larger households, Hispanic households, and young adults). In the expansion step, survey weights were adjusted to achieve consistency with various demographic categories of the full population (obtained from the most recent ACS). When survey weights are applied to the survey data, survey estimates reflect the population. Characteristics or categories of some of the hard-to-reach populations were used to define the expansion cells in MRTS. Weighting is discussed in section 4.

Table 5. Demographic Results Compared to 2008 – 2012 ACS 5-Year Estimates

Demographic		Retrieved Households	General Population Data
Total Households		2,471	337,771
Household Size	1	33.7%	29.4%
	2	41.3%	33.4%
	3	12.1%	15.9%
	4+	12.9%	21.4%
Household Vehicles	0	5.2%	5.8%
	1	32.4%	35.0%
	2	38.8%	38.9%
	3+	23.7%	21.2%
Residence Tenure	Own	75.3%	67.2%
	Rent	23.4%	32.8%
	Other	1.3%	-
Race	White	84.3%	69.8%
	American Indian, Alaskan Native	3.3%	8.2%
	African American	1.8%	2.7%
	Other	10.7%	19.3%
Hispanic	Yes	34.4%	46.8%
	No	65.6%	53.2%
Participant Gender	Male	47.1%	49.1%
	Female	52.9%	50.9%
Participant Age	<18 years old	18.2%	24.4%
	18 - 24	5.1%	9.9%
	25 - 54	38.5%	41.0%
	55 - 64	18.7%	12.2%
	65+	19.4%	12.4%

3.4. Survey Processing and Data Cleaning

3.4.1. Overview

Data processing and data cleaning were conducted on an ongoing basis throughout the study. Updates were made to variables that impacted data collection during the administration of survey (e.g., the addition of a car that was not originally reported) and at the conclusion of data collection for data that did not impact the flow of the survey (e.g., recoding race based on "Other, specify" responses).

A series of automated edits, range checks, and consistency checks were performed within the survey instrument, and data preparation staff performed frequency reviews and problem resolution to monitor, correct, and update the data. Automated checks were run to evaluate the validity of reported trip data.

The following sections provide more details for each of the data quality checks used.

3.4.2. Logic Checks

Logic checks were programmed into the recruit and retrieval instruments to ensure that questions were answered as accurately as possible. These included requiring that certain questions be answered, even if the answer was "don't know" or "prefer not to answer," and forcing the data type (e.g., requiring a number for the question AGE). Data range checks were also employed to ensure that the data fell within the expected range for a given question (e.g., 0-112 for AGE). Consistency checks were conducted to ensure that when a variable is present in more than one data file, each data file contained the same value for the variable (e.g., household size or participant age).

3.4.3. Real-Time Geocoding

Westat's TBW survey software was used to conduct of the retrieval portion of the MTRS. All trip ends were geocoded during the completion of the trip reporting, in real-time using a Google interface. Respondents could enter the address of the trip location or were able to use the Google search engine to locate a specific place (e.g., the CVS drugstore at a specific intersection) when they did not know the address of the location. TBW captured full address information and the matching X/Y coordinate of the location.

3.4.4. Frequency Reviews

Frequency reviews were conducted at the beginning, in the middle and at the end of data collection to ensure that all data were being properly captured in the survey database. A report displaying a frequency table for each survey variable was generated and included branching logic, question text and responses. Through the review of these frequency reports, analysts would identify and correct issues with the data as appropriate.

3.4.5. Edit Checks

A series of edit check queries were run on the data to identify potential reporting inconsistencies. If an edit check failed, the data from the household was manually reviewed by an analyst. Edit checks were completed on trip data and non-trip data; each are discussed below

3.4.5.1. Trip Data Checks

Trip data was processed through Westat's trip processing system (TPS). TPS includes a series of consistency checks on reported trip data. Table 6 provides a list of the TPS checks performed on these data. When a TPS edit failed, an analyst reviewed the data to determine whether adjustments to the data could be made based on information provided by another household member or if the household needed to be re-contacted to resolve the inconsistency in the data. Whether the data was updated by an analyst or an interviewer as a result of a re-contact with the household, the entire household record was reprocessed through the TPS checks. Each case was subjected to this process until it cleared TPS without any failures. Only households successfully passing these edits were included in the final dataset.

3.4.5.2. Non-Trip Data Checks

Non-trip edit checks were executed as part of the frequency reviews described in Section 3.4.4 and included checks of each survey variable.

Table 6. Trip Data Checks

- Location is missing X,Y coordinates
- Location is missing full address
- Location name text contains "Home" but is not location type 1 (Home location).
- Location type 1 (Home location) text is not "HOME"
- Location name text contains "Work" but is not location type 2 (Work location).
- Location name text contains "School" but is not location type 3 (School location).
- Consecutive locations have identical X,Y coordinates
- Consecutive locations have identical location name
- Household locations with same coordinate do not have matching addresses
- Every person in retrieved household reports at least one place
- Travel does not begin at home or does not end at home on assigned travel day
- Travel does not begin and end at same location on assigned travel day
- 0 trip person missing response to "NOGOWHY" variable
- Trip companion(s) expected but missing
- Place's arrival time is earlier than previous place's departure time
- Place's departure time is earlier than its arrival time
- Person did not leave vehicle at place where activity duration greater than 30 minutes
- Place travel speed too fast for travel mode
- Place travel speed too slow for travel mode
- Place has a person number that does not exist
- Place where household members disagree on number of companions
- Persons report travelling together but companion count does not match
- Persons report travelling together but more than one driver reported
- Persons report travelling together but times do not match
- Persons report travelling together but mode does not match
- Persons report travelling together but locations do not match
- Travel mode of "passenger" but members on trip < 2
- Trip has no "driver" travel mode assigned to any member on trip
- Transit travel mode assigned to a place that is not of transit type
- Transit trip has duration < 5 minutes
- Transit place does not precede or follow another transit place

3.4.6. Upcoding and Cleaning

At the conclusion of data collection period open-ended and 'other specify' responses were reviewed and upcoded or collapsed as appropriate. The upcoding of responses is the activity of recoding an open-ended response into a categorical response option (e.g., recoding Caucasian to white). The process includes removing the 'other specify' (open-ended) text response.

In addition to coding open-end text into categorical responses, Westat also combined or collapsed other responses that were similar to each other. These responses appear in the original dataset as independent responses (one offs) because of things like, misspelling of the response, different letter spacing in the response or capitalization issues. Combining these text responses makes analysis more efficient.

3.4.7. Derived Variables

Several of the variables in the data deliverable were derived using counts from participant responses. In survey research, some data elements are captured in more than one question or format causing discrepancies in the data. For example, asking how many people live in a household, followed by a roster of household members. Limiting the number of people that may be rostered based on the response to another question may affect the accuracy of the reported data in the more specific roster format.

Derived variables also provide the sum of an attribute across a household. For example, HHSTUD is the count of all household members that answered the STUDE question with a 1 or 2 (full-time or part-time student). The result is an actual count of the number of students in a household. STUDE is also available in the data deliverable, so analysis can be conducted at the person level using the reported, rather than the derived household level data.

Another type of derived variable provided in this dataset converts the data collected in multiple units (e.g., hours and minutes) into a single unit of analysis (e.g., minutes). Calculations can also be used to determine quantitative values such as number of non-household members on a trip. This number was derived by subtracting the number of household members (HHPARTY) reported on a trip from the total number (PARTY) being reported on the trip. A list of all of the derived variables included in the data deliverable can be found in Appendix 6.1.5.

3.5. Survey Response Rates

Response rates were calculated for both the recruitment and retrieval stages of the survey. The recent decline in survey response rates has been well documented. The shift from random-digit-dial (RDD) to Address Based Sampling (ABS) frames provides many benefits to targeted sampling and coverage bias, but only adds to the diminishing response rate issue. In general, approximately 40 to 50 percent of all sampled addresses are matched to a telephone number, and about 15 percent of those matches generally prove to be bad matches (e.g., not associated with the sampled address). Because more than half of the sampled households are only reachable by mail in the ABS sample design, passive refusals happen at a high rate. Response rates achieved from ABS frames are largely dependent on the salience of the study, the presentation of the recruitment materials, and public outreach campaigns.

The recruitment rate ($R_{Recruit}$) in survey's using an ABS is calculated by dividing responding households by eligible addresses.

$$R_{Recruit} = \frac{Recruited\ Households}{Sampled\ Addresses\ -\ Postal\ Returns}$$

The retrieval rate ($R_{Retrieve}$) is the percentage of households that completed the study after agreeing to participate.

$$R_{Retrieve} = \frac{Retrieved\ Households}{Recruited\ Households}$$

The final response rate (R_{Final}) is the product of the recruitment and retrieval rates.

$$R_{Final} = R_{Recruit} \times R_{Retrieve} = \frac{Retrieved\ Households}{Sampled\ Addresses - Postal\ Returns}$$

Table 7 shows the recruitment, retrieval and overall response rates for the MRTS by county. Observed recruitment rates were slightly higher than expected; however, retrieval rates were lower than expected for which there are several plausible explanations. First, the data collection occurred across the holiday season—between Thanksgiving and New Year's Day. Second, the offered incentive of $10 per household may be lower than what is sufficient to motivate participation at a higher level.

Table 7. Response Rates by County

County	Recruitment	Retrieval	Overall
Bernalillo	5.7%	62.6%	3.6%
Sandoval	6.4%	61.6%	3.9%
Valencia	6.3%	53.5%	3.4%
Total	5.9%	60.9%	3.6%

Standard in all voluntary survey data is some level of item non-response. The programming for the MRTS did not allow participants to skip questions; however, participants could provide a "don't know" or "prefer not to answer" response to most survey questions. Table 8 presents the non-response percentage for home ownership, household income, and household disability. The observed non-response of these variables is consistent with other household travel surveys recently conducted by Westat.

Table 8. Household Variables – Item Non-Response

Non-response Items	Unweighted	
	Frequency	Percentage
Home Ownership		
Bernalillo	60	2.4%
Sandoval	15	0.6%
Valencia	15	0.6%
Home Ownership Total	90	3.6%
Household Income		
Bernalillo	205	8.3%
Sandoval	67	2.7%
Valencia	35	1.4%
Household Income Total	307	12.4%
Household Disability		
Bernalillo	16	0.7%
Sandoval	4	0.2%
Valencia	2	0.1%
Household Disability Total	22	0.9%

Table 9 presents several person level non-response items. The person non-response for age was partially offset by a follow-up age range classification question that was asked when age was not initially reported. Of the 278 refusals to provide age, an age range was collected for 235 persons.

Table 9. Person Variables – Item Non-Response

Non-response Items	Unweighted Frequency	Weighted Frequency
Bernalillo		
Age	181	43,990
Age Range	27	6,893
Race	313	71,214
Employment	31	6,533
Days traveled to work per week	87	18,450
Level of Education	53	10,899
Student Status	37	8,772
Sandoval		
Age	54	6,392
Age Range	9	1,250
Race	91	12,016
Employment	11	2,245
Days traveled to work per week	24	3,295
Level of Education	23	3,158
Student Status	14	2,578
Valencia		
Age	43	3,539
Age Range	7	299
Race	97	11,152
Employment	13	1,181
Days traveled to work per week	18	1,506
Level of Education	19	2,022
Student Status	5	753

3.6. GPS Subsample

The objective of the GPS component of the MRTS was to complete GPS and travel day trip reporting with a subsample of 480 households in order to estimate levels of trip underreporting in the log only household sample. Trip rate correction factors computed from data from this 20 percent GPS subsample may be used to adjust trip rates in the non-GPS sample.

Households agreeing to participate in the GPS subsample were asked to use the data loggers for three days, and also required to complete a travel log and report their travel for one day. In addition to reporting travel day trip details, these households were sent data loggers for all household members between the ages of 16 and 75 (inclusive). These GPS loggers were to be worn for three consecutive days beginning on the assigned travel date. A $20 incentive per instrumented person was offered to all recruited GPS households. In order to be eligible for the incentive each household member had to report travel data for the assigned travel date, each instrumented household member

had to use the GPS devices provided, and all devices had to be returned to Westat. The following sections detail the GPS data collection and processing methods used in the MRTS.

3.6.1. Deployment: Equipment, Procedures, and Results

This section of the report will describe the GPS equipment used, will review the methods employed to distribute and collect the GPS devices, and will present the results of the deployment effort.

3.6.1.1. Wearable GPS Equipment

To collect GPS data for the MRTS, Westat used the GlobalSat GPS Data Logger (see Figure 8). We have used this device in multiple household travel and physical activity studies since 2007. The GPS data stream collected the following elements: date, time, latitude, longitude, and speed. These elements were stored in the logger in standard National Marine Electronics Association (NMEA) units and were converted into .csv files upon download. For the MRTS, the logging frequency was 3-second intervals with the speed screen activated so that no data was stored when the device recognized a point speed of zero.

Figure 8. GlobalSat DG-100 GPS Data Logger

3.6.1.2. Deployment Materials and Procedures

Households were recruited into the study at least 10 days prior to their assigned travel date to allow sufficient time to prepare the personalized GPS instructions, travel logs, equipment, and to schedule the arrival of the package prior to the assigned travel date.

Clear instructions were shipped with the devices and included an assignment sheet with each household member assigned a specific logger. To further assist in the data collection effort, a sticker was affixed to each GPS device with the first name of the household member printed on the sticker. A toll-free telephone number was also provided in the instructions if further assistance with device use was needed. The instructions emphasized that even though the household was included in the

technology component of the study, they also needed to use the travel logs to record all the places they went on the assigned travel date.

An equipment usage sheet was also provided in the GPS package. The participants were asked to complete and return this form with the devices. The form asked household members to record if they used the data loggers, and if not, to list the reason(s) why. Examples of the GPS device instructions and equipment usage sheets can be seen in Section 6.1.5. GPS packages were shipped via FedEx and included the following materials:

- A letter for the household introducing the GPS materials and devices;
- Personalized travel logs for each person age 5 and older (with labels identifying each person);
- Instructions for charging and using wearable GPS devices (including device assignments);
- Wearable GPS devices and a power cable for charging each GPS device; and,
- FedEx return packaging, including a prepaid label and instructions for returning the devices, the power cables, and the equipment usage sheet.

The equipment was shipped to arrive two business days prior to the assigned travel day (the first day of the three day equipment deployment period). Participants were asked to return all of the equipment and the completed equipment usage sheet immediately after the assigned GPS data collection period, but asked to hold onto their logs to use when reporting their travel online or over the phone. Both outbound and return equipment packages were tracked using the FedEx Application Programming Interface (API).

The deployment team tracked the household deployment status for each household using an internal website. The default deployment status was "Recruited." The status of each household in the system was updated daily to reflect the households' current state in the deployment process. Below is a list of all household deployment status codes: the first four statuses reflect the ideal progression of a successful deployment from recruited to equipment used and returned (i.e., GPS complete). The final four statuses were assigned to GPS-recruited households that did not result in the collection of any, or any useful, GPS data.

- Recruited
- Shipped
- Deployed
- Returned Deployed (used and returned equipment)
- Invalid Address
- Returned Refused (elected not to participate)
- Return-Delivery Exception (package unable to be delivered by FedEx)
- Not Returned/Lost

After receiving the returned equipment, the deployment staff downloaded the GPS data from each data logger and cleared the device memory for redeployment. The downloaded GPS files were then imported into the project database where the data processing was conducted.

3.6.1.3. Results of Deployment: Participation Rates

Based on Westat's experience conducting household travel surveys with a GPS component, we estimated that 67 percent of all household recruited into the GPS subsample would complete all required steps in the survey process. A target of 720 recruited GPS households was established to achieve 480 completes. We recruited 97 percent of the goal, or 701 households, into the GPS component of the study. Our completion rate of 75 percent exceeded our assumptions and resulted in 523 GPS complete households. Table 10 summarizes the recruitment and completion results of the GPS subsample effort.

Table 10. GPS Recruitment and Completion Results

Recruit Total	Recruit Goal	Recruit % Complete	GPS/Log Complete	GPS/Log Complete Goal	% Complete Goal
701	720	97	523	480	109

3.6.2. GPS Data Collection and Processing

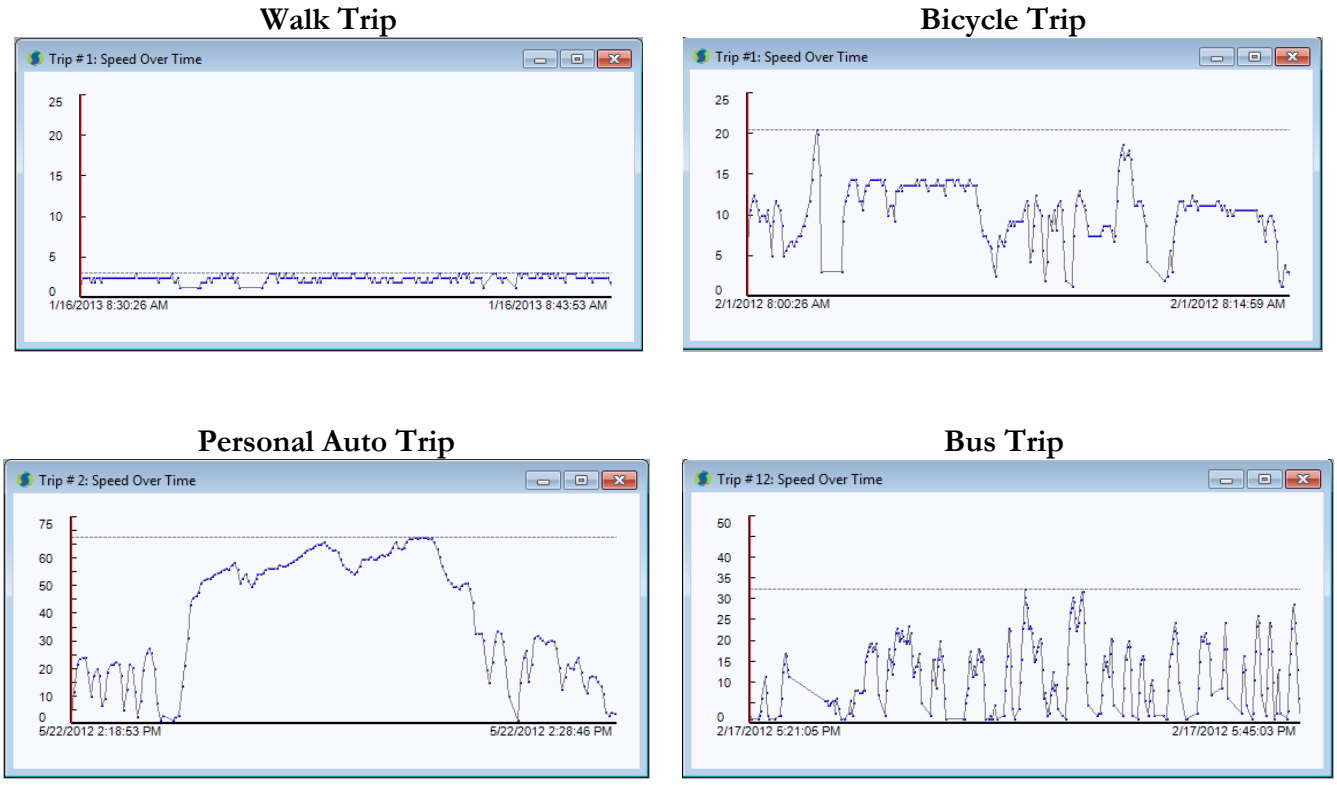
3.6.2.1. GPS and Log Processing Methods

As the GPS data were imported into the project database, the Universal Time Coordinate (UTC) date and time stamps in the GPS point data were translated to local (Albuquerque) date and time. Next, the GPS trace data for each participant were processed using Westat's Trip Identification and Analysis System (TIAS) software to identify potential trip ends based on time intervals between consecutively logged points. For this study, all initial dwell times of 120 seconds or more were flagged as potential trip stops. The GPS trip data were then visually reviewed by analysts to screen out traffic delays and other falsely identified potential trips with dwell times of 120 seconds or more, as well as to add stops that had dwell times of less than 120 seconds but had clear "stop" characteristics. Examples of typical stops that would not be automatically detected by the 120 second dwell time are short drop-off/pick-ups (e.g., school or work).

When geocoded addresses were available from the survey data, the analyst used these locations to assist in the trip end identification and/or confirmation process. Once this step was completed, the updated GPS-based trips collected were compared and matched with the trips reported for each

person's assigned travel day. Figure 9 shows an example[1] of speed profiles for walk, bicycle, personal auto and bus trips as viewed through TIAS.

Figure 9. Speed Profiles –Various Travel Modes



Once all GPS trip ends were identified the next step was to import the unique trips reported in the survey (log) by GPS households into TIAS for the trip comparison process. Westat's' GPS/log trip matching interface was designed to compare GPS trips with survey reported trips using time and location as the significant variables for automated matching. Trips were considered matched if the trip end times fell within 12.5 minutes of each other or trip end locations were within 100 meters of each other.

Data quality control guidelines were established that allowed the TIAS analysts to make adjustments to the automated matches as appropriate. These exceptions included matching beyond the programmed thresholds if information in the data supported an adjustment.

[1] This example is not data from the MRTS.

3.6.2.2. GPS and Log Comparison Results: Missed Trip Analysis

The GPS data deliverable that accompanies the travel survey data deliverable includes GPS data collected from all households that returned devices with data regardless of the household completion status. However, for the purpose of GPS to travel log trip comparisons, only the 523 households that were determined to be "GPS/Log complete" were evaluated.

In the missed trip analysis process the GPS captured and survey (log) reported trips are compared. Of the 523 GPS/Log complete households, 40 were dropped from the missed trip analysis process because they did not meet the requirements for inclusion in the analysis. These requirements were:

1. The household must be complete per previously stated completion rules (see Section 3.6).
2. The household must have conformed to one of three possible scenarios regarding trips recorded by GPS and log:
    a. Both records must have contained only a single trip
    b. Both records must have contained more than one trip
    c. Both records must have contained zero trips
3. The household data had to pass an analyst review and be flagged as "Matched" to be considered complete. Rules used to determine this status were:
    a. When reported log trips and collected GPS trips matched perfectly, the file was coded as "Matched."
    b. When reported log trips and collected GPS trips did not match the other set perfectly, but at least some portion of the travel matched, the file was coded as "Matched."
    c. When an analyst manually exhausted potential for reconciling discrepancies between the log trips and collected GPS trips and was unable to identify any matches in the data, the file was coded as "Not a match" and the file was removed from Missed Trip Analysis.

Once the final subset of households to be used for analysis was determined, 483 of the 523 households were used in the missed trip analysis conducted with the MRTS data. The data in this analysis included 811 GPS-instrumented persons. GPS devices used by these persons captured 4,510 trips on the assigned travel day, while self-report data resulted in 3,993 trips.

3.6.2.2.1. Reporting Exceptions

In some household travel surveys, work-related trips (e.g., commercial use of personal auto) and trips that have origins and destinations outside of the planning regions, are specifically not reported in the travel log or collected during the retrieval survey. In this study, there were no instructions to

exclude these types of trips during reporting. Missed trip analysis must also consider the impact of other typically unreported trips like loop trips (i.e., those that start and end at the same location) and on-site travel (e.g., trips that are conducted on the premises of one property, like a hospital or apartment complex). These types of trips are more commonly captured in wearable GPS studies.

Participants in this study were instructed not to report loop trips, but were not given any instructions regarding on-site trip reporting. The following discussion will present results that include both raw and adjusted frequencies. The adjusted frequencies remove any GPS-detected loop, on-site, work-related, and external trips for cases that did not have matching reported trips in the travel log data; regardless of the reporting instructions provided.

3.6.2.2.2. Matching Results

The following sections describe the three different types of matches observed in the MRTS data; 100 percent matched trips, trips that were reported in the survey, but not observed in the GPS data and trips observed in the GPS data, but not reported in the survey.

100 Percent Matched Trips. A perfect match is when all trips reported by the participant in the survey instrument matched the trips captured by their GPS data logger. This includes persons who reported no trips and had no GPS data on the assigned travel date. Of the 811 persons instrumented with GPS devices, 80 had no GPS data and no travel day trips reported in the survey data. This represents 9.9 percent of all instrumented GPS persons. In total, 365, or 45 percent, of the 811 persons in the GPS subsample were 100 percent matched, including the 80 persons who did not travel at all on the travel day.

In terms of trips, this dataset resulted in a 100 percent match rate for 1,323 (33.1 percent) reported and collected trips in the GPS subsample. Conversely, 66.9 percent of the trips identified in the GPS subsample were either missing one or more trips in the survey data or had one or more additional trips captured by the GPS device. These discrepancies are discussed below.

Trips reported in survey data, but not captured by GPS. The second comparison identifies trips reported by participants in the survey for which there was no corresponding GPS trip captured. During the matching process, 172 persons reported a total of 377 trips in the survey that had no corresponding GPS trips identified. This typically happens when participants place the GPS device where it cannot receive satellite signals (i.e., in a purse or backpack) or forget to confirm that it is powered on. Table 11 presents the frequency of persons missing GPS data by the number of missing trips.

Trips captured by GPS but not reported in survey data. The last category in the matching process examines those cases where trips were identified in the GPS data, but not reported in the survey data. Of the 811 persons, in the GPS subsample, 357 failed to report a total of 892 trips that were captured by the GPS device.

Table 11 also shows the frequency of persons missing survey reported trips with the corresponding of missing trips. The column 'Adjusted Frequency of Persons Missing Reported Trips' is the count of missing trips after GPS-detected loop, on-site, work-related, and external trips were excluded.

Table 11. Person Frequencies for Missing Trips

Number of Missing Trips	Frequency of Persons Missing GPS Captured Trips	Frequency of Persons Missing Survey Reported Trips	Adjusted Frequency of Persons Missing Survey Reported Trips
1	82	164	149
2	41	80	68
3	17	47	32
4	13	20	15
5	10	11	8
6	5	11	13
7	2	11	3
8	2	4	1
9	0	2	1
10	0	2	1
11	0	1	2
12	0	1	0
13	0	0	0
14	0	2	1
28	0	1	0
Total	172	357	294

3.6.2.2.3. Survey Data Comparison Summary

Overall, the missed trip analysis revealed that 18.3 percent of trips made by the GPS-instrumented persons were not reported in the survey data (892 missed log trips / (3,993 log reported trips + 892 missed log trips)). This percentage decreases to approximately 14 percent when typical reporting exceptions identified in the GPS data are removed (There were 249 such exceptions; [(892 missed

log trips – 249 exceptions) / (3,993 log reported trips + (892 missed log trips – 249 exceptions))]. This missed trip rate is consistent with findings from previous GPS-enhanced travel surveys.

It is important to note that additional analyses are needed to generate targeted trip rate correction factors (see Section 4.4); Westat does not advise the use of the overall missed trip rate as a correction factor for the entire sample but rather the application of individual trip factors to each trip weight.

3.6.2.3. GPS Dataset

Only data from the 483 completed households were included in the missed trip analysis.

Table 12 highlights key summary statistics from the GPS dataset. It includes households that met all the requirements to be considered a complete, as well as those households that only partially complied with the study requirements. There were 15,207 GPS trips collected over the course of three days by 1,286 instrumented persons living within the 675 households that were deployed with GPS devices. Only data from the 483 completed households were included in the missed trip analysis.

Table 12. GPS Processing Summary

	Households	Persons	GPS Trips
Deployed Households	701	1,286	-
Returned Households	675	1,235	15,207
Completed Households	523	924	12,269
Missed Trip Analysis Households	483	811	4,510[2]

The GPS dataset uses the same household ID as does the survey sample database. As part of the final data deliverable, Westat has provided an Access database with the following tables:

- GPS households;
- GPS trips;
- GPS points;
- GPS and reported trip matches and misses; and
- GPS and reported missed trip analysis.

[2] Missed trip analysis GPS Trips only include trips from the first day of travel as a basis for comparison with log reported trips. The number of GPS Trips for Returned Households and Completed Households include all three days of data collected.

4. Weighting

Survey samples are designed to elicit response from a representative sample of the population of interest. However, survey data collection rarely yields a totally representative sample due to differential response rates by various population subgroups, item non-response, and other factors. To mitigate the difference in the results between survey respondents and the population, weights are constructed and assigned to records in a survey data set so the data can be expanded to represent the population of inference as closely as possible. The weights are usually developed in a series of stages to compensate for unequal selection probabilities, nonresponse, non-coverage, and sampling fluctuations from known population values.[3] The use of raw or unweighted survey data will result in biased analyses, especially if the sample was selected with unequal probabilities which is often the case when targeting hard-to-reach populations or when the responding sample is very different from the survey population.

Survey weights were developed for three types of analytic units associated with all households in the MRTS dataset – household weights, person weights, and trip weights – to permit inference to the corresponding target populations. Household weights were assigned to responding households. Person and trip weights were assigned to responding persons within responding households. Each data table contains the weight for each record in the table. Dependent upon the unit of analysis, the following weight factors should be used:

1. Household-level data use HHRKWT0
2. Person-level data use PFNLWT0
3. Trip data use TRPWT0

In addition to the survey weights, replicate weights were developed for each type of analytic unit associated to the travel study. The replicate weights were used to calculate the variances of survey estimates using the paired jackknife replication method. The methods used to derive these weights were aimed at reflecting the features of the sample design so that when the jackknife variance estimation procedure was implemented, approximately unbiased estimates of sampling variance were obtained. In addition, the various weighting procedures were repeated on each set of replicate weights to appropriately reflect the impact of the weighting adjustments on the sampling variance of

[3] Brick, J.M. and Kalton, G. (1996). Handling Missing Data in Survey Research. Statistical Methods in Medical Research, 5, 215-238.

a survey estimate. Separate tables for each of the three types of replicate weights were provided in the dataset. The replicate weights are numbered 1 to 100 (e.g., HHRKWT1 – HHRKWT100).

The overall steps in the weighting process for the travel study component were as follows:

1. Construction of base weights (the reciprocal of the probability of selection of each sampled address);
2. Adjustment for non-response at the household-level;
3. Adjustment of the household weights to achieve consistency with characteristics for the full population of households in the study area (achieved by raking the non-response adjusted weights to independent household-level figures for the study area—raking can be thought of as multivariate post-stratification). This is the final household weight;
4. Assignment of the final household weights to all responding persons within completed households;
5. Person-level raking. This is the final person weight; and
6. Construction of the trip weights.

In this section of the report, tables are displayed by key survey variables summarized for the MRTS region. Appendices 6.3 and 6.7 each contain an additional series of tables with variables not discussed in this section, but captured during the survey effort.

4.1. Household Base Weights

The household base weight reflects the probability of selection for a sampled household and is calculated simply as the reciprocal of its probability of selection.

4.1.1. Adjustment for Non-Response at the Household-Level

After the assignment of the household level base weight, an adjustment for non-response was made to reflect those for which a retrieval interview was not obtained. The adjustments for household non-response were made within adjustment cells defined by the population group and by sampling

stratum (high density of key sample characteristics[4]/remaining households). A non-response adjustment factor was calculated for each cell as the ratio of the sum of household weights for all eligible households to the sum of the household weights for all recruited households. The non-response adjustment factor was applied to the household base weight of each responding household. In this way, the weights of the responding households were "weighted up" to represent the full set of responding and non-responding households in the adjustment cell.

4.1.2. Raking at the Household-Level

Raking adjustment procedures are used to improve the reliability of survey estimates and, to some extent, correct for the bias due to under-coverage and/or non-response. Raking is a post-stratification adjustment procedure where survey weights are iteratively adjusted to independent control totals for various demographic categories. The process has the effect of differentially adjusting the weights of the sampled households within groups of demographically similar households, so that the total sum of weights for the sampled households equals the corresponding independent control totals for all households.

The raking process used with the MRTS data had four "dimensions." The weights were adjusted to equal the totals within the cells for each dimension in an iterative process, until the process converged, and every dimension's cell totals equaled the independent control totals. The dimensions at the household weighting level included the following:

- Household size
- Vehicles per household
- Workers per household
- Household income

The independent control total for Household size came from the 2010 Decennial Census. Control totals for Vehicles per household and Workers per household came from the 2008–2012 5-year American Community Survey (ACS). The ACS control totals were adjusted to reflect the 2010 Decennial Census distribution. In Table 13 through Table 20 the weighted and unweighted frequencies for several key household-level demographic variables (e.g., household size, number of workers, etc.) are presented for each county. Of these key demographic variables, only household

[4] Within each county, the first stratum consisted of addresses in Census tracts with a high percentage of households in which number of workers was greater than number of vehicles, and Census tracts with high percentages of 0-vehicle or 0-to-1-vehicle households.

income (Table 17) was subject to relatively significant item non-response. A total of 307 households in the study did not provide a valid income range.

Table 13. Household Size by County (Unweighted and Weighted)

	Unweighted		Weighted	
Household Size	Frequency	Percentage	Frequency	Percentage
Bernalillo				
1	629	38%	81,785	31%
2	637	38%	86,689	33%
3	177	11%	42,022	16%
4+	215	13%	52,709	20%
County Total	1,658	67%	263,205	78%
Sandoval				
1	109	23%	10,192	22%
2	230	50%	17,470	37%
3	68	15%	7,414	16%
4+	57	12%	11,768	25%
County Total	464	19%	46,844	14%
Valencia				
1	97	28%	6,957	25%
2	151	43%	8,745	32%
3	55	16%	4,373	16%
4+	46	13%	7,648	28%
County Total	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 14. Household Number of Vehicles by County (Unweighted and Weighted)

Household Vehicles	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	114	7%	16,082	6%
1	624	38%	97,585	37%
2	595	36%	98,888	38%
3	218	13%	35,826	14%
4+	106	6%	14,732	6%
Not Ascertained	1	0%	92	0%
County Total	1,658	67%	263,205	78%
Sandoval				
0	4	1%	430	1%
1	101	22%	13,933	30%
2	227	49%	20,837	44%
3	83	18%	7,782	17%
4+	49	11%	3,861	8%
County Total	464	19%	46,844	14%
Valencia				
0	10	3%	1,192	4%
1	76	22%	7,485	27%
2	137	39%	9,768	35%
3	76	22%	5,701	21%
4+	50	14%	3,575	13%
County Total	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 15. Number of Household Workers by County (Unweighted and Weighted)

Household Workers	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	516	31%	67,945	26%
1	669	40%	111,510	42%
2	421	25%	70,447	27%
3+	52	3%	13,304	5%
County Total	1,658	67%	263,205	78%
Sandoval				
0	155	33%	11,978	26%
1	161	35%	19,527	42%
2	133	29%	12,885	28%
3+	15	3%	2,454	5%
County Total	464	19%	46,844	14%
Valencia				
0	137	39%	8,568	31%
1	125	36%	10,928	39%
2	81	23%	7,294	26%
3+	6	2%	931	3%
County Total	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 16. Household Number of Students by County (Unweighted and Weighted)

Household Students	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	1,178	71%	164,076	62%
1	276	17%	51,905	20%
2	143	9%	32,462	12%
3+	61	4%	14,763	6%
County Total	1,658	67%	263,205	78%
Sandoval				
0	333	72%	27,809	59%
1	73	16%	9,543	20%
2	40	9%	6,351	14%
3+	18	4%	3,141	7%
County Total	464	19%	46,844	14%
Valencia				
0	245	70%	15,989	58%
1	64	18%	5,562	20%
2	19	5%	2,394	9%
3+	21	6%	3,777	14%
County Total	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 17. Household Income by County (Unweighted and Weighted)

Household Income	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Less than $10,000	116	7%	20,607	8%
$10,000 to $14,999	117	7%	13,175	5%
$15,000 to $24,999	185	11%	27,312	10%
$25,000 to $34,999	155	9%	27,098	10%
$35,000 to $49,999	219	13%	34,683	13%
$50,000 to $74,999	261	16%	38,954	15%
$75,000 to $99,999	185	11%	25,288	10%
$100,000 to $149,999	149	9%	27,307	10%
$150,000 to $199,999	40	2%	9,665	4%
$200,000 or more	26	2%	6,938	3%
Don't Know	32	2%	4,736	2%
Refused	173	10%	27,443	10%
County Total	1,658	67%	263,205	78%
Sandoval				
Less than $10,000	14	3%	1,997	4%
$10,000 to $14,999	12	3%	1,102	2%
$15,000 to $24,999	39	8%	4,809	10%
$25,000 to $34,999	36	8%	3,493	7%
$35,000 to $49,999	57	12%	5,280	11%
$50,000 to $74,999	76	16%	9,179	20%
$75,000 to $99,999	69	15%	6,019	13%
$100,000 to $149,999	62	13%	5,659	12%
$150,000 to $199,999	20	4%	2,187	5%

Household Income	Unweighted Frequency	Unweighted Percentage	Weighted Frequency	Weighted Percentage
$200,000 or more	12	3%	1,141	2%
Don't Know	5	1%	725	2%
Refused	62	13%	5,251	11%
County Total	464	19%	46,844	14%
Valencia				
Less than $10,000	19	5%	3,501	13%
$10,000 to $14,999	30	9%	2,396	9%
$15,000 to $24,999	37	11%	2,263	8%
$25,000 to $34,999	34	10%	2,656	10%
$35,000 to $49,999	60	17%	4,100	15%
$50,000 to $74,999	65	19%	4,614	17%
$75,000 to $99,999	34	10%	2,173	8%
$100,000 to $149,999	27	8%	2,668	10%
$150,000 to $199,999	4	1%	577	2%
$200,000 or more	4	1%	676	2%
Don't Know	8	2%	445	2%
Refused	27	8%	1,652	6%
County Total	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 18. Household Residence Type by County (Unweighted and Weighted)

Household Residence Type	Unweighted Frequency	Unweighted Percentage	Weighted Frequency	Weighted Percentage
Bernalillo				
Single-family detached house	1,149	69%	180,685	69%
Single-family attached house	116	7%	18,865	7%
An apartment or condo	339	20%	55,009	21%
Mobile Home or Trailer	46	3%	7,220	3%
Dorm room	1	0%	209	0%
Boat, RV, Van	3	0%	328	0%
Don't know	1	0%	273	0%
Refused	3	0%	615	0%
County Total	1,658	67%	263,205	78%
Sandoval				
Single-family detached house	423	91%	42,453	91%
Single-family attached house	17	4%	1,544	3%
An apartment or condo	12	3%	1,769	4%
Mobile Home or Trailer	11	2%	1,038	2%
Refused	1	0%	40	0%
County Total	464	19%	46,844	14%
Valencia				
Single-family detached house	253	72%	18,928	68%
Single-family attached house	8	2%	633	2%
An apartment or condo	11	3%	1,380	5%
Mobile Home or Trailer	75	21%	6,722	24%
Refused	2	1%	59	0%
County Total	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 19. Ownership of Household Residence by County (Unweighted and Weighted)

Household Residence Ownership	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Own with mortgage	729	44%	120,990	46%
Own without mortgage	374	23%	50,366	19%
Rent	480	29%	78,147	30%
Occupied without payment of rent	15	1%	2,053	1%
Refused	27	2%	5,261	2%
Not Ascertained	33	2%	6,388	2%
County Total	1,658	67%	263,205	78%
Sandoval				
Own with mortgage	282	61%	30,109	64%
Own without mortgage	118	25%	9,369	20%
Rent	44	9%	5,569	12%
Occupied without payment of rent	5	1%	411	1%
Refused	10	2%	959	2%
Not Ascertained	5	1%	427	1%
County Total	464	19%	46,844	14%
Valencia				
Own with mortgage	175	50%	14,177	51%
Own without mortgage	114	33%	7,404	27%
Rent	33	9%	4,107	15%
Occupied without payment of rent	12	3%	1,064	4%
Don't know	1	0%	44	0%
Refused	8	2%	428	2%
Not Ascertained	6	2%	497	2%
County Total	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 20. Number of Licensed Drivers in Household by County (Unweighted and Weighted)

Household Drivers	Unweighted Frequency	Unweighted Percentage	Weighted Frequency	Weighted Percentage
Bernalillo				
0	58	3%	7,883	3%
1	713	43%	101,567	39%
2	781	47%	127,817	49%
3	89	5%	22,081	8%
4+	17	1%	3,857	1%
County Total	1,658	67%	263,205	78%
Sandoval				
0	5	1%	355	1%
1	126	27%	13,704	29%
2	300	65%	28,072	60%
3	29	6%	3,984	9%
4+	4	1%	729	2%
County Total	464	19%	46,844	14%
Valencia				
0	9	3%	1,155	4%
1	117	34%	9,013	33%
2	183	52%	13,095	47%
3	31	9%	3,175	11%
4+	9	3%	1,284	5%
County Total	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

4.2. Person-Level Weights

4.2.1. Adjustment of Initial Person-Level Weights

The final household weight was assigned to each person in responding household in the sample. This weight represents the initial person-level weight.

4.2.2. Raking at the Person-Level

For the same reasons raking was used at the household-level (improved reliability, reduction of potential bias, and to achieve consistency with known population counts), a simple raking/post-stratification procedure was also used at the person-level. Survey weights of responding persons were adjusted so that the sum of the weights of the responding persons equaled the corresponding

independent control total for the study area population. The dimensions at the person-weighting level included the following:

- Sex
- Age
- Race/Ethnicity

The independent control totals came from 2008 – 2012 5-Year ACS data. Table 21 through Table 28 present the weighted and unweighted frequencies for a number of person-level variables (e.g., gender, race, etc.).

Table 21. Participant Sex by County (Unweighted and Weighted)

	Unweighted		Weighted	
Person Sex	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Male	1,577	46%	321,218	49%
Female	1,789	53%	333,854	51%
Refused	29	1%	5,835	1%
Don't know	1	0%	92	0%
County Total	3,396	65%	660,998	76%
Sandoval				
Male	497	48%	62,669	50%
Female	535	52%	62,490	50%
Refused	5	0%	891	1%
Don't know	1	0%	115	0%
County Total	1,038	20%	126,165	15%
Valencia				
Male	363	47%	39,857	48%
Female	412	53%	41,769	51%
Refused	4	1%	443	1%
Don't know	1	0%	167	0%
County Total	780	15%	82,235	9%
Total	5,214	100%	869,398	100%

The majority of respondents identified themselves as white (63 percent). The largest percentage of participants (35 percent) had a bachelor's degree or higher, while another 25 percent had at least some college. Nine percent reported having more than one job.

Table 22. Participant Age Distribution by County (Unweighted and Weighted)

Person Age	Unweighted Frequency	Unweighted Percentage	Weighted Frequency	Weighted Percentage
Bernalillo				
0 – 4	192	6%	41,981	6%
5 – 17	392	12%	103,437	16%
18 – 24	181	5%	61,801	9%
25 – 29	185	5%	48,863	7%
30 – 34	258	8%	41,722	6%
35 – 39	209	6%	40,051	6%
40 – 44	218	6%	40,706	6%
45 – 49	208	6%	44,478	7%
50 – 54	219	6%	44,485	7%
55 – 59	265	8%	37,203	6%
60 – 64	301	9%	34,940	5%
65 – 69	281	8%	24,394	4%
70 – 74	147	4%	18,258	3%
75+	159	5%	34,688	5%
Don't know	14	0%	5,095	1%
Refused	167	5%	38,896	6%
County Total	3,396	65%	660,998	76%
Sandoval				
0 – 4	54	5%	10,468	8%
5 – 17	126	12%	23,182	18%
18 – 24	29	3%	4,562	4%
25 – 29	53	5%	9,659	8%
30 – 34	53	5%	7,242	6%
35 – 39	43	4%	8,063	6%
40 – 44	59	6%	8,094	6%
45 – 49	56	5%	8,757	7%
50 – 54	90	9%	9,126	7%
55 – 59	94	9%	7,723	6%
60 – 64	100	10%	7,082	6%
65 – 69	108	10%	6,113	5%
70 – 74	61	6%	4,068	3%
75+	58	6%	5,633	4%
Don't know	2	0%	317	0%
Refused	52	5%	6,075	5%
County Total	1,038	20%	126,165	15%
Valencia				
0 – 4	25	3%	3,543	4%
5 – 17	110	14%	16,770	20%
18 – 24	43	6%	8,253	10%
25 – 29	36	5%	4,722	6%
30 – 34	43	6%	4,648	6%
35 – 39	31	4%	5,256	6%
40 – 44	42	5%	4,943	6%
45 – 49	41	5%	5,436	7%
50 – 54	57	7%	5,484	7%
55 – 59	82	11%	5,572	7%
60 – 64	83	11%	4,470	5%

Person Age	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
65 – 69	65	8%	2,692	3%
70 – 74	36	5%	2,080	3%
75+	43	6%	4,828	6%
Don't know	3	0%	374	0%
Refused	40	5%	3,165	4%
County Total	780	15%	82,235	9%
Total	5,214	100%	869,398	100%

When participants were unable or unwilling to provide ages for the household members they were asked to provide an age range. Those responses are provided in Table 23.

Table 23. Participant Age Range by County (Unweighted and Weighted)

Person Age	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0 – 4	9	5%	2,941	7%
5 – 15	21	12%	5,500	13%
16 – 17	2	1%	866	2%
18 – 64	103	57%	24,141	55%
65 – 74	13	7%	1,757	4%
75 +	6	3%	1,924	4%
Don't know	2	1%	443	1%
Refused	25	14%	6,355	14%
County Total	181	65%	43,928	81%
Sandoval				
5 – 15	7	13%	1,263	20%
16 – 17	2	4%	372	6%
18 – 64	26	48%	3,067	48%
65 – 74	10	19%	467	7%
Don't know	1	2%	115	2%
Refused	8	15%	1,153	18%
County Total	54	19%	6,436	12%
Valencia				
0 – 4	2	5%	169	5%
5 – 15	2	5%	135	4%
16 – 17	1	2%	272	8%
18 – 64	28	65%	2,537	71%
65 – 74	3	7%	90	3%
Refused	7	16%	368	10%
County Total	43	15%	3,571	7%
Total	278	100%	53,935	100%

Table 24. Participant Race by County (Unweighted and Weighted)

Person Race	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
White	2,583	76%	416,549	63%
African American, Black	65	2%	16,009	2%
Asian	50	1%	13,873	2%
American Indian, Alaskan Native	96	3%	29,203	4%
Native Hawaiian or Pacific Islander	4	0%	966	0%
Multiracial	285	8%	113,184	17%
Don't know	54	2%	10,842	2%
Refused	259	8%	60,371	9%
County Total	3,396	65%	660,998	76%
Sandoval				
White	801	77%	80,615	64%
African American, Black	16	2%	3,332	3%
Asian	16	2%	2,562	2%
American Indian, Alaskan Native	38	4%	10,401	8%
Native Hawaiian or Pacific Islander	1	0%	113	0%
Multiracial	75	7%	17,126	14%
Don't know	12	1%	2,244	2%
Refused	79	8%	9,772	8%
County Total	1,038	20%	126,165	15%
Valencia				
White	587	75%	49,150	60%
African American, Black	4	1%	743	1%
Asian	3	0%	353	0%
American Indian, Alaskan Native	21	3%	7,459	9%
Native Hawaiian or Pacific Islander	1	0%	168	0%
Multiracial	67	9%	13,211	16%
Don't know	10	1%	2,353	3%
Refused	87	11%	8,799	11%
County Total	780	15%	82,235	9%
Total	5,214	100%	869,398	100%

Table 25. Participant Hispanic Ethnicity by County (Unweighted and Weighted)

Person Race	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Yes	1,137	33%	314,133	48%
No	2,147	63%	327,961	50%
Don't know	12	0%	1,407	0%
Refused	100	3%	17,488	3%
County Total	3,396	65%	660,989	76%
Sandoval				
Yes	289	28%	47,823	38%
No	720	69%	73,859	59%
Don't know	4	0%	567	0%
Refused	25	2%	3,676	3%
County Total	1,038	20%	125,925	14%
Valencia				
Yes	308	39%	44,447	54%
No	435	56%	34,926	42%
Don't know	1	0%	196	0%
Refused	36	5%	2,915	4%
County Total	780	15%	82,484	9%
Total	5,214	100%	869,398	100%

Table 26. Participant Number of Jobs by County (Unweighted and Weighted)

Person Jobs	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	6	0%	625	0%
1	1,474	87%	282,639	88%
2	140	8%	21,108	7%
3	20	1%	3,323	1%
4+	4	0%	499	0%
Don't know	10	1%	2,400	1%
Refused	48	3%	10,054	3%
County Total	1,702	68%	320,648	77%
Sandoval				
0	7	1%	1,490	2%
1	413	85%	51,057	84%
2	44	9%	5,698	9%
3	3	1%	310	1%
Don't know	1	0%	100	0%
Refused	18	4%	1,836	3%
County Total	486	19%	60,491	15%
Valencia				
0	2	1%	98	0%
1	282	89%	30,332	92%
2	16	5%	1,439	4%
3	2	1%	111	0%
Don't know	1	0%	99	0%
Refused	15	5%	1,012	3%
County Total	318	13%	33,090	8%
Total	2,506	100%	414,229	100%

Table 27. Participant Work Locations by County (Unweighted and Weighted)

Person Work Place	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Fixed	1,141	70%	220,859	72%
Home	125	8%	19,703	6%
Varies	361	22%	64,060	21%
Don't know	5	0%	1,691	1%
Refused	6	0%	1,256	0%
County Total	1,638	68%	307,569	78%
Sandoval				
Fixed	296	64%	37,413	66%
Home	54	12%	5,396	9%
Varies	107	23%	13,700	24%
Don't know	1	0%	281	0%
Refused	2	0%	275	0%
County Total	460	19%	57,066	14%
Valencia				
Fixed	218	73%	23,343	73%
Home	19	6%	1,393	4%
Varies	61	20%	6,670	21%
Refused	2	1%	474	1%
County Total	300	13%	31,881	8%
Total	2,398	100%	396,515	100%

Table 28. Educational Attainment by County (Unweighted and Weighted)

Person Educational Attainment	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Not a high school graduate	531	17%	138,728	23%
High School Graduate	383	12%	87,933	14%
Some College Credit but no Degree	463	15%	88,587	15%
Associate or Technical School Degree	301	9%	55,473	9%
Bachelor's or Undergraduate Degree	716	23%	119,764	20%
Graduate Degree	722	23%	107,847	18%
Don't know	12	0%	2,371	0%
Refused	41	1%	8,527	1%
County Total	3,169	65%	609,230	76%
Sandoval				
Not a high school graduate	137	14%	23,950	21%
High School Graduate	108	11%	12,523	11%
Some College Credit but no Degree	157	16%	20,280	18%
Associate or Technical School Degree	101	10%	13,013	11%
Bachelor's or Undergraduate Degree	233	24%	23,927	21%
Graduate Degree	217	22%	17,898	16%
Don't know	4	0%	729	1%
Refused	19	2%	2,429	2%
County Total	976	20%	114,748	14%
Valencia				
Not a high school graduate	143	19%	22,681	29%
High School Graduate	134	18%	13,756	18%
Some College Credit but no Degree	150	20%	15,363	20%
Associate or Technical School Degree	83	11%	6,123	8%
Bachelor's or Undergraduate Degree	125	17%	11,784	15%
Graduate Degree	92	12%	6,500	8%
Don't know	5	1%	964	1%
Refused	14	2%	1,058	1%
County Total	746	15%	78,230	10%
Total	4,891	100%	802,209	100%

4.2.3. Trip Weights and Rates

Trip weights were generated by simply multiplying the final person weight by 260 to represent the number of trips on any given weekday within a year. These weights should be used to expand the data to the population.

Trip rates in Table 29 through Table 34 were calculated by dividing the sum of trips by the sum of households or persons in the survey. Consistent with findings from other household travel surveys, the MRTS data show that larger households made more trips per household than smaller households (Table 31). Households with more workers also made more trips than those with fewer workers (Table 33).

Table 29. Household Trip Rates by County (Unweighted and Weighted)

County	Household Trip Rate	
	Unweighted	Weighted
Bernalillo	7.62	8.43
Sandoval	8.05	9.06
Valencia	7.86	8.94

Table 30. Person Trip Rates by County (Unweighted and Weighted)

County	Person Trip Rate	
	Unweighted	Weighted
Bernalillo	3.95	3.82
Sandoval	3.79	3.84
Valencia	3.64	3.55

Table 31. Trip Rates by Household Size by County (Unweighted and Weighted)

Household Size	Trip Rate	
	Unweighted	Weighted
Bernalillo		
1	4.61	4.58
2	7.14	7.23
3	10.51	10.29
4+	15.47	14.91
Sandoval		
1	4.53	4.65
2	7.76	8.32
3	9.04	9.66
4+	14.77	13.59
Valencia		
1	3.71	3.71
2	7.79	7.50
3	9.00	8.49
4+	15.46	15.60

Table 32. Trip Rates by Age by County (Unweighted and Weighted)

Age Distribution	Person Trip Rate	
	Unweighted	Weighted
Bernalillo		
0 – 4	N/A	N/A
5 – 17	3.47	3.47
18 – 24	3.40	3.29
25 – 29	3.91	3.55
30 – 34	4.52	4.54
35 – 39	4.67	4.81
40 – 44	4.81	5.05
45 – 49	4.36	4.24
50 – 54	4.18	4.14
55 – 59	4.15	4.02
60 – 64	3.99	3.93
65 – 69	3.77	3.72
70 – 74	3.90	4.08
75+	2.79	2.52
Don't know	3.14	2.94
Refused	3.11	2.90
Sandoval		
0 – 4	N/A	N/A
5 – 17	3.17	3.27
18 – 24	2.62	2.91
25 – 29	3.77	3.46
30 – 34	4.00	4.01
35 – 39	4.37	3.71
40 – 44	4.41	4.63
45 – 49	4.23	4.58
50 – 54	3.83	4.73
55 – 59	4.13	4.01
60 – 64	4.29	4.46
65 – 69	3.04	3.03
70 – 74	4.13	3.93
75+	3.74	4.02
Don't know	1.50	1.91
Refused	3.77	3.64
Valencia		
0 – 4	N/A	N/A
5 – 17	3.18	3.58
18 – 24	2.42	2.1
25 – 29	4.31	4.84
30 – 34	4.19	4.58
35 – 39	4.39	3.56
40 – 44	3.67	3.56
45 – 49	3.63	3.70
50 – 54	3.35	3.35
55 – 59	3.51	3.40
60 – 64	3.92	3.80
65 – 69	4.28	4.08
70 – 74	4.83	5.33
75+	3.21	2.85
Don't know	5.33	5.84
Refused	2.74	2.76

Table 33. Trip Rates by Number of Household Workers by County (Unweighted and Weighted)

Household Workers	Trip Rate	
	Unweighted	Weighted
Bernalillo		
0	5.46	6.06
1	7.13	7.90
2	10.33	10.80
3	13.12	12.12
4+	17.67	17.97
Sandoval		
0	7.02	6.77
1	7.55	8.65
2	9.50	11.04
3	9.33	9.11
4+	18.67	25.55
Valencia		
0	5.85	5.63
1	7.97	8.51
2	10.63	12.19
3	13.83	19.01
4+	N/A	N/A

Table 34. Trip Rates by Household Income by County (Unweighted and Weighted)

Household Income	Trip Rate	
	Unweighted	Weighted
Bernalillo		
Less than $10,000	5.74	6.77
$10,000 to $14,999	7.32	8.25
$15,000 to $24,999	6.66	7.34
$25,000 to $34,999	7.79	8.05
$35,000 to $49,999	6.21	6.56
$50,000 to $74,999	7.38	7.95
$75,000 to $99,999	9.24	10.36
$100,000 to $149,999	9.03	9.66
$150,000 to $199,999	10.08	11.01
$200,000 or more	11.12	13.02
Don't Know	9.53	10.25
Refused	7.70	8.90
Sandoval		
Less than $10,000	6.07	7.79
$10,000 to $14,999	7.67	7.93
$15,000 to $24,999	6.08	5.94
$25,000 to $34,999	6.58	6.70
$35,000 to $49,999	7.51	8.67
$50,000 to $74,999	9.22	9.86
$75,000 to $99,999	9.87	11.39
$100,000 to $149,999	7.56	8.47
$150,000 to $199,999	8.90	13.17
$200,000 or more	7.92	7.79
Don't Know	7.80	11.34
Refused	7.95	9.39

Household Income	Trip Rate	
	Unweighted	Weighted
Valencia		
Less than $10,000	6.95	7.68
$10,000 to $14,999	6.23	8.41
$15,000 to $24,999	6.70	7.69
$25,000 to $34,999	7.91	8.55
$35,000 to $49,999	7.62	8.12
$50,000 to $74,999	6.89	7.31
$75,000 to $99,999	10.44	11.52
$100,000 to $149,999	11.41	14.42
$150,000 to $199,999	15.50	16.35
$200,000 or more	8.75	7.72
Don't Know	7.62	10.38
Refused	6.67	6.56

In Table 35 through Table 39 unweighted and weighted frequencies for trip purpose and mode are shown. The most prevalent trip purposes were related to home, work, and retail shopping as illustrated in Table 35. It is important to recognize that the travel day for most participants in the study began at home. This contributed to the high percentage of home-based trip purposes reported.

Table 35. Primary Trip Purpose by County (Unweighted and Weighted)

Trip Purpose (Primary)	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Home Activities	3,974	31%	768,130	33%
Workplace Activities	1,911	15%	344,491	15%
School/Daycare Related	590	5%	154,736	7%
Retail Shopping	1,796	14%	293,270	12%
Dining at Restaurant	814	6%	140,005	6%
Visiting Hospital/Doctor	327	3%	54,246	2%
Recreational Activities	628	5%	106,289	5%
Banking/Other Office Related	339	3%	52,253	2%
Visiting Another Private Residence	347	3%	60,045	3%
Visiting a Place of Worship	86	1%	13,626	1%
College/University	102	1%	22,466	1%
Pick-up/Drop-off Passenger	891	7%	197,717	8%
Change modes	495	4%	91,732	4%
Loop for exercise	98	1%	16,353	1%
Other, Specify	213	2%	35,016	1%
Don't know	5	0%	1,524	0%
Refused	17	0%	4,626	0%
County Total	12,633	66%	2,356,525	76%
Sandoval				
Home Activities	1,125	30%	139,535	31%
Workplace Activities	475	13%	56,498	13%
School/Daycare Related	179	5%	29,330	7%
Retail Shopping	700	19%	72,153	16%

Trip Purpose (Primary)	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Dining at Restaurant	272	7%	31,672	7%
Visiting Hospital/Doctor	107	3%	10,188	2%
Recreational Activities	178	5%	19,628	4%
Banking/Other Office Related	110	3%	10,739	2%
Visiting Another Private Residence	105	3%	13,455	3%
Visiting a Place of Worship	32	1%	3,526	1%
College/University	17	0%	1,902	0%
Pick-up/Drop-off Passenger	187	5%	29,114	7%
Change modes	131	4%	16,777	4%
Loop for exercise	32	1%	3,248	1%
Other, Specify	79	2%	7,767	2%
Don't know	2	0%	107	0%
Refused	4	0%	230	0%
County Total	3,735	20%	445,869	14%

Table 36. Primary Trip Purpose by County (Unweighted and Weighted) (continued)

Trip Purpose (Primary)	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Valencia				
Home Activities	832	30%	88,444	32%
Workplace Activities	350	13%	33,323	12%
School/Daycare Related	148	5%	19,989	7%
Retail Shopping	458	17%	37,691	14%
Dining at Restaurant	172	6%	13,798	5%
Visiting Hospital/Doctor	90	3%	9,603	3%
Recreational Activities	96	4%	10,611	4%
Banking/Other Office Related	143	5%	13,150	5%
Visiting Another Private Residence	92	3%	8,713	3%
Visiting a Place of Worship	37	1%	3,888	1%
College/University	15	1%	2,412	1%
Pick-up/Drop-off Passenger	177	6%	24,523	9%
Change modes	81	3%	8,122	3%
Loop for exercise	10	0%	785	0%
Other, Specify	36	1%	3,313	1%
Don't know	3	0%	231	0%
Refused	2	0%	57	0%
County Total	2,742	14%	278,653	9%
Total	19,110	100%	3,081,047	100%

Data presented in Table 37 and Table 38, shows that private auto travel (as the driver or a passenger) was the largest mode choice for all trips and for the mode to work trips. Table 39 shows that the mode choice for auto travel decreases for school-related trips with walk and school bus modes increasing for these trips.

Table 37. All Trip Modes by County (Unweighted and Weighted)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Walk	1,062	8%	198,662	8%
Bike	257	2%	46,755	2%
Auto/Van/Truck (as the driver)	8,556	68%	1,497,116	64%
Auto/Van/Truck (as a passenger)	2,085	17%	465,821	20%
Public Bus	325	3%	66,854	3%
Dial-a-ride/Paratransit	3	0%	381	0%
Rail Runner	16	0%	2,592	0%
Taxi/Limo	7	0%	797	0%
School Bus	145	1%	47,274	2%
Motorcycle/Moped	29	0%	2,967	0%
Private Shuttle/Bus	15	0%	4,079	0%
Carpool/Vanpool	122	1%	19,915	1%
Something else	11	0%	3,313	0%
County Total	12,633	66%	2,356,525	76%
Sandoval				
Walk	156	4%	17,843	4%
Bike	8	0%	653	0%
Auto/Van/Truck (as the driver)	2,634	71%	302,683	68%
Auto/Van/Truck (as a passenger)	730	20%	93,259	21%
Public Bus	59	2%	9,143	2%
Dial-a-ride/Paratransit	N/A	N/A	N/A	N/A
Rail Runner	26	1%	2,823	1%
School Bus	72	2%	13,770	3%
Motorcycle/Moped	8	0%	553	0%
Private Shuttle/Bus	3	0%	496	0%
Carpool/Vanpool	38	1%	4,350	1%
Something else	1	0%	297	0%
County Total	3,735	20%	445,869	14%
Valencia				
Walk	106	4%	10,634	4%
Bike	4	0%	587	0%
Auto/Van/Truck (as the driver)	1,887	69%	168,659	61%
Auto/Van/Truck (as a passenger)	571	21%	76,031	27%
Public Bus	20	1%	1,648	1%
Dial-a-ride/Paratransit	N/A	N/A	N/A	N/A
Rail Runner	25	1%	3,141	1%
School Bus	86	3%	13,030	5%
Motorcycle/Moped	9	0%	441	0%
Private Shuttle/Bus	10	0%	1,260	0%
Carpool/Vanpool	22	1%	2,910	1%
Something else	2	0%	313	0%
County Total	2,742	14%	278,653	9%
Total	19,110	100%	3,081,047	100%

Table 38. Mode to Work by County (Unweighted and Weighted)

Trip Travel Mode to Work	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Walk	87	6%	14,707	6%
Bike	60	4%	10,767	4%
Auto/Van/Truck (as the driver)	1,142	81%	209,090	81%
Auto/Van/Truck (as a passenger)	77	5%	16,396	6%
Public Bus	14	1%	2,930	1%
Taxi/Limo	1	0%	215	0%
Motorcycle/Moped	7	0%	986	0%
Private Shuttle/Bus	N/A	N/A	N/A	N/A
Carpool/Vanpool	12	1%	1,910	1%
Something else	2	0%	516	0%
County Total	1,402	69%	257,516	79%
Sandoval				
Walk	24	7%	2,369	6%
Bike	1	0%	80	0%
Auto/Van/Truck (as the driver)	297	84%	35,979	85%
Auto/Van/Truck (as a passenger)	15	4%	1,929	5%
Public Bus	8	2%	1,285	3%
Taxi/Limo	N/A	N/A	N/A	N/A
Motorcycle/Moped	2	1%	159	0%
Private Shuttle/Bus	1	0%	104	0%
Carpool/Vanpool	5	1%	434	1%
Something else	N/A	N/A	N/A	N/A
County Total	353	17%	42,338	13%
Valencia				
Walk	8	3%	845	3%
Bike	N/A	N/A	N/A	N/A
Auto/Van/Truck (as the driver)	230	87%	23,918	88%
Auto/Van/Truck (as a passenger)	15	6%	1,534	6%
Public Bus	3	1%	251	1%
Taxi/Limo	N/A	N/A	N/A	N/A
Motorcycle/Moped	1	0%	59	0%
Private Shuttle/Bus	1	0%	20	0%
Carpool/Vanpool	7	3%	413	2%
Something else	N/A	N/A	N/A	N/A
County Total	265	13%	27,040	8%
Total	2,020	100%	326,894	100%

Table 39. Mode to School by County (Unweighted and Weighted)

Trip Travel Mode to School	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Walk	57	10%	14,241	9%
Bike	14	2%	3,806	2%
Auto/Van/Truck (as the driver)	160	27%	38,612	25%
Auto/Van/Truck (as a passenger)	270	46%	71,308	46%
Public Bus	10	2%	2,293	1%
School Bus	65	11%	20,415	13%
Motorcycle/Moped	N/A	N/A	N/A	N/A
Private Shuttle/Bus	1	0%	198	0%
Carpool/Vanpool	13	2%	3,504	2%
County Total	590	66%	154,377	77%
Sandoval				
Walk	8	5%	839	3%
Bike	N/A	N/A	N/A	N/A
Auto/Van/Truck (as the driver)	44	27%	7,053	27%
Auto/Van/Truck (as a passenger)	64	40%	9,871	37%
Public Bus	2	1%	319	1%
School Bus	38	23%	7,414	28%
Motorcycle/Moped	2	1%	109	0%
Carpool/Vanpool	4	2%	801	3%
County Total	162	18%	26,406	13%
Valencia				
Walk	7	5%	702	4%
Bike	N/A	N/A	N/A	N/A
Auto/Van/Truck (as the driver)	40	29%	4,698	24%
Auto/Van/Truck (as a passenger)	51	36%	7,818	39%
Public Bus	1	1%	57	0%
School Bus	38	27%	5,893	30%
Motorcycle/Moped	N/A	N/A	N/A	N/A
Private Shuttle/Bus	1	1%	165	1%
Carpool/Vanpool	2	1%	601	3%
County Total	140	16%	19,934	10%
Total	892	100%	200,717	100%

Table 40 presents the frequency of trips by day of week. The results show travel across the region is well balanced by day of week for both unweighted and weighted data.

Table 40. Number of Trips by Day of Week by County (Unweighted and Weighted)

	Unweighted		Weighted	
Trips on Travel Day	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Monday	2,187	17%	436,182	19%
Tuesday	2,332	18%	426,898	18%
Wednesday	2,879	23%	523,077	22%
Thursday	2,589	20%	470,167	20%
Friday	2,646	21%	500,201	21%
County Total	12,633	66%	2,356,525	76%
Sandoval				
Monday	897	24%	145,503	33%
Tuesday	606	16%	59,563	13%
Wednesday	677	18%	58,940	13%
Thursday	678	18%	71,590	16%
Friday	877	23%	110,274	25%
County Total	3,735	20%	445,869	14%
Valencia				
Monday	489	18%	42,835	15%
Tuesday	623	23%	55,242	20%
Wednesday	521	19%	61,057	22%
Thursday	572	21%	58,722	21%
Friday	537	20%	60,797	22%
County Total	2,742	14%	278,653	9%
Total	19,110	100%	3,081,047	100%

4.3. Replicate Weights

In addition to the survey weight, a set of 100 replicate weights was calculated for each analytic sample unit (household, person, and trip). The paired jackknife repeated replication method was used to calculate the sampling variance of estimates obtained from the data. The method of deriving these weights was aimed at reflecting the features of the sample design appropriately for each sample, so that when the jackknife variance estimation procedure was implemented, approximate unbiased estimates of sampling variance were obtained. In addition, the various weighting procedures were repeated on each set of replicate weights to appropriately reflect the impact of the weighting adjustments on the sampling variance of a survey estimate.

Many software packages for personal computers exist for replication variance estimation methods. For example, WesVar, later versions of SAS, and STATA all have the capability of producing replication estimates. These software packages produce both the appropriate estimates and corresponding variance estimates for the estimates. WesVar, developed and distributed by Westat, is available for free.

4.4. Trip Rate Correction Factors

4.4.1. Factors Associated with Underreporting

It is well established that a constant trip rate correction factor to use for all log-based reported trips does not make sense. There is substantial variation in under-reporting that occurs within a household travel survey; for example, some households may not require any correction factors whereas others will require a fairly large weight (see Zmud & Wolf, 2003). The present analysis attempts to identify the factors that significantly impact trip under-reporting so that the resulting information can be used to derive a set of weights (i.e., correction factors) for more accurate adjustment of household trip rates for the MRTS dataset.

There are several factors that could potentially contribute to trip under-reporting. For example, one variable that has been shown to be a correlate for underreporting is trip length. Trips of short duration are often missing from respondent logs more frequently than trips of long durations (Zmud & Wolf, 2003). In this study, 23.33% of trips that were less than 7 minutes in duration were underreported. On the other hand, just 8.79% of trips longer than 14 minutes were underreported (see Table 41).

Table 41. Trip Frequencies for GPS Trips and Missing Log Trips By Trip Duration

Trip duration	Total GPS Trips	Total missing log trips	% Missing trips
0-6 minutes	1,599	373	23.33%
7-14 minutes	1,326	157	11.84%
14+ minutes	1183	104	8.79%
Total	4,108	634	15.43%

For this analysis of the correlates of underreporting, numerous socio-demographic variables available in the GPS and Log Trip Matching database and the larger MRTS survey database were selected based upon prior studies of a similar nature (see Zmud & Wolf, 2003). Eight variables were

analyzed for their contribution to underreporting: trip duration; household size; reported vehicle ownership; household income; respondent age; employment status; student status; and presence of children under 18. Note that trip duration is a trip characteristic rather than a socio-demographic variable, and was included in this analysis due to its prior proven relationship to underreporting. Data from respondents who answered "Don't know" or who refused to answer the socio-demographic variables were not included in this analysis. This gives a reduced total of 3,547 total GPS-based trips across 396 households to be used as the basis for analysis. Table 42 gives a breakdown of the analysis sample based on the selected household characteristics, while Table 43 summarizes the percent of underreported trips for each of these socio-demographic variables.

Table 42. Households by Household Size, Number of Vehicles, Household Income, Employment Status, Student Status, and Presence of Children Under 18

Household type	Number of Households	Percentage of Households
Overall	396	100.00%
Household size		
1 person	117	29.55%
2 people	170	42.93%
3 or more people	109	27.53%
Number of vehicles		
0-1 vehicle	139	35.10%
2 or more vehicle	257	64.90%
Household Income		
Less than $50,000	205	51.77%
$50,000 to $99,999	128	32.32%
$100,000 or more	63	15.91%
Employment Status		
0 workers	98	24.75%
1 worker	162	40.91%
2 worker	124	31.31%
3 or more workers	12	3.03%
Student Status		
0 students	271	68.43%
1 student	73	18.43%
2 students	34	8.59%
3 or more students	18	4.55%
Presence of Children Under 18		
No children present	293	73.99%
Children present	103	26.01%

Table 43. Missed Log Trips by Household Size, Number of Vehicles, Respondent Age, Household Income, Employment Status, Student Status, and Presence of Children Under 18

Socio-demographic Variable	Number of GPS Trips	Total Missed Log Trips	% of Missed Trips
Overall	3,547	570	16.07%
Household size			
1 person	676	112	16.57%
2 person	1,573	264	16.78%
3+ person	1,298	194	14.95%
Number of vehicles			
0-1 vehicle	1,051	226	21.50%
2 or more vehicle	2,496	344	13.78%
Respondent Age			
0-39	1,164	187	16.07%
40-49	622	119	19.13%
>49	1,761	264	14.99%
Household Income			
Less than $50,000	1,747	321	18.37%
$50,000 to $99,999	1,252	180	14.38%
$100,000 or more	548	69	12.59%
Employment Status			
Not employed	1,287	232	18.03%
Part-time or Full-time employed	2,260	338	14.96%
Student Status			
Not a student	3,138	486	15.49%
Part-time or Full-time student	409	84	20.54%
Presence of Children Under 18			
No children present	2,338	378	16.17%
Children present	1,209	192	15.88%

High income households and those with more vehicles appear to be more accurate reporters. In general, subgroups in the sample that represent likely misreporters are respondents between the ages of 40-49, respondents who are either not employed or are students, and households with 0-1 vehicles, (using 18 percent as the threshold).

Re-Estimating Trip Rates Accounting for Misreporting. The main goal of this portion of the study was to quantify the amount of under-reporting that occurs in a household travel survey by using GPS data as validation information, by identifying the conditions under which misreporting will be a problem, and by applying the validation study results to improve trip rate estimates for the MRTS dataset. This section details how the estimated set of adjustment weights (i.e., correction factors) were determined for household trip rates, and how these weights can be applied to adjust trip rate estimates for the MRTS dataset.

The database of GPS trip records was used to test a model of trip misreporting. In this model, y_i is an indicator (dummy) variable that is 0 if a trip record was "missing" when compared to the GPS data and 1 if a trip record matched the GPS data, and x_i is a vector of associated characteristics that will influence whether a trip was reported or not. The goal of this analysis was to estimate the conditional distribution of y_i given x_i, $\Pr(y_i | x_i)$. A logistic regression model was used to determine which of our variables (household size, household income, employment status, etc.) had a significant impact on trip underreporting. Below is a listing of the coding of the trip and socio-demographic variables used in the regression analysis. It should be noted that '0 vehicles' was not appropriate as a separate category under Vehicle Ownership given that only 135 trips out of 3,547 trips fell into this category.

Trip duration (minutes)

- 0-6
- 7-14
- >14

Vehicle Ownership

- 0-1 vehicles
- 2+ vehicles

Age

- 1-39 years and younger
- 40-49 years
- 49+ years

Employment Status

- Not employed
- Employed

Presence of Children under 18

0	No children present
1	1+ children present

Household Size

1	1 person household
2	2 person household
3	3+ person household

Household Income

1	<$50,000
2	$50,000-$99,999
3	$100,000+

Student Status

0	Not a student
1	Part- or full-time student

Table 44. Results of Logistic Regression

Variable	Coefficient	Std. Err.	Significance
Trip Duration			
2	0.9046	0.1118	0.0000
3	1.1122	0.1267	0.0000
Household Vehicles	0.4977	0.1189	0.0000
Household Income			
2	0.1088	0.1128	0.3350
3	0.1440	0.1606	0.3700
Age			
2	-0.2696	0.1393	0.0530
3	0.0458	0.1336	0.7320
Household Size			
2	-0.3453	0.1431	0.0160
3	-0.1303	0.2366	0.5820
Student Status	-0.3055	0.1472	0.0380
Presence of Children	-0.0421	0.1948	0.8290
Employment Status	0.1539	0.1021	0.1320

As shown above in Table 44, the logistic regression analysis identified trip duration and number of household vehicles as being significantly associated with trip under-reporting at the .000 level of significance. In addition, household size had one category (2 persons) significant at the 0.02 level. Student status and age p-values were relatively larger, so they were excluded from the correction factor process. Consequently, as Table 45 shows, trip duration, number of household vehicles, and household size were used in the trip rate correction factor calculations. Categories 2 and 3 of trip duration and household size were combined to avoid small populations within each combination of trip durations, household vehicles, and household sizes:

Table 45. Results of Logistic Regression

Variable	Coefficient	Std. Err.	Significance
Trip Duration	1.0014	0.0942	0.0000
Household Vehicles	0.6120	0.1073	0.0000
Household Size	-0.2835	0.1308	0.0300

Based on the logistic regression analysis, Westat created an 8-cell matrix representing the 3-way cross tab of the 3 significant variables. Westat used this matrix to derive the adjustment weight for specific household types. Within each of the final 8 cells, the total sample count (Total GPS Trips) was divided by the total number of reported trips (Total Log Trips) to give an adjustment factor (Weight).

Table 46. Adjustment Weights Based on Model of Misreporting

Household Size	Household Vehicles	Duration	Total Log Trips	Total GPS Trips	Weight
1	0	1	157	207	1.32
2	0	1	84	134	1.60
3	0	1	75	109	1.45
1	1	1	48	69	1.44
2	1	1	375	480	1.28
3	1	1	320	405	1.27
1	0	2 or 3	252	285	1.13
2	0	2 or 3	143	174	1.22
3	0	2 or 3	128	157	1.23
1	1	2 or 3	127	138	1.09
2	1	2 or 3	717	795	1.11
3	1	2 or 3	605	652	1.08

The adjustment factors for the 8 cells range from a minimum of 1.09 to a maximum of 1.53. The cell with the lowest weight consists of households or trips with the following characteristics:

- Household size: 1 person
- Household vehicles: 2+
- Trip duration: Longer than 7 minutes

The cell with the highest weight consists of households or trips with the following characteristics:

- Household size: 2+ persons
- Household vehicles: 0-1
- Trip duration: Shorter than 7 minutes

After calculating the weights derived from the GPS and Log Trip Matching database, these weights were applied to all households in the MRTS database according to reported vehicle ownership, household size, household income, and trip duration. Each trip record was matched with a cell in the 8-cell matrix and the weight was applied.

Since the GPS subsample was not representative of the overall sample, the distribution across the 8 cells in the GPS sub-sample does not perfectly correspond to the distribution across all households in the full dataset due to missing value in categories. In other words, once the weight was applied to the MRTS dataset, the overall correction factor differed from the original level of 1.20 instead calculating to 1.16.

Overall, among the total 19,110 reported trips (excluding those with PLACENO=1, which represents the starting point for the first trip), 18,995 trips have sufficient household information to derive the adjustment weight. Adjusted counts have been derived by applying these weights. The adjusted counts are located in the supplemental access data table 'Adjusted Trip Weights'. For example, Table 47 shows the adjusted average trip counts for each county as compared to the unweighted and weighted trip rates.

Table 47. Mean Weighted Trips by County

County	Original Household Trip Rates		Household Trip Rates With Trip Rate Correction Applied	
	Unweighted	Weighted	Mean	Households
Bernalillo	7.62	8.43	9.40	1554
Sandoval	8.05	9.06	9.88	435
Valencia	7.86	8.94	9.66	322

5. Summary

5.1. Survey Results

The MRTS successfully collected travel behavior data from 2,471 households across the three county AMPA study region. A total of 19,110 trips (non-GPS households) were reported through the survey by 5,214 persons who participated in the MRTS study. There were 523 households that participated in the GPS subsample, which included 1,286 persons who were equipped with wearable GPS devices. These GPS households resulted in the capture 4,510 trips on the travel day and a total of 15,207 trips across the deployment period.

The survey methodology used in the conduct of the MRTS provided sampled households two options for recruitment (web and phone) and three for participation at the retrieval stage (web, phone, and mail back). The invitation letter sent to each sampled address encouraged self-reporting on our secure website. Eighty-three percent of all recruited households took advantage of the opportunity to respond online. The majority of participants also took advantage of reporting their travel day data online (38 percent), 34 percent reported their travel by phone and the remaining 28 percent responded by mail.

An examination of primary trip purpose showed that, other than trips that originated from or whose destination was home, the majority of trips were work related. Work trips accounted for 14 percent and retail shopping accounted for 13 percent of all trips, while other activities like pick-up or drop-off a passenger (8 percent), school or daycare-related activities (7 percent) and dining out at a restaurant (6 percent) made up most of the rest of all trips. The trip purpose of "home activities" was reported 32 percent of the time; however, when considering this statistic, it is important to remember that most travel days start at home When analyzing trip purpose for the home location, Westat recommends that analysts remember that Place 1 in the dataset is not a trip, but the origin for the first trip of the day (Place 2).

The most frequently reported trip mode in the survey was personal vehicle, with 64 percent of all reported trips having used a personal vehicle with the respondent as the driver, and another 21 percent of all trips with the respondent as the passenger. The survey also found that personal vehicles were the most frequently reported trip mode to work (82 percent as the driver and 6 percent as the passenger). Walking was reported as the trip mode for 7 percent of all trips and 6

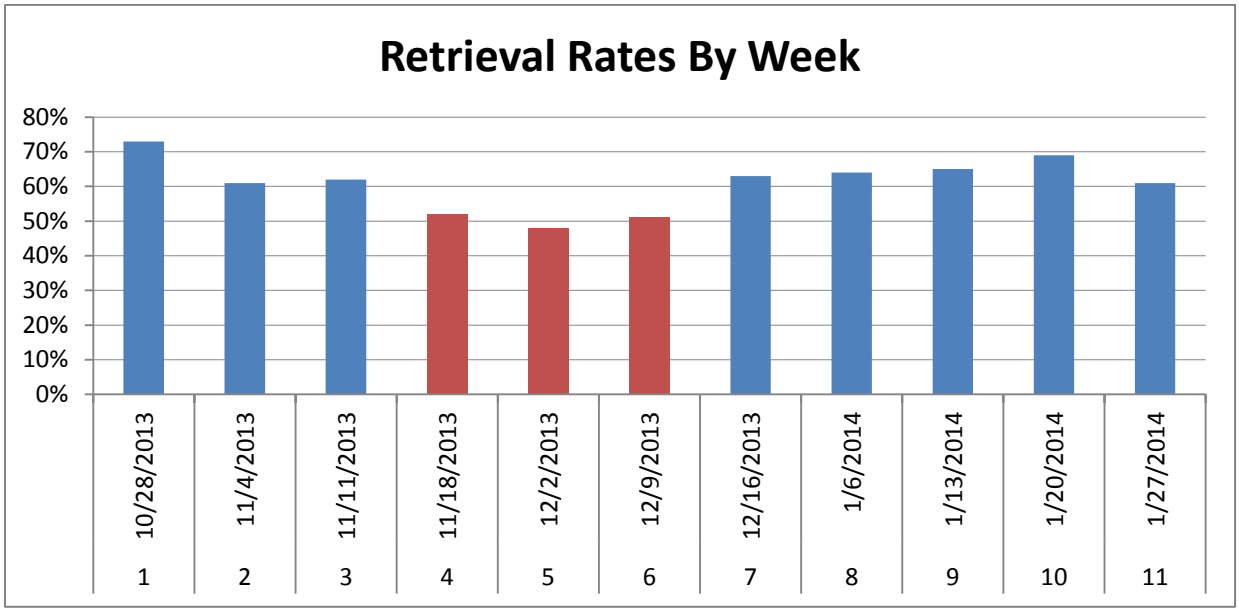
percent of all work trips. Bicycling was reported as the trip mode for 2 percent of all trips and 3 percent of all work trips.

5.2. Lessons Learned

Even the most successful projects have components or protocols that can be improved upon. Westat has identified a few elements of the survey methodology that should be considered for future research endeavors in the MRCOG region. These elements include field period planning, incentive structure, and addressing item non-response.

Westat found that the weeks between Thanksgiving and mid-December resulted in lower retrieval response rates. Because in general people tend to be busier, during that period of the year Westat would avoid collecting travel data during this holiday season. Figure 10 provides a summary of the retrieval rates (percent of recruited households that provided their travel data) by week across the 11 week data collection period. The week prior to Thanksgiving the retrieval rates dropped (noted in red) and remained lower than average through mid-December.

Figure 10. Retrieval Rates by Travel Week



When it comes to incentives, we feel the level of incentive offered in the MRTS, $10 household, may have been insufficient for motivating potential participants. In other travel surveys conducted

by Westat where a larger household level incentive has been offered higher overall retrieval rates have been achieved. In this study, the GPS households where offered a higher incentive to compensate for the additional burden of using and returning the GPS devices and retrieved at a rate of 75 percent; 15 percent higher than the log only sample.

We found that item non-response was an issue in two situations; when collecting household income and processing mail back travel logs. The percentage of households that did not respond to the income for the MRTS was within a normal range for other household travel surveys recently conducted by Westat. This data element is asked in the recruitment survey and is typically not provide by respondents 10 to 15 percent of the time. Because income is a key data element for most analysis, Westat has experimented with adding a follow-up income question that is asked of non-responding households during the retrieval survey and experienced a higher level of response. This additional question has reduced the overall non-response on income to lower than 10 percent in this initial experiment.

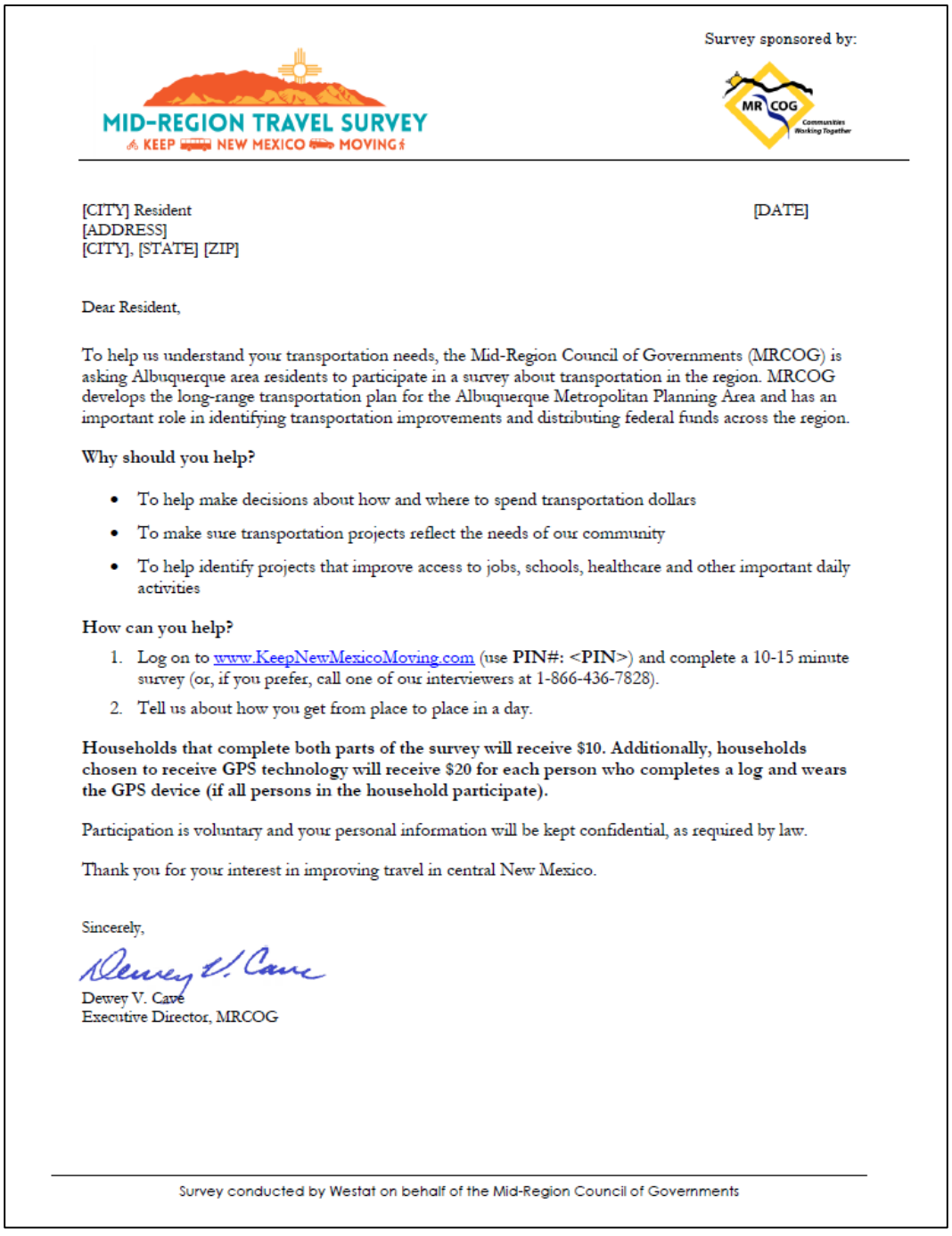
The MRTS offered three retrieval participation options; web, telephone or mail-back. In this study we found the quality of the data from mail-back logs to be less than desired. Resources had to be diverted from other survey tasks to attempt to re-contact households who had provided insufficient data. In the end, of the households that returned travel logs by mail, 30 percent had to be discarded because the data was incomplete. The labor required to process mail-backs was significant. These resources could have been more appropriately allocated.

These lessons provide valuable insight for future research endeavors and should be considered when planning new studies in the MRCOG region.

6. Appendices

6.1. Participation Documents

6.1.1. Invitation Letter



Survey sponsored by:

MID-REGION TRAVEL SURVEY
KEEP NEW MEXICO MOVING

MRCOG Communities Working Together

[CITY] Resident
[ADDRESS]
[CITY], [STATE] [ZIP]

[DATE]

Dear Resident,

To help us understand your transportation needs, the Mid-Region Council of Governments (MRCOG) is asking Albuquerque area residents to participate in a survey about transportation in the region. MRCOG develops the long-range transportation plan for the Albuquerque Metropolitan Planning Area and has an important role in identifying transportation improvements and distributing federal funds across the region.

Why should you help?

- To help make decisions about how and where to spend transportation dollars
- To make sure transportation projects reflect the needs of our community
- To help identify projects that improve access to jobs, schools, healthcare and other important daily activities

How can you help?

1. Log on to www.KeepNewMexicoMoving.com (use **PIN#: <PIN>**) and complete a 10-15 minute survey (or, if you prefer, call one of our interviewers at 1-866-436-7828).
2. Tell us about how you get from place to place in a day.

Households that complete both parts of the survey will receive $10. Additionally, households chosen to receive GPS technology will receive $20 for each person who completes a log and wears the GPS device (if all persons in the household participate).

Participation is voluntary and your personal information will be kept confidential, as required by law.

Thank you for your interest in improving travel in central New Mexico.

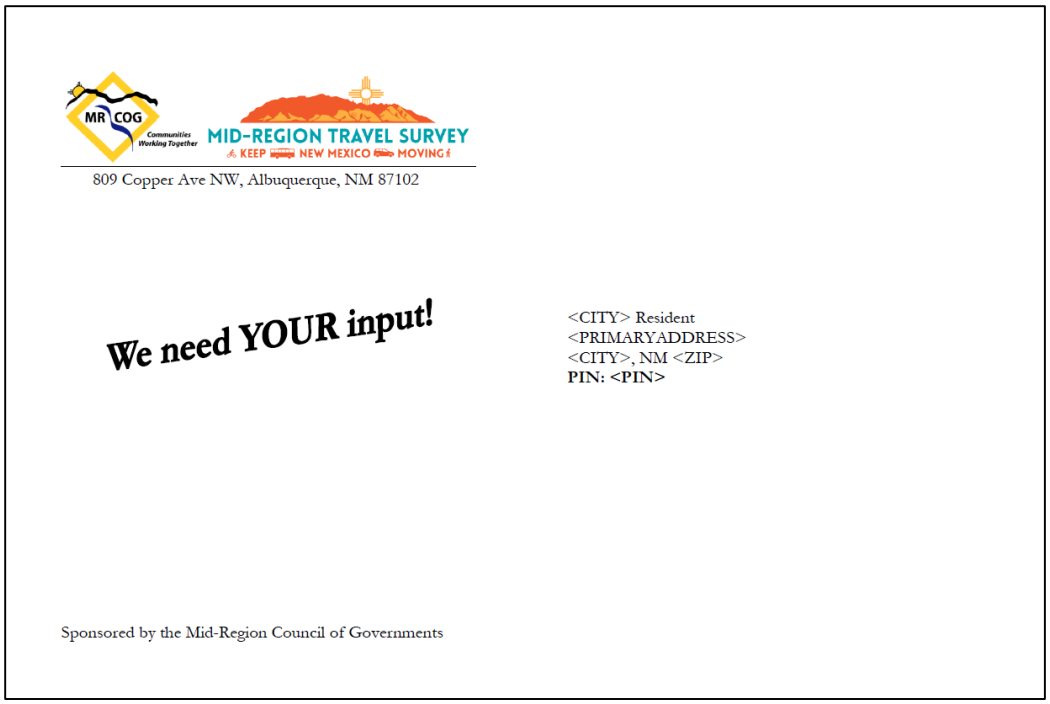
Sincerely,

Dewey V. Cave
Executive Director, MRCOG

Survey conducted by Westat on behalf of the Mid-Region Council of Governments

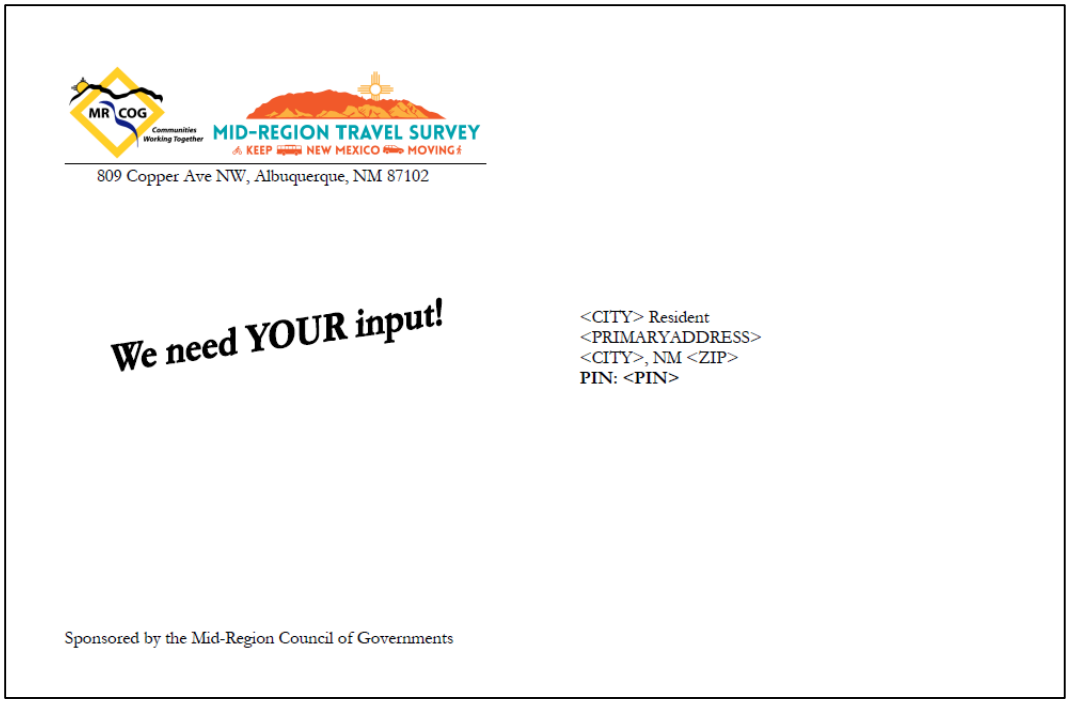
6.1.2. Reminder Postcard

6.1.2.1. Postcard 1(Front)



6.1.2.2. Postcard 1 (Back)

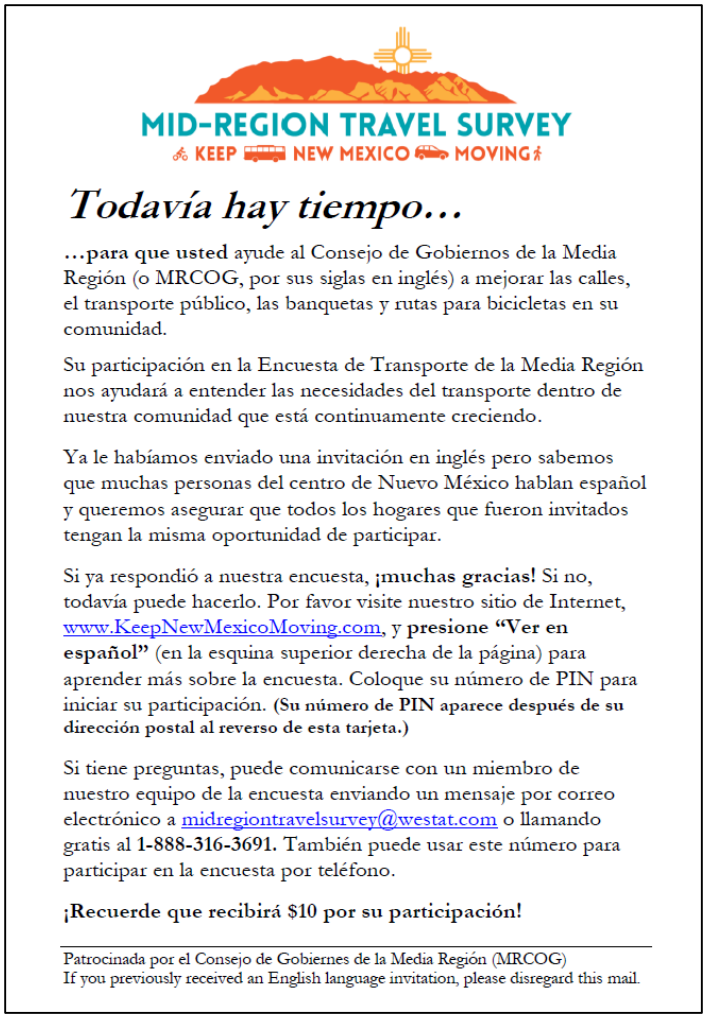
6.1.2.3. Postcard 2 (Front)



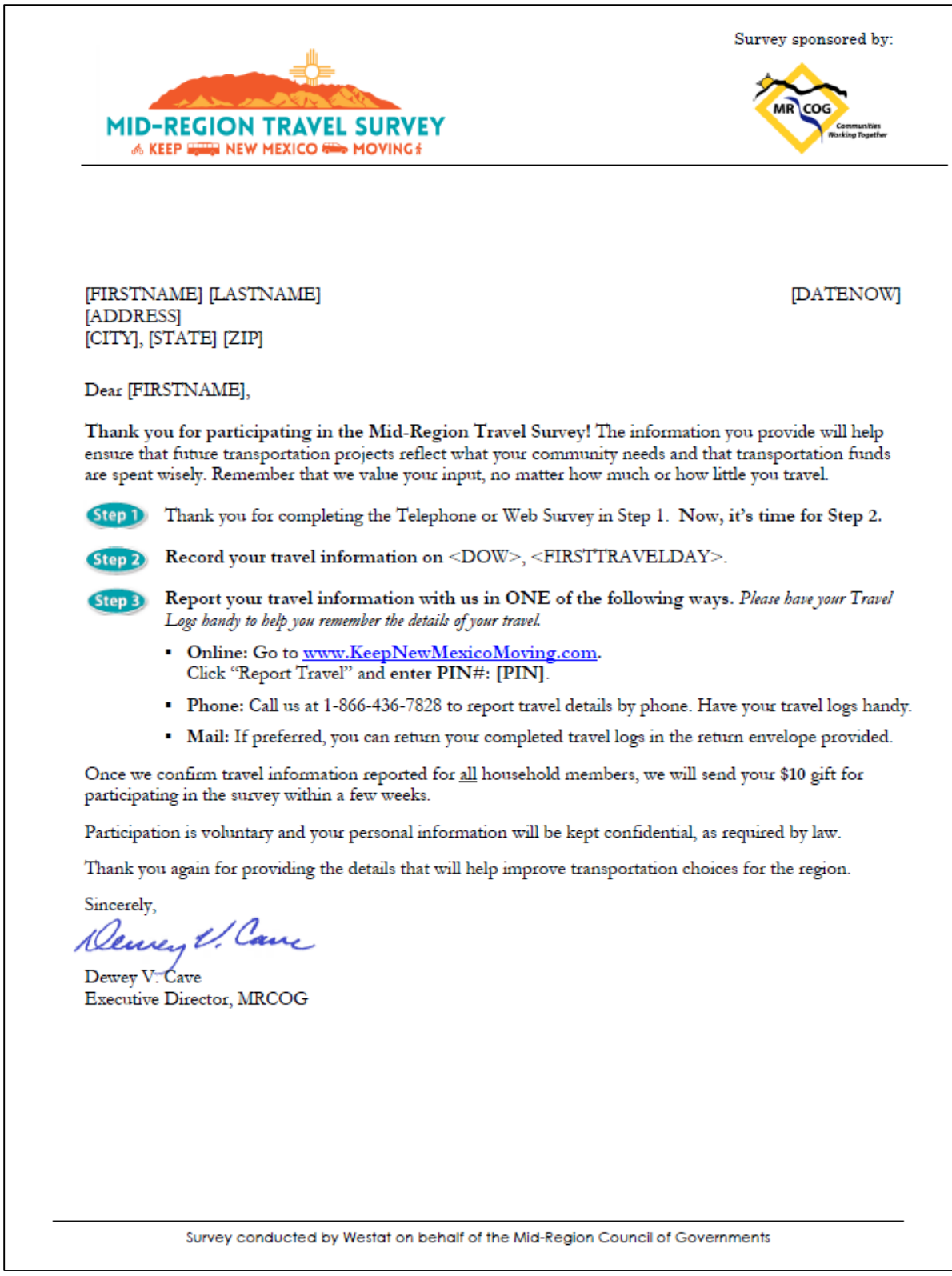
6.1.2.4. Postcard 2 (Back)

6.1.2.5. Postcard 3 (Front)

6.1.2.6. Postcard 3 (Back)



6.1.3. Travel Log Letter



Survey sponsored by:

MID-REGION TRAVEL SURVEY
KEEP NEW MEXICO MOVING

MR COG Communities Working Together

[FIRSTNAME] [LASTNAME]
[ADDRESS]
[CITY], [STATE] [ZIP]

[DATENOW]

Dear [FIRSTNAME],

Thank you for participating in the Mid-Region Travel Survey! The information you provide will help ensure that future transportation projects reflect what your community needs and that transportation funds are spent wisely. Remember that we value your input, no matter how much or how little you travel.

Step 1 Thank you for completing the Telephone or Web Survey in Step 1. **Now, it's time for Step 2.**

Step 2 **Record your travel information on** <DOW>, <FIRSTTRAVELDAY>.

Step 3 **Report your travel information with us in ONE of the following ways.** *Please have your Travel Logs handy to help you remember the details of your travel.*

- **Online:** Go to www.KeepNewMexicoMoving.com.
  Click "Report Travel" and **enter PIN#: [PIN]**.
- **Phone:** Call us at 1-866-436-7828 to report travel details by phone. Have your travel logs handy.
- **Mail:** If preferred, you can return your completed travel logs in the return envelope provided.

Once we confirm travel information reported for all household members, we will send your $10 gift for participating in the survey within a few weeks.

Participation is voluntary and your personal information will be kept confidential, as required by law.

Thank you again for providing the details that will help improve transportation choices for the region.

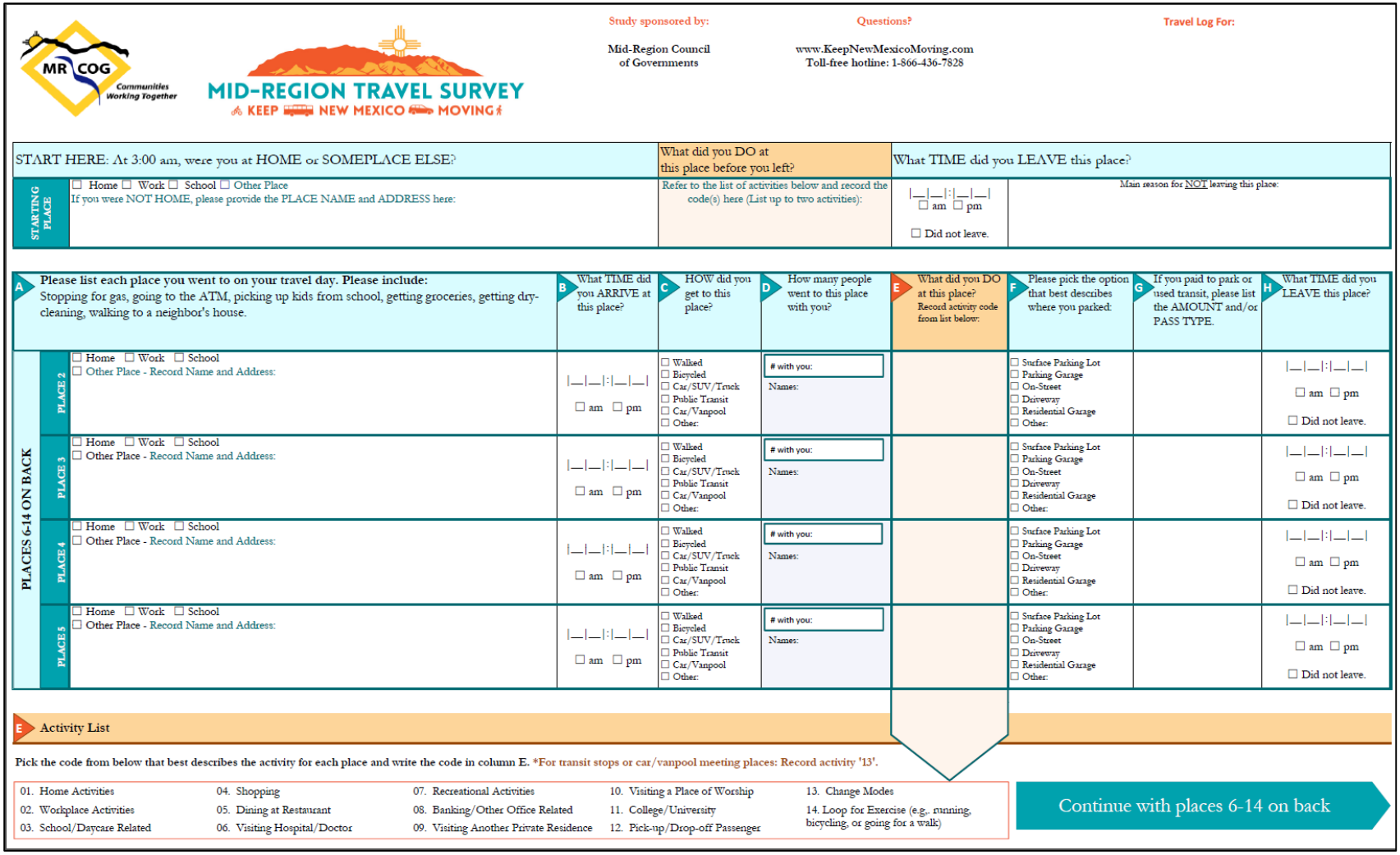
Sincerely,

Dewey V. Cave
Executive Director, MRCOG

Survey conducted by Westat on behalf of the Mid-Region Council of Governments

6.1.4. Travel Logs

6.1.4.1. Participant Log



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Mid-Region Council of Governments

Questions?
www.KeepNewMexicoMoving.com
Toll-free hotline: 1-866-436-7828

Travel Log For:

START HERE: At 3:00 am, were you at HOME or SOMEPLACE ELSE?	What did you DO at this place before you left?	What TIME did you LEAVE this place?	
STARTING PLACE ☐ Home ☐ Work ☐ School ☐ Other Place If you were NOT HOME, please provide the PLACE NAME and ADDRESS here:	Refer to the list of activities below and record the code(s) here (List up to two activities):	__|__:__ ☐ am ☐ pm ☐ Did not leave.	Main reason for NOT leaving this place:

A Please list each place you went to on your travel day. Please include: Stopping for gas, going to the ATM, picking up kids from school, getting groceries, getting dry-cleaning, walking to a neighbor's house.	B What TIME did you ARRIVE at this place?	C HOW did you get to this place?	D How many people went to this place with you?	E What did you DO at this place? Record activity code from list below:	F Please pick the option that best describes where you parked:	G If you paid to park or used transit, please list the AMOUNT and/or PASS TYPE.	H What TIME did you LEAVE this place?
PLACES 6-14 ON BACK PLACE 2 ☐ Home ☐ Work ☐ School ☐ Other Place - Record Name and Address:	__|__:__ ☐ am ☐ pm	☐ Walked ☐ Bicycled ☐ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: Names:		☐ Surface Parking Lot ☐ Parking Garage ☐ On-Street ☐ Driveway ☐ Residential Garage ☐ Other:		__|__:__ ☐ am ☐ pm ☐ Did not leave.
PLACE 3 ☐ Home ☐ Work ☐ School ☐ Other Place - Record Name and Address:	__|__:__ ☐ am ☐ pm	☐ Walked ☐ Bicycled ☐ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: Names:		☐ Surface Parking Lot ☐ Parking Garage ☐ On-Street ☐ Driveway ☐ Residential Garage ☐ Other:		__|__:__ ☐ am ☐ pm ☐ Did not leave.
PLACE 4 ☐ Home ☐ Work ☐ School ☐ Other Place - Record Name and Address:	__|__:__ ☐ am ☐ pm	☐ Walked ☐ Bicycled ☐ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: Names:		☐ Surface Parking Lot ☐ Parking Garage ☐ On-Street ☐ Driveway ☐ Residential Garage ☐ Other:		__|__:__ ☐ am ☐ pm ☐ Did not leave.
PLACE 5 ☐ Home ☐ Work ☐ School ☐ Other Place - Record Name and Address:	__|__:__ ☐ am ☐ pm	☐ Walked ☐ Bicycled ☐ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: Names:		☐ Surface Parking Lot ☐ Parking Garage ☐ On-Street ☐ Driveway ☐ Residential Garage ☐ Other:		__|__:__ ☐ am ☐ pm ☐ Did not leave.

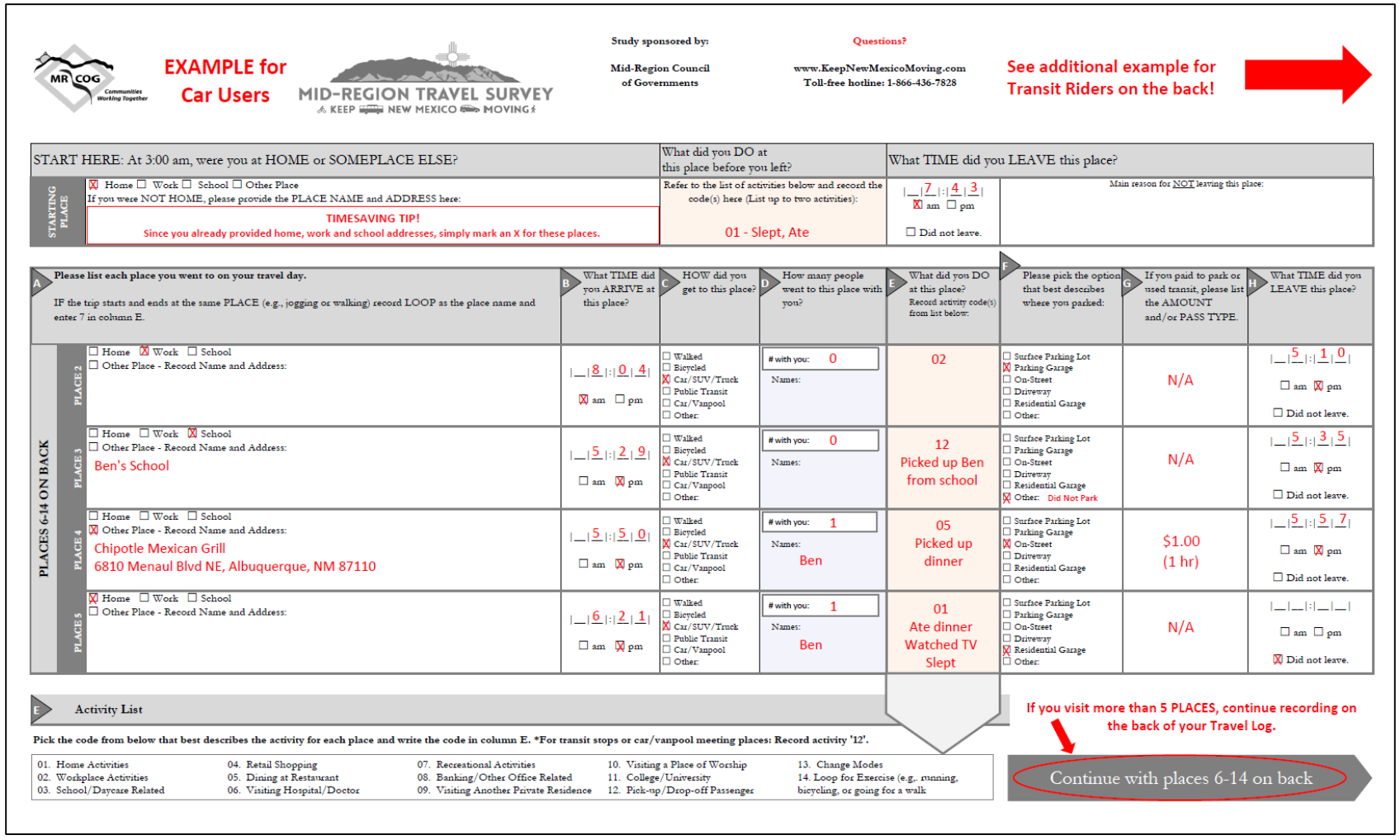
E Activity List

Pick the code from below that best describes the activity for each place and write the code in column E. *For transit stops or car/vanpool meeting places: Record activity '13'.

01. Home Activities	04. Shopping	07. Recreational Activities	10. Visiting a Place of Worship	13. Change Modes
02. Workplace Activities	05. Dining at Restaurant	08. Banking/Other Office Related	11. College/University	14. Loop for Exercise (e.g., running, bicycling, or going for a walk)
03. School/Daycare Related	06. Visiting Hospital/Doctor	09. Visiting Another Private Residence	12. Pick-up/Drop-off Passenger	

Continue with places 6-14 on back

6.1.4.2. Example Log (Car Users)



EXAMPLE for Car Users

MID-REGION TRAVEL SURVEY
KEEP NEW MEXICO MOVING

Study sponsored by:
Mid-Region Council of Governments

Questions?
www.KeepNewMexicoMoving.com
Toll-free hotline: 1-866-436-7828

See additional example for Transit Riders on the back!

START HERE: At 3:00 am, were you at HOME or SOMEPLACE ELSE?	What did you DO at this place before you left?	What TIME did you LEAVE this place?	
STARTING PLACE ☒ Home ☐ Work ☐ School ☐ Other Place If you were NOT HOME, please provide the PLACE NAME and ADDRESS here: TIMESAVING TIP! Since you already provided home, work and school addresses, simply mark an X for these places.	Refer to the list of activities below and record the code(s) here (List up to two activities): 01 - Slept, Ate	__|7|:|4|3| ☒ am ☐ pm ☐ Did not leave.	Main reason for NOT leaving this place:

A Please list each place you went to on your travel day. IF the trip starts and ends at the same PLACE (e.g., jogging or walking) record LOOP as the place name and enter 7 in column E.	B What TIME did you ARRIVE at this place?	C HOW did you get to this place?	D How many people went to this place with you?	E What did you DO at this place? Record activity code(s) from list below:	F Please pick the option that best describes where you parked:	G If you paid to park or used transit, please list the AMOUNT and/or PASS TYPE.	H What TIME did you LEAVE this place?
PLACES 6-14 ON BACK PLACE 2 ☐ Home ☒ Work ☐ School ☐ Other Place - Record Name and Address:	__|8|:|0|4| ☒ am ☐ pm	☐ Walked ☐ Bicycled ☒ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: 0 Names:	02	☐ Surface Parking Lot ☒ Parking Garage ☐ On-Street ☐ Driveway ☐ Residential Garage ☐ Other:	N/A	__|5|:|1|0| ☐ am ☒ pm ☐ Did not leave.
PLACE 3 ☐ Home ☐ Work ☒ School ☐ Other Place - Record Name and Address: Ben's School	__|5|:|2|9| ☐ am ☒ pm	☐ Walked ☐ Bicycled ☒ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: 0 Names:	12 Picked up Ben from school	☐ Surface Parking Lot ☐ Parking Garage ☐ On-Street ☐ Driveway ☐ Residential Garage ☒ Other: Did Not Park	N/A	__|5|:|3|5| ☐ am ☒ pm ☐ Did not leave.
PLACE 4 ☐ Home ☐ Work ☐ School ☒ Other Place - Record Name and Address: Chipotle Mexican Grill 6810 Menaul Blvd NE, Albuquerque, NM 87110	__|5|:|5|0| ☐ am ☒ pm	☐ Walked ☐ Bicycled ☒ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: 1 Names: Ben	05 Picked up dinner	☐ Surface Parking Lot ☐ Parking Garage ☒ On-Street ☐ Driveway ☐ Residential Garage ☐ Other:	$1.00 (1 hr)	__|5|:|5|7| ☐ am ☒ pm ☐ Did not leave.
PLACE 5 ☒ Home ☐ Work ☐ School ☐ Other Place - Record Name and Address:	__|6|:|2|1| ☐ am ☒ pm	☐ Walked ☐ Bicycled ☒ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: 1 Names: Ben	01 Ate dinner Watched TV Slept	☐ Surface Parking Lot ☐ Parking Garage ☐ On-Street ☐ Driveway ☒ Residential Garage ☐ Other:	N/A	__|__|:|__|__| ☐ am ☐ pm ☒ Did not leave.

If you visit more than 5 PLACES, continue recording on the back of your Travel Log.

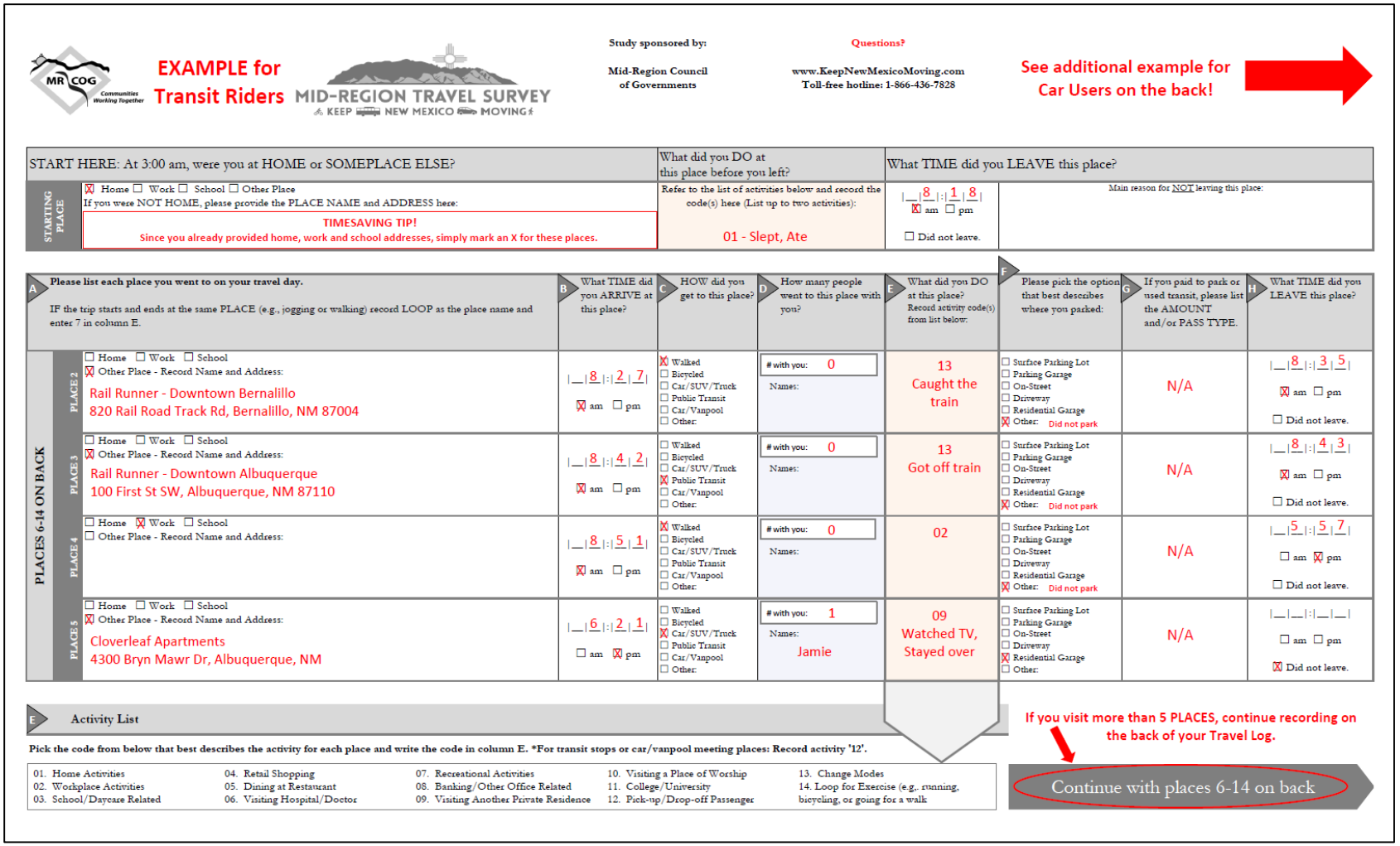
Continue with places 6-14 on back

E Activity List

Pick the code from below that best describes the activity for each place and write the code in column E. *For transit stops or car/vanpool meeting places: Record activity '12'.

01. Home Activities	04. Retail Shopping	07. Recreational Activities	10. Visiting a Place of Worship	13. Change Modes
02. Workplace Activities	05. Dining at Restaurant	08. Banking/Other Office Related	11. College/University	14. Loop for Exercise (e.g., running, bicycling, or going for a walk
03. School/Daycare Related	06. Visiting Hospital/Doctor	09. Visiting Another Private Residence	12. Pick-up/Drop-off Passenger	

6.1.4.3. Example Log (Transit Users)



EXAMPLE for Transit Riders

MID-REGION TRAVEL SURVEY
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Questions?
www.KeepNewMexicoMoving.com
Toll-free hotline: 1-866-436-7828

See additional example for Car Users on the back!

START HERE: At 3:00 am, were you at HOME or SOMEPLACE ELSE?	What did you DO at this place before you left?	What TIME did you LEAVE this place?	
STARTING PLACE ☒ Home ☐ Work ☐ School ☐ Other Place If you were NOT HOME, please provide the PLACE NAME and ADDRESS here: TIMESAVING TIP! Since you already provided home, work and school addresses, simply mark an X for these places.	Refer to the list of activities below and record the code(s) here (List up to two activities): 01 - Slept, Ate	__:8 1:8 ☒ am ☐ pm ☐ Did not leave.	Main reason for NOT leaving this place:

A Please list each place you went to on your travel day. IF the trip starts and ends at the same PLACE (e.g., jogging or walking) record LOOP as the place name and enter 7 in column E.	B What TIME did you ARRIVE at this place?	C HOW did you get to this place?	D How many people went to this place with you?	E What did you DO at this place? Record activity code(s) from list below:	F Please pick the option that best describes where you parked:	G If you paid to park or used transit, please list the AMOUNT and/or PASS TYPE.	H What TIME did you LEAVE this place?
PLACES 6-14 ON BACK PLACE 2 ☐ Home ☐ Work ☐ School ☒ Other Place - Record Name and Address: Rail Runner - Downtown Bernalillo 820 Rail Road Track Rd, Bernalillo, NM 87004	__:8 2:7 ☒ am ☐ pm	☒ Walked ☐ Bicycled ☐ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: 0 Names:	13 Caught the train	☐ Surface Parking Lot ☐ Parking Garage ☐ On-Street ☐ Driveway ☐ Residential Garage ☒ Other: Did not park	N/A	__:8 3:5 ☒ am ☐ pm ☐ Did not leave.
PLACE 3 ☐ Home ☐ Work ☐ School ☒ Other Place - Record Name and Address: Rail Runner - Downtown Albuquerque 100 First St SW, Albuquerque, NM 87110	__:8 4:2 ☒ am ☐ pm	☐ Walked ☐ Bicycled ☐ Car/SUV/Truck ☒ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: 0 Names:	13 Got off train	☐ Surface Parking Lot ☐ Parking Garage ☐ On-Street ☐ Driveway ☐ Residential Garage ☒ Other: Did not park	N/A	__:8 4:3 ☒ am ☐ pm ☐ Did not leave.
PLACE 4 ☐ Home ☒ Work ☐ School ☐ Other Place - Record Name and Address:	__:8 5:1 ☒ am ☐ pm	☒ Walked ☐ Bicycled ☐ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: 0 Names:	02	☐ Surface Parking Lot ☐ Parking Garage ☐ On-Street ☐ Driveway ☐ Residential Garage ☒ Other: Did not park	N/A	__:5 5:7 ☐ am ☒ pm ☐ Did not leave.
PLACE 5 ☐ Home ☐ Work ☐ School ☒ Other Place - Record Name and Address: Cloverleaf Apartments 4300 Bryn Mawr Dr, Albuquerque, NM	__:6 2:1 ☐ am ☒ pm	☐ Walked ☐ Bicycled ☒ Car/SUV/Truck ☐ Public Transit ☐ Car/Vanpool ☐ Other:	# with you: 1 Names: Jamie	09 Watched TV, Stayed over	☐ Surface Parking Lot ☐ Parking Garage ☐ On-Street ☐ Driveway ☒ Residential Garage ☐ Other:	N/A	__:__ ☐ am ☐ pm ☒ Did not leave.

If you visit more than 5 PLACES, continue recording on the back of your Travel Log.

Continue with places 6-14 on back

E Activity List

Pick the code from below that best describes the activity for each place and write the code in column E. *For transit stops or car/vanpool meeting places: Record activity '12'.

01. Home Activities	04. Retail Shopping	07. Recreational Activities	10. Visiting a Place of Worship	13. Change Modes
02. Workplace Activities	05. Dining at Restaurant	08. Banking/Other Office Related	11. College/University	14. Loop for Exercise (e.g., running, bicycling, or going for a walk
03. School/Daycare Related	06. Visiting Hospital/Doctor	09. Visiting Another Private Residence	12. Pick-up/Drop-off Passenger	

6.1.5. GPS Materials

6.1.5.1. GPS Letter

Survey sponsored by:

MID-REGION TRAVEL SURVEY
KEEP NEW MEXICO MOVING

[FIRSTNAME] [LASTNAME]
[ADDRESS]
[CITY], [STATE] [ZIP]

[DATENOW]

Dear [FIRSTNAME],

Thank you for participating in the Mid-Region Travel Survey! The information you provide will help ensure that future transportation projects reflect what your community needs and that transportation funds are spent wisely. Remember that we value your input, no matter how much or how little you travel.

Step 1 Thank you for completing the Telephone or Web Survey in Step 1. **Now, it's time for Step 2.**

Step 2 **Record your travel information using the Travel Logs and GPS devices.**

- Use the Travel Logs to record all places visited by your household on <DOW>, <FIRSTTRAVELDAY>.
- Use your **GPS devices** from **<FIRSTTRAVELDAY> to <LASTTRAVELDAY>**. GPS equipment is being provided for each household member between the ages of 16 and 75; see assignments in the table below. Instructions are provided in the package.

Person	Name	Age	GPS Unit ID
[PERSON1]	[NAME1]	[AGE1]	[GPSUNITID1]
[PERSON2]	[NAME2]	[AGE2]	[GPSUNITID2]
[PERSON3]	[NAME3]	[AGE3]	[GPSUNITID3]
[PERSON4]	[NAME4]	[AGE4]	[GPSUNITID4]
[PERSON5]	[NAME5]	[AGE5]	[GPSUNITID5]
[PERSON6]	[NAME6]	[AGE6]	[GPSUNITID6]

- Please return the GPS equipment and the completed Participation Record (in the pre-paid FedEx package) immediately after your travel period. Return instructions have been provided.
  Be sure to keep the Travel Logs for Step 3.

Step 3 **Report your travel information in ONE of the following ways.** *Please have your Travel Logs handy to help you remember the details of your travel.*

- **Online:** Go to www.KeepNewMexicoMoving.com. Click "Report Travel" and **enter PIN#: [PIN]**.
- **Phone:** Call us at 1-866-436-7828 to report travel details by phone; have your travel logs handy.
- **Mail:** If preferred, you can return your completed travel logs in the return envelope provided.

Once we confirm travel information for all household members, we will send your **$[INCENTIVE]** gift for participating in the GPS survey within a few weeks.

Participation is voluntary and your personal information will be kept confidential, as required by law.

Thank you again for providing the details that will help improve transportation choices for the region.

Sincerely,

Dewey V. Cave
Executive Director, MRCOG

Survey conducted by Westat on behalf of the Mid-Region Council of Governments

6.1.5.2. GPS Device Instructions (Front)

GPS Device Use Instructions

This package contains one GPS logging device for each person in your household between the ages of 16 and 75. Travel logs have also been provided for all household members.

TURNING ON GPS DEVICE

- Turn the GPS device on by pressing and holding the silver power button in the upper right-hand corner for approximately 5 seconds. All 3 lights will flash (green, blue and red) when the device turns on, and the green and red light should remain illuminated.
- Please make sure the device is turned on every morning, and whenever you are outdoors. The red light should be on, and the green light should be on (solid or flashing). If these lights are not on, press and hold the silver power button to turn the device off, and then to turn it on again.

WHEN AND HOW TO WEAR GPS DEVICE

- You should wear the GPS device whenever you travel outside of your home starting on your assigned travel date and continuing through all days of your GPS study period (as listed on your household letter).
- When walking, biking or riding public transportation, you should wear the GPS device on your waist or clipped to your bag or purse. If you are riding inside a vehicle such as a car or truck, you can continue to wear the GPS device on your waist or place your bag or purse on the seat.
- The green light will flash when data are being collected.

CHARGING THE GPS DEVICE

- Plug one end of the enclosed cable (the end with the larger connector) into the cable on the side of the GPS device. Connect the opposite end of the cable into the wall plug adaptor and plug the adapter into the wall. If the connection is right, the bottom light on the GPS device will light up in amber/red indicating that it is charging. The amber/red light may go off once the device is fully charged.

Please recharge the GPS device every night.

Have Questions?

Call 1-866-436-7828

between 9 am - 7 pm

Monday - Friday

Equipment Return Instructions
(See Other Side)

6.1.5.3. GPS Device Instructions (Back)

GPS Equipment Return Instructions

As soon as possible after our data collection period, collect all GPS devices, cables, and AC adapters provided for your household, place them in the packaging material and box in which they arrived, and place the box inside the pre-paid FedEx Pak (and seal the Pak). Please return the Participation Record with the equipment.

PACKAGING THE DEVICE FOR RETURN

Step 1 – Repackage The GPS Devices

Step 2 – Place GPS Devices Into Box

Step 3 – Place Participation Record In Box

Step 4 – Place Box Into FedEx Pak

FEDEX RETURN OPTIONS

1. Take the Package to a FedEx Drop Box or to FedEx Office Location
   - To locate by internet: www.fedex.com
   - To locate by phone: 1-800-GO-FEDEX (1-800-463-3339)
2. Call 1-800-GO-FEDEX for a pickup at your home or office
   - Tell the FedEx representative you have a prepaid return envelope
3. Call 1-866-436-7828 between 9 am and 7 pm Mon-Fri and we will schedule a FedEx pickup for you.

REMEMBER, IN ORDER TO RECEIVE YOUR PARTICIPATION GIFT, YOU MUST:

- Use the enclosed GPS devices (and travel logs)
- Report your travel as recorded on the travel logs by web, phone, or mail
- Fill out your Participation Record
- Return GPS devices, along with completed Participation Record via FedEx

Equipment Use Instructions
(See Other Side)

6.1.5.4. GPS Return Device Sheet

Participation Record

Device and Log Use: Please fill in the appropriate columns (with a Yes or No) at the end of each travel day.

		Day 1 <DOW> <ASSN>			Day 2 <DOW+1> <ASSN+1>		Day 3 <DOW+2> <ASSN+2>	
	PERSON:	Traveled?	Use GPS?	Filled in Travel Log?	Traveled?	Use GPS?	Traveled?	Use GPS?
1				<LOG>				
2				<LOG>				
3				<LOG>				
4				<LOG>				
5				<LOG>				
6				<LOG>				
7				<LOG>				
8				<LOG>				

Please Complete this Sheet and Return with GPS Equipment [HHID]-[GFLAG]

6.2. List of Derived Variables

6.2.1. Household Table

HHSIZX: Actual count of number of household members.

HHSTUD: Count of the number of students in each household (STUDE = 1 or 2).

HHWORKER: Count of the number of workers in each household (EMPLY = 1).

HHLICDRV: Count of the license holders in each household (LIC = 1).

HHCHILD: Count of the number of children in each household (AGE = 1 or AAGE = 2).

HHTRIPS: Count of total number of trips taken by household on travel day.

LIFCYCLE: Classification of each household using the number of children, adults, and retired members. Each household is classified into one of the 10 categories below.

01 = Household has one adult, no children and no retired persons.

02 = Household has 2 or more adults, no children and no retired persons.

03 = Household has one adult and the youngest child is 0 to 5 years old.

04 = Household has 2 or more adults and the youngest child is 0 to 5 years old.

05 = Household has one adult and the youngest child is 6 to 15 years old.

06 = Household has 2 or more adults and the youngest child is 6 to 15 years old.

07 = Household has one adult and the youngest child is 16 to 21 years old.

08 = Household has 2 or more adults and the youngest child is 16 to 21 years old.

09 = Household has one retired adult and no children.

10 = Household has 2 or more adults; at least one is retired and no children.

6.2.2. Person Table

WSTRT: Conversion of the participant's work start time to military time

WEND: Conversion of the participant's work end time to military time

6.2.3. Vehicle Table

HHVEHX: Count of the number of vehicles rostered in each household.

6.2.4. Trip Table

NONHHMTP: Count of non-household members on trip.

6.3. Household-level Frequency Tables by County

Table 48. Household Size by County (Unweighted and Weighted)

Household Size	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
1	629	38%	81,785	31%
2	637	38%	86,689	33%
3	177	11%	42,022	16%
4+	215	13%	52,709	20%
	1,658	67%	263,205	78%
Sandoval				
1	109	23%	10,192	22%
2	230	50%	17,470	37%
3	68	15%	7,414	16%
4+	57	12%	11,768	25%
	464	19%	46,844	14%
Valencia				
1	97	28%	6,957	25%
2	151	43%	8,745	32%
3	55	16%	4,373	16%
4+	46	13%	7,648	28%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 49. Number of Household Vehicles by County (Unweighted and Weighted)

Household Vehicles	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	114	7%	16,082	6%
1	624	38%	97,585	37%
2	595	36%	98,888	38%
3	218	13%	35,826	14%
4+	106	6%	14,732	6%
Not Ascertained	1	0%	92	0%
	1,658	67%	263,205	78%
Sandoval				
0	4	1%	430	1%
1	101	22%	13,933	30%
2	227	49%	20,837	44%
3	83	18%	7,782	17%
4+	49	11%	3,861	8%
	464	19%	46,844	14%
Valencia				
0	10	3%	1,192	4%
1	76	22%	7,485	27%
2	137	39%	9,768	35%
3	76	22%	5,701	21%
4+	50	14%	3,575	13%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 50. Number of Household Workers by County (Unweighted and Weighted)

Household Workers	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	516	31%	67,945	26%
1	669	40%	111,510	42%
2	421	25%	70,447	27%
3+	52	3%	13,304	5%
	1,658	67%	263,205	78%
Sandoval				
0	155	33%	11,978	26%
1	161	35%	19,527	42%
2	133	29%	12,885	28%
3+	15	3%	2,454	5%
	464	19%	46,844	14%
Valencia				
0	137	39%	8,568	31%
1	125	36%	10,928	39%
2	81	23%	7,294	26%
3+	6	2%	931	3%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 51. Household Number of Students by County (Unweighted and Weighted)

Household Students	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	1,178	71%	164,076	62%
1	276	17%	51,905	20%
2	143	9%	32,462	12%
3+	61	4%	14,763	6%
	1,658	67%	263,205	78%
Sandoval				
0	333	72%	27,809	59%
1	73	16%	9,543	20%
2	40	9%	6,351	14%
3+	18	4%	3,141	7%
	464	19%	46,844	14%
Valencia				
0	245	70%	15,989	58%
1	64	18%	5,562	20%
2	19	5%	2,394	9%
3+	21	6%	3,777	14%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 52. Household Income by County (Unweighted and Weighted)

Household Income	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Less than $10,000	116	7%	20,607	8%
$10,000 to $14,999	117	7%	13,175	5%
$15,000 to $24,999	185	11%	27,312	10%
$25,000 to $34,999	155	9%	27,098	10%
$35,000 to $49,999	219	13%	34,683	13%
$50,000 to $74,999	261	16%	38,954	15%
$75,000 to $99,999	185	11%	25,288	10%
$100,000 to $149,999	149	9%	27,307	10%
$150,000 to $199,999	40	2%	9,665	4%
$200,000 or more	26	2%	6,938	3%
Don't know	32	2%	4,736	2%
Refused	173	10%	27,443	10%
	1,658	67%	263,205	78%
Sandoval				
Less than $10,000	14	3%	1,997	4%
$10,000 to $14,999	12	3%	1,102	2%
$15,000 to $24,999	39	8%	4,809	10%
$25,000 to $34,999	36	8%	3,493	7%
$35,000 to $49,999	57	12%	5,280	11%
$50,000 to $74,999	76	16%	9,179	20%
$75,000 to $99,999	69	15%	6,019	13%
$100,000 to $149,999	62	13%	5,659	12%
$150,000 to $199,999	20	4%	2,187	5%
$200,000 or more	12	3%	1,141	2%
Don't know	5	1%	725	2%
Refused	62	13%	5,251	11%
	464	19%	46,844	14%
Valencia				
Less than $10,000	19	5%	3,501	13%
$10,000 to $14,999	30	9%	2,396	9%
$15,000 to $24,999	37	11%	2,263	8%
$25,000 to $34,999	34	10%	2,656	10%
$35,000 to $49,999	60	17%	4,100	15%
$50,000 to $74,999	65	19%	4,614	17%
$75,000 to $99,999	34	10%	2,173	8%
$100,000 to $149,999	27	8%	2,668	10%
$150,000 to $199,999	4	1%	577	2%
$200,000 or more	4	1%	676	2%
Don't know	8	2%	445	2%
Refused	27	8%	1,652	6%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 53. Household Residence Type by County (Unweighted and Weighted)

Household Residence Type	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Single-family detached house	1,149	69%	180,685	69%
Single-family attached house	116	7%	18,865	7%
An apartment or condo	339	20%	55,009	21%
Mobile Home or Trailer	46	3%	7,220	3%
Dorm room	1	0%	209	0%
Boat, RV, Van	3	0%	328	0%
Don't know	1	0%	273	0%
Refused	3	0%	615	0%
	1,658	67%	263,205	78%
Sandoval				
Single-family detached house	423	91%	42,453	91%
Single-family attached house	17	4%	1,544	3%
An apartment or condo	12	3%	1,769	4%
Mobile Home or Trailer	11	2%	1,038	2%
Refused	1	0%	40	0%
	464	19%	46,844	14%
Valencia				
Single-family detached house	253	72%	18,928	68%
Single-family attached house	8	2%	633	2%
An apartment or condo	11	3%	1,380	5%
Mobile Home or Trailer	75	21%	6,722	24%
Refused	2	1%	59	0%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 54. Ownership of Household Residence by County (Unweighted and Weighted)

Household Residence Ownership	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Own with mortgage	729	44%	120,990	46%
Own without mortgage	374	23%	50,366	19%
Rent	480	29%	78,147	30%
Occupied without payment of rent	15	1%	2,053	1%
Refused	27	2%	5,261	2%
Not Ascertained	33	2%	6,388	2%
	1,658	67%	263,205	78%
Sandoval				
Own with mortgage	282	61%	30,109	64%
Own without mortgage	118	25%	9,369	20%
Rent	44	9%	5,569	12%
Occupied without payment of rent	5	1%	411	1%
Refused	10	2%	959	2%
Not Ascertained	5	1%	427	1%
	464	19%	46,844	14%
Valencia				
Own with mortgage	175	50%	14,177	51%
Own without mortgage	114	33%	7,404	27%
Rent	33	9%	4,107	15%
Occupied without payment of rent	12	3%	1,064	4%
Don't know	1	0%	44	0%
Refused	8	2%	428	2%
Not Ascertained	6	2%	497	2%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 55. Number of Licensed Drivers in Household by County (Unweighted and Weighted)

Household Drivers	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	58	3%	7,883	3%
1	713	43%	101,567	39%
2	781	47%	127,817	49%
3	89	5%	22,081	8%
4+	17	1%	3,857	1%
	1,658	67%	263,205	78%
Sandoval				
0	5	1%	355	1%
1	126	27%	13,704	29%
2	300	65%	28,072	60%
3	29	6%	3,984	9%
4+	4	1%	729	2%
	464	19%	46,844	14%
Valencia				
0	9	3%	1,155	4%
1	117	34%	9,013	33%
2	183	52%	13,095	47%
3	31	9%	3,175	11%
4+	9	3%	1,284	5%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

6.4. Person-level Frequency Tables by County

Table 56. Participant Sex by County (Unweighted and Weighted)

	Unweighted		Weighted	
Person Sex	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Male	1,577	46%	321,218	49%
Female	1,789	53%	333,854	51%
Refused	29	1%	5,835	1%
Don't know	1	0%	92	0%
	3,396	65%	660,998	76%
Sandoval				
Male	497	48%	62,669	50%
Female	535	52%	62,490	50%
Refused	5	0%	891	1%
Don't know	1	0%	115	0%
	1,038	20%	126,165	15%
Valencia				
Male	363	47%	39,857	48%
Female	412	53%	41,769	51%
Refused	4	1%	443	1%
Don't know	1	0%	167	0%
	780	15%	82,235	9%
Total	5,214	100%	869,398	100%

Table 57. Participant Age Distribution by County (Unweighted and Weighted)

Person Age	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0 – 4	192	6%	41,981	6%
5 – 17	392	12%	103,437	16%
18 – 24	181	5%	61,801	9%
25 – 29	185	5%	48,863	7%
30 – 34	258	8%	41,722	6%
35 – 39	209	6%	40,051	6%
40 – 44	218	6%	40,706	6%
45 – 49	208	6%	44,478	7%
50 – 54	219	6%	44,485	7%
55 – 59	265	8%	37,203	6%
60 – 64	301	9%	34,940	5%
65 – 69	281	8%	24,394	4%
70 – 74	147	4%	18,258	3%
75+	159	5%	34,688	5%
Don't know	14	0%	5,095	1%
Refused	167	5%	38,896	6%
	3,396	65%	660,998	76%
Sandoval				
0 – 4	54	5%	10,468	8%
5 – 17	126	12%	23,182	18%
18 – 24	29	3%	4,562	4%
25 – 29	53	5%	9,659	8%
30 – 34	53	5%	7,242	6%
35 – 39	43	4%	8,063	6%
40 – 44	59	6%	8,094	6%
45 – 49	56	5%	8,757	7%
50 – 54	90	9%	9,126	7%
55 – 59	94	9%	7,723	6%
60 – 64	100	10%	7,082	6%
65 – 69	108	10%	6,113	5%
70 – 74	61	6%	4,068	3%
75+	58	6%	5,633	4%
Don't know	2	0%	317	0%
Refused	52	5%	6,075	5%
	1,038	20%	126,165	15%

Table 58. Participant Age Range by County (Unweighted and Weighted) (continued)

Person Age	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Valencia				
0 – 4	25	3%	3,543	4%
5 – 17	110	14%	16,770	20%
18 – 24	43	6%	8,253	10%
25 – 29	36	5%	4,722	6%
30 – 34	43	6%	4,648	6%
35 – 39	31	4%	5,256	6%
40 – 44	42	5%	4,943	6%
45 – 49	41	5%	5,436	7%
50 – 54	57	7%	5,484	7%
55 – 59	82	11%	5,572	7%
60 – 64	83	11%	4,470	5%
65 – 69	65	8%	2,692	3%
70 – 74	36	5%	2,080	3%
75+	43	6%	4,828	6%
Don't know	3	0%	374	0%
Refused	40	5%	3,165	4%
	780	15%	82,235	9%
Total	5,214	100%	869,398	100%

Table 59. Participant Race by County (Unweighted and Weighted)

Person Race	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
White	2,583	76%	416,549	63%
African American, Black	65	2%	16,009	2%
Asian	50	1%	13,873	2%
American Indian, Alaskan Native	96	3%	29,203	4%
Native Hawaiian or Pacific Islander	4	0%	966	0%
Multiracial	285	8%	113,184	17%
Don't know	54	2%	10,842	2%
Refused	259	8%	60,371	9%
	3,396	65%	660,998	76%
Sandoval				
White	801	77%	80,615	64%
African American, Black	16	2%	3,332	3%
Asian	16	2%	2,562	2%
American Indian, Alaskan Native	38	4%	10,401	8%
Native Hawaiian or Pacific Islander	1	0%	113	0%
Multiracial	75	7%	17,126	14%
Don't know	12	1%	2,244	2%
Refused	79	8%	9,772	8%
	1,038	20%	126,165	15%
Valencia				
White	587	75%	49,150	60%
African American, Black	4	1%	743	1%
Asian	3	0%	353	0%
American Indian, Alaskan Native	21	3%	7,459	9%
Native Hawaiian or Pacific Islander	1	0%	168	0%
Multiracial	67	9%	13,211	16%
Don't know	10	1%	2,353	3%
Refused	87	11%	8,799	11%
	780	15%	82,235	9%
Total	5,214	100%	869,398	100%

Table 60. Participant Hispanic by County (Unweighted and Weighted)

Person Hispanic	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Yes	1,137	33%	314,133	48%
No	2,147	63%	327,961	50%
Don't know	12	0%	1,407	0%
Refused	100	3%	17,488	3%
	3,396	65%	660,989	76%
Sandoval				
Yes	289	28%	47,823	38%
No	720	69%	73,859	59%
Don't know	4	0%	567	0%
Refused	25	2%	3,676	3%
	1,038	20%	125,925	14%
Valencia				
Yes	308	39%	44,447	54%
No	435	56%	34,926	42%
Don't know	1	0%	196	0%
Refused	36	5%	2,915	4%
	5,214	100%	869,398	100%

Table 61. Participant Number of Jobs by County (Unweighted and Weighted)

Person Jobs	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	6	0%	625	0%
1	1,474	87%	282,639	88%
2	140	8%	21,108	7%
3	20	1%	3,323	1%
4+	4	0%	499	0%
Don't Know	10	1%	2,400	1%
Refused	48	3%	10,054	3%
	1,702	68%	320,648	77%
Sandoval				
0	7	1%	1,490	2%
1	413	85%	51,057	84%
2	44	9%	5,698	9%
3	3	1%	310	1%
Don't Know	1	0%	100	0%
Refused	18	4%	1,836	3%
	486	19%	60,491	15%
Valencia				
0	2	1%	98	0%
1	282	89%	30,332	92%
2	16	5%	1,439	4%
3	2	1%	111	0%
Don't Know	1	0%	99	0%
Refused	15	5%	1,012	3%
	318	13%	33,090	8%
Total	2,506	100%	414,229	100%

Table 62. Participant Work Locations by County (Unweighted and Weighted)

Person Work Place	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Fixed	1,141	70%	220,859	72%
Home	125	8%	19,703	6%
Varies	361	22%	64,060	21%
Don't know	5	0%	1,691	1%
Refused	6	0%	1,256	0%
	1,638	68%	307,569	78%
Sandoval				
Fixed	296	64%	37,413	66%
Home	54	12%	5,396	9%
Varies	107	23%	13,700	24%
Don't know	1	0%	281	0%
Refused	2	0%	275	0%
	460	19%	57,066	14%
Valencia				
Fixed	218	73%	23,343	73%
Home	19	6%	1,393	4%
Varies	61	20%	6,670	21%
Refused	2	1%	474	1%
	300	13%	31,881	8%
Total	2,398	100%	396,515	100%

Table 63. Educational Attainment by County (Unweighted and Weighted)

Person Educational Attainment	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Not a high school graduate	531	17%	138,728	23%
High School Graduate	383	12%	87,933	14%
Some College Credit but no Degree	463	15%	88,587	15%
Associate or Technical School Degree	301	9%	55,473	9%
Bachelor's or Undergraduate Degree	716	23%	119,764	20%
Graduate Degree	722	23%	107,847	18%
Don't know	12	0%	2,371	0%
Refused	41	1%	8,527	1%
	3,169	65%	609,230	76%
Sandoval				
Not a high school graduate	137	14%	23,950	21%
High School Graduate	108	11%	12,523	11%
Some College Credit but no Degree	157	16%	20,280	18%
Associate or Technical School Degree	101	10%	13,013	11%
Bachelor's or Undergraduate Degree	233	24%	23,927	21%
Graduate Degree	217	22%	17,898	16%
Don't know	4	0%	729	1%
Refused	19	2%	2,429	2%
	976	20%	114,748	14%
Valencia				
Not a high school graduate	143	19%	22,681	29%
High School Graduate	134	18%	13,756	18%
Some College Credit but no Degree	150	20%	15,363	20%
Associate or Technical School Degree	83	11%	6,123	8%
Bachelor's or Undergraduate Degree	125	17%	11,784	15%
Graduate Degree	92	12%	6,500	8%
Don't know	5	1%	964	1%
Refused	14	2%	1,058	1%
	746	15%	78,230	10%
Total	4,891	100%	802,209	100%

6.5. Trip-level Frequency Tables by County

Table 64. Household Trip Rates by County (Unweighted and Weighted)

County	Household Trip Rate	
	Unweighted	Weighted
Bernalillo	7.62	8.43
Sandoval	8.05	9.06
Valencia	7.86	8.94

Table 65. Person Trip Rates by County (Unweighted and Weighted)

County	Person Trip Rate	
	Unweighted	Weighted
Bernalillo	3.95	3.82
Sandoval	3.79	3.84
Valencia	3.64	3.55

Table 66. Trip Rates by Household Size by County (Unweighted and Weighted)

Household Size	Trip Rate	
	Unweighted	Weighted
Bernalillo		
1	4.61	4.58
2	7.14	7.23
3	10.51	10.29
4+	15.47	14.91
Sandoval		
1	4.53	4.65
2	7.76	8.32
3	9.04	9.66
4+	14.77	13.59
Valencia		
1	3.71	3.71
2	7.79	7.5
3	9	8.49
4+	15.46	15.6

Table 67. Trip Rates by Number of Household Workers by County (Unweighted and Weighted)

Household Workers	Trip Rate	
	Unweighted	Weighted
Bernalillo		
0	5.46	6.06
1	7.13	7.9
2	10.33	10.8
3	13.12	12.12
4+	17.67	17.97
Sandoval		
0	7.02	6.77
1	7.55	8.65
2	9.5	11.04
3	9.33	9.11
4+	18.67	25.55
Valencia		
0	5.85	5.63
1	7.97	8.51
2	10.63	12.19
3	13.83	19.01

Table 68. Trip Rates by Household Income by County (Unweighted and Weighted)

Household Income	Trip Rate	
	Unweighted	Weighted
Bernalillo		
Less than $10,000	5.74	6.77
$10,000 to $14,999	7.32	8.25
$15,000 to $24,999	6.66	7.34
$25,000 to $34,999	7.79	8.05
$35,000 to $49,999	6.21	6.56
$50,000 to $74,999	7.38	7.95
$75,000 to $99,999	9.24	10.36
$100,000 to $149,999	9.03	9.66
$150,000 to $199,999	10.08	11.01
$200,000 or more	11.12	13.02
Don't know	9.53	10.25
Refused	7.7	8.9
Sandoval		
Less than $10,000	6.07	7.79
$10,000 to $14,999	7.67	7.93
$15,000 to $24,999	6.08	5.94
$25,000 to $34,999	6.58	6.7
$35,000 to $49,999	7.51	8.67
$50,000 to $74,999	9.22	9.86
$75,000 to $99,999	9.87	11.39
$100,000 to $149,999	7.56	8.47
$150,000 to $199,999	8.9	13.17
$200,000 or more	7.92	7.79
Don't know	7.8	11.34
Refused	7.95	9.39
Valencia		
Less than $10,000	6.95	7.68
$10,000 to $14,999	6.23	8.41
$15,000 to $24,999	6.7	7.69
$25,000 to $34,999	7.91	8.55
$35,000 to $49,999	7.62	8.12
$50,000 to $74,999	6.89	7.31
$75,000 to $99,999	10.44	11.52
$100,000 to $149,999	11.41	14.42
$150,000 to $199,999	15.5	16.35
$200,000 or more	8.75	7.72
Don't know	7.62	10.38
Refused	6.67	6.56

6.6. Additional Recruitment Frequency Tables

Table 69. Number of Children in Household by County (Unweighted and Weighted)

Household Children	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	1,306	79%	180,765	69%
1	167	10%	37,914	14%
2	131	8%	30,955	12%
3	40	2%	9,330	4%
4+	14	1%	4,242	2%
	1,658	67%	263,205	78%
Sandoval				
0	361	78%	29,017	62%
1	49	11%	6,346	14%
2	35	8%	6,917	15%
3	12	3%	2,740	6%
4+	7	2%	1,824	4%
	464	19%	46,844	14%
Valencia				
0	267	77%	17,188	62%
1	44	13%	4,008	14%
2	26	7%	5,055	18%
3	8	2%	1,057	4%
4+	4	1%	413	1%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 70. Participant Employment Status by County (Unweighted and Weighted)

Person Employment Status	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Worker	1,652	58%	310,479	60%
Retired	616	22%	83,150	16%
Homemaker	117	4%	23,636	5%
Unemployed, but looking for work	122	4%	33,373	6%
Unemployed, not seeking employment	144	5%	22,757	4%
Student	126	4%	34,435	7%
Don't know	1	0%	530	0%
Refused	12	0%	2,275	0%
NOT ASCERTAINED	44	2%	9,544	2%
	2,834	65%	520,177	77%
Sandoval				
Worker	463	53%	57,396	61%
Retired	247	28%	16,445	17%
Homemaker	48	6%	6,838	7%
Unemployed, but looking for work	21	2%	3,356	4%
Unemployed, not seeking employment	31	4%	3,053	3%
Student	33	4%	4,949	5%
Refused	5	1%	440	0%
NOT ASCERTAINED	19	2%	2,079	2%
	867	20%	94,557	14%
Valencia				
Worker	301	45%	31,950	50%
Retired	186	28%	10,843	17%
Homemaker	37	6%	6,317	10%
Unemployed, but looking for work	28	4%	3,217	5%
Unemployed, not seeking employment	43	6%	4,619	7%
Student	51	8%	6,363	10%
Refused	2	0%	152	0%
NOT ASCERTAINED	16	2%	1,057	2%
	664	15%	64,516	9%
Total	4,365	100%	679,251	100%

6.7. Additional Retrieval Frequency Tables

Table 71. Total Persons Traveling on Trip by County (Unweighted and Weighted)

Trip Party Size	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
1	7,659	61%	1,309,647	56%
2	3,041	24%	591,590	25%
3	1,087	9%	251,216	11%
4	523	4%	128,472	5%
5+	323	3%	75,599	3%
	12,633	66%	2,356,525	76%
Sandoval				
1	2,109	56%	239,569	54%
2	1,157	31%	133,876	30%
3	273	7%	37,817	8%
4	119	3%	22,012	5%
5+	77	2%	12,594	3%
	3,735	20%	445,869	14%
Valencia				
1	1,455	53%	129,925	47%
2	895	33%	79,876	29%
3	223	8%	38,598	14%
4	102	4%	20,556	7%
5+	67	2%	9,699	3%
	2,742	14%	278,653	9%
Total	19,110	100%	3,081,047	100%

Table 72. Household Members Traveling on Trip by County (Unweighted and Weighted)

Trip Household Members	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
1	8,802	70%	1,524,621	65%
2	2,404	19%	481,620	20%
3	880	7%	215,998	9%
4	375	3%	91,834	4%
5+	172	1%	42,451	2%
	12,633	66%	2,356,525	76%
Sandoval				
1	2,357	63%	270,938	61%
2	1,021	27%	119,898	27%
3	226	6%	32,866	7%
4	87	2%	14,388	3%
5+	44	1%	7,780	2%
	3,735	20%	445,869	14%
Valencia				
1	1,726	63%	155,912	56%
2	753	27%	67,335	24%
3	152	6%	31,155	11%
4	91	3%	21,759	8%
5+	20	1%	2,492	1%
	2,742	14%	278,653	9%
Total	19,110	100%	3,081,047	100%

Table 73. Non-Household Members Traveling on Trip by County (Unweighted and Weighted)

Trip Non-household Members	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0	11,173	88%	2,080,359	88%
1	1,070	8%	192,488	8%
2	221	2%	42,767	2%
3	73	1%	16,258	1%
4	39	0%	5,373	0%
5+	57	0%	19,280	1%
	12,633	66%	2,356,525	76%
Sandoval				
0	3,434	92%	402,522	90%
1	209	6%	30,372	7%
2	49	1%	6,420	1%
3	18	0%	2,880	1%
4	4	0%	652	0%
5+	21	1%	3,023	1%
	3,735	20%	445,869	14%
Valencia				
0	2,386	87%	240,104	86%
1	263	10%	30,074	11%
2	51	2%	4,199	2%
3	16	1%	1,864	1%
4	7	0%	598	0%
5+	19	1%	1,814	1%
	2,742	14%	278,653	9%
Total	19,110	100%	3,081,047	100%

Table 74. Reason for No Trips on Travel Day by County (Unweighted and Weighted)

Person No Travel Reason	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Personally Sick	70	17%	14,353	18%
Vacation or Personal Day	95	24%	19,808	24%
Caretaking Sick Kids	3	1%	831	1%
Caretaking Sick Other	9	2%	1,583	2%
Home-bound Elderly or Disabled	30	7%	7,268	9%
Worked at home for pay	28	7%	4,261	5%
Not Schedule to Work	37	9%	7,697	9%
Worked Around Home (Not For Pay)	64	16%	10,781	13%
Out of Area	25	6%	7,102	9%
No Transportation Available	5	1%	606	1%
Other	25	6%	5,165	6%
Don't know	5	1%	551	1%
Refused	8	2%	1,175	1%
	404	60%	81,181	74%
Sandoval				
Personally Sick	19	13%	1,260	8%
Vacation or Personal Day	47	32%	5,785	37%
Caretaking Sick Kids	2	1%	425	3%
Caretaking Sick Other	1	1%	33	0%
Home-bound Elderly or Disabled	8	5%	487	3%
Worked at home for pay	20	14%	1,539	10%
Not Schedule to Work	8	5%	367	2%
Worked Around Home (Not For Pay)	23	16%	2,635	17%
Out of Area	12	8%	1,754	11%
No Transportation Available	1	1%	423	3%
Other	5	3%	605	4%
Don't know	2	1%	168	1%
	148	22%	15,481	14%
Valencia				
Personally Sick	14	12%	1,705	13%
Vacation or Personal Day	37	31%	3,662	27%
Caretaking Sick Kids	2	2%	969	7%
Home-bound Elderly or Disabled	9	8%	712	5%
Worked at home for pay	2	2%	377	3%
Not Schedule to Work	13	11%	1,636	12%
Worked Around Home (Not For Pay)	15	13%	906	7%
Out of Area	6	5%	359	3%
No Transportation Available	2	2%	53	0%
Other	13	11%	2,663	20%
Don't know	5	4%	395	3%
Refused	2	2%	63	0%
	120	18%	13,500	12%
Total	672	100%	110,162	100%

Table 75. Trip Duration by Mode by County (Unweighted and Weighted)

Trip Travel Mode/Duration	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Walk				
0-5 Minutes	386	36%	72,805	37%
6-10 Minutes	225	21%	41,952	21%
11-20 Minutes	256	24%	47,290	24%
21-30 Minutes	102	10%	20,541	10%
31-60 Minutes	76	7%	13,522	7%
61-90 Minutes	13	1%	1,993	1%
91-120 Minutes	1	0%	279	0%
Greater than 120 minutes	3	0%	279	0%
Walk Total	1,062	8%	198,662	8%
Bike				
0-5 Minutes	39	15%	8,872	19%
6-10 Minutes	54	21%	10,521	23%
11-20 Minutes	69	27%	11,618	25%
21-30 Minutes	46	18%	8,516	18%
31-60 Minutes	39	15%	6,131	13%
61-90 Minutes	8	3%	983	2%
91-120 Minutes	2	1%	114	0%
Bike Total	257	2%	46,755	2%
Auto/Van/Truck (as the driver)				
0-5 Minutes	1,412	17%	239,603	16%
6-10 Minutes	2,044	24%	355,303	24%
11-20 Minutes	3,105	36%	549,607	37%
21-30 Minutes	1,325	15%	231,896	15%
31-60 Minutes	581	7%	101,693	7%
61-90 Minutes	64	1%	13,399	1%
91-120 Minutes	11	0%	1,735	0%
Greater than 120 minutes	14	0%	3,881	0%
Auto/Van/Truck (as the driver) Total	8,556	68%	1,497,116	64%
Auto/Van/Truck (as a passenger)				
0-5 Minutes	391	19%	90,377	19%
6-10 Minutes	534	26%	120,514	26%
11-20 Minutes	727	35%	164,689	35%
21-30 Minutes	291	14%	59,892	13%
31-60 Minutes	117	6%	24,125	5%
61-90 Minutes	14	1%	2,761	1%
91-120 Minutes	2	0%	482	0%
Greater than 120 minutes	9	0%	2,981	1%
Auto/Van/Truck (as a passenger) Total	2,085	17%	465,821	20%
Dial-a-ride/Paratransit				
6-10 Minutes	1	33%	113	30%
11-20 Minutes	1	33%	113	30%
31-60 Minutes	1	33%	154	41%
Dial-a-ride/Paratransit Total	3	0%	381	0%

Table 75. Trip Duration by Mode by County (Unweighted and Weighted) (continued)

Trip Travel Mode/Duration	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo (continued)				
Taxi/Limo				
6-10 Minutes	1	14%	69	9%
11-20 Minutes	5	71%	514	64%
21-30 Minutes	1	14%	215	27%
Taxi/Limo Total	7	0%	797	0%
School Bus				
0-5 Minutes	2	1%	1,898	4%
6-10 Minutes	12	8%	3,281	7%
11-20 Minutes	49	34%	17,275	37%
21-30 Minutes	48	33%	14,344	30%
31-60 Minutes	26	18%	8,489	18%
61-90 Minutes	4	3%	558	1%
91-120 Minutes	2	1%	147	0%
Greater than 120 minutes	2	1%	1,282	3%
School Bus Total	145	1%	47,274	2%
Motorcycle/Moped				
0-5 Minutes	4	14%	176	6%
6-10 Minutes	2	7%	342	12%
11-20 Minutes	15	52%	1,685	57%
21-30 Minutes	8	28%	764	26%
Motorcycle/Moped Total	29	0%	2,967	0%
Private Shuttle/Bus				
0-5 Minutes	5	33%	1,283	31%
6-10 Minutes	3	20%	810	20%
11-20 Minutes	2	13%	492	12%
21-30 Minutes	3	20%	852	21%
61-90 Minutes	2	13%	642	16%
Private Shuttle/Bus Total	15	0%	4,079	0%
Something else				
11-20 Minutes	2	18%	337	10%
31-60 Minutes	5	45%	1,761	53%
61-90 Minutes	1	9%	347	10%
Greater than 120 minutes	3	27%	867	26%
Something else Total	11	0%	3,313	0%
Carpool/Vanpool				
0-5 Minutes	27	22%	4,378	22%
6-10 Minutes	21	17%	2,971	15%
11-20 Minutes	32	26%	5,436	27%
21-30 Minutes	25	20%	3,934	20%
31-60 Minutes	12	10%	2,254	11%
61-90 Minutes	4	3%	704	4%
91-120 Minutes	1	1%	239	1%
Carpool/Vanpool Total	122	1%	19,915	1%

Table 75. Trip Duration by Mode by County (Unweighted and Weighted) (continued)

Trip Travel Mode/Duration	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo (continued)				
Public Bus				
0-5 Minutes	32	10%	4,985	7%
6-10 Minutes	61	19%	11,447	17%
11-20 Minutes	92	28%	19,257	29%
21-30 Minutes	56	17%	10,953	16%
31-60 Minutes	65	20%	14,198	21%
61-90 Minutes	18	6%	5,468	8%
Greater than 120 minutes	1	0%	545	1%
Public Bus Total	325	3%	66,854	3%
Rail Runner				
31-60 Minutes	2	13%	409	16%
61-90 Minutes	13	81%	2,107	81%
91-120 Minutes	1	6%	75	3%
Rail Runner Total	16	0%	2,592	0%
	12,633	66%	2,356,525	76%
Sandoval				
Walk				
0-5 Minutes	74	47%	7,152	40%
6-10 Minutes	24	15%	5,226	29%
11-20 Minutes	35	22%	3,349	19%
21-30 Minutes	8	5%	535	3%
31-60 Minutes	14	9%	1,532	9%
61-90 Minutes	1	1%	49	0%
Walk Total	156	4%	17,843	4%
Bike				
0-5 Minutes	2	25%	124	19%
6-10 Minutes	2	25%	255	39%
31-60 Minutes	3	38%	195	30%
61-90 Minutes	1	13%	80	12%
Bike Total	8	0%	653	0%
Auto/Van/Truck (as the driver)				
0-5 Minutes	476	18%	60,568	20%
6-10 Minutes	568	22%	70,097	23%
11-20 Minutes	760	29%	77,798	26%
21-30 Minutes	439	17%	47,346	16%
31-60 Minutes	337	13%	41,297	14%
61-90 Minutes	42	2%	4,951	2%
91-120 Minutes	7	0%	385	0%
Greater than 120 minutes	5	0%	242	0%
Auto/Van/Truck (as the driver) Total	2,634	71%	302,683	68%

Table 75. Trip Duration by Mode by County (Unweighted and Weighted) (continued)

Trip Travel Mode/Duration	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Sandoval (continued)				
Auto/Van/Truck (as a passenger)				
0-5 Minutes	158	22%	18,704	20%
6-10 Minutes	180	25%	22,808	24%
11-20 Minutes	227	31%	30,615	33%
21-30 Minutes	80	11%	11,134	12%
31-60 Minutes	76	10%	9,090	10%
61-90 Minutes	7	1%	715	1%
91-120 Minutes	1	0%	60	0%
Greater than 120 minutes	1	0%	132	0%
Auto/Van/Truck (as a passenger) Total	730	20%	93,259	21%
School Bus				
0-5 Minutes	1	1%	152	1%
6-10 Minutes	5	7%	1,523	11%
11-20 Minutes	15	21%	2,792	20%
21-30 Minutes	33	46%	5,967	43%
31-60 Minutes	18	25%	3,335	24%
School Bus Total	72	2%	13,770	3%
Motorcycle/Moped				
6-10 Minutes	1	13%	54	10%
11-20 Minutes	3	38%	181	33%
31-60 Minutes	4	50%	317	57%
Motorcycle/Moped Total	8	0%	553	0%
Private Shuttle/Bus				
6-10 Minutes	1	33%	104	21%
11-20 Minutes	2	67%	392	79%
Private Shuttle/Bus Total	3	0%	496	0%
Something else				
Greater than 120 minutes	1	100%	297	100%
Something else Total	1	0%	297	0%
Carpool/Vanpool				
0-5 Minutes	6	16%	1,226	28%
6-10 Minutes	7	18%	1,010	23%
11-20 Minutes	8	21%	658	15%
21-30 Minutes	4	11%	332	8%
31-60 Minutes	9	24%	731	17%
61-90 Minutes	3	8%	351	8%
Greater than 120 minutes	1	3%	41	1%
Carpool/Vanpool Total	38	1%	4,350	1%
Public Bus				
0-5 Minutes	6	10%	834	9%
6-10 Minutes	9	15%	1,433	16%
11-20 Minutes	15	25%	2,437	27%
21-30 Minutes	8	14%	1,542	17%
31-60 Minutes	18	31%	2,512	27%
61-90 Minutes	3	5%	385	4%
Public Bus Total	59	2%	9,143	2%

Table 75. Trip Duration by Mode by County (Unweighted and Weighted) (continued)

Trip Travel Mode/Duration	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Sandoval (continued)				
Rail Runner				
0-5 Minutes	1	4%	151	5%
6-10 Minutes	1	4%	97	3%
11-20 Minutes	2	8%	111	4%
21-30 Minutes	2	8%	145	5%
31-60 Minutes	15	58%	2,084	74%
61-90 Minutes	5	19%	235	8%
Rail Runner Total	26	1%	2,823	1%
	3,735	20%	445,869	14%
Valencia				
Walk				
0-5 Minutes	71	67%	7,035	66%
6-10 Minutes	14	13%	1,569	15%
11-20 Minutes	7	7%	820	8%
21-30 Minutes	7	7%	948	9%
31-60 Minutes	6	6%	232	2%
61-90 Minutes	1	1%	29	0%
Walk Total	106	4%	10,634	4%
Bike				
0-5 Minutes	2	50%	417	71%
11-20 Minutes	2	50%	170	29%
Bike Total	4	0%	587	0%
Auto/Van/Truck (as the driver)				
0-5 Minutes	313	17%	27,900	17%
6-10 Minutes	376	20%	32,633	19%
11-20 Minutes	531	28%	48,806	29%
21-30 Minutes	293	16%	24,584	15%
31-60 Minutes	341	18%	32,063	19%
61-90 Minutes	26	1%	2,201	1%
91-120 Minutes	1	0%	41	0%
Greater than 120 minutes	6	0%	431	0%
Auto/Van/Truck (as the driver) Total	1,887	69%	168,659	61%
Auto/Van/Truck (as a passenger)				
0-5 Minutes	93	16%	10,088	13%
6-10 Minutes	113	20%	15,757	21%
11-20 Minutes	180	32%	25,536	34%
21-30 Minutes	87	15%	11,607	15%
31-60 Minutes	87	15%	10,599	14%
61-90 Minutes	7	1%	1,185	2%
Greater than 120 minutes	4	1%	1,258	2%
Auto/Van/Truck (as a passenger) Total	571	21%	76,031	27%

Table 75. Trip Duration by Mode by County (Unweighted and Weighted) (continued)

Trip Travel Mode/Duration	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Valencia (continued)				
School Bus				
0-5 Minutes	4	5%	650	5%
6-10 Minutes	8	9%	598	5%
11-20 Minutes	29	34%	3,871	30%
21-30 Minutes	20	23%	4,327	33%
31-60 Minutes	23	27%	3,422	26%
61-90 Minutes	2	2%	162	1%
School Bus Total	86	3%	13,030	5%
Motorcycle/Moped				
0-5 Minutes	4	44%	126	29%
6-10 Minutes	2	22%	131	30%
11-20 Minutes	1	11%	65	15%
31-60 Minutes	2	22%	119	27%
Motorcycle/Moped Total	9	0%	441	0%
Private Shuttle/Bus				
6-10 Minutes	2	20%	40	3%
11-20 Minutes	2	20%	228	18%
31-60 Minutes	4	40%	661	52%
61-90 Minutes	2	20%	330	26%
Private Shuttle/Bus Total	10	0%	1,260	0%
Something else				
91-120 Minutes	1	50%	103	33%
Greater than 120 minutes	1	50%	210	67%
Something else Total	2	0%	313	0%
Carpool/Vanpool				
0-5 Minutes	4	18%	871	30%
6-10 Minutes	5	23%	775	27%
11-20 Minutes	2	9%	610	21%
21-30 Minutes	2	9%	140	5%
31-60 Minutes	8	36%	480	17%
61-90 Minutes	1	5%	34	1%
Carpool/Vanpool Total	22	1%	2,910	1%
Public Bus				
6-10 Minutes	3	15%	279	17%
11-20 Minutes	7	35%	335	20%
21-30 Minutes	5	25%	367	22%
31-60 Minutes	4	20%	480	29%
61-90 Minutes	1	5%	186	11%
Public Bus Total	20	1%	1,648	1%
Rail Runner				
0-5 Minutes	1	4%	433	14%
11-20 Minutes	6	24%	965	31%
21-30 Minutes	5	20%	610	19%
31-60 Minutes	11	44%	798	25%
Greater than 120 minutes	2	8%	335	11%
Rail Runner Total	25	1%	3,141	1%
	2,742	14%	278,653	9%
Total	19,110	100%	3,081,047	100%

Table 76. Trip Duration by Primary Trip Purpose by County (Unweighted and Weighted)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
Home Activities				
0-5 Minutes	619	16%	119,820	16%
6-10 Minutes	856	22%	166,584	22%
11-20 Minutes	1,388	35%	270,989	35%
21-30 Minutes	711	18%	134,188	17%
31-60 Minutes	333	8%	62,020	8%
61-90 Minutes	50	1%	10,258	1%
91-120 Minutes	7	0%	758	0%
Greater than 120 minutes	10	0%	3,512	0%
Home Activities Total	3,974	31%	768,130	33%
Workplace Activities				
0-5 Minutes	215	11%	36,989	11%
6-10 Minutes	340	18%	60,389	18%
11-20 Minutes	723	38%	133,101	39%
21-30 Minutes	417	22%	71,944	21%
31-60 Minutes	185	10%	34,433	10%
61-90 Minutes	24	1%	6,032	2%
91-120 Minutes	3	0%	468	0%
Greater than 120 minutes	4	0%	1,135	0%
Workplace Activities Total	1,911	15%	344,491	15%
School/Daycare Related				
0-5 Minutes	108	18%	31,956	21%
6-10 Minutes	137	23%	35,834	23%
11-20 Minutes	202	34%	50,750	33%
21-30 Minutes	93	16%	24,352	16%
31-60 Minutes	43	7%	10,258	7%
61-90 Minutes	6	1%	1,481	1%
Greater than 120 minutes	1	0%	105	0%
School/Daycare Related Total	590	5%	154,736	7%
Retail Shopping				
0-5 Minutes	435	24%	64,999	22%
6-10 Minutes	528	29%	86,261	29%
11-20 Minutes	597	33%	100,556	34%
21-30 Minutes	158	9%	27,612	9%
31-60 Minutes	57	3%	10,689	4%
61-90 Minutes	19	1%	2,383	1%
Greater than 120 minutes	2	0%	770	0%
Retail Shopping Total	1,796	14%	293,270	12%
Dining at Restaurant				
0-5 Minutes	203	25%	35,898	26%
6-10 Minutes	245	30%	40,976	29%
11-20 Minutes	250	31%	44,662	32%
21-30 Minutes	71	9%	11,189	8%
31-60 Minutes	41	5%	6,098	4%
61-90 Minutes	2	0%	612	0%
91-120 Minutes	1	0%	239	0%
Greater than 120 minutes	1	0%	331	0%
Dining at Restaurant Total	814	6%	140,005	6%

Table 76. Trip Duration by Primary Trip Purpose by County (Unweighted and Weighted) (continued)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo (continued)				
Visiting Hospital/Doctor				
0-5 Minutes	36	11%	6,274	12%
6-10 Minutes	44	13%	7,115	13%
11-20 Minutes	134	41%	22,345	41%
21-30 Minutes	70	21%	12,044	22%
31-60 Minutes	37	11%	5,053	9%
61-90 Minutes	6	2%	1,415	3%
Visiting Hospital/Doctor Total	327	3%	54,246	2%
Recreational Acitivities				
0-5 Minutes	95	15%	15,566	15%
6-10 Minutes	149	24%	24,144	23%
11-20 Minutes	245	39%	41,161	39%
21-30 Minutes	94	15%	16,890	16%
31-60 Minutes	32	5%	5,576	5%
61-90 Minutes	4	1%	467	0%
91-120 Minutes	2	0%	195	0%
Greater than 120 minutes	7	1%	2,290	2%
Recreational Acitivities Total	628	5%	106,289	5%
Banking/Other Office Related				
0-5 Minutes	95	28%	13,403	26%
6-10 Minutes	97	29%	16,229	31%
11-20 Minutes	100	29%	15,509	30%
21-30 Minutes	28	8%	3,817	7%
31-60 Minutes	16	5%	2,914	6%
61-90 Minutes	2	1%	249	0%
91-120 Minutes	1	0%	132	0%
Banking/Other Office Related Total	339	3%	52,253	2%
Visiting Another Private Residence				
0-5 Minutes	69	20%	13,339	22%
6-10 Minutes	72	21%	11,206	19%
11-20 Minutes	118	34%	20,488	34%
21-30 Minutes	49	14%	8,603	14%
31-60 Minutes	30	9%	4,713	8%
61-90 Minutes	4	1%	461	1%
91-120 Minutes	3	1%	697	1%
Greater than 120 minutes	2	1%	537	1%
Visiting Another Private Residence Total	347	3%	60,045	3%
Visiting a Place of Worship				
0-5 Minutes	14	16%	2,492	18%
6-10 Minutes	22	26%	2,689	20%
11-20 Minutes	23	27%	4,220	31%
21-30 Minutes	17	20%	2,813	21%
31-60 Minutes	9	10%	1,296	10%
61-90 Minutes	1	1%	116	1%
Visiting a Place of Worship Total	86	1%	13,626	1%

Table 76. Trip Duration by Primary Trip Purpose by County (Unweighted and Weighted) (continued)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo (continued)				
College/University				
0-5 Minutes	10	10%	2,286	10%
6-10 Minutes	26	25%	6,620	29%
11-20 Minutes	32	31%	6,971	31%
21-30 Minutes	20	20%	3,448	15%
31-60 Minutes	12	12%	2,483	11%
Greater than 120 minutes	2	2%	659	3%
College/University Total	102	1%	22,466	1%
Pick-up/Drop-off Passenger				
0-5 Minutes	173	19%	41,896	21%
6-10 Minutes	258	29%	56,700	29%
11-20 Minutes	329	37%	67,854	34%
21-30 Minutes	83	9%	19,786	10%
31-60 Minutes	45	5%	10,340	5%
61-90 Minutes	3	0%	1,141	1%
Pick-up/Drop-off Passenger Total	891	7%	197,717	8%
Change modes				
0-5 Minutes	143	29%	25,200	27%
6-10 Minutes	113	23%	20,496	22%
11-20 Minutes	124	25%	23,959	26%
21-30 Minutes	49	10%	7,377	8%
31-60 Minutes	45	9%	10,354	11%
61-90 Minutes	18	4%	3,891	4%
91-120 Minutes	1	0%	75	0%
Greater than 120 minutes	2	0%	379	0%
Change modes Total	495	4%	91,732	4%
Loop for exercise				
0-5 Minutes	19	19%	2,803	17%
6-10 Minutes	17	17%	3,266	20%
11-20 Minutes	25	26%	3,518	22%
21-30 Minutes	15	15%	2,667	16%
31-60 Minutes	20	20%	3,811	23%
61-90 Minutes	1	1%	172	1%
Greater than 120 minutes	1	1%	116	1%
Loop for exercise Total	98	1%	16,353	1%
Other, Specify				
0-5 Minutes	60	28%	10,324	29%
6-10 Minutes	46	22%	6,050	17%
11-20 Minutes	62	29%	11,099	32%
21-30 Minutes	27	13%	4,659	13%
31-60 Minutes	16	8%	2,378	7%
91-120 Minutes	2	1%	507	1%
Other, Specify Total	213	2%	35,016	1%

Table 76. Trip Duration by Primary Trip Purpose by County (Unweighted and Weighted) (continued)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo (continued)				
Don't Know				
0-5 Minutes	1	20%	474	31%
11-20 Minutes	2	40%	845	55%
31-60 Minutes	2	40%	205	13%
Don't Know Total	5	0%	1,524	0%
Refused				
0-5 Minutes	3	18%	658	14%
6-10 Minutes	8	47%	2,765	60%
11-20 Minutes	1	6%	285	6%
21-30 Minutes	3	18%	519	11%
31-60 Minutes	1	6%	113	2%
61-90 Minutes	1	6%	285	6%
Refused Total	17	0%	4,626	0%
	12,633	66%	2,356,525	76%
Sandoval				
Home Activities				
0-5 Minutes	174	15%	22,970	16%
6-10 Minutes	246	22%	34,620	25%
11-20 Minutes	317	28%	37,438	27%
21-30 Minutes	196	17%	21,697	16%
31-60 Minutes	166	15%	20,055	14%
61-90 Minutes	21	2%	2,433	2%
91-120 Minutes	2	0%	105	0%
Greater than 120 minutes	3	0%	216	0%
Home Activities Total	1,125	30%	139,535	31%
Workplace Activities				
0-5 Minutes	60	13%	7,445	13%
6-10 Minutes	63	13%	8,169	14%
11-20 Minutes	121	25%	12,465	22%
21-30 Minutes	115	24%	13,726	24%
31-60 Minutes	94	20%	12,743	23%
61-90 Minutes	14	3%	1,525	3%
91-120 Minutes	4	1%	226	0%
Greater than 120 minutes	4	1%	199	0%
Workplace Activities Total	475	13%	56,498	13%
School/Daycare Related				
0-5 Minutes	44	25%	7,057	24%
6-10 Minutes	29	16%	5,158	18%
11-20 Minutes	40	22%	6,719	23%
21-30 Minutes	39	22%	5,301	18%
31-60 Minutes	27	15%	5,095	17%
School/Daycare Related Total	179	5%	29,330	7%

Table 76. Trip Duration by Primary Trip Purpose by County (Unweighted and Weighted) (continued)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Sandoval (continued)				
Retail Shopping				
0-5 Minutes	204	29%	21,025	29%
6-10 Minutes	187	27%	18,800	26%
11-20 Minutes	197	28%	18,549	26%
21-30 Minutes	63	9%	7,815	11%
31-60 Minutes	42	6%	5,239	7%
61-90 Minutes	5	1%	611	1%
91-120 Minutes	2	0%	114	0%
Retail Shopping Total	700	19%	72,153	16%
Dining at Restaurant				
0-5 Minutes	58	21%	6,928	22%
6-10 Minutes	67	25%	7,596	24%
11-20 Minutes	87	32%	10,043	32%
21-30 Minutes	32	12%	4,769	15%
31-60 Minutes	25	9%	2,042	6%
61-90 Minutes	3	1%	294	1%
Dining at Restaurant Total	272	7%	31,672	7%
Visiting Hospital/Doctor				
0-5 Minutes	15	14%	819	8%
6-10 Minutes	20	19%	1,966	19%
11-20 Minutes	21	20%	1,982	19%
21-30 Minutes	24	22%	2,862	28%
31-60 Minutes	24	22%	2,224	22%
61-90 Minutes	3	3%	336	3%
Visiting Hospital/Doctor Total	107	3%	10,188	2%
Recreational Activities				
0-5 Minutes	27	15%	2,856	15%
6-10 Minutes	35	20%	5,324	27%
11-20 Minutes	64	36%	6,307	32%
21-30 Minutes	24	13%	2,076	11%
31-60 Minutes	28	16%	3,066	16%
Recreational Activities Total	178	5%	19,628	4%
Banking/Other Office Related				
0-5 Minutes	20	18%	1,688	16%
6-10 Minutes	29	26%	3,298	31%
11-20 Minutes	34	31%	3,020	28%
21-30 Minutes	15	14%	1,527	14%
31-60 Minutes	9	8%	815	8%
61-90 Minutes	3	3%	391	4%
Banking/Other Office Related Total	110	3%	10,739	2%
Visiting Another Private Residence				
0-5 Minutes	18	17%	3,454	26%
6-10 Minutes	26	25%	3,091	23%
11-20 Minutes	37	35%	4,165	31%
21-30 Minutes	12	11%	1,404	10%
31-60 Minutes	12	11%	1,341	10%
Visiting Another Private Residence Total	105	3%	13,455	3%

Table 76. Trip Duration by Primary Trip Purpose by County (Unweighted and Weighted) (continued)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Sandoval (continued)				
Visiting a Place of Worship				
0-5 Minutes	6	19%	889	25%
6-10 Minutes	6	19%	856	24%
11-20 Minutes	11	34%	1,025	29%
21-30 Minutes	6	19%	380	11%
31-60 Minutes	2	6%	177	5%
61-90 Minutes	1	3%	200	6%
Visiting a Place of Worship Total	32	1%	3,526	1%
College/University				
0-5 Minutes	2	12%	229	12%
11-20 Minutes	6	35%	423	22%
21-30 Minutes	4	24%	417	22%
31-60 Minutes	5	29%	833	44%
College/University Total	17	0%	1,902	0%
Pick-up/Drop-off Passenger				
0-5 Minutes	52	28%	8,524	29%
6-10 Minutes	44	24%	6,515	22%
11-20 Minutes	49	26%	8,020	28%
21-30 Minutes	20	11%	2,666	9%
31-60 Minutes	19	10%	2,890	10%
61-90 Minutes	2	1%	202	1%
Greater than 120 minutes	1	1%	297	1%
Pick-up/Drop-off Passenger Total	187	5%	29,114	7%
Change modes				
0-5 Minutes	24	18%	3,446	21%
6-10 Minutes	23	18%	3,665	22%
11-20 Minutes	37	28%	4,171	25%
21-30 Minutes	11	8%	1,349	8%
31-60 Minutes	29	22%	3,537	21%
61-90 Minutes	7	5%	609	4%
Change modes Total	131	4%	16,777	4%
Loop for exercise				
0-5 Minutes	7	22%	423	13%
6-10 Minutes	6	19%	1,282	39%
11-20 Minutes	6	19%	628	19%
21-30 Minutes	5	16%	209	6%
31-60 Minutes	7	22%	657	20%
61-90 Minutes	1	3%	49	2%
Loop for exercise Total	32	1%	3,248	1%
Other, Specify				
0-5 Minutes	13	16%	1,159	15%
6-10 Minutes	17	22%	2,268	29%
11-20 Minutes	36	46%	3,225	42%
21-30 Minutes	6	8%	620	8%
31-60 Minutes	5	6%	380	5%
61-90 Minutes	2	3%	114	1%
Other, Specify Total	79	2%	7,767	2%

Table 76. Trip Duration by Primary Trip Purpose by County (Unweighted and Weighted) (continued)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Sandoval (continued)				
Don't Know				
11-20 Minutes	2	100%	107	100%
Don't Know Total	2	0%	107	0%
Refused				
11-20 Minutes	2	50%	46	20%
21-30 Minutes	2	50%	184	80%
Refused Total	4	0%	230	0%
	3,735	20%	445,869	14%
Valencia				
Home Activities				
0-5 Minutes	149	18%	15,844	18%
6-10 Minutes	119	14%	13,718	16%
11-20 Minutes	240	29%	25,547	29%
21-30 Minutes	122	15%	13,359	15%
31-60 Minutes	182	22%	18,287	21%
61-90 Minutes	14	2%	1,350	2%
Greater than 120 minutes	6	1%	339	0%
Home Activities Total	832	30%	88,444	32%
Workplace Activities				
0-5 Minutes	31	9%	2,868	9%
6-10 Minutes	59	17%	5,024	15%
11-20 Minutes	76	22%	7,366	22%
21-30 Minutes	68	19%	6,527	20%
31-60 Minutes	106	30%	10,672	32%
61-90 Minutes	8	2%	666	2%
Greater than 120 minutes	2	1%	200	1%
Workplace Activities Total	350	13%	33,323	12%
School/Daycare Related				
0-5 Minutes	23	16%	2,739	14%
6-10 Minutes	24	16%	3,501	18%
11-20 Minutes	43	29%	5,870	29%
21-30 Minutes	29	20%	4,224	21%
31-60 Minutes	26	18%	3,328	17%
61-90 Minutes	3	2%	327	2%
School/Daycare Related Total	148	5%	19,989	7%
Retail Shopping				
0-5 Minutes	105	23%	8,318	22%
6-10 Minutes	125	27%	11,631	31%
11-20 Minutes	123	27%	9,992	27%
21-30 Minutes	51	11%	3,210	9%
31-60 Minutes	51	11%	4,380	12%
61-90 Minutes	3	1%	160	0%
Retail Shopping Total	458	17%	37,691	14%

Table 76. Trip Duration by Primary Trip Purpose by County (Unweighted and Weighted) (continued)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Valencia (continued)				
Dining at Restaurant				
0-5 Minutes	40	23%	3,230	23%
6-10 Minutes	44	26%	3,268	24%
11-20 Minutes	43	25%	3,556	26%
21-30 Minutes	33	19%	2,835	21%
31-60 Minutes	12	7%	910	7%
Dining at Restaurant Total	172	6%	13,798	5%
Visiting Hospital/Doctor				
0-5 Minutes	5	6%	267	3%
6-10 Minutes	16	18%	1,826	19%
11-20 Minutes	22	24%	1,757	18%
21-30 Minutes	15	17%	1,355	14%
31-60 Minutes	30	33%	3,949	41%
61-90 Minutes	2	2%	449	5%
Visiting Hospital/Doctor Total	90	3%	9,603	3%
Recreational Activities				
0-5 Minutes	11	11%	1,013	10%
6-10 Minutes	15	16%	2,144	20%
11-20 Minutes	39	41%	5,039	47%
21-30 Minutes	21	22%	1,771	17%
31-60 Minutes	8	8%	392	4%
61-90 Minutes	1	1%	210	2%
91-120 Minutes	1	1%	41	0%
Recreational Activities Total	96	4%	10,611	4%
Banking/Other Office Related				
0-5 Minutes	27	19%	1,889	14%
6-10 Minutes	52	36%	3,945	30%
11-20 Minutes	40	28%	4,788	36%
21-30 Minutes	16	11%	1,655	13%
31-60 Minutes	7	5%	772	6%
61-90 Minutes	1	1%	101	1%
Banking/Other Office Related Total	143	5%	13,150	5%
Visiting Another Private Residence				
0-5 Minutes	20	22%	1,869	21%
6-10 Minutes	15	16%	1,306	15%
11-20 Minutes	35	38%	3,216	37%
21-30 Minutes	10	11%	644	7%
31-60 Minutes	8	9%	342	4%
61-90 Minutes	2	2%	74	1%
Greater than 120 minutes	2	2%	1,262	14%
Visiting Another Private Residence Total	92	3%	8,713	3%
Visiting a Place of Worship				
0-5 Minutes	7	19%	474	12%
6-10 Minutes	6	16%	217	6%
11-20 Minutes	21	57%	3,005	77%
31-60 Minutes	3	8%	192	5%
Visiting a Place of Worship Total	37	1%	3,888	1%

Table 76. Trip Duration by Primary Trip Purpose by County (Unweighted and Weighted) (continued)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Valencia (continued)				
College/University				
6-10 Minutes	2	13%	196	8%
11-20 Minutes	3	20%	473	20%
21-30 Minutes	5	33%	731	30%
31-60 Minutes	5	33%	1,012	42%
College/University Total	15	1%	2,412	1%
Pick-up/Drop-off Passenger				
0-5 Minutes	34	19%	5,041	21%
6-10 Minutes	27	15%	3,483	14%
11-20 Minutes	55	31%	8,016	33%
21-30 Minutes	33	19%	4,511	18%
31-60 Minutes	24	14%	2,871	12%
61-90 Minutes	3	2%	545	2%
Greater than 120 minutes	1	1%	56	0%
Pick-up/Drop-off Passenger Total	177	6%	24,523	9%
Change modes				
0-5 Minutes	19	23%	2,051	25%
6-10 Minutes	11	14%	809	10%
11-20 Minutes	20	25%	2,068	25%
21-30 Minutes	11	14%	1,373	17%
31-60 Minutes	15	19%	1,123	14%
61-90 Minutes	2	2%	218	3%
91-120 Minutes	1	1%	103	1%
Greater than 120 minutes	2	2%	377	5%
Change modes Total	81	3%	8,122	3%
Loop for exercise				
0-5 Minutes	2	20%	190	24%
6-10 Minutes	1	10%	21	3%
11-20 Minutes	2	20%	372	47%
21-30 Minutes	1	10%	46	6%
31-60 Minutes	3	30%	128	16%
61-90 Minutes	1	10%	29	4%
Loop for exercise Total	10	0%	785	0%
Other, Specify				
0-5 Minutes	18	50%	1,642	50%
6-10 Minutes	5	14%	546	16%
11-20 Minutes	5	14%	344	10%
21-30 Minutes	3	8%	303	9%
31-60 Minutes	5	14%	479	14%
Other, Specify Total	36	1%	3,313	1%
Don't Know				
0-5 Minutes	1	33%	86	37%
6-10 Minutes	2	67%	145	63%
Don't Know Total	3	0%	231	0%

Table 76. Trip Duration by Primary Trip Purpose by County (Unweighted and Weighted) (continued)

Trip Travel Mode	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Valencia (continued)				
Refused				
21-30 Minutes	1	50%	40	70%
31-60 Minutes	1	50%	17	30%
Refused Total	2	0%	57	0%
	2,742	14%	278,653	9%
Total	19,110	100%	3,081,047	100%

6.8. Crosstabs for Key Sample Management Variables

Table 77. Workers by Household Size by County (Unweighted and Weighted)

Household Size/Workers	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
1				
0	309	49%	35,509	43%
1	320	51%	46,275	57%
	629	38%	81,785	31%
2				
0	178	28%	24,467	28%
1	221	35%	30,580	35%
2	238	37%	31,642	37%
	637	38%	86,689	33%
3				
0	20	11%	4,607	11%
1	59	33%	15,662	37%
2	73	41%	16,481	39%
3	25	14%	5,272	13%
	177	11%	42,022	16%
4+				
0	9	4%	3,361	6%
1	69	32%	18,992	36%
2	110	51%	22,324	42%
3	24	11%	7,159	14%
4+	3	1%	873	2%
	215	13%	52,709	20%
	1,658	67%	263,205	78%

Table 76. Workers by Household Size by County (Unweighted and Weighted) (continued)

Household Size/Workers	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Sandoval				
1				
0	56	51%	4,982	49%
1	53	49%	5,210	51%
	109	23%	10,192	22%
2				
0	87	38%	5,320	30%
1	66	29%	6,707	38%
2	77	33%	5,443	31%
	230	50%	17,470	37%
3				
0	8	12%	961	13%
1	22	32%	2,764	37%
2	30	44%	2,521	34%
3	8	12%	1,168	16%
	68	15%	7,414	16%
4+				
0	4	7%	714	6%
1	20	35%	4,847	41%
2	26	46%	4,922	42%
3	4	7%	697	6%
4+	3	5%	589	5%
	57	12%	11,768	25%
	464	19%	46,844	14%
Valencia				
1				
0	58	60%	3,972	57%
1	39	40%	2,984	43%
	97	28%	6,957	25%
2				
0	66	44%	3,175	36%
1	49	32%	3,209	37%
2	36	24%	2,361	27%
	151	43%	8,745	32%
3				
0	8	15%	779	18%
1	22	40%	1,994	46%
2	22	40%	1,430	33%
3	3	5%	169	4%
	55	16%	4,373	16%
4+				
0	5	11%	643	8%
1	15	33%	2,741	36%
2	23	50%	3,502	46%
3	3	7%	762	10%
	46	13%	7,648	28%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 78. Vehicles by Household Size by County (Unweighted and Weighted)

Household Size/Vehicles	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
1				
0	84	13%	10,620	13%
1	427	68%	58,306	71%
2	91	14%	10,537	13%
3	17	3%	1,612	2%
4	6	1%	447	1%
5+	3	0%	171	0%
Not Ascertained	1	0%	92	0%
	629	38%	81,785	31%
2				
0	22	3%	3,767	4%
1	127	20%	20,901	24%
2	335	53%	47,900	55%
3	105	16%	11,180	13%
4	35	5%	2,070	2%
5+	13	2%	871	1%
	637	38%	86,689	33%
3				
0	4	2%	546	1%
1	36	20%	10,417	25%
2	73	41%	16,756	40%
3	42	24%	10,844	26%
4	13	7%	2,222	5%
5+	9	5%	1,237	3%
	177	11%	42,022	16%
4+				
0	4	2%	1,150	2%
1	34	16%	7,961	15%
2	96	45%	23,694	45%
3	54	25%	12,190	23%
4	18	8%	5,387	10%
5+	9	4%	2,327	4%
	215	13%	52,709	20%
	1,658	67%	263,205	78%

Table 78. Vehicles by Household Size by County (Unweighted and Weighted) (continued)

Household Size/Vehicles	Unweighted		Weighted	
Sandoval				
1				
0	4	4%	430	4%
1	62	57%	6,896	68%
2	33	30%	2,274	22%
3	4	4%	312	3%
4	2	2%	77	1%
5+	4	4%	202	2%
	109	23%	10,192	22%
2				
1	26	11%	3,817	22%
2	138	60%	9,874	57%
3	43	19%	2,735	16%
4	17	7%	771	4%
5+	6	3%	274	2%
	230	50%	17,470	37%
3				
1	9	13%	1,393	19%
2	30	44%	3,355	45%
3	19	28%	1,880	25%
4	4	6%	384	5%
5+	6	9%	402	5%
	68	15%	7,414	16%
4+				
1	4	7%	1,828	16%
2	26	46%	5,334	45%
3	17	30%	2,855	24%
4	6	11%	1,134	10%
5+	4	7%	617	5%
	57	12%	11,768	25%
	464	19%	46,844	14%

Table 78. Vehicles by Household Size by County (Unweighted and Weighted) (continued)

Household Size/Vehicles	Unweighted		Weighted	
Valencia				
1				
0	7	7%	495	7%
1	50	52%	4,265	61%
2	29	30%	1,660	24%
3	8	8%	480	7%
4	2	2%	38	1%
5+	1	1%	18	0%
	97	28%	6,957	25%
2				
0	1	1%	42	0%
1	17	11%	2,106	24%
2	75	50%	4,034	46%
3	35	23%	1,519	17%
4	14	9%	602	7%
5+	9	6%	441	5%
	151	43%	8,745	32%
3				
0	2	4%	655	15%
1	6	11%	639	15%
2	16	29%	997	23%
3	20	36%	1,531	35%
4	7	13%	345	8%
5+	4	7%	206	5%
	55	16%	4,373	16%
4+				
1	3	7%	475	6%
2	17	37%	3,077	40%
3	13	28%	2,171	28%
4	9	20%	1,069	14%
5+	4	9%	857	11%
	46	13%	7,648	28%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%

Table 79. Workers by Vehicles by County (Unweighted and Weighted)

Household Vehicles/Workers	Unweighted		Weighted	
	Frequency	Percentage	Frequency	Percentage
Bernalillo				
0				
0	77	68%	10,732	67%
1	35	31%	4,643	29%
2	2	2%	707	4%
	114	7%	16,082	6%
1				
0	261	42%	33,917	35%
1	314	50%	54,952	56%
2	48	8%	7,825	8%
3	1	0%	891	1%
	624	38%	97,585	37%
2				
0	118	20%	17,955	18%
1	218	37%	38,316	39%
2	251	42%	40,490	41%
3	8	1%	2,128	2%
	595	36%	98,888	38%
3				
0	40	18%	3,917	11%
1	76	35%	10,230	29%
2	82	38%	15,931	44%
3	19	9%	5,499	15%
4+	1	0%	249	1%
	218	13%	35,826	14%
4+				
0	19	18%	1,332	9%
1	26	25%	3,369	23%
2	38	36%	5,494	37%
3	21	20%	3,913	27%
4+	2	2%	624	4%
	106	6%	14,732	6%
Not Ascertained				
0	1	100%	92	100%
	1	0%	92	0%
	1,658	67%	263,205	78%

Table 79. Workers by Vehicles by County (Unweighted and Weighted) (continued)

Household Vehicles/Workers	Unweighted		Weighted	
Sandoval				
0				
0	4	100%	430	100%
	4	1%	430	1%
1				
0	52	51%	5,926	43%
1	43	43%	7,425	53%
2	6	6%	582	4%
	101	22%	13,933	30%
2				
0	69	30%	4,390	21%
1	81	36%	8,745	42%
2	76	33%	7,261	35%
3	1	0%	441	2%
	227	49%	20,837	44%
3				
0	16	19%	861	11%
1	25	30%	2,401	31%
2	33	40%	3,400	44%
3	7	8%	905	12%
4+	2	2%	215	3%
	83	18%	7,782	17%
4+				
0	14	29%	370	10%
1	12	24%	955	25%
2	18	37%	1,642	43%
3	4	8%	519	13%
4+	1	2%	374	10%
	49	11%	3,861	8%
	464	19%	46,844	14%

Table 79. Workers by Vehicles by County (Unweighted and Weighted) (continued)

Household Vehicles/Workers	Unweighted		Weighted	
Valencia				
0				
0	8	80%	778	65%
1	2	20%	414	35%
	10	3%	1,192	4%
1				
0	46	61%	3,900	52%
1	28	37%	3,295	44%
2	2	3%	290	4%
	76	22%	7,485	27%
2				
0	55	40%	2,713	28%
1	46	34%	4,002	41%
2	36	26%	3,053	31%
	137	39%	9,768	35%
3				
0	18	24%	937	16%
1	32	42%	2,030	36%
2	24	32%	2,530	44%
3	2	3%	205	4%
	76	22%	5,701	21%
4+				
0	10	20%	241	7%
1	17	34%	1,188	33%
2	19	38%	1,421	40%
3	4	8%	727	20%
	50	14%	3,575	13%
	349	14%	27,722	8%
Total	2,471	100%	337,771	100%