SOUTHEAST FLORIDA HOUSEHOLD TRAVEL SURVEY

FINAL SURVEY REPORT

NOVEMBER 2017

Miami-Dade County Transportation Planning Organization
with
Broward County Metropolitan Planning Organization
Palm Beach County Metropolitan Planning Organization
Florida Department of Transportation, Districts 4 & 6

WSP | PARSONS BRINCKERHOFF

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Miami-Dade Transportation Planning Organization
Contract Administrator

November 2017

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QUALITY MANAGEMENT

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EXECUTIVE SUMMARY

Between 2014 and 2017, the Southeast Florida region undertook an effort to design, test and implement a household travel survey. The survey covered the entire Southeast Florida Region, encompassing Broward, Miami-Dade, and Palm Beach Counties. The purpose of the survey was to collect detailed information on the travel behavior of persons in the Tri-County Region. This effort was led by the Miami-Dade Transportation Planning Organization, acting on behalf of the Broward Metropolitan Planning Organization, Palm Beach Metropolitan Planning Organization, and Florida Department of Transportation Districts Four and Six. This data collection effort consisted of three components: a household travel survey, an attitudinal survey, and a general origin-destination survey.

The Southeast Florida Household Travel Survey employed a stratified sampling method, with certain populations over-sampled to increase the likelihood that the final sample contained sufficient observations of important but infrequent households and travel behaviors, such as zero-car households and transit users. The survey was administered in two waves; the first wave was conducted in the Fall of 2016, and the second wave was conducted in the Spring of 2017. Households were identified at random using an address-based frame, and invited to participated via U.S. Postal Service mail. The recruitment and trip diary surveys were administered online, with the option of paper diaries in three languages (English, Spanish and Haitian Creole) offered to all participants. The second recruitment wave included an opt-in option, following an extensive media campaign to raise awareness of the study. In accordance with Florida State law, no incentives were offered to survey participants.

Participants were asked to record all travel undertaken during a two-day period by all household members. In addition, approximately ten percent of participating households were asked to carry personal GPS devices, which recorded their travel over the same two-day period. The survey was expanded using a multi-dimensional balancing method to account and adjust for possible sample bias with respect to key household characteristics. The survey gathered travel patterns for approximately 2,000 households in the Tri-County Region.

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1 INTRODUCTION

Between 2014 and 2017, the Southeast Florida region undertook an effort to design, test and implement a household travel survey. The survey covered the entire Southeast Florida Region, encompassing Broward, Miami-Dade, and Palm Beach Counties (hereafter referred to as the Tri-County Region). The purpose of the survey was to collect detailed information on the travel behavior of persons in the Tri-County Region. This effort was led by the Miami-Dade Transportation Planning Organization, acting on behalf of the Broward Metropolitan Planning Organization, Palm Beach Metropolitan Planning Organization, and Florida Department of Transportation Districts Four and Six. This data collection effort consisted of three components: a household travel survey, an attitudinal survey, and a general origin-destination survey. This report documents the methodology to design, implement and expand the Southeast Florida Household Travel Survey (SEFL HTS).

The objectives of this data collection effort were:

1. To gather and analyze travel activity, attitudes and preferences, and socioeconomic characteristics of persons living in the Tri-County Region to support further development of the Southeast Florida Regional Planning Model (SERPM);
2. To act as a resource for development of Five-Year Transportation Improvement Programs (TIP), Long-Range Transportation Plans (LRTP), and transportation policies of respective MPOs;
3. To develop new performance measures, and their corresponding targets, to meet Moving Ahead for Progress in the 21st Century Act (MAP-21) requirements;
4. To identify trends over time; and,
5. To the extent possible, provide data that can potentially be used for area- and corridor-level analysis.

The SEFL HTS employed a stratified sampling method, with certain populations over-sampled to increase the likelihood that the final sample contained sufficient observations of important but infrequent households and travel behaviors, such as zero-car households and transit users. The survey was administered in two waves; the first wave was conducted in the Fall of 2016, and the second wave was conducted in the Spring of 2017. Households were identified at random using an address-based frame, and invited to participated via U.S. Postal Service mail. The recruitment and trip diary surveys were administered online, with the option of paper diaries in three languages (English, Spanish and Haitian Creole) offered to all participants. The second recruitment wave included an opt-in option, following an extensive media campaign to raise awareness of the study. In accordance with Florida State law, no incentives were offered to survey participants.

Participants were asked to record all travel undertaken during a two-day period by all household members. In addition, approximately ten percent of participating households were asked to carry personal GPS devices, which recorded their travel over the same two-day period. The survey was expanded using a multi-dimensional balancing method to account and adjust for possible sample bias with respect to key household characteristics. The survey gathered travel patterns for approximately 2000 households in the Tri-County Region.

This report describes the following aspects of survey methodology and results:

- Survey design
- Sample design
- Household recruitment and trip diary completion results
- Data QA/QC checks
- Survey expansion methodology

Responsibilities of the consulting team were as follows: Abt Associates designed and administered the survey, Cambridge Systematics, Inc. designed the sampling plan and performed the data QA/QC checks, and WSP | Parsons Brinckerhoff Inc. managed the study and developed the expansion factors.

2 SURVEY DESIGN METHODOLOGY

2.1 SAMPLE FRAME

An address-based sampling (ABS) frame was used to obtain a representative sample of the population. The households selected followed a sampling plan design developed by Cambridge Systematics that was approved by the Modeling Subcommittee of the Regional Transportation Technical Advisory Committee (RTTAC-MS). The sample was drawn proportionate to county population so results would be generalizable to the entire region. The sampling plan is described in detail in Chapter 2.

2.2 RECRUITMENT OF HOUSEHOLDS

The ABS frame utilized the US Postal Service Computerized Delivery Sequence File (DSF). Once the sample was drawn, bilingual (English and Spanish) invitation letters were mailed to households via first-class mail. A sample letter is included in Appendix A. The letter asked that someone within the household access and fill the online recruitment survey, which was available in English, Spanish and Haitian Creole. The invitation letter also provided respondents with a helpline number to call if they were not able to complete the survey online. As an alternative, respondents were offered to complete the recruitment survey over the phone via CATI (Computer-Assisted Telephone Interviewing) conducted by Abt Associates interviewers.

Figure 2-1: SE Florida Survey Web Portal

For the pilot survey, follow-up postcards were sent to non-respondents (households that were identified as not having completed the recruitment survey two weeks after the initial mailing), asking the recipient to access the recruitment survey online or call the helpline for recruitment over the phone. Follow-up mailings were not implemented for the full study due to budget constraints.

The recruit survey determined the eligibility of the respondent/respondent's household. Eligible households which completed the recruitment survey were invited to complete the travel diary portion of the survey. The questions asked during recruitment are shown in Appendix A.

2.3 TRAVEL DIARY

All households that completed the recruitment survey were sent a follow-up cover letter containing the household's unique user ID and the assigned travel dates. The letter provided respondents with instructions on how to complete the travel diary. The travel diary questionnaire is shown in Appendix A. The instructions differed by retrieval mode, i.e., whether the household had chosen to complete the diary online or via CATI when they completed the recruitment survey. Web diary respondents were instructed to visit a specific website and click a specific button, and, when prompted, enter the user ID provided in the letter. CATI respondents were instructed that they would receive a phone call from one of our CATI interviewers following the end of their assigned travel period. Households in the GPS sub-sample furthermore received a separate instruction sheet with information on how to use the GPS loggers.

Respondents who had chosen to participate via the web were asked to complete the travel diary as soon as possible after the assigned travel date. For CATI households, CATI interviewers attempted to reach the household for five consecutive days starting the first day after the travel period ended to retrieve the household's travel information.

While the recruitment survey was to be completed by one member of the household, the travel diary was to be completed by each member of the household. Diary data was collected for household members between the ages of 6 and 84, both inclusive, during Phase 1. For Phase 2 there was no upper age limit. The travel diary survey collected information about each eligible household member's trips and activities over a 48-hour period (two consecutive days).

2.4 SURVEY INSTRUMENTS

Two web survey instruments were developed for this study; a recruitment survey and a diary survey. For the Pilot Study and Phase 1 of the full study, both surveys could only be accessed with a unique user ID that was sent in the invite letter. For Phase 2, however, an opt-in approach was employed to supplement the address-based sample. Potential opt-in participants were recruited using databases of transit users, transit-related community organizations and other allied organizations. In addition to the address-based sample, invitations to participate were sent out via email to email addresses on record in the afore-mentioned databases. To accommodate this recruitment approach, the survey was modified to allow households to access the recruitment survey without a user ID. Households were screened out if not in the study area or if the household had already completed the survey during Phase 1. After recruitment, unique user IDs were assigned on the back-end and were then provided to recruited households in the cover letter they received prior to their first travel date. The diary survey could still only be accessed with a unique household user ID.

An attitudinal preference (AP) survey was built into the recruitment survey instrument, but was nonetheless a stand-alone survey. The goal of the AP survey was to collect information about attitudes and preferences of regional travelers to support either independent analyses or to merge with the modeling framework. The AP survey was administered to the primary respondent. The survey consisted of 25 questions and was shown once to primary respondent after all other information for the

first travel day had been collected. The order of the questions was randomized to avoid question order bias. The questions included in the attitudinal survey are shown in Appendix A.

2.5 CATI DATA COLLECTION

The CATI retrieval of the recruitment and/or the travel diary surveys were conducted by professionally trained interviewers located in Abt's McAllen, Texas, call center. Besides general training in CATI operations, interviewers who conducted interviews for this study received training in the design of both surveys as well as the general purpose of the study.

Requests for CATI recruitment were bundled; date of request, telephone number of respondent, and any other details were logged. CATI recruitment calls were made towards the end of Phase 1 and 2 to those who had requested it.

For the diary survey retrieval, CATI calls were made continuously throughout the data collection period. Five attempts were made to reach the respondent, starting the day after the travel period ended and continuing every day until five days after the travel period ended.

2.6 DATA COLLECTED

2.6.1 RECRUITMENT SURVEY

The recruitment survey collected demographic information for the entire household, e.g., household size, household income, number of motorized vehicles, as well as school enrollment status and age and race for individual household members. In addition, contact information was collected (phone numbers and email addresses) for future reminders, and finally the respondent was asked to confirm the mailing address or to provide a corrected one.

2.6.2 ATTITUDINAL PREFERENCE SURVEY

The AT survey questions related to topics such as travel time sensitivity and impact of travel time unreliability; travel experience (safety and stress); travel costs; and, preferences for transit and non-motorized travel.

2.6.3 TRAVEL DIARY SURVEY

The diary survey collected information from each household member about his/her employment status, frequently visited places/addresses. Subsequently it collected travel activity data, including the most precise address or location of the travel destinations, the activity at each destination, the travel mode, whether respondent was a driver or passenger, how many people accompanied the respondent on a given trip, and whether a toll was paid if travel mode was a motorized vehicle.

2.6.4 ADDRESS DATA

The collection of precise address data is crucial for travel demand modeling. Both survey instruments were designed and programmed to reduce respondent burden in providing detailed address data, whether administered via web or phone. To improve the quality of addresses, both the recruitment and the diary surveys integrated Google autocomplete, a geocoding address correctional service which is part of Google Maps, to assist in spelling and give feedback immediately as respondents typed the name of a location or an address. The autocomplete feature aids participants in finding address information for shopping plazas, schools, businesses, etc. The autocomplete suggested places and addresses biased towards the county in which the household was located. This survey feature lessened the burden placed on the respondent and improved the likelihood of obtaining complete addresses, which was essential for precise and accurate geocoding of the locations visited by each respondent.

2.7 DATA QUALITY

The web surveys were programmed to allow only certain ranges for key entered item values, such as household size. If an entry was made outside of the allowable range the value was hard-prompted and the program alerted the respondent/interviewer of the entry error. The instrument would not advance on the screen until an appropriate value was entered. Other questions were soft-prompted so that when a potentially aberrant answer (e.g., origin and destination of a trip is the same location) was encountered, a prompt would ask the respondent or interviewer to confirm the answer. These logic checks performed on-the-fly helped produce high quality data more consistently.

In addition to the built-in logic checks in the web survey instruments, additional data checks were performed on the back-end during data processing. These checks included additional logic checks that were not possible or feasible to program into the survey instrument, such as verifying that the total number of household members that accompanied the respondent on a trip did not exceed the total number of people on the trip.

Quality control of the data outputs were implemented as part of the data processing, to ensure that data was consistent and logical. This includes checks to ensure that the destination of the previous trip is the origin of the current trip and that the same geocodes are used for the same location if that location appears more than once. We also checked to make sure that households in the household level file are also on the person level file and that the household size in the household level file matches the number of people in the person file. Abt Associates also checked to make sure that the number of workers in a household did not exceed the number of people 16 or older in the household.

2.8 MIXED MODE SURVEYS

As described above, the study was built as a two-stage design –recruitment and travel diary retrieval– and was administered as a sequential mixed-mode survey. While invitations to participate in the study were by mail only, it was stated in the letter that respondents could call the helpline phone number and request to be recruited over the phone via CATI. In the recruitment instrument, respondents were asked to choose whether they wanted to complete the diary online or over the phone via CATI. This allowed households that either did not want to complete the surveys online or did not have internet access, to participate on an equal footing with households that had internet access and chose to complete the surveys online. Information from CATI respondents was collected by CATI interviewers using the same web survey instruments as the respondents who completed the surveys online, so that there would be no discernible difference in the quality of data between the two retrieval modes.

2.9 REMINDERS

2.9.1 EMAIL REMINDERS

After recruitment, a total of four email reminders were sent to individual household members to keep them engaged and to remind them to prepare for their travel day as well as providing instructions on how to complete the travel diary. Reminders were sent to adult household members (18 years of age or older) for whom an email address had been provided in the recruitment survey. Respondents could opt out of receiving email reminders at any point.

The following types of email reminders were sent:

- → The first reminder was sent six days before the first assigned travel day. It confirmed that the household would be traveling and when the first travel day was. It also contained an email address, a helpline phone number, and the URL for the study website (included in all reminders to follow as well).

- The second reminder was sent two days before the first assigned travel day. It contained instructions on how to access the travel diary online for web respondents and for CATI respondents it stated that they would receive a phone call to have their travel information retrieved.
- The third reminder was sent the day after the travel period ended. It asked web respondents to access the diary online and for CATI respondents it stated that an interviewer would call them at some point that day.
- The final reminder was sent five days after the first assigned travel day. It stressed that this would be the last chance to complete the diary and asked web respondents to access the diary online and for CATI respondents it stated that an interviewer would call them at some point that day.

2.9.2 PHONE REMINDERS

In addition to the email reminders, a reminder phone call was placed the day before the travel day for households that had provided a phone number for the primary respondent (the person who completed the recruitment survey). Reminder calls were only made to the primary respondent, so each household with a phone number for the primary respondent received one phone reminder. If respondent did not answer the call, a voice mail was left (if possible), reminding the respondent of next day's travel, explaining how to access the online diary survey (web retrieval households), or mentioning that an interviewer would call the household following the travel period (CATI retrieval households).

2.10 INCENTIVES

The original survey design included monetary incentives for respondents, which were contingent on successful completion of the study. Incentives have proven to be effective in other household surveys to increase recruitment and diary completion rates. However, in this case, project sponsors were not permitted to offer incentives to survey respondents. It is estimated that the lack of incentives had a negative impact on the overall survey response rate. Recent surveys conducted with incentives show completion rates exceeding 2%[1]; the actual completion rate was approximately 0.5%. A detailed analysis of the completion rate is included in Chapter 4.

[1] A review of 13 recent household travel surveys, conducted by Abt Associates, shows that overall response rates range from 2.2 % (Delaware Valley Region Household Survey) to 29.68 % (Chicago Regional Household Travel Inventory). The response rate seems to be determined primarily by two factors, 1) recruitment method and 2) retrieval method. The three studies with the highest overall response rates (22.0%, 25.9%, and 29.7%, respectively) used phone interviewing exclusively for recruitment and retrieval (Chicago Regional Household Travel Inventory and East Tennessee Household Travel Survey) or used it predominantly (Quad Cities Household Travel Survey). Another factor contributing to the high response rates may be that the East Tennessee Household Travel Survey had no GPS component and the two other studies had only in-vehicle GPS tracking. The eight travel surveys with study designs that were most like the SEFL HTS also had the lowest response rates (2.2%-5.9%). Common to these studies (and mirroring the SEFTC pilot study) is that they used address-based samples; encouraged self-administered recruitment online; and had GPS subsamples. Of those eight studies, all but one had an online retrieval instrument. The exception, Atlanta Regional Travel Survey, only offered CATI retrieval or mail-back of paper diary. Two of the eight studies offered only online self-reported retrieval and, upon request, CATI retrieval (over-all response rates: 3.60 % and 3.75 %). This approach is identical to the approach of the SEFL HTS pilot study. Five of the eight studies offered participants the option of mailing back paper travel diaries in addition to online retrieval (self-reporting) and phone retrieval (CATI).

2.11 GPS SUBSAMPLE

A random subsample of households was invited to log their travel with GPS loggers in the recruitment survey, in addition to filling the trip diary. These households could still participate in the survey without carrying GPS loggers, in case they opted out from the GPS subsample). GPS loggers were assigned to each household member 18 years of age or older, and they were asked to keep their assigned GPS logger with them for the entire travel period. The study targeted a 10% GPS subsample. The final GPS subsample was 220 households that also completed the diary, equivalent to 11.4 % of all completed households.

The GPS device utilized was a small, portable, and passive GPS device. Pre-charged GPS devices (either new or wiped of previously recorded data) were mailed out with the cover letter to GPS households. Each GPS device was labeled with the name of the person to which it had been assigned. Enclosed with the GPS loggers was an instruction sheet that explained how to operate the devices. The GPS devices were configured to record location data at one second intervals (assuming, of course, that it was turned on and receiving satellite signals).

After the travel period, GPS devices were returned by mail to Abt Associates and GPS data was downloaded, cross-referenced to the diary data, stored and then wiped from the device.

2.12 DATA COLLECTION SCHEDULE

The data collection process included various activities, from the time that the invite letter was mailed to a household, to the last possible day in which households could report their travel. The specific schedule for the Pilot Survey and each phase of the main survey are as indicated below. Several contacts with survey participants were performed once they were recruited into the survey, and as their travel day approached. The sequence of activities, and number of days in between them, is shown in Figure 2-2.

2.12.1 PILOT

The pilot was conducted between February 15th and March 10th, 2016.

2.12.2 PHASE 1

Phase 1 of the full study began in the Fall of 2016 with recruitment starting in September 21st and first possible travel day of November 2nd. The last day of data collection was January 26th as data collection was extended for participants who requested to have travel dates reassigned.

2.12.3 PHASE 2

Phase 2 of the full study began in the Spring of 2017 with recruitment starting in March 7th and the first travel day on March 21st. The last day of data collection was May 30th, 2017.

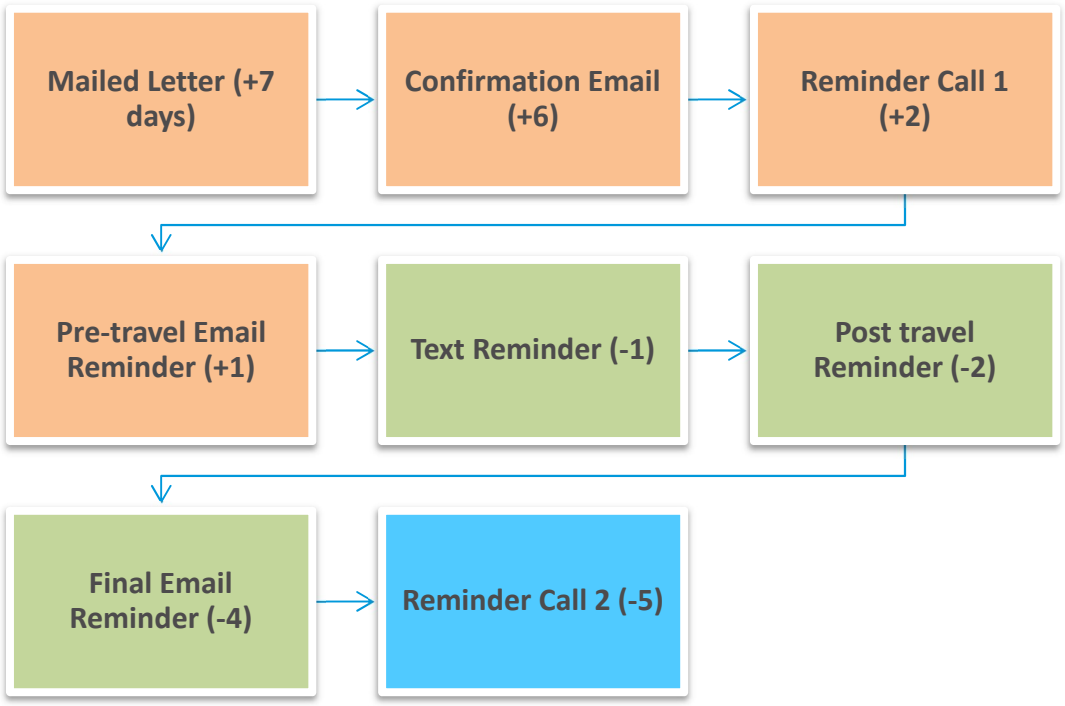

Figure 2-2: Diary Contact Protocol

3 SAMPLE DESIGN

3.1 ANALYZING REGIONAL SOCIODEMOGRAPHICS FOR THE SAMPLING PLAN

The SEFL HTS sample was designed as a stratified sample because this method is both efficient and allows for controlling the number of households along key attribute. In particular, with a stratified sample one can control for attributes that are relatively infrequent in the regional population, but important to capture in large enough numbers to support model development. Similarly, stratified sampling allows controlling for households that could be over-represented in the final sample because they tend to participate in these efforts at higher rates than the general population. The following demographic attributes were used in the sample design:

- Household size
- Number of workers in household
- Auto ownership

Demographic data to support the sample design was obtained from the American Community Survey (ACS) 2009-2013 5-year release at a census block group level.

3.1.1 HOUSEHOLD SIZE

The number of people in a household is a principal determinant of the number of trips produced by the household. Therefore, this variable is an essential part of the sampling plan. Table 3-1 shows the shares of households by size within each county in the SE Florida Region. In terms of the sample design, oversampling larger households was recommended because:

- Travel such as escort and joint travel are more prevalent in larger households than in other households; and
- Larger households typically exhibit lower response rates than small households in part due to the effort and difficulty of providing so much information for several persons, and because respondents have less free time to participate in exhaustive surveys.

Table 3-1: Household size, Tri-County-Region

Household size	Miami-Dade		Broward		Palm Beach		Tri-County Region	
	#HH	%	#HH	%	#HH	%	#HH	%
One person	214,452	26%	199,764	30%	166,350	32%	580,566	29%
Two persons	240,488	29%	208,222	31%	194,703	37%	643,413	32%
Three persons	155,632	19%	108,926	16%	70,244	13%	334,802	17%
Four persons	125,730	15%	88,973	13%	56,357	11%	271,060	13%
Five or more persons	91,729	11%	57,573	9%	38,353	7%	187,655	9%
Total households	828,031	100%	663,458	100%	526,007	100%	2,017,496	100%

Source: ACS 2013

As shown in Table 3-1, almost a quarter of households in the Tri-County Region have four or more members, though in Palm Beach County this share is less than 20%. It was also observed that in one-third of census block groups, a majority of households have at least three members.

3.1.2 NUMBER OF WORKERS

Like total household size, the number of workers in a household strongly influences the number of trips, specifically work trips and tours:

- Travel patterns of workers, including times of day and activities, are often shaped around the primary work activity, both spatially and temporally;
- The travel patterns and activity participation of other household members tend to be coordinated with the worker(s) patterns, and
- Escorting activities can be both driven by the work schedule of the adults in the household, or the drivers of certain work travel choices, depending on the degree of flexibility afforded by the place of work.

Households that have more workers than automobiles available also have complex modal choices that are very relevant from a modeling context. Therefore, oversampling such households is important to ensure that this variety of behaviors is captured in the sample. On the other hand, households without workers are more likely to have adults that stay home for all or a large part of the day, which increases the likelihood that they will respond to the survey. Given that these households contribute relatively little information from a travel perspective, they need not be sampled in large numbers. Table 3-2 shows the distribution of households by number of workers across the Tri-County Region. This table shows that:

- Over a third of households in Palm Beach County have no workers. This share is about 25% Miami-Dade and Broward Counties.
- A majority of households in all three counties have either one or two workers. Very few households have three or more workers.

Table 3-2: Number of workers per household, Tri-County Region

Household workers	Miami-Dade		Broward		Palm Beach		Tri-County Region	
	#HH	%	#HH	%	#HH	%	#HH	%
Zero workers	206,027	25%	171,728	26%	185,199	35%	562,954	28%
One workers	338,659	41%	273,214	41%	192,044	37%	803,917	40%
Two workers	221,912	27%	177,436	27%	123,746	24%	523,094	26%
Three or more workers	61,433	7%	41,080	6%	25,018	5%	127,531	6%
Total households	828,031	100%	663,458	100%	526,007	100%	2,017,496	100%

3.1.3 HOUSEHOLD VEHICLE OWNERSHIP

Increasing auto ownership generally increases mobility and provides households with an opportunity to make more trips, travel longer, and have more complex travel tours. On the other hand, using transit, which has lower level of service outside of peak hours, or sharing vehicles among multiple household drivers, limits household travel decisions outside peak service hours.

From a modeling perspective, households that do not own any vehicles and are dependent on transit and other shared services for movement must be specifically targeted since they are often underrepresented in a drawing of a random sample. Therefore, it is essential to inform the sampling plan with data about zero-car ownership, among other reasons to obtain sufficient transit tours and possibly also shared car service observations.

Households with good access to transit tend to use it in larger numbers. Therefore, the identification of transit-dependent households for sampling purposes can be informed by the location of transit stops and stations, in addition to auto ownership.

Vehicle ownership has been reliably used in transportation surveys as a proxy for income and mobility measures. An advantage to auto ownership is that people are more willing to report how many cars they own than their income.

Table 3-3 shows the number of households by their vehicle ownership across the Tri-County Region. The following observations are relevant to the sample design plan:

- The distribution of household vehicle ownership is very similar in Broward County and Palm Beach County, while Miami-Dade County has more households with zero vehicles.
- Overall, the vast majority of households (over 90%) own at least one vehicle.

Table 3-3: Household vehicle ownership, Tri-County Region

Household vehicles	Miami-Dade		Broward		Palm Beach		Tri-County Region	
	#HH	%	#HH	%	#HH	%	#HH	%
Zero cars	94,635	11%	51,388	8%	35,107	7%	181,130	9%
One car	330,905	40%	279,702	42%	231,164	44%	841,771	42%
Two cars	287,632	35%	241,814	36%	197,774	38%	727,220	36%
Three or more cars	114,859	14%	90,554	14%	61,962	12%	267,375	13%
Total households	828,031	100%	663,458	100%	526,007	100%	2,017,496	100%

3.2 SAMPLE DESIGN APPROACH

The sample design allocates the county-level targets, or total households to be sampled from within each county, to subareas within the county and to household segments. Breaking down the targets within each County is important so that the sample can be tracked at a sub-County level, to ensure representativeness of the sample.

Each county was subdivided into three zones. This number allows for enough differentiation within the region, without diluting the targets for each zone too much. These zones were not defined by contiguous boundaries; rather they were defined by the distribution of household demographics within each zone. From a sampling approach, these zones are called Area Types. This section outlines the approach to identify these Area Types.

3.2.1 DATA ASSEMBLY

The three Area Types were identified using the ACS data at a block group level. The following variables were gathered for the creation of the Area Types:

- Key demographic data such as household size, household vehicles, household income, and ethnicity (at an individual level) were downloaded for the census block groups;
- Other demographic data such as household workers, cross-tabulation of workers and vehicles, and ACS journey-to-work (JTW) mode shares (at place of residence) were downloaded at a census tract level since these data are not available at a census block group level[2].
- Transit stop data were also downloaded and assigned to the appropriate block group. Stop density was calculated within each block group to account for differences in the size of the block groups.

3.2.2 PERCENTAGE SHARE CALCULATIONS

The percentage incidence for several key variables was calculated at block group level. The variables for which these percentage incidences were calculated include:

- Zero-auto households
- Auto-deficient[3] households, calculated two ways – one that includes zero-auto households and another that does not include zero-auto households
- Large households, which are households with at least three members
- Hispanic population;
- Low income and high income households
- Transit and non-motorized mode for work journeys

3.2.3 CREATING PERCENTILE SCORES

Each block group was then ranked based on a percentile score for each of the variables described above using the following criteria:

- Block groups that belonged to the 0-25th percentile were given a score of 1
- Block groups that belonged to the 26th-50th percentile were given a score of 2
- Block groups that belonged to the 51th-75th percentile were given a score of 3
- Block groups that belonged to the 76th-100th percentile were given a score of 4

The percentile scores were calculated separately for each county to reflect county-specific demographics and usage patterns in the sampling plan.

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[2] Variables downloaded at the tract level were disaggregated to the individual block groups by assuming similar distribution holds true for each block group within the tract.

[3] A household is auto deficient if the household owns fewer vehicles than there are workers in the household.

As an example, the percentile scores for the Transit and Non-Motorized Shares using the ACS JTW data are presented below. As the Table indicates, the percentage shares for Transit Usage at each of the percentile break-points vary between the three counties. Therefore, calculating the percentile scores for all counties jointly could result in erroneous assignment of Area Types to block groups.

Table 3-4: Percentile Scores for the ACS JTW Transit and Non-Motorized Share[4]

Percentile	Miami-Dade	Broward	Palm Beach
25th	2.58%	1.26%	0.79%
50th	5.60%	3.87%	2.37%
75th	11.69%	7.81%	5.78%
100th	72.28%	50.00%	40.09%

3.2.4 DEFINING AREA TYPES

Area Types were then developed using a combination of the percentile scores across different variables. As discussed above, the Area Types were driven by the demographics and transit demand/supply variables and as such may not be contiguous. The design of the Area Types was driven by two key considerations:

- Select Area Types in a way that hard-to-reach populations may be easily identified; and
- Each Area Type must exhibit a certain degree of **homogeneity** among the dimensions of greatest interest.

As part of the selection process, several area types were tested and analyzed. A full list is included below:

- High Transit Demand Area Type which includes all block groups where the Transit ACS JTW percentile score was 4.
- Good Transit Supply Area Type which includes all block groups where the Transit Stop Density percentile score was 4[5].
- High Transit Demand and High Transit Supply Area Type which includes all block groups where both the Transit ACS JTW percentile score & the Transit Stop Density percentile score were 4.
- High Transit Dependent Area Type which includes all block groups where the Zero-Auto percentile score was 4.

[4] No percentage shares were developed for the transit stop density; rather the stop density numbers were used to calculate the percentile scores.
[5] This also includes downtown areas where several transit routes converge.

- High Auto Deficit Household Area Type which includes all block groups where the Auto Deficit percentile score was 4.
- High Hispanic Area Type which includes all block groups where the Hispanic percentile score was 4.
- Large Household Area Type which includes all block groups where the Large Household (3 or more members) percentile score was 4.
- High Income Area Type which includes all block groups where the High Income ($100,000 or more) percentile score was 4.
- Large Hispanic Household Area Type which includes all block groups where the Large Household percentile score and the Hispanic percentile score were both 4.

As can be expected, several block groups were included in the highest percentile score for several different variables. So, in developing the Area Type variables, a series of hierarchical rules were established to ensure that the most hard-to-reach populations or populations that are most relevant from a modeling standpoint are identified first:

- All block groups that have High Transit Scores (either Transit Demand or Transit Supply or both) are identified first. This is because in a general household survey, transit populations are often under-represented. Since the regional model is a tour and activity-based model, it is also not possible to supplement the household survey data with a transit on-board survey data to estimate the tour-level models.
- Next, block groups that have high 0-Auto/Auto-Deficit Score are identified[6]. This is because households with automobile deficiencies tend to have a constrained choice set when it comes to modal decisions.
- Next, block groups that have high Hispanic Score are identified since Hispanic households tend to have lower response rates in household travel surveys.
- Next, block groups with a high Large Household Score are identified.
- Finally, block groups with a high High Income Score are identified.
- All remaining block groups are treated as “Rest”.

3.2.5 SELECTING AREA TYPES

Several different combinations of Area Types were examined to identify the ones would work best in capturing the regional demographics of greatest interest during the survey. The following Area Types were selected for the SEFL HTS sample design:

[6] If two block groups have both High Transit and High Auto-Deficit score, then they are put in the high Transit Score Area Type bin.

- *High Transit Demand and Good Transit Supply* and *High Auto Deficit Household* Area Type which includes all block groups where both the Transit ACS JTW percentile score & the Transit Stop Density percentile score were 4, or where the High Auto Deficit percentile score was 4
- *Large Household* Area Type which includes all block groups where the Large Household percentile score was 4; and
- *Everything Else* Area Type, which includes all other block groups.

3.2.6 DESCRIBING THE AREA TYPES

Table 3-5 describes the number of block groups in each of the Area Types for each county while Table 3-6 shows the number of households in each Area Type.

Table 3-5: Number of block groups in each Area Type

Area type	Miami-Dade	Broward	Palm Beach	Tri-County Region
High transit or Auto deficit	440	283	246	969
Large household	348	192	158	698
Everything else	806	465	482	1,753
All block groups	1,594	940	886	3,420

Table 3-6: Total households in each Area Type

Area type	Miami-Dade	Broward	Palm Beach	Tri-County Region
High transit or Auto deficit	230,179	183,657	130,011	543,847
Large household	185,026	139,892	96,746	421,664
Everything else	412,826	339,909	299,250	1,051,985
All households	828,031	663,458	526,007	2,017,496

Figure 3-1 to Figure 3-4 show the extent of each of these Area Types in Miami-Dade, Broward, and Palm Beach Counties, and in the entire Tri-County Region, respectively.

The distribution of households by Area Type and County are presented in the following Tables below.

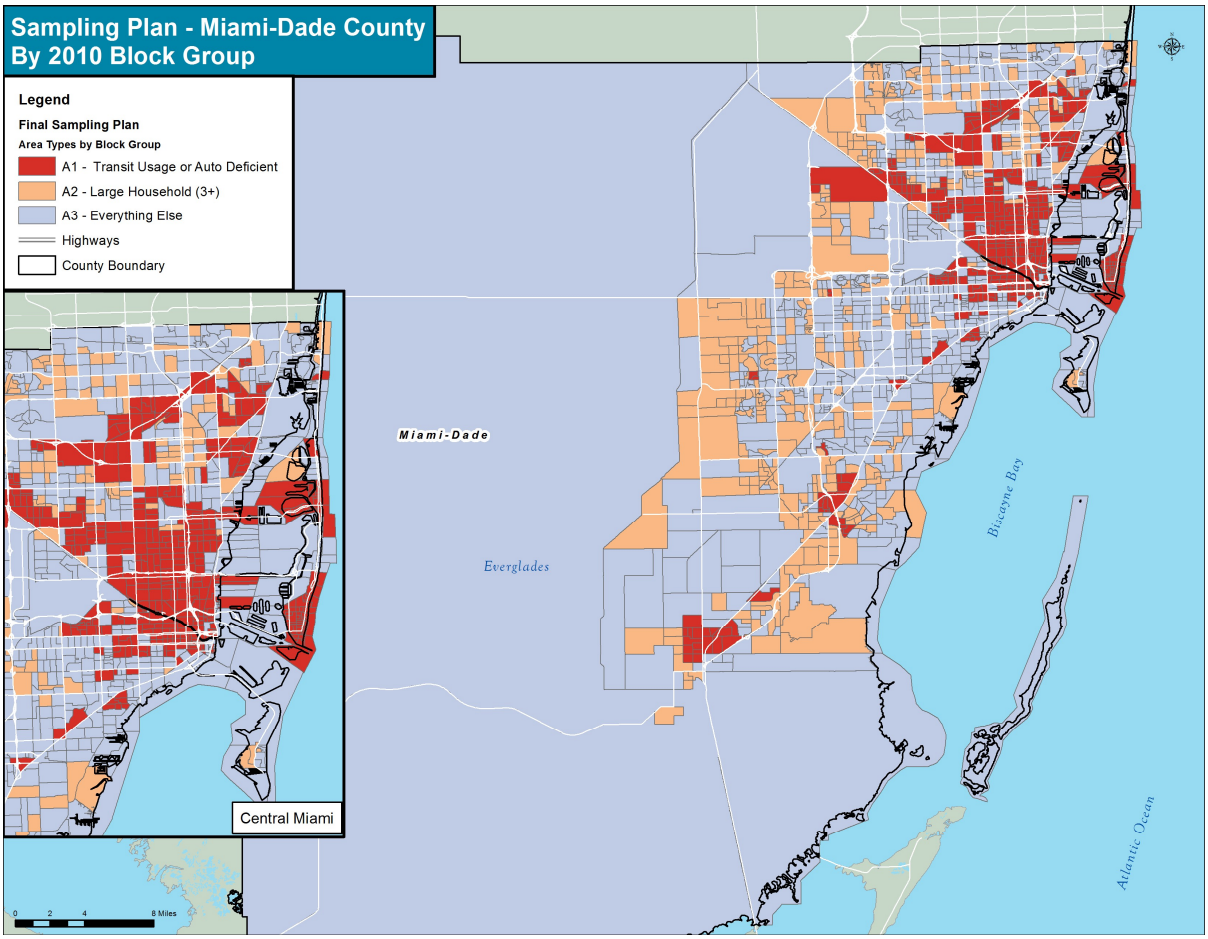


Figure 3-1: Area Type Definitions in Miami-Dade County

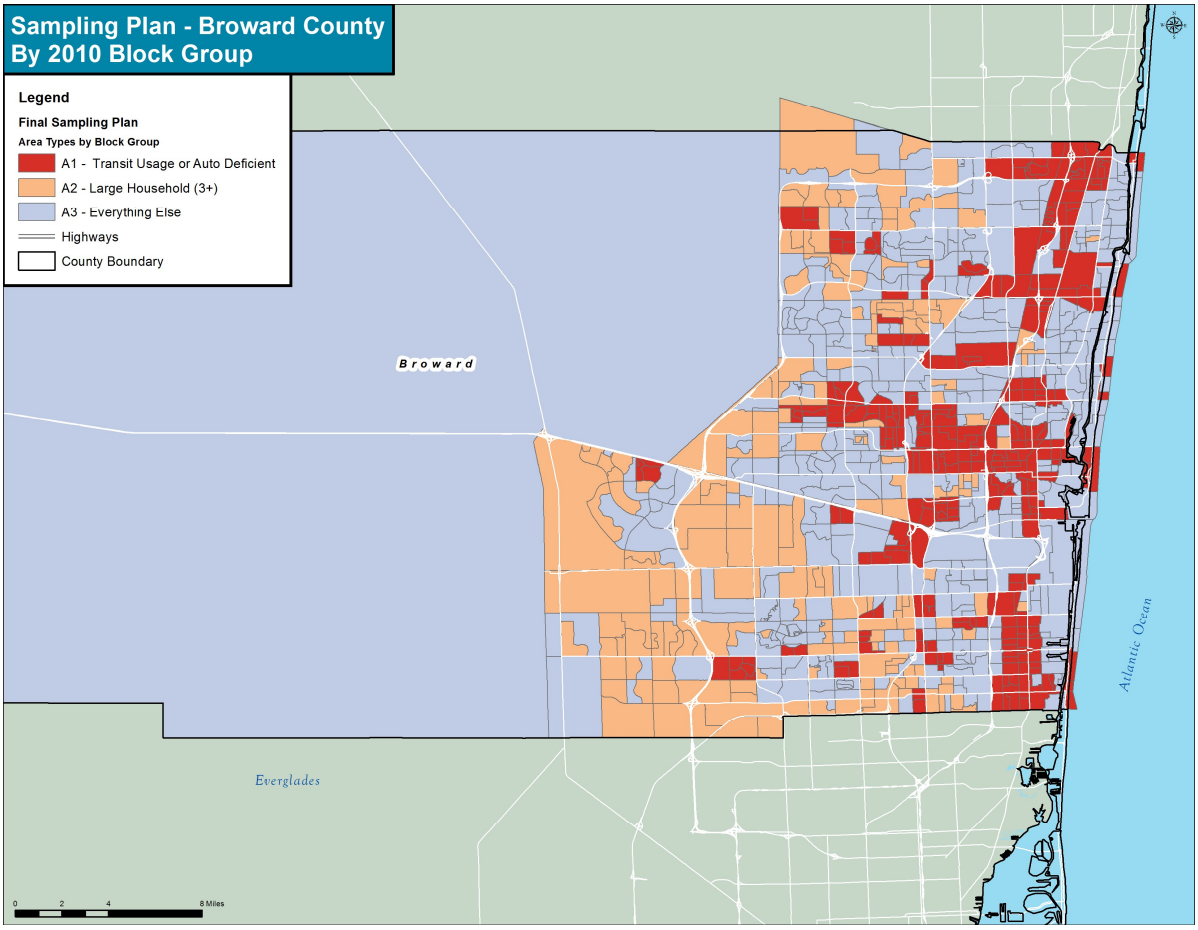


Figure 3-2: Area Type Definitions in Broward County

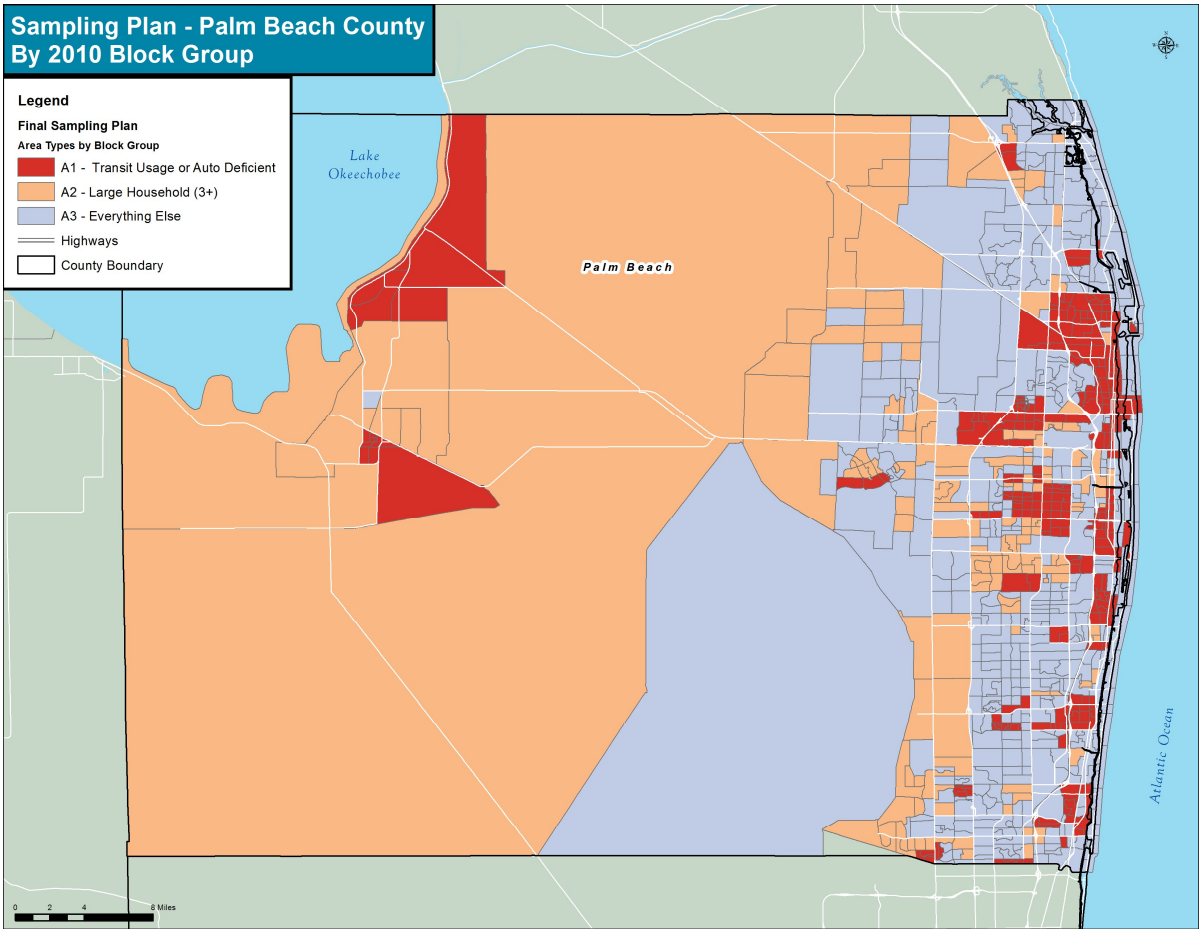


Figure 3-3: Area Type Definitions in Palm Beach County

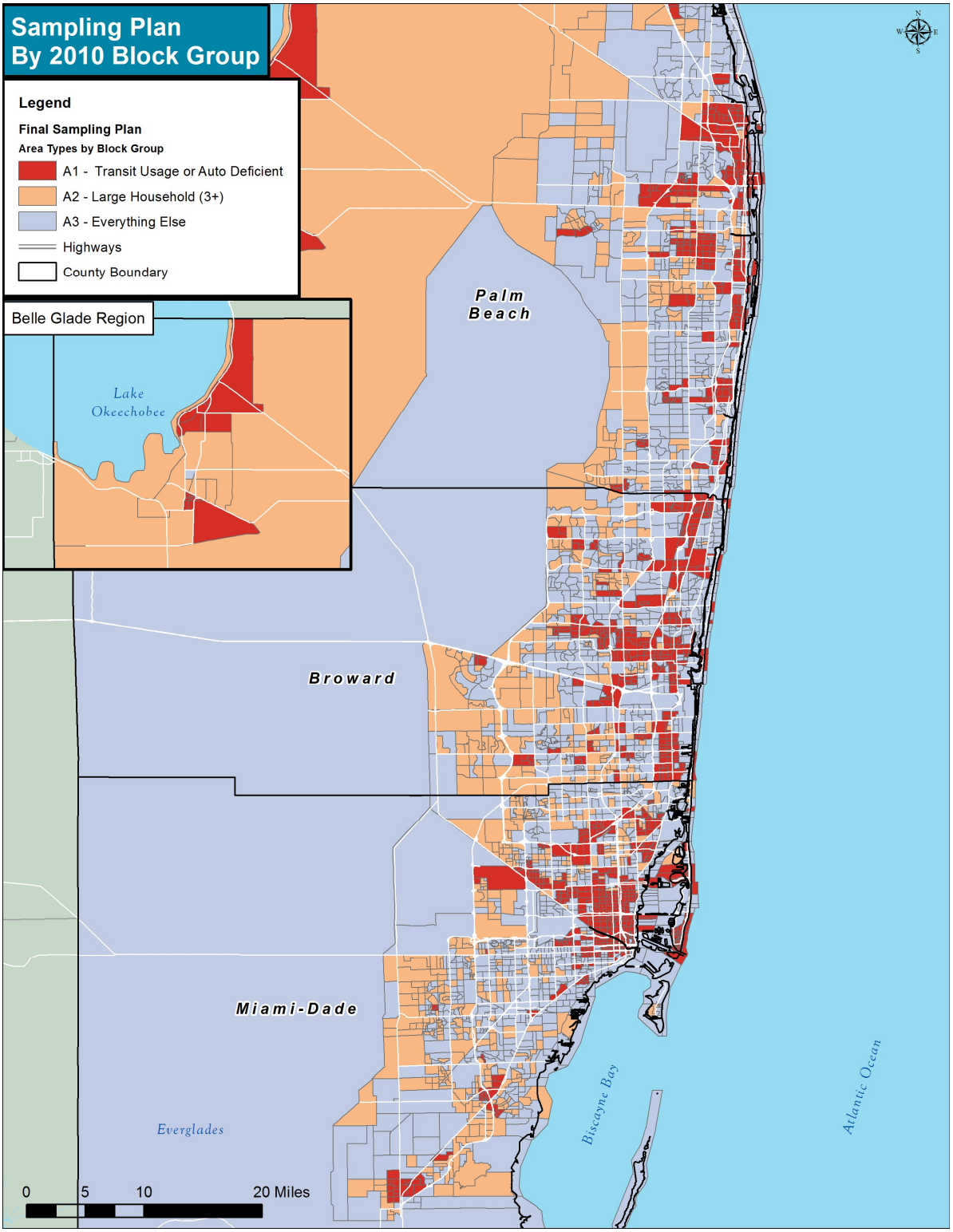


Figure 3-4: Area Type Definitions in the Tri-County Region

Table 3-7: Distribution of households by Area Type, Miami-Dade County

Household attribute	High Transit or Auto Deficient	Large Household	Other	All Area Types
Household size				
One person	81,744	19,878	112,830	214,452
Two person	63,575	38,833	138,080	240,488
Three person	38,242	46,609	70,781	155,632
Four or more persons	46,618	79,706	91,135	217,459
Household vehicles				
Zero cars	58,250	6,786	29,599	94,635
One car	106,331	50,756	173,818	330,905
Two cars	51,355	81,330	154,947	287,632
Three or more cars	14,243	46,154	54,462	114,859
Household income				
$0 - $24,999	108,756	35,587	107,287	251,630
$25,000 - $49,999	62,532	45,053	103,759	211,344
$50,000 - $74,999	28,936	35,434	71,929	136,299
$75,000 - $99,999	13,020	26,771	43,438	83,229
$100,000 or more	16,935	42,181	86,413	145,529
Household workers				
Zero workers	77,095	31,323	97,609	206,027
One workers	93,923	70,779	173,957	338,659
Two workers	46,231	62,439	113,242	221,912
Three or more workers	12,930	20,485	28,017	61,433
All households	230,179	185,026	412,826	828,031

Table 3-8: Distribution of households by Area Type, Broward County

Household attribute	High Transit or Auto Deficient	Large Household	Other	All Area Types
Household size				
One person	69,106	16,202	114,456	199,764
Two person	55,818	33,595	118,809	208,222
Three person	25,079	32,672	51,175	108,926
Four or more persons	33,654	57,423	55,469	146,546
Household vehicles				
Zero cars	28,035	3,588	19,765	51,388
One car	92,605	33,353	153,744	279,702
Two cars	48,346	67,378	126,090	241,814
Three or more cars	14,671	35,573	40,310	90,554
Household income				
$0 - $24,999	66,794	16,202	73,998	156,994
$25,000 - $49,999	54,940	26,680	85,540	167,160
$50,000 - $74,999	29,019	26,761	62,730	118,510
$75,000 - $99,999	14,291	19,551	43,000	76,842
$100,000 or more	18,613	50,698	74,641	143,952
Household workers				
Zero workers	62,664	19,237	89,827	171,728
One workers	75,264	55,319	142,631	273,214
Two workers	36,584	51,507	89,345	177,436
Three or more workers	9,145	13,829	18,106	41,080
All households	183,657	139,892	339,909	663,458

Table 3-9: Distribution of households by Area Type, Palm Beach County

Household attribute	High Transit or Auto Deficient	Large Household	Other	All Area Types
Household size				
One person	48,665	13,247	104,438	166,350
Two person	39,646	26,841	128,216	194,703
Three person	17,193	20,862	32,189	70,244
Four or more persons	24,507	35,796	34,407	94,710
Household vehicles				
Zero cars	20,251	2,299	12,557	35,107
One car	64,949	25,411	140,804	231,164
Two cars	33,984	47,107	116,683	197,774
Three or more cars	10,827	21,929	29,206	61,962
Household income				
$0 - $24,999	48,484	13,369	58,240	120,093
$25,000 - $49,999	38,715	20,115	72,776	131,606
$50,000 - $74,999	20,176	18,698	54,256	93,130
$75,000 - $99,999	9,571	13,436	35,996	59,003
$100,000 or more	13,065	31,128	77,982	122,175
Household workers				
Zero workers	49,561	17,919	117,718	185,199
One workers	48,725	37,087	106,232	192,044
Two workers	25,322	33,937	64,487	123,746
Three or more workers	6,403	7,803	10,812	25,018
All households	130,011	96,746	299,250	526,007

3.3 SAMPLING TARGETS BY AREA TYPE

The previous sub-section outlines the socio-demographics in each of the three Area Types. In this section, the specific sampling targets for each Area Type and county combination are discussed along with a description of survey targets. The motivation behind the development of the sampling targets is as follows:

- Ensure that there about 40 households in each sampling target cell[7]. Collapse cells, where necessary, if there are fewer than 40 households in the cell.
- Oversample the Area Types that contain a high share of hard-to-reach populations.
- Household income was monitored during the data collection phase, but not used to develop "hard" sampling targets. This is because typically a large proportion of households do not provide this information owing to privacy concerns.

Overall, the sampling targets for each of the three counties in the sampling plan are as follows:

- Miami-Dade County – 2350 households, or 0.28% sampling rate
- Broward County – 1,500 households or 0.23% sampling rate
- Palm Beach County – 1,110 households or 0.22% sampling rate

3.3.1 MIAMI DADE COUNTY SAMPLING PLAN

The household sampling targets for Miami-Dade County are shown in Table 3-10. Key points of interest include:

- The sampling rate for the High Transit Usage or Auto Deficit Household Area Type (0.36%) is higher than the overall sampling rate for the region (0.28%). This is done specifically to target more households from the areas of greatest interest from a modeling perspective.
- In total, 829 households are targeted from the High Transit Usage or Auto Deficient Area Type, 592 households are targeted from the Large Household Area Type, and 929 households from all remaining block groups.
- Cells pertaining to households with no vehicles were combined for the Large Household and Other Area Types. No other cells needed to be combined since the sample sizes were sufficient to meet the minimum criteria.

[7] In other studies, having 40-50 households in a sampling cell has proven sufficient to support model estimation.

Table 3-10: Sampling targets by Area Type, Miami-Dade County

Household attribute	High Transit or Auto Deficient	Large Household	Other	All Area Types
Sampling rate	0.36%	0.32%	0.23%	0.28%
Household size				
One person	294	64	254	612
Two person	229	124	311	664
Three person	138	149	159	446
Four or more persons	168	255	205	628
Household vehicles				
Zero cars	210	89		298
One car	383	162	391	936
Two cars	185	260	349	794
Three or more cars	51	148	123	322
Household income				
$0 - $24,999	392	114	242	747
$25,000 - $49,999	225	144	234	603
$50,000 - $74,999	104	113	162	379
$75,000 - $99,999	47	86	98	230
$100,000 or more	61	135	195	390
Household workers				
Zero workers	278	100	220	597
One workers	338	226	392	956
Two workers	166	200	255	621
Three or more workers	47	66	63	175
All households	829	592	929	2,350

3.3.2 BROWARD COUNTY SAMPLING PLAN

The household sampling targets for Broward County are shown in Table 3-11. The following points are of greatest relevance:

- The sampling rate for the High Transit Usage or Auto Deficit Household Area Type and the Large Household Area Type (0.30%) is higher than the overall sampling rate for the region (0.23%), to increase the likelihood of recruiting households with these characteristics.
- In total, 551 households are targeted from the High Transit Usage or Auto Deficit Household Area Type, 420 households are targeted from the Large Household Area Type, and 529 households from all remaining block groups.
- Cells pertaining to zero-vehicle households were combined across the Large Household and Other Area Types. No other cells were combined.

Table 3-11: Sampling targets by Area Type, Broward County

Household attribute	High Transit or Auto Deficient	Large Household	Other	All Area Types
Sampling rate	0.30%	0.30%	0.16%	0.23%
Household size				
One person	207	49	178	434
Two person	167	101	185	453
Three person	75	98	80	253
Four or more persons	101	172	86	360
Household vehicles				
Zero cars	84	42		126
One car	278	100	239	617
Two cars	145	202	196	544
Three or more cars	44	107	63	214
Household income				
$0 - $24,999	200	49	115	364
$25,000 - $49,999	165	80	133	378
$50,000 - $74,999	87	80	98	265
$75,000 - $99,999	43	59	67	168
$100,000 or more	56	152	116	324
Household workers				
Zero workers	188	58	140	386
One workers	226	166	222	614
Two workers	110	155	139	403
Three or more workers	27	41	28	97
All households	551	420	529	1,500

3.3.3 PALM BEACH COUNTY SAMPLING PLAN

The household sampling targets for Palm Beach County are shown in Table 3-12. The following points are of greatest relevance:

- The sampling rata for the High Transit Usage or Auto Deficit Household Area Type and the Large Household Area Type are much higher (0.28%) than the overall sampling rate for the region (0.22%). This is done specifically to target more households from the areas of greatest interest from a modeling perspective.
- A special West district was created to ensure some samples from the rural region of the county. Because of its low population, the West district was not segmented by Area Type. The sample rate for this area is 0.37% to meet the minimum target of 40 households.
- In total (including the West region), 375 households are targeted from the High Transit Usage or Auto Deficit Household Area Type, 264 households are targeted from the Large Household Area Type, and 511 households from all remaining block groups.
- Cells pertaining to zero-vehicle households were combined across all Area Types since the targets fall below the minimum threshold.
- For High Transit Usage or Auto Deficit Household Area Type, cells for the two highest income categories were combined to create a target of 61 households from households with over $75,000 annual income.
- For each of the Area Types, cells for households with two or three or more workers were combined to create a two or more category. This was also done to meet minimum sample size thresholds.

Table 3-12: Sampling targets by Area Type, Palm Beach County

Household attribute	High Transit or Auto Deficient	Large Household	Other	All Area Types
Sampling rate, urban area	0.28%	0.28%	0.17%	0.22%
Sampling rate, West district		0.37%		
Household size				
One person	130	106	178	361
Two person	106	124	219	377
Three person	45	55	55	155
Four or more persons	63	95	59	216
Household vehicles				
Zero cars		72		72
One car	173	66	240	480
Two cars	118	125	199	383
Three or more cars		59	50	169

Household attribute	High Transit or Auto Deficient	Large Household	Other	All Area Types
Household income				
$0 - $24,999	126	86	99	268
$25,000 - $49,999	103	144	124	270
$50,000 - $74,999	54	50	93	196
$75,000 - $99,999	61	120	61	152
$100,000 or more	61	135	133	224
Household workers				
Zero workers	131	47	201	379
One workers	128	98	181	407
Two workers	84	111	209	202
Three or more workers	47	66	63	202
All households	343	256	511	1,110

3.4 AGGREGATE SAMPLING TARGETS BY COUNTY-GEOGRAPHY

In addition to developing targets at the non-contiguous Area Type level, aggregate targets were also developed at a district level for each of the three counties. The primary motivation for this approach was to ensure that the surveys collected as part of this study are well distributed throughout the region. The following steps were implemented as part of this process:

- Each MPO developed a set of traffic analysis districts (TAD) for their county. Miami-Dade County has 42 TADs, Broward County has 31 TADs, and Palm Beach County has 29 TADs.
- Block groups in each county were mapped to the TADs. The total population and households for each TAD were calculated using the underlying block group data from the Census.
- Each TAD was assigned the dominant/majority Area Type (which were calculated at the block group level). Several TADs that have a heterogeneous mix of Area Types from their underlying block groups, but only one unique Area Type was chosen.
- The sampling rate calculated in the previous section was assigned to the TADs based on the Area Type that they belonged to and sampling targets at an aggregate level were developed at a TAD level.
- Since there are many TADs, county TADs were combined into three groups (North, Central and South) to monitor the sample. The TADs and TAD groups are shown in Figure 3-5 to Figure 3-7. Palm Beach County had an additional West region, as described above.
- At the aggregate TAD level, only survey completions were monitored at a household-level. No targets were assigned or monitored for detailed socio-demographics at this level. All the socio-demographic targeting was carried out at the Area Type level. These aggregate targets are presented in Table 3-13 – Table 3-15.

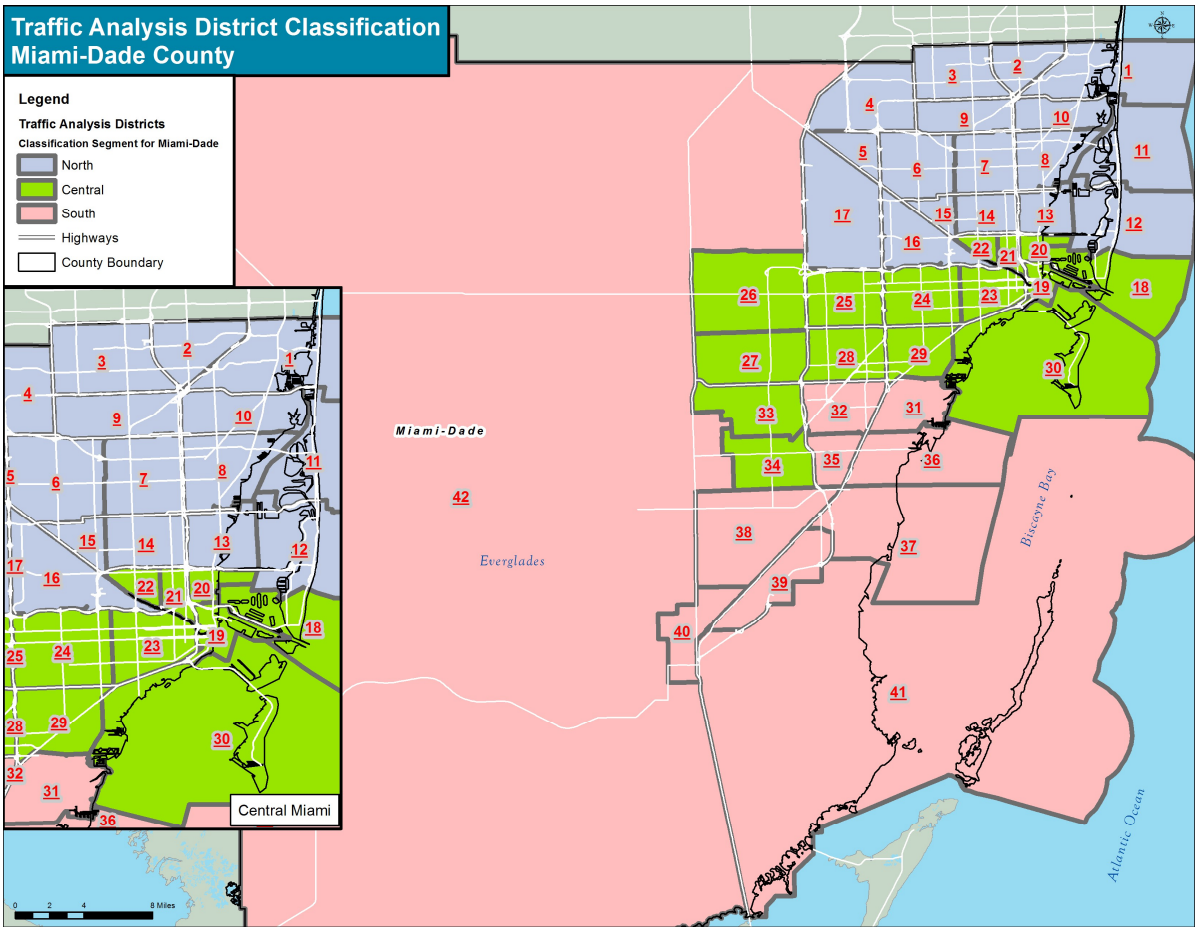


Figure 3-5: Traffic analysis districts in Miami-Dade County

Table 3-13: Traffic analysis district group sampling targets, Miami-Dade County

District	High Transit or Auto Deficient	Large Household	Other	All Area Types
North	425	188	390	1,003
Central	364	293	355	1,012
South	40	111	184	335
Total	829	592	929	2,350

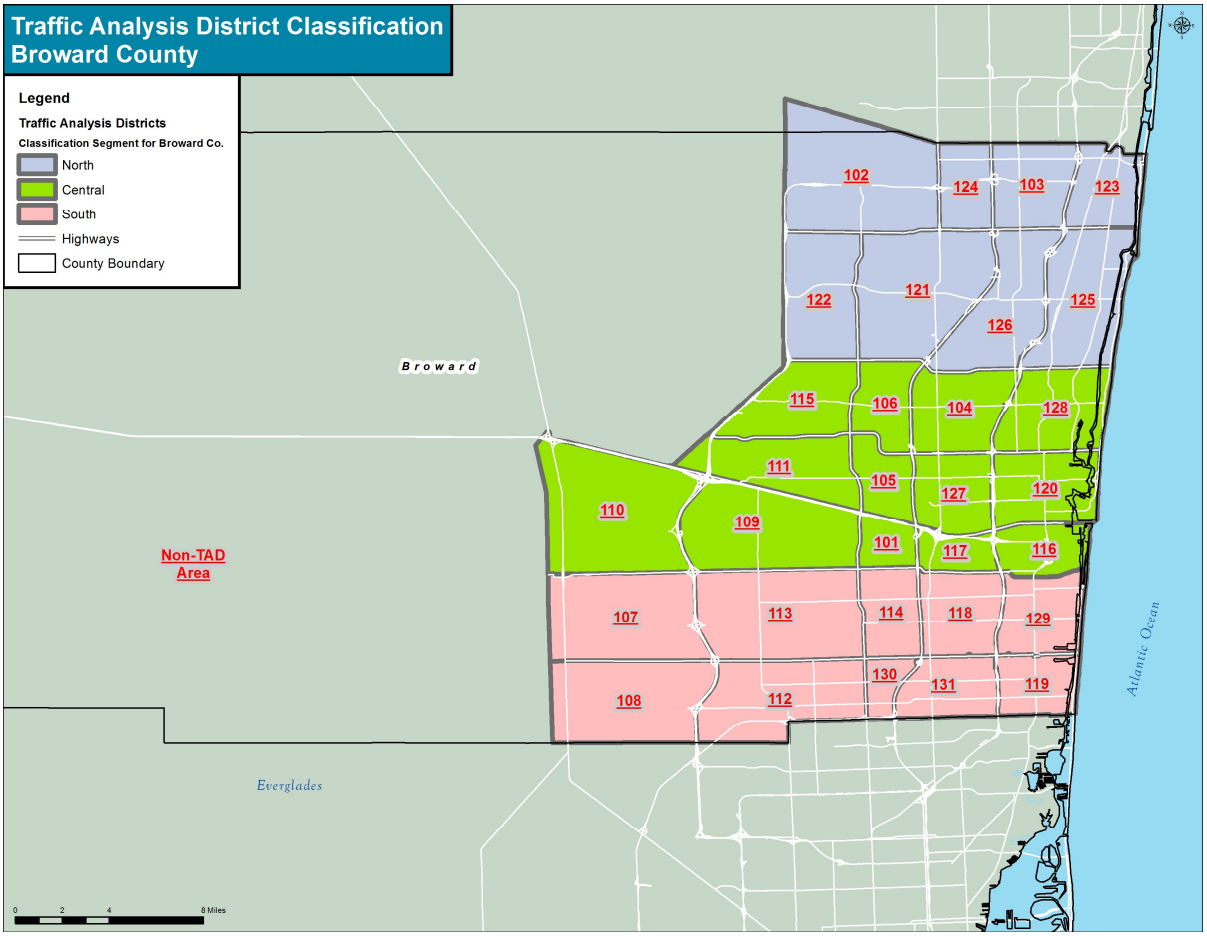


Figure 3-6: Traffic analysis districts in Broward County

Table 3-14: Traffic analysis district group sampling targets, Broward County

District	High Transit or Auto Deficient	Large Household	Other	All Area Types
North	116	74	294	484
Central	334	119	79	532
South	101	227	156	484
Total	551	420	529	1,500

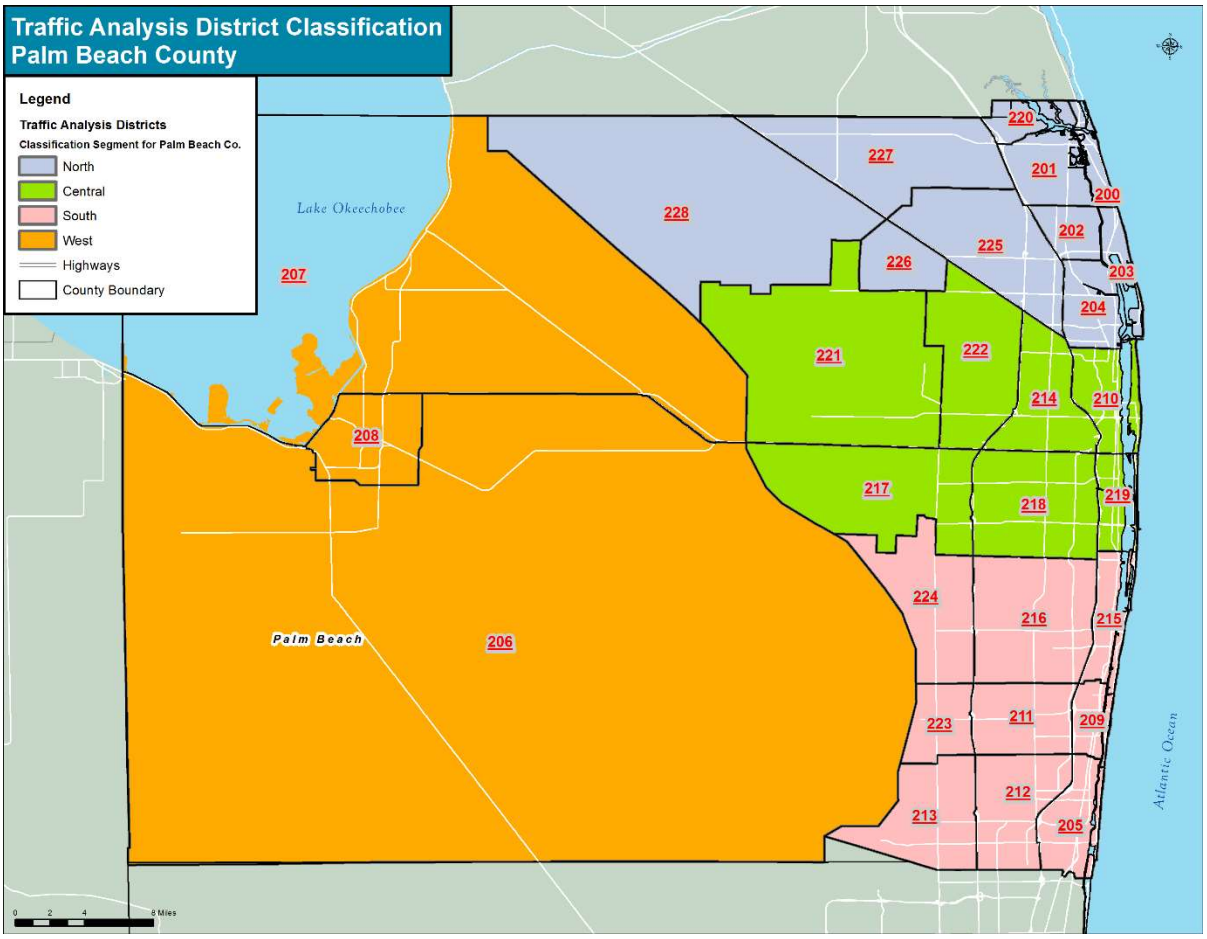


Figure 3-7: Traffic analysis districts in Palm Beach County

Table 3-15: Traffic analysis district group sampling targets, Palm Beach County

District	High Transit or Auto Deficient	Large Household	Other	All Area Types
North	64	28	89	181
Central	216	228	104	548
South	63	0	317	381
West				40
Total	375	264	511	1,150

4 SURVEY COMPLETION RESULTS

4.1 HOUSEHOLD RECRUITMENT

4.1.1 PILOT SURVEY

Invite letters were mailed to 4,500 addresses; a total of 70 households successfully completed the recruitment survey for a recruitment rate of 1.55%.

Table 4-1: Overview of Pilot Study Results

MEASURE	ACTUAL	TARGET
Number of Sampled Addresses	4,500	4,500
Valid Addresses	4,490	4,000
Number of Recruitment Mailings	2	2
Total Pieces of Mail Sent	9,000	9,000
Recruited Households*	70	160
Completed Household Travel Diaries (2 days)	24	80
Recruitment Rate	1.55%	4.0%
Travel Diary Completion Rate	34.3%	50.0%
Overall Completion Rate	0.53%	2.0%

4.1.2 PHASE 1 SURVEY

For Phase 1, a total of 210,100 households were invited to participate in the recruitment survey. Three batches of invite letters were mailed in the Fall with approximately 63,000 letters going out in each batch with two weeks between the mailings. The first batch was mailed mid-September and the third batch was mailed mid-October. Most of the recruited households signed onto the study the week following each mail drop, but sign on continued throughout December albeit at a diminishing rate.

A total of 3,637 households completed the recruitment survey and were found eligible to participate in the diary portion. This gives a recruitment rate of 1.73% for Phase 1.

4.1.3 PHASE 2 SURVEY

For Phase 2, a total of 207,100 households were invited to participate in the recruitment survey. Three batches of invite letters were mailed out with approximately 63,000 letters going out in each batch with two weeks between the mailings. The first batch was mailed end of February and the third batch was mailed by the end of March.

In addition, several email blasts were administered by participating partner agencies and transportation stakeholder organizations. An opt-in option was offered via this campaign; emails inviting recipients to complete the recruitment survey were sent to approximately 10,000 email addresses. In addition, an advertisement campaign accompanied Phase 2 to further promote the survey throughout the region. This campaign included radio spots, billboard advertisements, printed newspaper advertisements, and banner advertisements on social, news and radio media webpages.

Recruitment was, again, clustered around the physical letter mailings but continued through May, again at a diminishing rate. A total of 4,016 households were successfully recruited and eligible, resulting in a recruitment rate of 1.93% for Phase 2.

The overall recruitment rate for both phases was 1.83%.

4.2 DIARY COMPLETION RESULTS

4.2.1 DEFINITION OF COMPLETE HOUSEHOLDS

A complete household is defined as a household in which all eligible household members complete the travel diary. For Phase 1, household members between the ages of six (6) and 84, both inclusive, were eligible. For Phase 2, all household members six years of age or older were eligible; that is, the upper age limit was removed.

4.2.2 PILOT

Out of 70 households recruited for the Pilot Study, 24 households completed the diary for a diary completion rate of 34.3%. With 24 completed diary surveys (out of 4,500 households), the overall completion rate for the Pilot Study was 0.53%.

4.2.3 PHASE 1 SURVEY

Phase 1 started November 2, 2016 and ended mid-December 2016 with a few households traveling in January 2017 due to having their travel dates reassigned as requested. Out of the 3,637 households recruited in Phase 1,817 completed the diary survey. This results in a diary response rate of 22.5% for Phase 1, and an overall completion rate of 0.39%. As shown in Table 4-2, approximately half of recruited households started the travel diaries, and only about half of the household that started the diaries completed them. Completion rates by county varied from approximately 20% in Miami-Dade to 26% in Palm Beach (Table 4-3). The completion rate decreases rapidly with increasing household size, as shown in Table 4-4, decreases as well with increasing number of household vehicles (Table 4-5), but appears to be invariant with respect to household income (Table 4-6).

Table 4-2: Overview of Phase 1 completion results

MEASURE	ACTUAL
Number of Sampled Addresses	210,100
Recruited Households	3,637
Recruited Households that started the travel diary	48.8%
Households that completed the travel diary	817
Travel Diary Completion Rate	22.5%
Overall Completion Rate	0.39%

Table 4-3: Phase 1 completion rates by residence county

COUNTY	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
Miami-Dade	313	1557	20.1 %
Broward	289	1261	22.9 %
Palm Beach	215	819	26.3 %

Table 4-4: Phase 1 completion rates by household size

HOUSEHOLD SIZE	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
1	316	779	40.6 %
2	337	1487	22.7 %
3	91	611	14.9 %
4	46	492	9.3 %
5	19	183	10.4 %
6	5	55	9.1 %
7	2	20	10.0 %
8	1	5	20.0 %

Table 4-5: Phase 1 completion rates by household vehicles

HOUSEHOLD VEHICLES	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
0	43	150	28.7 %
1	353	1083	32.6 %
2	297	1545	19.2 %
3	93	575	16.2 %
4	27	209	12.9 %
5	3	49	6.1 %
7	1	11	9.1 %

Table 4-6: Phase 1 completion rates by household income

HOUSEHOLD INCOME	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
Less than $10,000	19	78	24.4 %
$10,000 to $14,999	17	84	20.2 %
$15,000 to $24,999	38	154	24.7 %
$25,000 to $34,999	36	190	26.3 %
$35,000 to $49,999	73	256	22.3 %
$50,000 to $74,999	119	452	22.3 %
$75,000 to $99,999	79	357	23.5 %
$100,000 to $149,999	97	416	20.7 %
$150,000 to $199,999	28	159	19.5 %
$200,000 or more	46	176	20.5 %
Prefer not to say	264	1307	20.2 %
Blank	1	7	14.3%

4.2.4 PHASE 2 SURVEY

Phase 2 diary data collection started in March, 2017 and continued throughout May 1st. Out of the 4,016 recruited households, 1,111 completed the diary survey for a 27.7% diary completion rate, and an overall completion rate of 0.54%. As shown in Table 4-7, somewhat more than half of recruited households started the travel diaries, and only about half of the household that started the diaries completed them. Completion rates by county varied from approximately 26% in Miami-Dade to 30% in Palm Beach (Table 4-8). As observed in Phase 1, the completion rate decreases rapidly with increasing household size, as shown in Table 4-9, decreases as well with increasing number of household vehicles (Table 4-10), but appears to be invariant with respect to household income (Table 4-11).

Table 4-7: Overview of Phase 2 completion results

MEASURE	ACTUAL
Number of Sampled Addresses	207,100
Recruited Households	4,016
Recruited Households that started the travel diary	54.6%
Households that completed the travel diary	1,111
Travel Diary Completion Rate	27.7%
Overall Completion Rate	0.54%

Table 4-8: Phase 2 completion rates by residence county[8]

COUNTY	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
Miami-Dade	405	1579	25.6 %
Broward	424	1462	29.0 %
Palm Beach	276	926	29.8 %

Table 4-9: Phase 2 completion rates by household size

HOUSEHOLD SIZE	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
1	345	844	40.9 %
2	476	1691	28.1 %
3	140	687	20.4 %
4	96	526	18.3 %
5	39	193	20.2 %
6	9	54	16.7 %
7	2	16	12.5 %
8	2	3	66.7 %
9	2	3	66.7%

Table 4-10: Phase 2 completion rates by household vehicles

HOUSEHOLD VEHICLES	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
0	52	173	30.1 %
1	422	1195	35.3 %
2	462	1771	26.1 %
3	116	585	19.8 %
4	42	205	20.5 %
5	13	68	19.1 %
7	2	10	20.0 %
8	2	4	50.0%

[8] Six of the 1,111 households that completed the diary survey were screened out later due reporting a home address located outside of the study area counties. For this reason, the number of complete households adds up to 1,105 households only. This was most likely the result of the opt-in strategy. The residential location of opt-in households could only be verified *a posteriori*, and therefore non-study area households were screened out after recruitment.

Table 4-11: Phase 2 completion rates by household income

HOUSEHOLD INCOME	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
Less than $10,000	16	66	24.2 %
$10,000 to $14,999	19	71	26.8 %
$15,000 to $24,999	45	153	29.4 %
$25,000 to $34,999	55	171	32.2 %
$35,000 to $49,999	95	264	36.0 %
$50,000 to $74,999	135	476	28.4 %
$75,000 to $99,999	108	410	26.3 %
$100,000 to $149,999	168	534	31.5 %
$150,000 to $199,999	72	266	27.1 %
$200,000 or more	66	253	26.1 %
Prefer not to say	332	1347	24.7 %
Blank	16	66	24.2 %

4.2.5 PHASES 1 AND 2 COMBINED

Out of 7,653 recruited households, 1,928 households completed the diary survey (i.e., all eligible household members completed both days of the diary). This gives an overall diary response rate of 25.2%, and an overall completion rate of 0.46%.

Table 4-12: Overview of the full study completion rate

MEASURE	ACTUAL
Number of Sampled Addresses	417,200
Valid Addresses[9]	375,480
Number of Recruitment Mailings	6
Recruited Households	7,653
Recruited Households that Started the Travel Diary	51.8%
Completed Household Travel Diaries (2 days)	1,928
Recruitment Rate	1.83%
Travel Diary Completion Rate	25.2%
Overall Completion Rate	0.46%

[9] Based on an estimated vacancy rate of 10% of the sampled households.

Table 4-13: Full study completion rates by residence county[10]

COUNTY	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
Miami-Dade	718	3136	22.9 %
Broward	713	2723	26.2 %
Palm Beach	491	1747	28.1 %

Table 4-14: Phase 2 completion rates by household size

HOUSEHOLD SIZE	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
1	661	1623	40.7%
2	813	3178	25.6%
3	231	1298	17.8%
4	142	1017	14.0%
5	58	376	15.4%
6	14	109	12.8%
7	4	36	11.1%
8	3	8	37.5%
9	2	3	66.7%

Table 4-15: Phase 2 completion rates by household vehicles

HOUSEHOLD VEHICLES	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
0	95	323	29.4%
1	775	2278	34.0%
2	759	3316	22.9%
3	209	1160	18.0%
4	69	414	16.7%
5	16	117	13.7%
7	3	21	14.3%
8	2	4	50.0%

[10] Excludes opt-in households that were later found to be located outside of the study area.

Table 4-16: Phase 2 completion rates by household income

HOUSEHOLD INCOME	COMPLETE HOUSEHOLDS	RECRUITED HOUSEHOLDS	PERCENT COMPLETION
Less than $10,000	35	144	24.3%
$10,000 to $14,999	38	155	24.5%
$15,000 to $24,999	84	310	27.1%
$25,000 to $34,999	105	361	29.1%
$35,000 to $49,999	152	520	29.2%
$50,000 to $74,999	236	928	25.4%
$75,000 to $99,999	192	767	25.0%
$100,000 to $149,999	254	950	26.7%
$150,000 to $199,999	103	425	24.2%
$200,000 or more	102	429	23.8%
Prefer not to say	597	2651	22.5%
Blank	17	73	23.3 %

5 QA/QC REVIEW

Cambridge Systematics (CS) carried out quality assurance/quality control (QA/QC) procedures on data collected through the household travel survey to help ensure that the final dataset is logically related and does not contain critical inconsistencies. This effort was centered on an automated procedure which reads, processes, and evaluates data compiled by the survey administrator, Abt Associates. Manual analysis of flagged results and periodic spot checks supplemented this effort, on an as-needed basis.

The QA/QC process tested the database for several types of potential issues:

- The most obvious issue checked is **missing information or entries** in the databases that do not have responses for questions. This is not relevant to all questions since some questions are not relevant for certain individuals or trips. For instance, it is acceptable and expected that a non-worker would not answer a question about employment industry.

- The second issue checked is **illogical or incorrect data**, such as the start time for a trip (or activity) appearing to be earlier than the end time for that same trip (or activity). This effort helps identify cases in which the survey respondent made a mistake or misinterpreted the survey questions.

- The third issue checked is **data transcription concerns**. This can take the form of offset columns or mislabeled data. Such concerns can be fixed by going back to the raw responses and reprocessing to produce new output. A related issue is incorrect geocoding for trip starts and trip ends.

- The last issue checked is **misinterpretation of data variable formats**. The coding of variables could either be misunderstood or read in the wrong format. It can be as simple as a time stamp being read as 24-hour format rather than 12-hour format or the expectation of an answer for an inapplicable question. This does not require correction, but it is important as it affects the use of the data in the future.

The QA/QC program also engaged in limited review of the unweighted dataset to confirm target sample coverage and basic response statistics. As was hoped for, the responses came from the desired variety of household types, including different sizes, number of workers, number of vehicles, transit usage, and income, as was intended in designing the sampling plan. However, basic response statistics suggest lower-than-expected trip making rates among persons and households. It is beyond the scope of the QA/QC program to determine if this survey result is due to the instrumentation for the survey or whether it is indeed a characteristic of travel patterns in the surveyed region – it will undoubtedly be part of downstream study and use of the expanded dataset.

The remainder of this chapter is focused on discussion of the issue-checking procedures and results, followed by brief conclusions.

5.1 QA/QC PROCEDURES

The QA/QC assessments are divided into three groups – household, person, and trip (activity) – and are consistent with the databases received from the survey administrator.

Household-level checks include a roll-up of household-level data, such as income, and a roll-up of checks at the trip and person level. Person-level checks verify information specific to persons. One such check identifies individuals who are missing employment status, as each person has their own employment status. Trip-level checks include information about arrival times, activity purposes, departure times, party size, and travel mode.

Two levels of checks were established based on the relative importance of the check. There are critical checks which indicate conditions for acceptance of the data into a final dataset. The lower tier of checks flag records which have either issues of milder concern, or information which is questionable but not necessarily wrong. The latter could include issues such as unusual ages for a spouse or workers who do not make work trips. These lower level checks are generally not serious individually, but can indicate an issue if a high number of records are flagged.

Generally, the QA/QC checks fit into the following types:

- Formatting: All IDs should follow a format that is consistent and relevant to the questions at hand.
- Geocoding: The locations must have reasonable location coordinates relative to the South Florida region. Trips can go out of the model area, but not primary homes.
- Counts: The number of people, workers, and vehicles in a household must be consistent with information given in the different files.
- Dataset consistency: All households and people should be represented in the trip file, and vice-versa (between ages 6 and 85).
- Age, Gender, License: This information must be given and must be consistent with activities, modes, and relationships.
- Employment and Education: Status and related details should be given and consistent with other information.
- Origin/destination: Trip origin and trip destination should be different places and consistent with previous and next trips.
- Time: Time must be provided and chronologically correct, and the durations of travel and activities must be logical.
- Activities: Trip activities should be consistent with person's characteristics. Days should start and end at home or work for the most part and activities must be recorded for both days of travel from 3 AM onwards.
- Mode: The mode should be recorded properly and details, like driver vs. passenger, should be logical.

5.2 RESULTS

The collected data included 19,630 trips by 4,172 persons in 2,096 households spread across the Tri-County Region. All but 147 households recorded 2 days of travel. To retain as many observations as possible, the QA/QC process was run on both days of each respondents' trip data as well as each day individually. Many households only had critical issues on one of the two days of their travel. A day was considered acceptable if the trips from every person in the household on that day had complete and correct data. The subsections below discuss checks made on the household-, person-, and trip-level data, respectively.

5.2.1 HOUSEHOLD CHECKS

The sum of all critical checks in each household, including person and trip checks, was computed to determine which households were without any critical issues, and therefore usable in survey expansion. Table 5-1 shows the household level checks performed as well as the number of households which had no critical issues. Only the trip checks were day specific, so their results apply regardless of which days were included. Around 13% of households had issues in only one of the two days and 80% had no issues in either day. The household income is not present in 20% of records, but it will be imputed for these.

Table 5-1: Household-Level Checks

DESCRIPTION	CRITICAL	FREQUENCY	PERCENT
Household Has NO Critical Issues		**1,678**	**80%**
Household Has NO Critical Issues in Day 1		**1,810**	**86%**
Household Has NO Critical Issues in Day 2		**1,824**	**87%**
Missing Geocodes, Home	1	6	0%
Sign Inconsistency in Home Geocode	1	0	0%
Home Geocode Out of the Region	1	0	0%
Length of HHID is not 6 digits	0	0	0%
Number of Workers is greater than Household Members 18+	0	234	11%
Household is Missing Income	0	415	20%
Household Has Only Over/Under $50K Income	0	227	11%
HHID in the Household File Not in the Person file	1	0	0%
Number of People in Person File is not Equal to Household Size	1	1	0%
Households in the Household File Not in Trip File	1	0	0%
Household Has No Assigned Date	1	0	0%
Number of Spouses is greater than 1	0	1	0%

The critical household-level information checked was mostly from the recruit portion of the survey. This was a short questionnaire given to households that included an invitation to complete a travel diary. While the income is a sensitive subject for many, most of the other recruit questions are simple and straightforward.

5.2.2 PERSON CHECKS

There were few critical issues in the person dataset. The most important person information – age, student status, and worker status – were mandatory questions in the survey. As a result, these data were almost universally provided for everyone. School location was not given for some students, but could be identified in the trip file via the trip destination information. The missing work details are unlikely to be used in modeling and it is reasonable for 7% of people who declare themselves workers to not have a work trip on a survey day. Table 5-2 summarizes findings from the person-level checks.

Table 5-2: Person-Level Checks

DESCRIPTION	CRITICAL	FREQUENCY	PERCENT
HH ID in Person File is Not in Household file	1	0	0%
Worker with Fixed Location is Missing Address	0	0	0%
Student is Missing School Address	0	538	13%
Student is Missing School Name	0	586	14%
Person is Not Represented in Trip File	1	0	0%
Person Has No Assigned Date	1	0	0%
Unusual Age for Spouse	0	2	0%
Unusual Age for (Grand)Parents of Householder	0	17	0%
Child Under 16 has Driver's License	0	7	0%
Missing Educational Attainment	0	16	0%
Unusual Age for School Type	0	195	5%
School Type or Tenure Missing From Student	0	69	2%
School Type or Tenure is Present in Non-Student	0	0	0%
Work Status Missing	1	7	0%
Child Under 16 is Listed as Working	0	0	0%
Worker Did Not Report Work Location Status	0	1	0%
Worker Did Not Make a Work Trip	0	312	7%
Worker Did Not Report Addition Job	0	1	0%
Worker Did Not Report Employer Business	0	7	0%
Worker Did Not Report Work Hours	0	231	6%
Worker Did Not Report Flexible Schedule	0	31	1%
Worker Did Not Report Occupation	0	344	8%
Missing School Status	1	5	0%
Missing Gender	0	38	1%
Missing Age	1	0	0%
Missing License Status	0	8	0%
Missing Relation to Household Head	0	18	0%
Missing Hispanic characterization for individuals	0	103	2%
Missing a travel day in the diary of an individual	0	203	5%
Missing both travel days in the diary of an individual	1	0	0%

Like the household checks the person checks target recruit survey answers, except for the comparisons to trips like “Worker did not make a work trip”. Aside from a few critical missing information checks, most of the checks monitor secondary questions about work and school habits and internal consistency, such as age comparisons. The low number of flags indicate that, overall, the survey was filled out properly. If many were marked for child under 16 listed as working, for example, it would suggest that questions may have been misleading or miscoded.

5.2.3 TRIP CHECKS

Nearly all critical issues identified were in the trip file. Trip file information was collected in the diary survey (unlike the person and household information, which was recorded during the recruit survey). The diary survey was much more detail-intensive, requiring answers for a series of questions related to any travel necessary for each activity each person identified on the survey day. The critical trip-level checks are summarized in Table 5-3.

Efforts to correct the missing geocodes by manually reviewing addresses, especially in households which had most of them, kept around 100 households from being discarded. For about 2% of trips, address information was either not given, incomplete, or otherwise such that they could not be salvaged.

Another 2% had data which could not be reasonably corrected. This was mostly captured in checks which compared origin and destination locations. The QA/QC process included cleaning, but only involved changing answers in cases where there was 100% certainty in the updated information. The activity types and times were identified in nearly all records.

The issues found were similar in number whether looking at day one or day two from the two-day survey. However, in many cases people (and households) had issues on only one of the survey days. This meant that most households, even most of those with issues, still had a full day with no issues.

Table 5-3: Trip-Level Critical Checks

DESCRIPTION	CRITICAL	BOTH DAYS	PCT.	DAY1	DAY1 PCT.	DAY2	DAY2 PCT.
Missing Origin Geocode	1	388	2%	185	2%	203	2%
Missing Destination Geocode	1	400	2%	193	2%	207	2%
Sign Inconsistency in Origin Geocode	1	4	0%	2	0%	2	0%
Sign Inconsistency in Destination Geocode	1	7	0%	5	0%	2	0%
Household ID in Trip File Not in Household file	1	0	0%	0	0%	0	0%
Person ID in Trip File Not in Household file	1	0	0%	0	0%	0	0%
Missing Person ID	1	0	0%	0	0%	0	0%
Duplicate Trip ID	1	0	0%	0	0%	0	0%
Name/Origin Type Does Not Match Previous Destination's - Same Day	1	0	0%	0	0%	0	0%
Origin Activity Does Not Match Previous Destination's - Same Day	1	0	0%	0	0%	0	0%
Origin Lat/Long Do Not Match Previous Destination's - Same Day	1	55	0%	29	0%	26	0%
Same O or D (Name & Address) as Previous Record - Same Day	1	247	1%	128	1%	119	1%
Missing Origin Name and Address	1	4	0%	0	0%	4	0%
Missing Destination Name and Address	1	0	0%	0	0%	0	0%
O and D (Name and Address) are the Same	1	418	2%	231	2%	187	2%

DESCRIPTION	CRITICAL	BOTH DAYS	PCT.	DAY1	DAY1 PCT.	DAY2	DAY2 PCT.
Missing Time Information	1	0	0%	0	0%	0	0%
Arrival Time is After Departure Time	1	29	0%	0	0%	29	0%
Departure Time is Greater than the Preceding Trip's Arrival Time	1	10	0%	5	0%	0	0%
Missing Party Size in Auto Trip	1	0	0%	0	0%	0	0%
Missing Origin Activity	1	5	0%	2	0%	3	0%
Missing Destination Activity	1	3	0%	0	0%	3	0%
Trip not during travel day	1	0	0%	0	0%	0	0%

The non-critical checks of the trip file, shown in Table 5-4, put all but 1% of the origins and destinations inside the region. Most of the “inconsistent” location types and activities were paid-work outside of a primary or secondary workplace or attending classes outside of a school location. A trip with matching locations (by coordinates) is acceptable if the origin and destination are different places at the same address, like a strip mall. If the same address and names are given, it is caught in the critical checks above.

Table 5-4: Trip-Level Non-Critical Checks

DESCRIPTION	CRITICAL	BOTH DAYS	PCT.	DAY1	DAY1 PCT.	DAY2	DAY2 PCT.
Geocode Out of the Region, origin	0	106	1%	53	1%	53	1%
Geocode Out of the Region, destination	0	152	1%	80	1%	72	1%
Name/Origin Type Does Not Match Previous Destination's - Consecutive Days	0	140	1%	0	0%	0	0%
Origin Activity Does Not Match Previous Destination's - Consecutive Days	0	276	1%	0	0%	0	0%
Origin Lat/Long Don't Match Previous Destination's - Consecutive Days	0	92	0%	0	0%	0	0%
Same O or D (Name & Address) as Previous Record - Consecutive Days	0	165	1%	0	0%	0	0%
O and D are Both Home Activity	0	215	1%	132	1%	83	1%
Day Does not Start at Home or Work	0	8	0%	2	0%	6	0%
Day Does not End at Home or Work	0	0	0%	0	0%	0	0%
Origin Location Types and Activities are Inconsistent	0	1,381	7%	731	7%	650	7%
Destination Location Types and Activities are Inconsistent	0	1,758	9%	933	9%	825	9%
Non-Auto Trip Time Greater than 90 Minutes	0	0	0%	0	0%	0	0%
Transit Trip Does not Start during Operating Hours	0	79	0%	0	0%	79	1%
Auto Trip is Missing Passenger/Driver Info	0	3,020	15%	1,659	16%	1,361	15%
Child is Listed as Driving	0	13	0%	7	0%	6	0%
Missing Origin or Destination Name	0	0	0%	0	0%	0	0%

DESCRIPTION	CRITICAL	BOTH DAYS	PCT.	DAY1	DAY1 PCT.	DAY2	DAY2 PCT.
Work Trip by Non-Worker	0	38	0%	19	0%	19	0%
Work Trip by Child under 14	0	932	5%	476	5%	456	5%
School Trip by Non-Student	0	98	0%	53	1%	45	0%
Auto Trip Driver is Unlicensed	0	19	0%	8	0%	11	0%
Work Trip in Zero-Worker Household	0	14	0%	8	0%	6	0%
Origin Matches Destination by Lat/Long	0	641	3%	355	3%	286	3%

5.3 QA/QC ASSESSMENT

Household travel surveys demand a great deal of information and cooperation from respondents. The QA/QC process helps to ensure that the records which are included in the final survey data set are suitable for modeling and other uses. This QA/QC process was applied only to households that were deemed to have finished the survey as evidenced by having stated that they had input all trips for the travel period. (Many more households who started the survey but did not finish were not included in this analysis.)

Following the QA/QC process, 1,954 households representing 3,634 days of travel remained as having passed the checks. These households comprise the expansion data set, and, therefore, only these will be expanded to represent the study area population and used for modeling and other statistical analysis.

Household demographics did not appear to significantly change the rate of survey acceptance, though those households with more trips were more likely to have critical issues. The surveyors did very well in, amongst other areas, ensuring that everyone in each household was accounted for and that all trips were assigned times and activities. These are essential elements necessary for travel demand modeling.

6 HOUSEHOLD AND PERSON SAMPLE OVERVIEW

This chapter shows various tabulations of the household and person sample, and compares the final sample to similar statistics obtained from the American Community Survey (ACS) 2015 5-Year Release. The purpose of these comparisons is to provide an overview of the sample characteristics, and to identify the population cohorts that are under-represented in the sample. The sample is not expected to exhibit the same characteristics as the Tri-County Region population, since by design it is not a simple random sample. The sample expansion weights, which are described in Chapter 7, attempt to correct for intended and unintended biases present in the final sample.

The final SEFL HTS consists of 1,954 household records and 3,835 person records, including one-day households (142) and two-day diary households (1,812).

6.1 HOUSEHOLD SIZE

The distribution of the household sample by household size is shown in Table 6-1 for each county. The SEFL HTS sample contains a higher proportion of one-person and two-person households than the target population, and a smaller proportion of three-person households and large households (4 or more persons), as shown in Table 6-2. This is the case in all three counties.

Table 6-1: Household by size, SEFL HTS

Household Size	Miami-Dade		Broward		Palm Beach		Region Total	
	#HH	%	#HH	%	#HH	%	#HH	%
One person	263	36%	276	38%	200	40%	739	38%
Two persons	298	41%	302	41%	212	42%	812	42%
Three persons	80	11%	78	11%	58	12%	216	11%
Four or more persons	80	11%	74	10%	33	7%	187	10%
Total households	721	100%	730	100%	503	100%	1,954	100%

Table 6-2: Household size comparison, unweighted sample and ACS

Household Size	Miami-Dade		Broward		Palm Beach		Region Total	
	HTS	ACS	HTS	ACS	HTS	ACS	HTS	ACS
One person	36%	26%	38%	30%	40%	31%	38%	29%
Two persons	41%	29%	41%	32%	42%	37%	42%	32%
Three persons	11%	18%	11%	16%	12%	14%	11%	17%
Four or more persons	11%	26%	10%	22%	7%	18%	10%	23%
Total households	100%	100%	100%	100%	100%	100%	100%	100%

6.2 HOUSEHOLD INCOME

The distribution of the household sample by household income is shown in Table 6-3 for each county. The SEFL HTS sample contains a smaller proportion of low income households (less than $25,000) than the target population, approximately the same proportion of middle income households (between $25,000 and $75,000), and a higher proportion of high income households (more than $75,000), as shown in Table 6-4. This is the case in all three counties. Note that only 1,360 out of the 1,954 households, or 70% of the households, reported their income.

Table 6-3: Households by annual income, SEFL HTS

Annual Household Income	Miami-Dade		Broward		Palm Beach		Region Total	
	#HH	%	#HH	%	#HH	%	#HH	%
Less than $24,999	68	13%	62	12%	40	13%	170	13%
$25,000 - $49,999	97	18%	101	19%	62	20%	260	19%
$50,000 - $74,999	105	20%	93	18%	64	21%	262	19%
$75,000 or more	260	49%	265	51%	143	46%	668	49%
Total households	530	100%	521	100%	309	100%	1,360	100%

Table 6-4: Household income comparison, unweighted sample and ACS

Annual Household Income	Miami-Dade		Broward		Palm Beach		Region Total	
	HTS	ACS	HTS	ACS	HTS	ACS	HTS	ACS
Less than $24,999	13%	31%	12%	23%	12%	23%	13%	26%
$25,000 - $49,999	18%	25%	19%	25%	21%	24%	19%	25%
$50,000 - $74,999	20%	16%	18%	18%	19%	17%	19%	17%
$75,000 or more	49%	28%	51%	34%	48%	36%	49%	32%
Total households	100%	100%	100%	100%	100%	100%	100%	100%

6.3 HOUSEHOLD WORKERS

The distribution of the household sample by the number of workers in the household is shown in Table 6-5, for each county. The SEFL HTS sample exhibits approximately the same distribution of households by number of workers as the target population, as shown in Table 6-6. This is the case in all three counties.

Table 6-5: Households by workers in the household, SEFL HTS

Workers in Household	Miami-Dade		Broward		Palm Beach		Region Total	
	#HH	%	#HH	%	#HH	%	#HH	%
Zero workers	155	21%	221	30%	172	34%	548	28%
One worker	334	46%	292	40%	194	39%	820	42%
Two workers	210	29%	201	28%	124	25%	535	27%
Three or more workers	22	3%	16	2%	13	3%	51	3%
Total households	721	100%	730	100%	503	100%	1,954	100%

Table 6-6: Household worker comparison, unweighted sample and ACS

Workers in Household	Miami-Dade		Broward		Palm Beach		Region Total	
	HTS	ACS	HTS	ACS	HTS	ACS	HTS	ACS
Zero workers	21%	25%	30%	25%	34%	34%	28%	27%
One worker	46%	41%	40%	40%	39%	36%	42%	39%
Two workers	29%	27%	28%	28%	25%	24%	27%	27%
Three or more workers	3%	8%	2%	7%	3%	5%	3%	7%
Total households	100%	100%	100%	100%	100%	100%	100%	100%

6.4 PERSON AGE

The distribution of the person sample by age is shown in Table 6-7, for each county. Participants in the SEFL HTS tend to exhibit an older age profile than the Tri-County Region's population, as shown in Table 6-8. This is the case in all three counties, however it is most pronounced Broward and Palm Beach samples.

Table 6-7: Residents by age, SEFL HTS

Age	Miami-Dade		Broward		Palm Beach		Region Total	
	#pp	%	#pp	%	#pp	%	#pp	%
Less than 18 years old	184	13%	161	11%	97	10%	442	12%
18 to 25 years old	72	5%	50	3%	27	3%	149	4%
26 to 45 years old	368	25%	257	18%	181	19%	806	21%
46 to 65 years old	525	36%	588	41%	380	40%	1,493	39%
66 or more years old	303	21%	380	26%	262	28%	945	25%
Total persons	1,452	100%	1,436	100%	947	100%	3,835	100%

Table 6-8: Resident age comparison, unweighted sample and ACS

Age	Miami-Dade		Broward		Palm Beach		Region Total	
	HTS	ACS	HTS	ACS	HTS	ACS	HTS	ACS
Less than 18 years old	13%	20%	11%	20%	10%	19%	12%	20%
18 to 25 years old	5%	9%	3%	8%	3%	8%	4%	8%
26 to 45 years old	25%	33%	18%	32%	19%	27%	21%	31%
46 to 65 years old	36%	25%	41%	26%	40%	25%	39%	25%
66 or more years old	21%	14%	26%	14%	28%	21%	25%	16%
Total persons	100%	100%	100%	100%	100%	100%	100%	100%

7 SURVEY EXPANSION METHODOLOGY

7.1 OVERVIEW

The survey data, when expanded, should reproduce the population across key characteristics, such as household size, household income, person age, etc., at the smallest possible spatial level. The expansion factors are approximately inversely proportional to the sampling probability. When the sampling method is simple random sampling, then all households have approximately the same expansion factor. The SE Florida HTS employed a stratified sampling method, with certain populations over-sampled to ensure that the final sample contained sufficient observations of important but infrequent households and travel behaviors, such as zero-car households and transit users.

In developing the expansion factors, a weight is assigned to each household such that, in the aggregate, the distribution of households and persons match certain pre-specified controls. A multi-dimensional balancing (MDB) method is applied to calculate the weights to account and adjust for possible sample bias with respect to key household characteristics. The MDB algorithm requires a target total for each household category that will be controlled for in the expansion process. These target or controlled totals indicate the number of households of each category found in the SE Florida population at the time that the survey was conducted. Typical controlled categories include household income, number of workers in the household, and person age, among others.

To account for differences in the control variables across the entire region, the region was subdivided into spatial clusters. A cluster is intended to be a relatively homogeneous subarea, with respect to the control variables. The control totals were therefore specified for each cluster, and correspondingly, the expansion weights were developed independently by cluster. The final expansion weights however were developed without the cluster segmentation, given that the sample of large households (4 or persons per household) was too small to support spatial stratification.

This section describes all aspects of the survey expansion methodology in detail.

7.2 MULTI-DIMENSIONAL BALANCING ALGORITHM

Multi-dimensional balancing (MDB) is a table balancing procedure that can be used to calculate expansion weights for any household sample. Unlike Iterative Proportional Fitting (IPF), which only handles household-level controls, MDB allows for the incorporation of any number of household-level and person-level controls when expanding the household sample.

Table 7-1 shows an example of how the sample household and person data are organized and referenced, for a case where household size and person age are used as the control variables, and the sample consists of only five households. Each table row corresponds to a household observation. The table shows the contribution of each observation to the household size and person age controls. In this example, there are four household size controlled categories ($i=1$ to $i=4$), and four controlled categories for person age ($i=5$ to $i=8$).

The first household ($n=1$) has one person of age 65+, therefore it contributes one household control $i=1$, and one person to control $i=8$. The second household has two persons -- one of age 0-15 and another one of age 16-3. This household contributes one household to control $i=2$, one person to control $i=5$ and another person to control $i=3$. The third household has three persons -- one of age 16-35 and two persons of age 36-64. The fourth household has four persons -- two of age 16-35 and

another two of age 36-64. The fifth household has five persons -- one person of age 0-15, three persons of age 16-35, and two persons of age 36-64.

An initial household weight, w_n, is required. In this example household weights are all set to 1 but in a general case the initial weight can be differentiated to account for the sample structure.

The problem that MDB solves is finding a new set of weights, x_n, such that, when expanded, the sample totals across all the controlled categories are as close as possible to the control totals.

Table 7-1: Multi-dimensional balancing example

HH Id	HH Size				Person Age				HH initial weight (w_n)
	1 (i=1)	2 (i=2)	3 (i=3)	4+ (i=4)	0 - 15 (i=5)	16 - 35 (i=6)	36 - 64 (i=7)	65+ (i=8)	
$n=1$	1							1	1
$n=2$		1			1	1			1
$n=3$			1			1	2		1
$n=4$				1		2	2		1
$n=5$				1	1	3	2		1
Sample totals	1	1	1	2	2	7	6	1	5
Control totals	100	200	250	300	400	400	650	250	850

The following notation is used below to describe the algorithm:

$i = 1, 2, \ldots, I$ household and person controls,

$n \in N$ household sample in the PUMA (or any geographic unit),

w_n a priori weighs assigned in the PUMA (or any geographic unit),

A^i zonal controls,

$a_n^i \geq 0$ coefficients of contribution of household to each control,

x_n final expansion weights.

The balancing problem can be written as a convex entropy-maximization problem in the following way:

$$\min_{\{x_n\}} \sum_n x_n \ln \frac{x_n}{w_n}, \quad (1)$$

Subject to constraints:

$$\sum_n a_n^i x_n = A^i, (\alpha^i), \quad (2)$$

$$x_n \geq 0\ , \quad (3)$$

where α^i represents dual variables that give rise to balancing factors.

The objective function (1) expresses the principle of using all households proportionally to the assigned *a priori* weight. The constraints ensure that the controls are matched, and that the expansion weights are positive. This is a convex mathematical problem with linear constraints that can be solved by forming the Lagrangian and equating the partial derivatives to zero. The Lagrangian function can be written in the following way:

$$L(\{x_n\}) = \left(\sum_n x_n \ln \frac{x_n}{w_n} \right) - \sum_i \alpha^i \left[\left(\sum_n a_n^i x_n \right) - A^i \right]. \quad (4)$$

We calculate partial derivatives and equate them to zero:

$$\frac{\partial L(\{x_n\})}{\partial x_n} = \ln \frac{x_n}{w_n} + 1 - \sum_i \alpha^i \left(a_n^i \right) = 0 . \quad (5)$$

By collecting terms with constants on the right-hand side and exponentiating both sides we obtain the following solution:

$$x_n = k \times w_n \times ex \;\; (\textstyle\sum_i a_n^i \, \alpha^i) = w_n \times \prod_i [exp(\alpha^i)]^{a_n^i} = w_n \times \prod_i (\hat{\alpha}^i)^{a_n^i}, \quad (6)$$

where $\hat{\alpha}^i$ represents balancing factors to be calculated.

Note that the balancing factors correspond to the controls, not to households. For each household, the weight is calculated as a product of the initial weight by the relevant balancing factors exponentiated by the participation coefficient. A zero (0) participation coefficient automatically results in a balancing factor reset to 1 that does not affect the household weight.

This formulation has been further generalized to account for relaxation of constraints that avoids non-convergence when the controls are not consistent within themselves. A Newton-Raphson algorithm based on the gradient optimization of the objective function (Eq.1) is used to solve for the balancing factors.

7.3 DEVELOPMENT OF SPATIAL CLUSTERS

To account for differences in the control variables across the entire region, the region was subdivided into clusters of census tracts. Control totals were specified for each census tract cluster. Correspondingly, initial expansion weights were developed independently for each cluster. A cluster is intended to be a relatively homogeneous group of tracts, with respect to the control variables. Census tracts in a cluster are “similar” to each other (for example, a cluster of low income, low car availability tracts), and “dissimilar” to tracts in other clusters.

The model area census tracts were grouped into clusters using the *k-means* unsupervised learning algorithm. This algorithm takes numerous features of each census tract (e.g., persons per household, percentage low income households) and partitions the tract set into clusters such that the tract dissimilarities are minimized within clusters. The measure of dissimilarity is the Euclidean distance, computed in high-dimensional space since many attributes may be used to create the clusters.

Let the set of data points D be $\{\boldsymbol{x}_1, \boldsymbol{x}_2, \ldots, \boldsymbol{x}_n\}$, where $\boldsymbol{x}_i = (\boldsymbol{x}_{i1}, \boldsymbol{x}_{i2}, \ldots, \boldsymbol{x}_{ir})$ is a vector in $X \subseteq R^r$, and r is the number of dimensions. In our case, D is the set of census tracts for the model region, $\boldsymbol{x}$ is a vector

of tract attributes, which may be average household size, percent of zero-car households, average number of household vehicles, average number of workers per household, among other possible attributes. Note that r, the number of dimensions, refers to the number of tract attributes chosen for clustering.

The *k-means* algorithm partitions the given data D into k clusters, where k is specified by the user. Each cluster has a center, called centroid. The algorithm works as follows:

1. Choose k (random) data points (seeds) to be the initial centroids
2. Assign each data point to the closest centroid
3. Re-compute the centroids using the current cluster memberships
4. If a convergence criterion is not met, repeat steps 2 and 3

The convergence criterion is based on the sum of square errors (SSE) between iterations, computed as follows:

$$SSE = \sum_{j=1}^{k} \sum_{x \in C_j} d(x, m_j)^2,$$

where

C_j is the j^{th} cluster,

m_j is the centroid of cluster C_j (the mean vector of all the data points in C_j), and

$d(\boldsymbol{x}, \boldsymbol{m}_j)$ is the (Euclidian) distance between data point $\boldsymbol{x}$ and centroid $\boldsymbol{m}_j$.

There is no *a priori* limit on the number of clusters. However, each cluster must contain a minimum number of household samples, which initially is defined as 100 samples. This requirement stems from a desire to not compute expansion factors on fewer observations. As such, the clusters defined by the *k-means* learning algorithm may be aggregated to meet the household sample minima.

Clustering and expansion are somewhat iterative, in that the clusters may be adjusted to obtain a better distribution of expansion weights. That is, the clustering may be revised to avoid assigning very high expansion weights to a few households.

The following census tract attributes were used to create the clusters:

- Residential density
- Household size, measured as the percent of households with one, two, three and four or more persons
- Number of workers per household, measured as the percent of households having zero, one, two and three or more workers
- Household income, measured as the percent of households with income less than $25k, $25k-$50k, $50k-$75k, and more than $75k.

The k-means procedure resulted in seven clusters, with average attributes as shown in Table 7-2.

Table 7-2: Average characteristics of census tract clusters

Cluster Attribute	Cluster #						
	1	2	3	4	5	6	7
Avg. Residential Density	0.0016	0.0015	0.0010	0.0005	0.0009	0.0011	0.0017
Avg. Percent Size One Households	36.5%	55.9%	35.2%	14.6%	18.0%	22.4%	42.9%
Avg. Percent Size Two Households	29.1%	35.5%	48.4%	31.8%	29.0%	28.3%	34.5%
Avg. Percent Size Three Households	15.7%	5.4%	8.3%	20.6%	21.1%	19.3%	11.9%
Avg. Percent Size Four+ Households	18.7%	3.3%	8.1%	33.0%	32.0%	29.9%	10.7%
Avg. Percent Zero Worker Households	37.1%	66.4%	51.6%	15.0%	17.2%	24.9%	27.1%
Avg. Percent One Worker Households	41.2%	24.1%	31.1%	37.5%	38.6%	40.4%	46.2%
Avg. Percent Two Worker Households	17.3%	8.2%	15.3%	38.5%	33.7%	25.9%	23.3%
Avg. Percent Three+ Worker Households	4.4%	1.3%	1.9%	9.0%	10.5%	8.7%	3.4%
Avg. Percent Income <$25k Households	51.0%	41.5%	16.1%	9.6%	19.0%	35.4%	24.4%
Avg. Percent Income $25k - $50k Households	27.9%	27.7%	18.7%	14.1%	26.4%	31.4%	24.3%
Avg. Percent Income $50k - $75k Households	11.5%	13.9%	15.0%	15.2%	21.4%	16.9%	18.6%
Avg. Percent Income >$75k Households	9.7%	16.9%	50.3%	61.1%	33.2%	16.3%	32.8%

7.4 CONTROL VARIABLES AND CONTROL TOTALS

The following control categories were used for expanding the SEFL HTS:

- Household size (1, 2, 3, 4+ person households)
- Household income (Less than $25k, $25k-$50k, $50k-$75k, more than $75k)
- Number of workers per household (0, 1, 2, 3+ workers in household)
- Persons by age (less than 18 years old, 18-25, 26-45, 46-65, 66 and older)

The source for developing 2015 control totals is the 2011-2015 Five-Year Release of the American Community Survey (ACS), census tract level summaries. The tables below show the county totals reported by the 2011-2015 ACS dataset for these control variables. Control totals for census tract clusters are shown in Appendix B.

Table 7-3: Households by annual income, Tri-County Region

Annual Household Income	Miami-Dade		Broward		Palm Beach		Region Total	
	#HH	%	#HH	%	#HH	%	#HH	%
Less than $24,999	258,023	31%	156,483	23%	121,443	23%	535,949	26%
$25,000 - $49,999	211,803	25%	165,663	25%	130,206	24%	507,672	25%
$50,000 - $74,999	135,436	16%	121,555	18%	92,288	17%	349,279	17%
$75,000 or more	236,891	28%	226,583	34%	190,668	36%	654,142	32%
Total households	842,153	100%	670,284	100%	534,605	100%	2,047,042	100%

Source: ACS 2011-2015 Release

Table 7-4: Households by size, Tri-County Region

Household Size	Miami-Dade		Broward		Palm Beach		Region Total	
	#HH	%	#HH	%	#HH	%	#HH	%
One person	222,311	26%	198,669	30%	166,451	31%	587,431	29%
Two persons	246,740	29%	213,666	32%	197,241	37%	657,647	32%
Three persons	154,902	18%	109,323	16%	74,060	14%	338,285	17%
Four or more persons	218,200	26%	148,626	22%	96,853	18%	463,679	23%
Total households	842,153	100%	670,284	100%	534,605	100%	2,047,042	100%

Source: ACS 2011-2015 Release

Table 7-5: Households by workers in the household, Tri-County Region

Workers in Household	Miami-Dade		Broward		Palm Beach		Region Total	
	#HH	%	#HH	%	#HH	%	#HH	%
Zero workers	207,705	25%	170,373	25%	182,973	34%	561,051	27%
One worker	343,232	41%	269,825	40%	193,825	36%	806,882	39%
Two workers	227,775	27%	185,687	28%	129,209	24%	542,671	27%
Three or more workers	63,441	8%	44,399	7%	28,598	5%	136,438	7%
Total households	842,153	100%	670,284	100%	534,605	100%	2,047,042	100%

Source: ACS 2011-2015 Release

Table 7-6: Residents by age, Tri-County Region

Age	Miami-Dade		Broward		Palm Beach		Region Total	
	#pp	%	#pp	%	#pp	%	#pp	%
Less than 18 years old	550,700	20%	400,397	20%	273,021	19%	1,224,118	20%
18 to 25 years old	249,596	9%	156,493	8%	109,563	8%	515,652	8%
26 to 45 years old	929,278	33%	619,724	32%	399,976	27%	1,948,978	31%
46 to 65 years old	696,661	25%	512,972	26%	365,147	25%	1,574,780	25%
66 or more years old	393,474	14%	276,700	14%	308,771	21%	978,945	16%
Total persons	2,819,709	100%	1,966,286	100%	1,456,478	100%	6,242,473	100%

Source: ACS 2011-2015 Release

7.5 HOUSEHOLD INCOME IMPUTATION

Approximately one-third of the households did not report household income. In order to include these households in the expansion procedure, household income was imputed for all households with missing income data. The primary method for income imputation is the estimation of an ordinal logistic regression model using auto sufficiency categories as the primary explanatory variable and income group as the dependent variable.

The explanatory variables used in the income imputation model are listed in Table 7-7, along with the model estimation statistics. All estimated coefficients are different from zero with 95% confidence, as indicated by the value of the t-statistic (i.e., greater than 1.9), and exhibit logical signs.

Table 7-7: Household income imputation model

Explanatory variable	Coefficient	Standard Error	t-Statistic
Auto insufficient household	1.2478	0.3046	4.097
Auto sufficient household			
No extra car	1.3970	0.2890	4.833
One extra car	1.5931	0.3011	5.291
Two+ extra cars	1.6829	0.3575	4.707
Single worker household	1.2514	0.1252	9.995
Two worker household	2.1771	0.1411	15.432
Three+ worker household	1.9012	0.2934	6.48
Home owner	1.0896	0.1275	8.549
Renter – Single family dwelling unit	1.2725	0.5046	2.522
Renter – Apartment	0.9827	0.506	1.942

The performance of the income imputation model was evaluated by applying the model to the estimation dataset, and comparing the correct prediction rate. When applying the model, instead of selecting the alternative with highest probability, the choice was selected via Monte Carlo simulation, that is, by sampling from the predicted income probabilities. Table 7-8 shows the observed and predicted income distribution for households that reported income. Over all households, the model exactly reproduces the observed distribution. In terms of the prediction rate of the correct income group, when aggregated to the four groups shown in Table 7-9, the model correctly predicts income group for 502 out of 1360 households, or 37% of the households.

Table 7-8: Aggregate income imputation model performance

		OBSERVED		PREDICTED	
Bin #	Income range	freq.	pct.	freq.	pct.
1	Less than $10,000	36	3%	41	3%
2	$10,000 to $14,999	37	3%	38	3%
3	$15,000 to $24,999	97	7%	96	7%
4	$25,000 to $34,999	91	7%	111	8%
5	$35,000 to $49,999	169	12%	157	12%

		OBSERVED		PREDICTED	
6	$50,000 to $74,999	262	19%	260	19%
7	$75,000 to $99,999	195	14%	205	15%
8	$100,000 to $149,999	260	19%	252	19%
9	$150,000 to $199,999	103	8%	107	8%
10	$200,000 or more	110	8%	93	7%
	Total households	1360	100%	1360	100%

Table 7-9: Performance on the estimation dataset

		Observed Income Bin				
Income	Predicted Bin	1	2	3	4	Total Households
Less than $24,999	1	49	80	18	28	175
$25,000 to $74,999	2	78	218	83	149	528
$75,000 to $99,999	3	18	76	25	86	205
$100,000 to $199,999	4	25	148	69	210	452
	Total	170	522	195	473	1360

When applied to the households with missing income data, the resulting distribution of household income is as shown in Table 7-10. The distribution of income in the missing income dataset is very similar to the distribution of the observed income dataset.

Table 7-10: Performance on the missing income households

		HOUSEHOLDS THAT REPORT INCOME		PREDICTED FOR MISSING INCOME HOUSEHOLDS	
Bin #	Income range	Freq.	Pct.	Freq.	Pct.
1	Less than $10,000	36	3%	9	2%
2	$10,000 to $14,999	37	3%	18	3%
3	$15,000 to $24,999	97	7%	35	6%
4	$25,000 to $34,999	91	7%	48	8%
5	$35,000 to $49,999	169	12%	88	15%
6	$50,000 to $74,999	262	19%	120	20%
7	$75,000 to $99,999	195	14%	79	13%
8	$100,000 to $149,999	260	19%	114	19%
9	$150,000 to $199,999	103	8%	44	7%
10	$200,000 or more	110	8%	39	7%
	Total households	1360	100%	594	100%

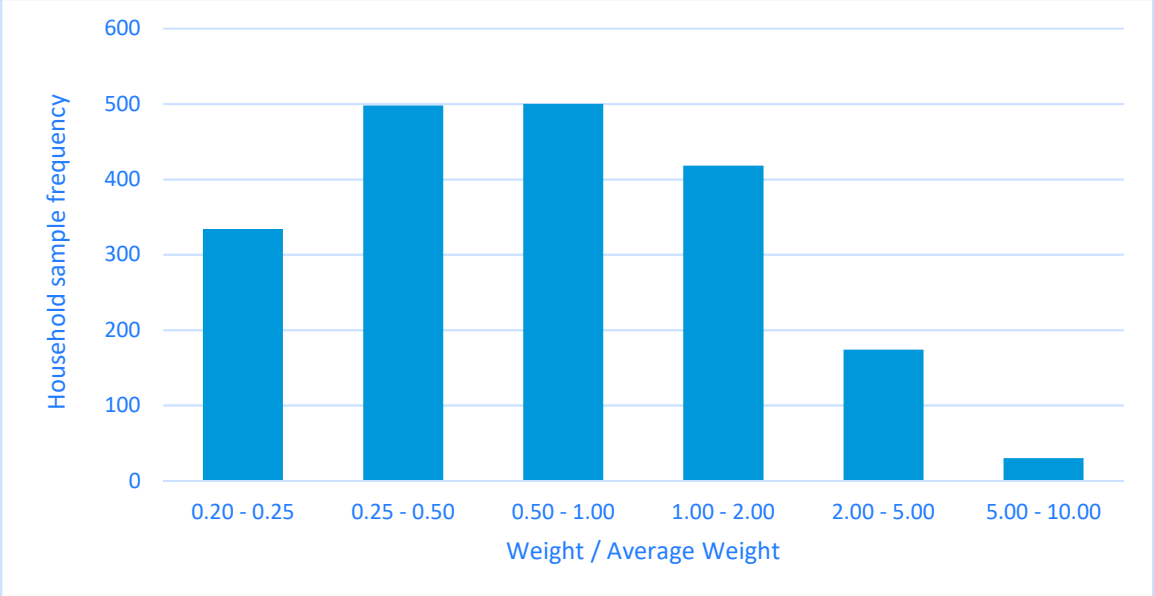
7.6 SURVEY EXPANSION RESULTS

The final control categories include three household attributes (size, income and number of workers) with high importance, and persons by age with lower importance. Three levels of geographic stratification were explored for the household controls – census tract clusters, county, and region. The person controls were always specified as region-level controls. The final expansion weights use county level controls for both household and person variables, to preserve a minimum number of observations in all strata and avoid the presence of overly large expansion weights for a few household segments. The final control categories used in the survey expansion are as follows:

- Household size (1, 2 and 3+ person households)
- Household income (Less than $25k, $25k-$50k, $50k-$75k, more than $75k)
- Number of workers per household (0, 1+ workers in household)
- Persons by age (less than 18 years old, 18-25, 26-45, 46-65, 66 and older)

Figure 7-1 shows the distribution of the expansion weight factor, which is defined as the ratio of the sample observation weight to the average weight for the entire sample. The minimum and maximum weight factors are inputs to the expansion procedure; they were specified as 0.20 and 10, respectively.

Figure 7-1: Ratio of Weight to Average Weight



The person controls were specified with lower importance than the household level controls due to the relative lack of large person households in the sample. The average household size for the region is approximately 3 persons per household (ACS 2015), while the average household size for the sample is approximately 2 persons per household. Under these circumstances, when the person controls are given equal importance as the household controls, the procedure will assign very high weights to the

large households, and compensate by giving very low weights to the small (1-person) households. This results in a very skewed weight factor distribution, which is undesirable since it tends to create lumpiness in the travel behavior statistics. As such, it was deemed preferable to under-estimate the total number of persons in the expanded totals, rather than using a skewed weight factor distribution.

7.6.1 TRI-COUNTY REGION EXPANSION TOTALS

Summary tabulations of the expanded survey compared to ACS totals for the Tri-County Region are shown in Table 7-11 to

Table 7-14. These tables show that the expansion procedure results in a nearly perfect match for most high importance controls. The deviations from the control totals for the household workers variable are due to omitting this control for 3+ person households. This limitation was imposed due to the small number of zero worker households among 3+ person households in the sample. The improvement gained from this limitation is the ability to use county-level controls for all other household variables.

Total persons are under-estimated by approximately 20% region-wide. As discussed above, this under-estimation results from the relative lack of large person households in the sample, coupled with restricting the maximum weight on these large households to no more than 10 times the average weight.

Table 7-11: Expanded household income totals, Tri-County Region

Annual Household Income	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
Less than $24,999	535,949	26%	536,964	26%	1,015	0%
$25,000 - $49,999	507,672	25%	508,864	25%	1,192	0%
$50,000 - $74,999	349,279	17%	350,121	17%	842	0%
$75,000 or more	654,142	32%	655,921	32%	1,779	0%
Total households	2,047,042	100%	2,051,870	100%	4,828	0%

Table 7-12: Expanded household size totals, Tri-County Region

Household Size	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
One person	587,431	29%	588,307	29%	876	0%
Two persons	657,647	32%	658,949	32%	1,302	0%
Three or more persons	801,964	41%	804,614	39%	2,650	0%
Total households	2,047,042	100%	2,051,870	100%	4,828	0%

Table 7-13: Expanded household workers totals, Tri-County Region

Household Workers	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
Zero workers	561,051	27%	528,874	26%	-32,177	-6%
One or more worker	1,485,991	73%	1,522,996	74%	37,005	2%
Total households	2,047,042	100%	2,051,870	100%	4,828	0%

Table 7-14: Expanded person age totals, Tri-County Region

Age	ACS		HTS		Difference	
	#pp	%	#pp	%	#pp	%
Less than 18 years old	1,224,118	20%	964,991	20%	-259,127	-21%
18 to 25 years old	515,652	8%	403,755	8%	-111,897	-22%
26 to 45 years old	1,948,978	31%	1,531,224	31%	-417,754	-21%
46 to 65 years old	1,574,780	25%	1,237,216	25%	-337,564	-21%
66 or more years old	978,945	16%	770,213	16%	-208,732	-21%
Total persons	6,242,473	100%	4,907,400	100%	-1,335,073	-21%

7.6.2 MIAMI-DADE COUNTY EXPANSION TOTALS

Summary tabulations of the expanded survey compared to ACS totals for Miami-Dade County are shown in Table 7-15 to Table 7-18. Once expanded, the survey estimates total Miami-Dade County households within 1% of the ACS estimate for 2015. The survey somewhat under-estimates the low-income households, the large households, and the zero worker households. Total county population is under-estimated by 25%, with the oldest age group (66 years old and older) more under-estimated than younger persons.

Table 7-15: Expanded household income totals, Miami-Dade County

Annual Household Income	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
Less than $24,999	258,023	31%	258,546	31%	523	0%
$25,000 - $49,999	211,803	25%	212,342	25%	539	0%
$50,000 - $74,999	135,436	16%	135,785	16%	349	0%
$75,000 or more	236,891	28%	237,593	28%	702	0%
Total households	842,153	100%	844,265	100%	2,112	0%

Table 7-16: Expanded household size totals, Miami-Dade County

Household Size	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
One person	222,311	26%	222,656	26%	345	0%
Two persons	246,740	29%	247,275	29%	535	0%
Three or more persons	373,102	44%	374,335	44%	1,233	0%
Total households	842,153	100%	844,265	100%	2,112	0%

Table 7-17: Expanded household workers totals, Miami-Dade County

Household Workers	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
Zero workers	207,705	25%	184,181	22%	-23,524	-11%
One or more worker	634,448	79%	660,085	78%	25,637	4%
Total households	849,616	100%	844,265	100%	2,112	0%

Table 7-18: Expanded person age totals, Miami-Dade County

Age	ACS		HTS		Difference	
	#pp	%	#pp	%	#pp	%
Less than 18 years old	550,700	20%	450,424	21%	-100,276	-18%
18 to 25 years old	249,596	9%	205,100	10%	-44,496	-18%
26 to 45 years old	929,278	33%	712,187	34%	-217,091	-23%
46 to 65 years old	696,661	25%	492,522	23%	-204,139	-29%
66 or more years old	393,474	14%	263,130	12%	-130,344	-33%
Total persons	2,819,709	100%	2,123,363	100%	-696,346	-25%

7.6.3 BROWARD COUNTY EXPANSION TOTALS

Summary tabulations of the expanded survey compared to ACS totals for Broward County are shown in Table 7-19 to Table 7-22. Once expanded, the survey over-estimates total Broward County households by 5%, compared to the ACS estimate for 2015. In relative terms, the survey somewhat over-estimates the lowest and highest income households, the large households, and the zero worker households. Total county population is under-estimated by 13%, with the younger age groups (45 years old and younger) more under-estimated than older persons.

Table 7-19: Expanded household income totals, Broward County

Annual Household Income	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
Less than $24,999	156,483	23%	156,751	23%	268	0%
$25,000 - $49,999	165,663	25%	166,038	25%	375	0%
$50,000 - $74,999	121,555	18%	121,837	18%	282	0%
$75,000 or more	226,583	34%	227,203	34%	620	0%
Total households	670,284	100%	671,829	100%	1,545	0%

Table 7-20: Expanded household size totals, Broward County

Household Size	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
One person	198,669	30%	198,958	30%	289	0%
Two persons	213,666	32%	214,070	32%	404	0%
Three or more persons	257,949	38%	258,800	39%	851	0%
Total households	670,284	100%	671,829	100%	1,545	0%

Table 7-21: Expanded household workers totals, Broward County

Household Workers	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
Zero workers	170,373	25%	164,543	24%	-5,830	-3%
One or more worker	499,911	75%	507,286	76%	7,375	1%
Total households	670,284	100%	671,829	100%	1,545	0%

Table 7-22: Expanded person age totals, Broward County

Age	ACS		HTS		Difference	
	#pp	%	#pp	%	#pp	%
Less than 18 years old	400,397	20%	297,072	19%	-103,325	-26%
18 to 25 years old	156,493	8%	116,573	7%	-39,920	-26%
26 to 45 years old	619,724	32%	474,825	30%	-144,899	-23%
46 to 65 years old	512,972	26%	436,023	27%	-76,949	-15%
66 or more years old	276,700	14%	274,853	17%	-1,847	-1%
Total persons	1,966,286	100%	1,599,346	100%	-366,940	-19%

7.6.4 PALM BEACH COUNTY EXPANSION TOTALS

Summary tabulations of the expanded survey compared to ACS totals for Palm Beach County are shown in Table 7-23 to Table 7-26. Once expanded, the survey under-estimates total Palm Beach County households by 7%, compared to the ACS estimate for 2015. In relative terms, the survey under-estimates the high-income households, while over-estimating the one-person households and the large households, as well as the zero-worker households. Total county population is under-estimated by 24%, with the oldest age group (66 years old and older) and the college-age group (18-24 years old) more under-estimated than other persons.

Table 7-23: Expanded household income totals, Palm Beach County

Annual Household Income	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
Less than $24,999	121,443	23%	121,668	23%	225	0%
$25,000 - $49,999	130,206	24%	130,485	24%	279	0%
$50,000 - $74,999	92,288	17%	92,499	17%	211	0%
$75,000 or more	190,668	36%	191,126	36%	458	0%
Total households	534,605	100%	535,777	100%	1,172	0%

Table 7-24: Expanded household size totals, Palm Beach County

Household Size	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
One person	166,451	31%	166,693	31%	242	0%
Two persons	197,241	37%	197,604	37%	363	0%
Three or more persons	170,913	32%	171,480	32%	567	0%
Total households	534,605	100%	535,777	100%	1,172	0%

Table 7-25: Expanded household workers totals, Palm Beach County

Household Workers	ACS		HTS		Difference	
	#HH	%	#HH	%	#HH	%
Zero workers	182,973	34%	180,151	34%	-2,822	-2%
One or more worker	351,632	66%	355,626	66%	3,994	1%
Total households	534,605	100%	535,777	100%	1,172	0%

Table 7-26: Expanded person age totals, Palm Beach County

Age	ACS		HTS		Difference	
	#pp	%	#pp	%	#pp	%
Less than 18 years old	273,021	19%	217,495	18%	-55,526	-20%
18 to 25 years old	109,563	8%	82,083	7%	-27,480	-25%
26 to 45 years old	399,976	27%	344,213	29%	-55,763	-14%
46 to 65 years old	365,147	25%	308,671	26%	-56,476	-15%
66 or more years old	308,771	21%	232,230	20%	-76,541	-25%
Total persons	1,456,478	100%	1,184,692	100%	-271,786	-19%

7.7 TRIP RATES

Summary tabulations of the daily trip rates, after applying the expansion factors, are shown in Table 7-27 to Table 7-31. In calculating the sample size, households/individuals who participated in both days of the survey count as two observations. The number of unique households and individuals, in the trip rate calculation, is 1,836 and 3,137, respectively.

The demographic groups reporting trip rates greater than the regional average are households with three or more persons, household with annual income greater than $75,000, households with at least two workers, and 26 to 45 years old persons. Trip rates reported by Miami-Dade County residents are lower than the trip rates reported by Broward County and Palm Beach County residents for almost all the segments. The only segment in Miami-Dade County that exhibits a trip rate greater than the other two counties is 18 to 25 year old persons. In all counties, trip rates per household increase with household size, with household income, and with the number of workers in the household. Trip rates per person are lowest for persons younger than 25 years old, and approximately the same for persons older than 25 years old, in all counties.

Households that completed two-day trip diaries reported, on average, lower trip rates than the households that completed only one-day trip diaries. The trip rates are 14.4 for the households participated only in Day 1, 9.4 for households that participated only in Day 2 and 6.1 for the households that participated in both days (Table 7-31). These differences are partially explained by larger average household size for the single-day respondents -- average expanded household size is 2.9, 2.6 and 2.4 for households participated in Day 1 only, Day 2 only and both days, respectively. When expressed as per capita trip rates, at most only a small difference in trip rates can be noted between one-day and two-day households.

Table 7-27: Average daily trip rate by household size

Household Size	Miami-Dade		Broward		Palm Beach		Region Total	
	Trip Rate	Sample Size	Trip Rate	Sample Size	Trip Rate	Sample Size	Trip Rate	Sample Size
One person	3.1	409	3.5	405	3.5	292	3.3	1,106
Two persons	5.2	491	5.7	490	5.4	349	5.4	1,330
Three persons	6.7	142	7.9	136	10.0	97	7.8	375
Four or more persons	10.1	135	11.6	133	12.8	54	11.1	322
All Households	6.2	1,177	6.9	1,164	6.8	792	6.6	3,133

Table 7-28: Average daily trip rates by annual household income

Annual Household Income	Miami-Dade		Broward		Palm Beach		Region Total	
	Trip Rate	Sample Size	Trip Rate	Sample Size	Trip Rate	Sample Size	Trip Rate	Sample Size
Less than $24,999	4.7	128	4.7	97	5.2	71	4.8	296
$25,000 - $49,999	6.1	215	6.9	229	6.2	163	6.4	607
$50,000 - $74,999	6.1	236	6.7	229	7.3	163	6.6	628
$75,000 or more	7.6	598	8.1	609	7.8	395	7.9	1602
All Households	6.2	1,177	6.9	1,164	6.8	792	6.6	3,133

Table 7-29: Average annual trip rates by the number of workers in the household

Workers in Household	Miami-Dade		Broward		Palm Beach		Region Total	
	Trip Rate	Sample Size	Trip Rate	Sample Size	Trip Rate	Sample Size	Trip Rate	Sample Size
Zero workers	4.2	198	4.9	276	5.2	225	4.8	699
One worker	4.8	569	6.0	497	5.5	323	5.4	1,389
Two workers	7.9	376	8.3	364	8.8	221	8.3	961
Three or more workers	9.9	34	11.3	27	13.4	23	11.1	84
All Households	6.2	1,177	6.9	1,164	6.8	792	6.6	3,133

Table 7-30: Average daily trip rates by the age of residents

Age	Miami-Dade		Broward		Palm Beach		Region Total	
	Trip Rate	Sample Size	Trip Rate	Sample Size	Trip Rate	Sample Size	Trip Rate	Sample Size
Less than 18 years old	2.4	176	2.8	181	2.7	112	2.6	469
18 to 25 years old	2.8	105	2.7	64	2.6	43	2.8	212
26 to 45 years old	3.0	614	3.8	434	4.0	290	3.4	1,338
46 to 65 years old	3.1	858	3.2	948	3.6	597	3.2	2,403
66 or more years old	3.1	344	3.3	472	3.3	315	3.2	1,131
All Persons	2.9	2,097	3.3	2,099	3.5	1,357	3.2	5,553

Table 7-31: Average daily trip rates by number of day completions, Tri-County region

		Day(s) of Participation			Region Total
		Day 1 Only	Day 2 Only	Both Days	
Household	Trip Rate (All Households)	14.4	9.4	6.1	6.6
	Average Household Size	2.9	2.6	2.4	2.5
	Sample Size	130	144	2,859	3,133
Person	Trip Rate (All Persons)	3.3	2.9	3.2	3.2
	Average Person Age	41.1	47.4	41.4	41.8
	Sample Size	467	403	4,683	5,553

8 RECOMMENDATIONS

Household travel surveys are lengthy, costly and complex efforts. They are often conducted only every ten years, and sometimes with even less frequency. This section presents recommendations for the next regional household survey.

Undoubtedly the lack of participant incentives had a large negative impact on the household recruitment rate, and to a lesser extent, on the diary completion rate. Given the cost of household recruit mailouts required to achieve the minimum desired samples, it will be important to research alternative recruitment methods as part of, or prior to conducting the next survey. The recruitment cost is primarily the cost of mailouts, and as such, a way to recruit by other means (phone or email) would be preferable. The difficulty lies in finding an adequate sampling frame of telephone numbers or email addresses for the region's households.

While Florida DOT is precluded from paying for survey incentives, there may be funding sources available to the local and regional planning agencies that could be tapped for the incentive budget. In lieu of cash payouts, options such as transit passes, toll road credits, or similar types of incentives should be explored prior to procuring a survey consultant. If no funding source is identified for incentives, it may be more cost-effective to continue participating in the National Household Travel Survey Add-On program.

The survey posed a substantial burden to respondents, particularly the two-day diary (instead of single day) and the addition of an attitudinal survey element. A more limited set of questions, omission of attitudinal question, and/or single day diary may help to improve completion rates. Approximately 10% of the households completed only one day of the two-day travel diary. They tended to be larger households, underscoring the burden posed by the length of the questionnaire and increased reliance on proxy reporting. Once controlled for household size, there is little material difference in average trip rates between the one-day and the two-day diary households.

The distribution of respondents across household size, income and number of worker categories approximately followed a priori expectations. In general, the survey captured a disproportionately small fraction of infrequent and hard to reach households, which was anticipated in the absence of incentives. Nonetheless, most household categories are represented in all counties by at least 50 households, and in many cases by more than 100 households. Similarly, all age groups are represented in the final sample, with the least number of observations corresponding to the least frequent age group in the population – persons 18 to 25 years old.

The preliminary review of trip rates per person and per household shows a reasonable relationship to household size, income, number of workers and person age, although in general the average trip rates are lower than observed in previous surveys. Whether this reflects actual travel behavior or is due to the survey methodology cannot be established with certainty at this time. Data from the sub-sample of GPS-equipped households shows that these households report fewer trips in their diary than are captured by the GPS logger. On average, the GPS subsample reported 3.25 trips on their diaries while 3.55 were captured using the GPS logger. This is a difference of approximately 10%, which is consistent with findings from other GPS assisted surveys.

The improvement in the survey completion rate achieved during Phase 2 of the survey highlights the importance of public outreach. Incorporation of a comprehensive outreach effort early in the design phase of the survey should be considered for the next survey.

Alternative data collection methods, such as using a phone-based app, may help to improve diary completion rates among certain populations, and could help to reduce respondent burden. It may be necessary to consider using multiple modes to retrieve the diary data (online, CATI, phone app) to give users maximum flexibility. Passive smartphone GPS data collection applications that transmit the phone location back to the survey data server are an attractive option to reduce respondent burden and improve the accuracy of trip location reporting. This method needs to be combined with questions that elicit the purpose of the trip and party composition. Research is underway to impute trip purposes from commercially available land use data, and if successful, it may obviate the need to ask for trip or activity purpose details.

Finally, given the inherent risk posed by conducting the survey only once every 10 years, coupled with the current rapid change in public and private mobility services, it may be prudent to plan for a continuous data collection program. These programs operate similarly to the American Community Survey; the recruitment process is spread out over multiple years, and the annual samples are combined over multiple years to obtain a large enough sample for analysis.

Appendix A

Recruitment Letter

SEFTC Regional Travel Survey
Southeast Florida Transportation Council

FDOT
Florida Department of Transportation

Dear Lake Worth Resident, 09/16/2016

Transportation is an important part of our life. We invite you to share how you travel to work, school and other locations in your community. The Southeast Florida Transportation Council (SEFTC) is conducting a Regional Household Travel Survey to research your community's transportation needs.

This very important study will collect up-to-date information that will impact how we spend our resources to improve your community, including:

- Improving roads and reducing traffic congestion
- Increasing public bus and rail service
- Providing safe sidewalks and bicycle lanes

Respond on the Internet at **www.seftctravelsurvey.org**
Click on the "**Household Survey**" button
Log in using this user ID: **6E7HT**
Complete your survey by **Wednesday, October 5, 2016**

Your participation is essential! Your household is one of a small number of households within the area who have been randomly selected to participate in this study, so your response will have a major impact. Any information you provide will be private and confidential.

If you have any questions about this study or need help completing the survey, you can call us at 1-800-334-4614 or visit our website www.seftctravelsurvey.org.

We appreciate your time and thoughts in participating in this study. Thank you in advance for your important contribution to improving transportation in your area.

Sincerely,
Honorable Susan Haynie
SEFTC Chair
Palm Beach Metropolitan
Planning Organization Board

Sincerely,
Honorable Bruno A. Barreiro
SEFTC Vice Chair
Miami-Dade Metropolitan
Planning Organization Board

Sincerely,
Honorable Bryan Caletka
SEFTC Member
Broward Metropolitan
Planning Organization Board

Vea el otro lado para obtener una traducción Español

Palm Beach MPO — metropolitan planning organization
Miami-Dade Metropolitan Planning Organization
Broward MPO — Metropolitan Planning Organization

SEFTC Regional Travel Survey
Southeast Florida Transportation Council

FDOT
Florida Department of Transportation

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Estimado residente de Lake Worth: 09/16/2016

El transporte es una parte importante de la vida. Lo invitamos a que nos comente cómo viaja usted al trabajo, la escuela y otros lugares de su comunidad. El Consejo de Transporte del Sureste de Florida (Southeast Florida Transportation Council, SEFTC) realiza un Encuesta regional sobre viajes del hogar para evaluar las necesidades de transporte de su comunidad.

Este estudio tan importante recopilará información actualizada para determinar cómo invertimos nuestros recursos con el fin de mejorar nuestra comunidad, lo cual incluye:

- Mejorar las carreteras y reducir la congestión del tránsito
- Expandir el servicio público de autobuses y trenes
- Proveer aceras y carriles para bicicletas seguros

Responda en Internet en **www.seftctravelsurvey.org/espanol**
Haga clic en el botón "**Encuesta del hogar**"
Inicie sesión con esta ID de usuario: **6E7HT**
Tiene tiempo para completar la encuesta hasta el **Miércoles, 05 de octubre, 2016**

¡Su participación es fundamental! Su hogar es uno de los pocos del área que han sido elegidos al azar para participar en este estudio, por eso su respuesta tendrá una gran repercusión.

Toda la información que suministre será privada y confidencial. Si tiene alguna pregunta sobre este estudio o necesita ayuda para completar la encuesta, puede llamarnos al 1-800-334-4614 o visitar nuestro sitio web en www.seftctravelsurvey.org.

Valoramos el tiempo y la dedicación que pone para participar en este estudio. Desde ya le agradecemos su importante aporte para mejorar el transporte de su área.

Atentamente,
Honorable Susan Haynie
Presidente de SEFTC
La Organización de Planificación Metropolitana de Palm Beach

Atentamente,
Honorable Bruno A. Barreiro
Vicepresidente de SEFTC
La Organización de Planificación Metropolitana de Miami-Dade

Atentamente,
Honorable Bryan Caletka
Miembro de SEFTC
La Organización de Planificación Metropolitana de Broward

See the other side for an English translation

metropolitan planning organization PALM BEACH MPO

MIAMI-DADE METROPOLITAN PLANNING ORGANIZATION

Broward MPO Metropolitan Planning Organization

Recruitment Questionnaire

LOGIN

LOGIN
Introduction Text: To start, enter the user ID printed on you letter and click "Log In"
Instruction Text: "You can find your User ID in both of the letters we sent you."

ENTER USER ID :
<**text box size:** 1 row, 5 characters>
Response Format: Open-ended text.
Required Answer: YES

LANGUAGE PREFERENCE

LANG
Welcome to the Southeast Florida Regional Household Survey.
Would you prefer to participate in English, Spanish or Haitian Creole?

Bienvenido al Estudio de Viajes del sureste de la Florida.
¿Preferiría llenar la encuesta en inglés, español o criollo haitiano?

Byenveni nan Sondaj Vwayaj Rejyonal 2016
Èske ou ta pito yo patisipe nan lang angle, lang Espanyòl oubyen kreyòl ayisyen?

Response Options: <9> "English (inglés)"
<10> "Español (Spanish)"
<1036> "Haitian Creole"

Continue
Continuar
Kontinye

SURVEY INTRODUCTION

WELCOME
Introduction Text: "Welcome to the Southeast Florida Regional Travel Survey.
It is important that all invited households respond, even if you do not travel very much. This is so we can get a complete picture of how and when people move about when they go out.
The study will look at how residents in <COUNTY> county and nearby areas travel on a daily basis. The results will be used to:
• Improve roads and reducing traffic
• Increase public bus and rail service
• Provide safer sidewalks and bicycle lanes

Please use the "Next Page" and "Previous Page" buttons to navigate within the survey."

RESPONDENT IS 18 OR OLDER

AGE18
Universe: All
Question Text: "Are you a member of this household and at least 18 years old?"
Response Options: <1> "Yes." < go to Opinion_grid>
<2> "No" <go to TERM18_INFO>
Response Format: Radio Button
Required Answer: YES

TERMINATE INTERVIEW 18

TERM18_INFO
Universe: Household respondent under 18 (AGE18=2) or Person 1 age less than 18 (AGE_2_1<5)
Introduction Text: "This survey needs to be completed by someone at least 18 years of age. If someone 18 years of age or older is available, please ask them to come to the computer and go to www.seftctravelsurvey.org and click the "Household Survey" button. When asked, enter the following user ID #: **<USERID>**

If no one in your household at least 18 years of age is currently available, please write down the website and user ID number and have him/her log back in at a later time. Thank you.

You may now close this screen"

CONSENT FORM

ICONSENT
Universe: All
"This survey is being conducted on behalf of the Southeast Florida Transportation Council (SEFTC) by Abt SRBI, a survey research firm. The purpose of this survey is to gather demographic information from Southeast Florida households, and will be used by the survey sponsor, SEFTC, to forecast the transportation needs of the region. Your responses are confidential and participation is entirely voluntary and will be used for statistical purposes only.
The estimated time needed to complete this survey is 15 minutes.
If you have any questions about your rights as a study participant, please call the Abt SRBI Institutional Review Board at 301-628-5524.

If you have any questions about the Regional Travel Survey, contact Abt SRBI at 1-800-334-4614.
By continuing with this survey, you confirm that you are at least 18 years old and have read the consent form."

TRANSPORTATION OPINIONS

Universe: All
Introduction Text: "To start, we would like to know your thoughts on the community's transportation system and how you usually travel from place to place. Next, we would like some background information regarding your household."

TRANSPORTATION OVERALL

Opinion1a
Universe: All
Question Text: "How would you rate the transportation options in your community, overall?"
Response Options:
<1> "Excellent"
<2> "Very good"
<3> "Good"
<4> "Fair"
<5> "Poor"
<999> "Don't know"
<997> "No answer"
Response Format: Drop down
Required Answer: NO

BUS AND RAIL

Opinion1b
Universe: All
Question Text: "How would you rate the public bus and rail service in your community?"
Response Options:
<1> "Excellent"
<2> "Very good"
<3> "Good"
<4> "Fair"
<5> "Poor"
<999> "Don't know"
<997> "No answer"
Response Format: Drop down

Required Answer: NO

BIKE LANES AND SIDEWALKS

Opinion1c
Universe: All
Question Text: "How would you rate the bike lanes and sidewalks in your community?"
Response Options:
<1> "Excellent"
<2> "Very good"
<3> "Good"
<4> "Fair"
<5> "Poor"
<999> "Don't know"
<997> "No answer"
Response Format: Drop down
Required Answer: NO

HIGHWAYS

Opinion1d
Universe: All households
Question Text: "How would you rate the roads and highways that serve your community?"
Response Options:
<1> "Excellent"
<2> "Very good"
<3> "Good"
<4> "Fair"
<5> "Poor"
<999> "Don't know"
<997> "No answer"
Response Format: Drop down
Required Answer: NO

TRAVELING MODE USAGE

USE BUS AND RAIL

Mode1a
Universe: All
Question Text: **"**When traveling from place to place, how often do you ride a public bus or use rail service?"
Response Options:
<1> "Every Day"

<2> "A few days a week"
<3> "A few days a month"
<4> "A few days a year"
<5> "Never"
<999> "Don't know"
<997> "No answer"

Response Format: Dropdown
Required Answer: NO

CAR SERVICE

Mode1b
Universe: All households
Question Text: **"**When traveling from place to place, how often do you ride with Uber, Lyft, Zipcar or other shared car service?"
Response Options:
<1> "Every Day"
<2> "A few days a week"
<3> "A few days a month"
<4> "A few days a year"
<5> "Never"
<999> "Don't know"
<997> "No answer"

Response Format: Dropdown
Required Answer: NO

WALK

Mode1c
Universe: All
Question Text: **"**When traveling from place to place, how often do you walk 1 mile or more?"
Response Options:
<1> "Every Day"
<2> "A few days a week"
<3> "A few days a month"
<4> "A few days a year"
<5> "Never"
<999> "Don't know"
<997> "No answer"

Response Format: Dropdown
Required Answer: NO

BIKE

Mode1d
Universe: All
Question Text: **"**When traveling from place to place, how often do you ride a bicycle?"
Response Options:
<1> "Every Day"
<2> "A few days a week"
<3> "A few days a month"
<4> "A few days a year"
<5> "Never"
<999> "Don't know"
<997> "No answer"
Response Format: Dropdown
Required Answer: NO

PERSONAL VEHICLE

Mode1e
Universe: All
Question Text: **"**When traveling from place to place, how often do you drive a personal vehicle (including car, van or truck)?"
Response Options:
<1> "Every Day"
<2> "A few days a week"
<3> "A few days a month"
<4> "A few days a year"
<5> "Never"
<999> "Don't know"
<997> "No answer"
Response Format: Dropdown
Required Answer: NO

TRAFFIC CONGESTION OPINION

Traffic_O
Universe: All
Question Text: "How would you rate the level of traffic congestion in your community?"
Response Options:
<1> "Very congested"
<2> "Moderately congested"
<3> "Slightly congested"
<4> "Not at all congested
<999> "Don't know"
<997> "No answer"
Response Format: Drop down

Required Answer: NO

NUMBER OF MOTORIZED VEHICLES

TOTVEH
Universe: All
Question Text: "How many motorized vehicles are owned, leased, or available for regular use by the people who currently live in your household? Please be sure to include motorcycles and mopeds."
Instructions Text: "Include leased or company-owned cars, vans, pickup trucks, sport-utility vehicles, motorcycles and mopeds if they are used by household members on a regular basis. Do not include RVs."
Response Options: ____"Number of motorized vehicles" <**text box size:** 1 row, 2 characters>
<0> "None"
Response Format: Open ended box and check box
Required Answer: YES

NUMBER OF ADULT BICYCLES

ABIKES
Universe: All households
Question Text: "How many adult-size bicycles does your household have in working order?"
Instructions Text: "Include all bikes, in working condition, that are large enough to be used by an adult."
Response Options: ___"Number of Bicycles" <**text box size:** 1 row, 2 characters>
<0> "None"
<999> "Don't know"
<997> "No answer"
Response Format: Open ended box and check boxes
Required Answer: NO

TOLL TRANSPONDER OWNERSHIP

TOLL_OWN
Universe: TOTVEH >= 1 (one or more vehicles)
Question Text: "To pay for highway tolls, many drivers use SunPass, E-Pass, EZ-Pass or similar transponders instead of using cash. These toll transponders are usually attached to the front windshield of a car."
Does your household own a SunPass or any other toll transponder?"
Instructions Text: "This includes the SunPass Mini sticker transponder as well as the Sunpass Portable transponder."

Response Options: <1> "Yes"
<2> "No"
<999> "Don't know"
<997> "No answer"
Response Format: Radio button
Required Answer: NO

HOUSEHOLD COMPOSITION

Introduction Text: "How people travel is often dependent on the characteristics of their household. To better understand your traveling needs, we would like you to describe your household by answering a few questions."

HOUSEHOLD SIZE

HHSIZE
Universe: All
Question Text: "How many people are living or staying at this address?"
Instructions Text: "INCLUDE yourself and everyone else (babies, children and adults) who live or stay here."
"DO NOT INCLUDE anyone who is living somewhere else, such as a college student living away or someone in the Armed Forces on deployment."
Response Options: "Number of People"
<1> "1"
<2> "2"
<3> "3"
<4> "4"
<5> "5"
<6> "6"
<7> "7"
<8> "8"
<9> "9"
<10> "10 or more"
Response Format: Drop down list
Required answer: YES
Terminate: If no answer after second double soft prompt, send to TERM_REFUSAL.

Introduction Text: "For the next set of questions, we would like you to describe the background of members of your household. These questions are important in understanding how residents in your neighborhood travel."

PERSON NAMES

FNAME_#
Universe: All
Question Text: <If HHSIZE = 1> "Please tell us your first name, initials or nick-name?"
<If HHSIZE greater than 1:> "Please tell us the first name, initials or nick-name of the <HHSIZE> people living or staying at this address"
Instructions Text: "Names or initials are not allowed to be identical. If two names or initials are identical, consider adding text or a number to one of them. For instance, you can name one person Joe and another Joe Jr. or Joe2."
Response Options:

	Name:
Your first name, initials or nick-name:	_____ <**text box size:** 1 row, 30 characters>
Person 2's first name, initials or nick-name:	_____ <**text box size:** 1 row, 30 characters>
Person 3's first name, initials or nick-name	_____ <**text box size:** 1 row, 30 characters>
Person 4's first name, initials or nick-name:	_____ <**text box size:** 1 row, 30 characters>
UP TO PERSON 10	_____ <**text box size:** 1 row, 30 characters>

Response Format: List of all persons, text box next to each person's name, open-ended text
Required answer: YES
Terminate: If no answer, send to TERM_REFUSAL.

PERSON GENDER

GENDER_#
Universe: All
Question Text: <If HHSIZE=1> "What is your sex?"
<If HHSIZE>1> "Please provide the sex for all household members"
Instructions Text: <NULL>
Masking: Mask the "Prefer not to say" option. Unmask after soft prompt 1 has been displayed.
Response Options:

	"Male	"Female"	<998>"Prefer not to say"	<997> "No answer"
Your sex:	○	○	○	○
FNAME_2's sex:	○	○	○	○
FNAME_3's sex:	○	○	○	○
FNAME_4's sex:	○	○	○	○
UP TO PERSON 10	○	○	○	○

Response Format: Grid, radio buttons, LIST ALL HH MEMBERS BY NAME
Required Answer: NO

PERSON AGE

AGE_#
Universe: All
Question Text: <If HHSIZE=1> "What is your age?"
<If HHSIZE>1> "Please provide the age for all household members"
Instructions Text: <If Person number 2 or greater then:> "Please report babies as age 0 when the child is less than 1 year old."
Response Options: <If person number 1>

	Age in years	
<person1> Your age:	_____ <textbox, 3 character>	<997> "No answer"
<person2> FNAME_2's age:	_____ <textbox, 3 character>	<997> "No answer"
<person3> FNAME_3's age:	_____ <textbox, 3 character>	<997> "No answer"
<person4> FNAME_4's age:	_____ <textbox, 3 character>	<997> "No answer"

Response Format: Open-ended

Required answer: NO
Terminate: <If respondent leaves AGE_1 < 18, then send to TERM18_INFO >

Terminate: <If all members of household are 85 or older, then send to TERM_INEL>
Terminate: <If all members of household are 18 or younger, then send to TERM_INEL>

PERSON AGE CATEGORY

AGE_2_#
Universe: Exact age not provided in **AGE_#** question
Question Text: <If HHSIZE=1> "What is your age category?"
<If HHSIZE>1> "Please provide the age category for each household member"
Instruction Text: For classification purposes, we need to know at least the age category of each household member. This will be used to make sure all age categories are represented in the survey.
Response Options:
<1> "Under 3 years old"
<2> "3 to 5 years old"
<3> "6 to 13 years old"
<4> "14 to 17 year old"
<5> "18 to 64 year old"
<6> "65 to 84 years old"
<7> "85 years and over"

Response Format: Drop down list,

Required answer: YES
Terminate3: <If respondent leaves AGE_2_1 < 4, then send to TERM18_INFO >

TERMINATE INELIGIBLE HOUSEHOLDS

TERM_INEL
Universe: All household respondents are 85 or older (All AGE_2_#=7)
All household respondents are under 18 (All AGE_2_#<=4)
No household members between 18 and 84 (both inclusive).
I.e., No one in age AGE_2_#=5 or 6.
Introduction Text: "Thank you for your time. Your household is not eligible to participate in this study. This concludes the survey.
You may now close this screen"

TERMINATE INTERVIEW REFUSAL

TERM_REFUSAL
Universe: Household Refusal to force answer question

Introduction Text: "To participate in the second part of the study - the travel survey - we ask you to re-enter this survey and provide an answer to the question that you missed. To re-enter the survey, please go to www.seftctravelsurvey.org and click on the "Household Survey" button. When asked, enter the following user ID #: <USERID>. You may now close this window."

RELATIONSHIP STATUS

RELATIONSHIP_#
Universe: HHSIZE>1
Question Text: <Starting with Person2> "How is FNAME_2+ related to you?"
Instructions Text: <NULL>
Auto punch: Person1 = <0> "Contact person"
Masking: ALWAYS mask option <0> "Contact person"
Response Options:
<0> "Contact person"
<1> "Husband or wife"
<2> "Son or daughter (biological child, adopted child or stepchild)"
<3> "Brother or sister"
<4> "Father or mother"
<5> "Grandchild"
<6> "Parent-in-law"
<7> "Son-in-law or daughter-in-law"
<8> "Other relative"
<9> "Roomer or boarder"
<10> "Housemate or roommate"
<11> "Unmarried partner"
<12> "Foster child"
<13> "Other nonrelative"
<998> "Prefer not to say"
<997> "No answer"
Response Format: Drop down list
Required Answer: NO

PERSON DRIVER STATUS

DRIVE_#
Universe: AGE_2_#>=4 (Age 14 or older)
Question Text: <If person 1> "Do you drive?"
<If person 2 or greater> "Does <FNAME_#> drive?"
Response Options:
<1> "Yes"
<2> "No"
<998> "Prefer not to say"

<997> "No answer"
Response Format: Drop down list
Required Answer: NO

PERSON HISPANIC ORIGIN

HISP_#
Universe: All
Question Text: <If person 1> "Are you of Hispanic or Latino origin?"
<If person 2 or greater> "Is FNAME_# of Hispanic or Latino origin?"
Response Options: <1> "Yes"
<2> "No"
<998> "Prefer not to say"
<997> "No answer"
Response Format: Drop down list
Required Answer: NO

PERSON RACE

RACE_#
Universe: All
Question Text: <If person 1> "What is your race?"
<If person 2 or greater> "What is <FNAME>'s race?"
Instructions Text: "Please select all that apply"

Response Options: <1> ☐"White"

<2> ☐"Black or African American"

<3> ☐"American Indian or Alaska Native"

<4>☐ "Asian"

<5>☐ "Some other race – Please specify":_____
<**text box size:** 1 row, 15 characters>
<998> "Prefer not to say"
<997> "No answer"
Response Format: Check all that apply and open-ended text.
Required Answer: NO

PERSON EDUCATION STATUS

EDUSTATUS_#

Universe: AGE_2_#>=2
Question Text: <If person 1> “In the past three months, did you attend school or college in person?”
<If person 2 or greater> “In the past three months, did <FNAME_#> attend school or college in person?”
Instructions Text: "This includes nursery school, preschool, kindergarten, grade 1 through 12, college and vocational school."
Response Options: <1> “Attended school or college in person”
<2> "Attended homeschool or online classes part or most of the time”
<3> “Did not attend school or college”
<998> “Prefer not to say”
<997> “No answer”
Response Format: Radio button
Required Answer: NO

PERSON EDUCATION LEVEL OR GRADE

EDULEVEL_#
Universe: EDUSTATUS_# =1 or 2 (Attended school/college within past three months)
Question Text: <If person 1> “What grade or level did you attend/are you attending?”
<If person 2 or greater> “What grade or level did <FNAME_#> attend/is <FNAME_#> attending?”
Instructions Text: "Graduate school includes MA or PhD programs, medical and law schools."
Response Options: <1> “Nursery school, preschool”
<2> “Kindergarten”
<3> “Grade 1 through 12”
<4> “College undergraduate years (freshman to senior)”
<5> “Graduate or professional school”
<6> “Vocational or technical school”
<999> “Don’t know”
<998> “Prefer not to say”
<997> “No answer”
Response Format: Drop down list
Required Answer: NO

PERSON EDUCATION FULL TIME OR PART TIME STATUS

EDUTENURE_#
Universe: EDUSTATUS_# = 1 or 2 (Attended school/college within past three months)

Question Text: <If person 1> "Are you attending school or college full-time or part-time?"
<If person 2 or greater> "Is <FNAME_#> attending school or college full-time or part-time?"
Response Options: <1> "Full-time"
<2> "Part-time"
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"
Response Format: Drop down list
Required Answer: NO

DIARY MODE

DIARYCONSENT
Universe: Person 1
Question Text:
<All> "The planners and engineers of the Southeast Florida Transportation Council are interested in how people travel from place to place. This information will make traveling to work, school and shopping centers quicker and safer.< If HHSIZE=1> "In a few weeks, we will send you the second part of the survey. The second part asks about how you travel for two days. Without completing this second part of the survey, we cannot use of the information you have already provided."
< If HHSIZE=1 and GPS=1 then> "To help understand how far you travel, we would like to send you a GPS device. We will provide the GPS device to you at no cost."
<If HHSIZE >=2> In a few weeks, we will send you the second part of the survey. The second part asks about how your households travel for two days. Without completing this second part of the survey, we cannot use of the information you have already provided."
< If HHSIZE >=2 and GPS=1 then> " To help understand how far you travel, we would like to send your household a GPS device(s). We will provide the GPS device(s) to you at no cost."
<All> "Would you be able to complete the second part of the survey over the Internet?"
Response Options: <1> "Yes" < **MAILNAME>**
<2> "No" <send to TELMODE>
<997> "No answer" <send to REFUSALCONVERT >
Response Format: Radio button
Required answer: YES
Forward: If no answer, send to REFUSALCONVERT

TELMODE
Universe: DIARYCONSENT=2
Question Text: "Would you be able to complete the second part of the survey over the phone or internet?"

Instructions Text: <NULL>
Response Options: <1> "Internet" <**MAILNAME>**
<2> "Phone" <**MAILNAME>**
<3> "No" < send to REFUSALCONVERT>
<997> "No answer" <send to REFUSALCONVERT >
Response Format: Radio button
Required answer: YES
Forward: If no answer, send to REFUSALCONVERT

HOUSEHOLD REFUSAL CONVERSION

REFUSALCONVERT
Universe: DIARYCONSENT=997 OR TELMODE=3,997
Question Text: "Have you ever wondered how transportation planners decide on where to build a street or place a bus stop? This study will help <COUNTY> county improve future transportation options.
The information you provide is vital to reducing congestion and improving transportation safety. We want to make sure that your household is represented in this important survey. No one else can substitute for you.
Will you help by completing the second part of the survey over the Internet or over the phone?"
Instructions Text: <NULL>
Response Options: <1> "Internet"
<2> "Phone"
<9> "No thank you" <send to Term_NoRecruit>
<997> "No answer" <send to Term_NoRecruit>
Response Format: Radio button
Required answer: YES
Terminate: If no answer, send to Term_NoRecruit

TERMINATE INTERVIEW REFUSAL

Term_NoRecruit
Universe: REFUSALCONVERT=9, 997
Introduction Text: "Thank you for your time. This concludes the survey.
You may now close this screen"

MAILNAME

MAILNAME
Universe: Person 1
Question Text: "To whom should we address the mail materials?"

Instructions Text: <NULL>
Response Options: <MAILFIRSTN> "First Name:" _____
<**text box size:** 1 row, 30 characters>
< MAILLASTN > "Last Name:" _____
<**text box size:** 1 row, 30 characters>
Required answer: YES
Terminate: If no answer, send to Term_NoRecruit

CONTACT INFORMATION

EMAIL_#
Instruction Text: "To help remind your household to complete the second part of the survey, we would like your contact information."
Could you provide us with:"
Universe: If age 18 + (AGE_2_# in (5, 6))
Question Text: <If person 1>"Your email:"
<if person 2+>"FNAME_#'s email:"
Response Options: _____ <text box, 50>
<998> "Prefer not to say"
<997> "No answer"
Required Answer: NO

PHONE_#
Universe: If age 18 + (AGE_2_# in (5, 6))
Question Text: <If person 1>"Your phone number:"
<if person 2+>"<FNAME_#>'s phone number:"
Response Options: _____ <text box, 10>
<998> "Prefer not to say"
<997> "No answer"
Required Answer: NO

CELL_#
Universe: If age 18 + (AGE_2_# in (5, 6))
Question Text: **"**Is this a landline phone or cellphone?"
Response Options: <1> "Landline phone"
<2> "Cellphone"
<998> "Prefer not to say"
<997> "No answer"
Response Format: Drop down list
Required Answer: NO

REMINDER CONSENT

REM_CONS_#
Universe: If age AGE_2_# in (5, 6)
Question Text: <If person 1> **"**In which language would you like reminders sent?"
<If person 2+> **"**In which language would <FNAME_#> like reminders sent?"
Response Options: <1> "English"
<2> "Spanish"
<3> "Haitian-Creole"
<997> "No answer"
Response Format: Drop down list
Required Answer: NO

TEXT CONSENT

TEXTCONS
Universe: Person 1 AND valid number provided (Phone_1 not in (997, 998)) AND cell phone (Cell_1 =2)

Question Text: **"**We can also send you a text message to remind you to complete the second part of the survey. Messages will be sent from an automated system and we will only send up to 5 text messages. Message and data rates may apply and you can reply STOP at any time to opt out of the text messages.

May we have your permission to send you invitations to surveys via text message?"

Response Options: <1> "Yes"
<2> "No"
<997> "No answer"
Response Format: Drop down list
Required Answer: NO

CONFIRM MAIL ADDRESS

MAILCONF
Universe: Person 1 AND MAILADDR not = NULL (i.e., address provided in sample)
Question Text: "In order to mail instructions for completing the second part of the survey, we need to verify that your mailing address is:"
Street Address: <MAILADDR>
<IF MAILSUITE not NULL> Apartment or Suite: <MAILSUITE>

City: <MAILCITY>
State: <MAILSTATE>
ZIP code: <MAILZIP>

Instructions Text: <NULL>

Response Options: <1> "Yes, this is my mailing address"
<2> "No, this is not my mailing address"
<997> No answer

Response Format: Radio button

Required Answer: YES

Terminate: If no answer after double soft prompt, send to TERM_REFUSAL

CORRECT MAIL ADDRES

MAILADDRCORRECT

Universe: Person 1 AND MAILCONF =2 (Mailing address not confirmed) or MAILADDR = NULL (i.e., address not provided in sample)

Question Text: "Could you please provide your correct mailing address?"

Instructions Text: <NULL>

Response Options: <Insert Address Auto Complete using API>
<MAILADDR>"Street:"_____
<**text box size:** 1 row, 50 characters>
<MAILSUITE>"Apartment or Suite:"_____
<**text box size:** 1 row, 20 characters>
<MAILCITY>"City:" _____
<**text box size:** 1 row, 20 characters>
<MAILSTATE>"State:"_____
<**text box size:** 1 row, 20 characters>
<MAILZIP>"5 digit ZIP code:"_____
<**text box size:** 1 row, 5 digits>

Response Format: Open ended

Required answer: YES

Terminate If no answer after double soft prompt1 OR double soft prompt2, send to TERM_REFUSAL

HOUSEHOLD QUESTIONS

Introduction Text: "To conclude, we have a few questions about your home. This information is needed to assure our data is representative of the region."
<DISPLAY FIELDS:>
Street: <MAILADDR>
<IF MAILSUITE not NULL> Apartment or Suite: <MAILSUITE>
City: <MAILCITY>

State: <MAILSTATE>
ZIP code: <MAILZIP>

HOUSEHOLD TENURE

RENT
Universe: Person 1
Question Text: "Is this house, apartment, or mobile home owned or rented?"
Response Options:
<1> "Owned by you or someone in this household"
<2> "Rented
<3> "Occupied without payment of rent"
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"
Response Format: Drop down list
Required Answer: NO

SEASONAL HOME

SEASONAL
Universe: Person 1
Question Text: "Is this housing unit for vacation, seasonal or other short-term use?"
Response Options:
<1> "Yes"
<2> "No"
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"
Response Format: Drop down list
Required Answer: NO

SEASONAL MONTHS

SEASONAL2
Universe: Person 1
Question Text: "How many months per year do you usually live at this address?"
Response Options:
<1> "Up to 1 month"
<2> "2 months"
<3> "3 months"
<4> "4 months"
<5> "5 months"
<6> "6 months"
<7> "7 months"
<8> "8 months"
<9> "9 months"

<10> "10 months"
<11> "11 or more months
<997> "No answer"

Response Format: Drop down list
Required Answer: NO

DWELLING TYPE

DWELLING
Universe: Person 1
Question Text: "Which best describes this housing unit?"
Response Options: <1> "A mobile home"
<2> "A one-family house"
<3> "A building with 2 or more units"
<4> "Boat, RV, van, or something else"
<999> "Don't know"
<997> "No answer"

Response Format: Drop down list
Required Answer: NO
<Page Break>

CATEGORICAL HOUSEHOLD INCOME

INCOME_Range
Universe: Person 1
Question Text: "What was your household's total income during the PAST 12 MONTHS?"
Response Options: <1> "Less than $10,000"
<2> "$10,000 to $14,999"
<3> "$15,000 to $24,999"
<4> "$25,000 to $34,999"
<5> "$35,000 to $49,999"
<6> "$50,000 to $74,999"
<7> "$75,000 to $99,999"
<8> "$100,000 to $149,999"
<9> "$150,000 to $199,999"
<10> "$200,000 or more
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"

Response Format: Drop down list
Required Answer: NO

INCOME BELOW/ABOVE 50K

INCOME_50K

Universe: Person 1 if INCOME_Range=998 or 999 or 997

Question Text: "Was your household's total income during the PAST 12 MONTHS more or less than $50.000?"

Response Options:
<1> "Less than $50,000"
<2> "$50,000 or more"
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"

Response Format: Drop down list

Required Answer: NO

END OF SURVEY

ENDSURVEY

Universe: Household Consent (DIARYCONSENT=1 or REFUSALCONVERT =1)

Introduction Text: "Thank you for completing the first part of the survey. Information regarding the second part of the survey will be sent by mail a few days prior to your first travel day ."

If you have any questions, please contact us at:
Toll Free: "800-334-4614"
Email: "seftcsurvey@srbi.com"
Website: "www.seftctravelsurvey.org"
You may now close this window."

Attitudinal Survey

The traveler attitude survey is a key element of the regional household survey effort. The data from the attitude survey will likely be used in three key areas: (a) to quantify traveler attitudes and preferences by sociodemographic strata, (b) to develop traveler market segments using different combinations of the attitudinal questions, and (c) to potentially use some of these market segments as explanatory variables in the estimation of the activity-based models.

The questions included in the attitudinal survey are shown below. When the questions are asked of the survey participants, the topic headers were not shown. The questions were randomized to ensure that there is no bias related to answering questions in a certain order.

ATTITUDINAL QUESTIONS

I would like to ask you about your day-to-day trips. I am going to read you a number of statements as they relate to these trips.

There are no right or wrong answers. I would like to indicate ***your*** level of agreement or disagreement with each statement. Please indicate your rating level on a scale of 1 to 10, where

- 1 means that you strongly disagree,
- 10 means that you strongly agree.

Remember, you can always say "don't know" if you feel the question does not apply to you. Is that clear or do you have any questions before we proceed?

Time Sensitivity

1. Driving is usually the fastest way to get to my destination.
2. I would change my form of travel if it would save me some time.
3. I like to make productive use of my time when I travel.
4. I am willing to pay higher tolls, if it is going save me time.
5. Having a stress-free trip is more important than reaching my destination quickly.

Flexibility

6. I need to make most of my daily trips according to a fixed schedule.
7. I need to make stops on the way to or from key destinations.
8. I need to travel mostly during the morning and afternoon rush hours.
9. It is important to be able to change my travel plans at a moment's notice.

Travel Experience

10. I wouldn't mind walking 15 to 20 minutes to get to and from a bus or train stop.
11. I don't mind changing between buses or between bus and rail service.
12. Riding transit is less stressful than driving on congested highways.
13. Figuring out how to use public transportation is easy.
14. I don't like riding transit with total strangers sitting next to me.

15. App-based car services are an affordable and convenient option for my daily travel.

Safety

16. I feel safe on a bus or train to my destination.
17. I feel safe while waiting for a bus or train to/from my destination.
18. I feel safe riding my bicycle on roadways where bike-lanes are marked.

Reliability

19. If my travel is delayed, I am concerned about the cause and length of the delay.
20. I don't mind travel delays as long as I am comfortable.
21. I prefer slower, yet reliable routes to faster routes that are prone to delays.
22. I leave earlier or later to avoid highway congestion.

Cost

23. I am willing to pay a higher fare for a premium quality transit service.
24. I use the fastest form of transportation for my daily travel regardless of the costs.
25. Cost of driving (or price of gas) is a key factor in choosing the way I travel.

Trip Diary Questionnaire

INTRO SCREEN/LOGIN

Intro Text: Please enter your User ID below and click "CONTINUE" to get started.
Ingrese su ID de usuario abajo y haga clic en "Log In" para comenzar.
Tanpri mete Idantifikasyon [ID] Itilizatè w la pi ba a epi klike "Log In" pou w kòmanse.

Instruction Text: "You can find your User ID in both of the letters we sent you."
Puede encontrar su ID de usuario en las cartas que le enviamos.
W ap jwenn Idantifikasyon [ID] Itilizatè w la nan toulede lèt nou te voye ba ou yo.
ENTER USER ID:

Required Answer: YES

Response Format: Open-ended text.

LANGUAGE PREFERENCE

LANG

Welcome to the Southeast Florida Regional Household Survey.
Would you prefer to participate in English, Spanish or Haitian Creole?

Bienvenido al Estudio de Viajes del sureste de la Florida.
¿Preferiría llenar la encuesta en inglés, español o criollo haitiano?

Byenveni nan Sondaj Vwayaj Rejyonal 2016
Èske ou ta pito yo patisipe nan lang angle, lang Espanyòl oubyen kreyòl ayisyen?

Response Options: <9> "English (inglés)"
<10> "Español (Spanish)"
<1036> "Haitian Creole"

Continue
Continuar
Kontinye

LANDING PAGE

LANDING

Intro Text: "CLICK ON A NAME BELOW TO ENTER TRAVEL INFORMATION FOR THAT PERSON."

FNAME_1 START
FNAME_2 START
FNAME_3 START
UP TO PERSON 10

Response Format: List of names of HH members between 6 and 84, both inclusive with "START" button associated
Required Answer: N/A

CONSENT PAGE

ICONSENT
Universe: All

Consent Text:

<All> "This survey is being conducted on behalf of the Southeast Florida Transportation Council (SEFTC) by Abt SRBI, a survey research firm. The purpose of this survey is to gather demographic and travel behavior information from Southeast Florida households. This information will be used to forecast the transportation needs of the Southeast Florida region and your community.
<if GPS=1 and AGE 18 or older> "Respondents' travel behavior, such as distances traveled and number of trips, will also be captured with the use of Global Positioning System (GPS) loggers. The GPS logger will help the SEFTC better understand travel in your area. To protect your privacy, all travel data is stored on the GPS logger under an anonymous id."

<All> "In this study, we will be asking each household member to complete their own travel diary for two (2) assigned travel days.

For children between the ages of 6 and 12 years, we ask that an adult respond on their behalf.

Your responses are confidential and participation is entirely voluntary and will be used for statistical purposes only.

Depending on the number of trips taken, the estimated time needed to complete this survey is 15 minutes.

If you have any questions about your rights as a study participant, please call the Abt SRBI Institutional Review Board at 301-628-5524.

If you have any questions about the Regional Travel Survey, contact Abt SRBI at 1-800-334-4614.

By continuing with this survey, you confirm that you consent to participate in this study.
<Previous Page> **<Next Page>**

Response Format: Only text, no answer options.
Required Answer: N/A

PROXY

PROXY
Universe: HHSIZE>=2 (households with two or more household members)

Question Text: "Is this <FNAME_#> or is it someone else in the household?"
Instructions Text: <NULL>
Response Options: <0> FNAME_#
<1> "Someone else"
Auto-punch: Skip question and auto-punch as "0" if HHSIZE=1
Response Format: Radio button
Required Answer: YES

LABOR FORCE BLOCK

Introduction Text: "The first time you record <If PROXY =0, "your"> <else If PROXY =1, "F_NAME's"> trips and activities, we will ask a few questions about <If PROXY =0, "your"> <else If PROXY =1, "F_NAME's"> work and school status. This is important as commuting to and from work and school accounts for most of the trips a person makes on a daily basis.
Next, we will ask you to record all <If PROXY =0, "your"> <else If PROXY =1, "F_NAME's"> trips (including walks and bike rides) and to provide as much detail as possible.
Let's start with some background questions that will help us understand why and how far <If PROXY =0 then "you"> <else If PROXY =1 "F_NAME"> travels. Next, we will ask about <If PROXY =0, "your"> <else If PROXY =1, "F_NAME's"> trips."

TRANSIT PASS OWNERSHIP

TRANSIT_PASS
Universe: sAge>3 (persons 14 years of age or older)
Question Text: <If PROXY=0> "Do you own an **unlimited ride, weekly or monthly** BCT bus pass, EASY Card or QUIK pass?"
<If PROXY=1> "Does FNAME_# own an **unlimited ride, weekly or monthly** BCT bus pass, EASY Card or QUIK pass?"
Instructions Text: <If PROXY=0> "If you own a **pay per trip** and not an **unlimited** BCT bus pass, EASY Card or QUIK pass, please select the option 'No'."

<If PROXY=1> "If FNAME_# owns a **pay per trip** and not an **unlimited** BCT bus pass, EASY Card or QUIK pass, please select the option 'No'."

Definition Text: <Unlimited Ride>=" Unlimited passes let you ride as many times as you want for a specific period, such as a week or month. Unlimited passes are often called "weeklies" or "monthlies"."
<Pay per ride>="Pay per ride passes are loaded with a cash value. A cash amount for each ride is deducted after each use."

Response Options:
<1> "Yes"
<2> "No"
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"

Response Format: Radio button
Required Answer: NO

WORK STATUS

WRK_STS
Universe: sAge > 3 (persons 14 years of age or older)
Question Text: <If PROXY =0>"This week, from <Week Start as: DOW, MM DD, YYYY> through <Week End as: DOW, MM DD, YYYY>, will you do ANY work for either pay or profit?"
<If PROXY =1>"This week, from <Week Start as: DOW, MM DD, YYYY> through <Week End as: DOW, MM DD, YYYY>, will FNAME_# do ANY work for either pay or profit?"

Response Options:
<1> "Yes"
<2> "No"
<3> "Retired"
<4> "Disabled and unable to work"
MASK:
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"

Response Format: Radio button
Required Answer: NO

JOB STATUS

JOB_STS
Universe: WRK_STS =2 (will not do work during week of travel period)

Question Text: <If PROXY =0>"This week, from <Week Start as: DOW, MM DD, YYYY> through <Week End as: DOW, MM DD, YYYY>, do you have a job either full time or part time?
<If PROXY =1>"This week, from <Week Start as: DOW, MM DD, YYYY> through <Week End as: DOW, MM DD, YYYY>does FNAME_# have a job either full or part time?

Instructions Text: Include any job from which you are temporarily absent, such as on vacation or maternity/paternity leave.

Masking: Mask "Don't know" and "Prefer not to say". Unmask after soft prompt.

Response Options:
<1> "Yes"
<2> "No"
<3> "Retired"
<4> "Disabled and unable to work"

MASK:
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"

Response Format: Radio button

Required Answer: NO

NUMBER OF JOBS

Count_Jobs

Universe: WRK_STS =1 or JOB_STS =1 (has job and/or will do work during week of travel period)

Question Text: <if PROXY=0>"As of this week, how many jobs do you have?"
<if PROXY=1>"As of this week, how many jobs does FNAME_# have?"

Instructions Text: <NULL>

Masking: Mask "Don't know" and "Prefer not to say". Unmask after soft prompt.

Response Options:
<1> "One (1) for pay job"
<2> "Two (2) for pay jobs"
<3> "Three (3) or more for pay jobs

MASK:
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"

Response Format: Radio button

Required Answer: NO

HOURS WORKED

WRK_AMNT

Universe: WRK_STS =1 (will do work for pay or profit during week of travel period)

Question Text: <if PROXY=0> "In total, how many hours do you plan on working this WEEK at your <if Count_Jobs=2, 3, show: primary> job?"
<if PROXY=1> "In total, how many hours does FNAME_# plan on working this WEEK at your <if Count_Jobs=2, 3, show: primary> job?"

Instructions Text: "If you don't know for sure, please provide your best guess."

Response Options: "___ Planned hours to work this week
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"

Response Format: Open-ended and check box

Required Answer: NO

FLEXIBLE WORK SCHEDULE

Wrk_Flx

Universe: WRK_STS =1 or JOB_STS =1 (has job and/or will do work during week of travel period)

Question Text: <If PROXY=0> "Do you have flexible work hours at your <if Count_Jobs=2, 3, show: primary> job that allow you to vary or make changes in the time you begin and end work?"
"<If PROXY=1> Does FNAME_# have flexible work hours at FNAME_#'s <if Count_Jobs=2, 3, show: primary> job that allow FNAME_# to vary or make changes in the time FNAME_# begins and ends work?"

Instructions Text: <NULL>

Response Options: <1> "Yes"
<2> "No"
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"

Response Format: Radio button

Required Answer: NO

OCCUPATION

OCCP

Universe: WRK_STS =1 or JOB_STS =1 (has job and/or will do work during week of travel period)

Question Text: <If PROXY=0> **"**What kind of work do you do in your [IF Count_Jobs
=2,3, "primary"] job, that is, what is your occupation?"
<If PROXY=1> **"**What kind of work does FNAME_# do in his/her [IF Count_Jobs =2,3, "primary"] job, that is, what is his/her occupation?"

Definition Text: **"**A set of activities or tasks that employees are paid to perform.**"**

Response Options:

<1>	Architecture and Engineering
<2>	Arts, Design, Entertainment, Sports, and Media
<3>	Building and Grounds Cleaning and Maintenance
<4>	Business and Financial Operations
<5>	Community and Social Services
<6>	Computer and Mathematical
<7>	Construction and Extraction
<8>	Education, Training, and Library
<9>	Farming, Fishing, and Forestry
<10>	Food Preparation and Serving Related
<11>	Healthcare Practitioners and Technical
<12>	Healthcare Support
<13>	Installation, Maintenance, and Repair
<14>	Legal
<15>	Life, Physical, and Social Science
<16>	Management
<17>	Military Specific
<18>	Office and Administrative Support
<19>	Personal Care and Service
<20>	Production
<21>	Protective Service
<22>	Sales and Related
<23>	Transportation and Material Moving
<24>	Other, please describe: _____

MASK:
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"

Response Format: Radio and open-ended
Required Answer: NO

INDUSTRY

INDUSTRY

Universe: WRK_STS =1 or JOB_STS =1

Question Text: "<If PROXY=0> What kind of business or industry is your <if Count_Jobs=2, 3, show: primary> job?"
"<If PROXY=1> What kind of business or industry is FNAME_#'s <if Count_Jobs=2, 3, show: primary> job?"

Instructions Text: "Describe the activity at the location where employed."

Definition Text: **"**The type of activities an enterprise (a private firm, government, or nonprofit organization) performs.**"**

Response Options:

<1>	Agriculture, Forestry, Fishing and Hunting
<2>	Mining, Quarrying, and Oil and Gas Extraction
<3>	Utilities
<4>	Construction
<5>	Wholesale Trade
<6>	Information and Communication
<7>	Finance and Insurance
<8>	Real Estate and Rental and Leasing
<9>	Professional, Scientific, and Technical Services
<10>	Management of Companies and Enterprises
<11>	Administrative and Support and Waste Management and Remediation Services
<12>	Educational Services
<13>	Health Care and Social Assistance
<14>	Arts, Entertainment, and Recreation
<15>	Accommodation and Food Services
<16>	Other Services (except Public Administration)
<17>	Public Administration
<18>	Manufacturing
<19>	Retail Trade
<20>	Transportation and Warehousing
<21>	Other, please describe:_____

MASK:
<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"

Response Format: Radio button and open-ended

Required Answer: NO

FREQUENT PLACES INTRODUCTION

Text: "To help you log your travel, we would like to know the addresses of places you may visit regularly.
This information makes completing the diary easier by pre-filling portions of your diary."

CONFIRM LOCATION ADDRESS

LOCCONFIRM
Universe: All
Question Text: <PROXY=0>"To confirm, is this the address of your current home?"
<PROXY=1>"To confirm, is this the address of FNAME_#'s current home?"
Street Address: <HADD>
<IF HSUIT not NULL> Apartment or Suite: <HSUIT>
City: <HCITY>
State: <HSTAT>
ZIP code: <HZIP>
Instructions Text: "We will not contact you or share this information."
Response Options: <1> "<PROXY=0>Yes, this is my current home"
"<PROXY=1>Yes, this is FNAME_#'S current home"
<2> "<PROXY=0>No, this is not my current home"
"<PROXY=1>No, this is not FNAME_#'s current home"
Response Format: Radio button
Required Answer: YES

CORRECT LOCATION ADDRESS

LOCCORRECT
Universe: LOCCONFIRM = 2 (respondent answered that home address on file is not correct)
Question Text: "<PROXY=0>May we have your current home address?"
"<PROXY=1>May we have FNAME_#'s current home address?"

Instructions Text1: "<PROXY=0>We will not contact you or share this information."
"<PROXY=1>We will not contact FNAME_# or share this information."
Instructions Text2: You may look up the address by entering the location name or part of the address in the box below.
Response Options: <Insert Address Auto Complete using API>
<LOCADD>"Street Address:"_____
<LOCSUIT>"Apartment or Suite:"_____
<LOCCITY>"City:" _____

<LOCSTAT> "State:" _____
<LOCZIP> "ZIP code": _____
Response Format: Open-ended/auto-complete
Required Answer: YES

WORK LOCATION 1

WRK_LOC
Universe: Count_Jobs=1,2, 3 (respondent has 1 or more jobs)
Question Text: "<if PROXY=0> Is your <if Count_Jobs=2, 3, show: primary> workplace located at home, at another location, or does it vary?"
"<if PROXY=1> Is FNAME_#'s <if Count_Jobs=2, 3, show: primary> workplace located at home, at another location, or does it vary?"
Definition Text: **"**The physical location of where you work.**"**
Response Options: <1> "Current Home"
<2> "Another location – Not home"
<3> "Varies"
Response Format: Radio button
Required Answer: YES

WORK LOCATION 2

WRK_LOC2
Universe: Count_Jobs=2,3 (respondent has two or more jobs)
Question Text: <If PROXY=0> "Is your secondary workplace located at home, at another location, or does it vary?"
<If PROXY=1> "Is FNAME_#'s secondary workplace located at home, at another location, or does it vary?"
Definition Text: **"**The physical location of where you work.**"**
Response Options: <1> Current Home
<2> Another location – Not home
<3> Varies
Response Format: Radio button
Required Answer: YES

PRIMARY WORK LOCATION

PRI_WRK_LOC
Universe: Count_Jobs=1,2, 3 and WRK_LOC = 2,3 (respondent has one or more jobs and does not work solely from home in his/her primary job)
Question Text: "<if PROXY=0> What is your <if Count_Jobs=2, 3, show: primary> work location address?"

<if PROXY=1> “What is FNAME_#’s <if Count_Jobs=2, 3, show: primary> work location address?”
<If WRK_LOC=3 then /> : “If <proxy=0 then “your” /> <else proxy=1 then “<FNAME’s/>”/> workplace location varies, please provide the usual location for this week”

Instructions Text1: You may look up the address by entering the location name or part of the number address in the box below.

Instructions Text2: “This information is used by transportation planners to improve your community’s transportation options. We will not contact the workplace or share this information.”

Response Options: <Insert Address Auto Complete using API>
<PRINAME>”Business Name:”_____
<PRIADD>”Street Name or Nearest Cross Streets:”_____

<PRICITY>”City:” _____
<PRISTATE>”State:”_____
<PRIZIP>”ZIP code:”_____
<997> “No answer”

Response Format: Open-ended (auto-complete)

Required Answer: NO

SECONDARY WORK LOCATION

SEC_WRK_LOC

Universe: Count_Jobs=2,3 and WRK_LOC2 = 2,3 (respondent has two or more jobs and does not work solely from home in his/her primary job)

Question Text: “<if PROXY=0> What is your secondary work location address?”
“<if PROXY=1> What is FNAME_#’s secondary work location address?”

Instructions Text1: You may look up the address by entering the location name or part of the number address in the box below.
<If WRK_LOC2=3 then /> : “If <proxy=0 then “your” /> <else proxy=1 then “<FNAME/>”/> workplace location varies, please provide the usual location for this week”

Instructions Tex2t: “This information is used by transportation planners to improve your community’s transportation options. We will not contact the workplace or share this information.”

Response Options: <Insert Address Auto Complete using API>
<SECNAME>”Secondary Job Business Name:”_____

<SECADDR>”Street Name or Nearest Cross Streets:”_____
<SECCITY>”City:” _____
<SECSTATE>”State:”_____

<SECZIP>"ZIP code:"_____
<997> "No answer"

Response Format: Open-ended (auto-complete)
Required Answer: NO

SCHOOL ADDRESS

SCHL_LOC

Universe: SCH_# < 3 (Respondent is attending school or attended within past three months)

Question Text: <If PROXY=0> "Previously, you indicated that you are currently enrolled in school. What is the address of the school you attend?"
<If PROXY=1> Previously, you indicated that <FName_#> is currently enrolled in school**.** What is the address of the school <FName_#> attends?"

Instructions Text1: **"**If your school has several locations, please provide the address of the location where you have most of your classes."

Instructions Text2: "By providing this information, you will help the transportation planners design safer transportation options around schools and colleges."

Response Options: <Insert Address Auto Complete using API>
<SCHNAME> "School Name:"_____
<SCHLADDR>"Street Name or Nearest Cross Streets:"_____
<SCHLITY>"City:" _____
<SCHLSTATE>"State:"_____
<SCHLZIP>"ZIP code:"_____
<0> "Not currently enrolled in school"
<997> "No answer"

Response Format: Open-ended (auto-complete) and check box
Required Answer: NO

PARKING AT WORK 1

PARK_PASS

Universe: DRIVE_# =1 AND Count_Jobs=1,2,3 AND WRK_LOC=2,3 (Respondent drives, has one or more jobs, and does not work solely from home in his/her primary job)

Question Text: "Is parking at your <if Count_Jobs=2,3, show: primary> job (or business) free?"

Response Options: <1> Parking is free at my <if Count_Jobs=2, 3, show: primary>job (or

business).

<2> Parking is not free at my <if Count_Jobs=2, 3, show: primary> job (or business), and my employer **does not** reimburse the cost

<3> Parking is not free at my <if Count_Jobs=2, 3, show: primary> job (or business), and my employer **fully** reimburses the cost

<4> Parking is not free at my <if Count_Jobs=2, 3, show: primary> job (or business), and my employer **partially** reimburses the cost

<999> "Don't know"

<998> "Prefer not to say"

<997> "No answer"

Response Format: radio button
Required Answer: NO

PARKING AT WORK 2

PARK_PASS2
Universe: DRIVE_# =1 AND Count_Jobs=2,3 AND WRK_LOC2=2,3 (Respondent drives, has two or more jobs, and does not work solely from home in his/her secondary job)
Question Text: "Is parking at your secondary job (or business) free?"

Response Options: <1> Parking is free at my secondary job (or business).

<2> Parking is not free at my secondary job (or business), and my employer **does not** reimburse the cost

<3> Parking is not free at my secondary job (or business), and my employer **fully** reimburses the cost

<4> Parking is not free at my secondary job (or business), and my employer **partially** reimburses the cost

<999> "Don't know"

<998> "Prefer not to say"

<997> "No answer"

Response Format: radio button
Required Answer: NO

ORIGIN DETAIL

TOLL USE

TOLLUSE
Universe: All
Question Text: <**first** day of entering trip info>
<If PROXY=0> "Did you pay for any tolls while traveling on <ASSN as: DOW, MM DD, YYYY>?"
<If PROXY=1> "Did <FNAME> pay for any tolls while traveling on <ASSN as: DOW, MM DD, YYYY>?"
<**second** day of entering trip info>
"You have completed the first day of your travel diary.
<If PROXY=0> "Did you pay for any tolls while traveling on <ASSN+1 as: DOW, MM DD, YYYY>?"
<If PROXY=1> "Did <FNAME> pay for any tolls while traveling on <ASSN+1 as: DOW, MM DD, YYYY>?"

Instructions Text: <NULL>
Response Options: <1> Yes
<2> No
<3> Don't Know
<998> No Answer
Response Format: Radio button
Required Answer: NO

TRIP START

STTRAVEL
Universe: All (first place of the day)
Text: <**first** day of entering trip info> "Now we'd like to find out how you spent your time on <ASSN as: DOW, MM DD, YYYY>, from 3:00 in the morning until 3:00 AM next day. We'll need to know where you were and how you got there."
<**second** day of entering trip info> "Now we'd like to find out how you spent your time on <ASSN1 as: DOW, MM DD, YYYY>, from 3:00

in the morning until 3:00 AM next day. We'll need to know where you were and how you got there."
<**first** day of entering trip info>
<If PROXY=0> "Let's begin. At 3 a.m. on <ASSN as: DOW, MM DD, YYYY>, were you…?"
<If PROXY=1> "Let's begin. At 3 a.m. on <ASSN as: DOW, MM DD, YYYY>, was FNAME_#…?"
<**second** day of entering trip info>
"<If PROXY=0> Let's begin. At 3 a.m. on <ASSN1 as: DOW, MM DD, YYYY>, were you…?"
"<If PROXY=1> Let's begin. At 3 a.m. on <ASSN1 as: DOW, MM DD, YYYY>, was FNAME_#…?"

Response Options:

<3> Home
<1> At a location other than home
<2> Traveling between locations (driving, walking, on an airplane, etc.)

Response Format: Radio button
Required Answer: YES

ORIGIN

D10_ORIGIN

Universe: STTRAVEL = 1 (Respondent was at a location other than home at 3 a.m. on travel day)

Question Text: "<If PROXY=0> "Where were you at 3 a.m. on <ASSN>?"

"<If PROXY=1> "Where was <FNAME> at 3 a.m. on <ASSN>?"

Response Options:

<1> Home

<2> Primary workplace (<PWNAME>)

<3> Secondary workplace (<SWNAME>)

<4> Main School/College

<99> Some other location

Response Format: Radio button

Required Answer: YES

ORIGIN NAME

D10_D_NAME

Universe: D10_ORIGIN=99 (some other location)

Question Text: "What is the NAME of this location?"

Instructions Text: Example: Grandma's house, HEB grocery store, Library, etc.

Response Format: Open-ended

Required Answer: YES

ORIGIN TYPE OF PLACE

D10_D_TYPE_#

Universe: D10_ORIGIN=99 (some other location)

Question Text: "How would you describe this location?"

Response Options:
<1> Residential (home or apartment)
<2> Business
<3> Park or beach
<5> Other, please specify:
<999> Don't know
<998> Prefer not to say

Response Format: Drop-down

Required Answer: NO

ORIGIN TYPE OF PLACE – OTHER

D10_D_TYPE_OTHER

Universe: D10_D_TYPE_# = 5

Question Text: "How would you describe this location?"

Response Format: Open-ended
Required Answer: NO

ORIGIN LOCATION ADDRESS I

D10_D_ADDRESS

Universe: D10_ORIGIN=99 and TRIP_NO=0

Question Text: "What is the ADDRESS of this location?"

Response Options: <D10ADD>: Street Name or Nearest Cross Streets: _____

<D10CITY> City: _____

<D10STAT> State: _____

<D10ZIP> Zip Code: _____

MASK:

<999> "Don't know"

<998> "Prefer not to say"

<997> No answer

Response Format: Open-ended and check boxes

Required Answer: NO

ORIGIN ACTIVITY TYPE CODE

D10ACTIVITY

Description: Numeric Code indicating the type of activity. For activity 0 (where day began), this should be coded as 1 if it began at home, 4 if day began at work, or as 96 if it began at another location.

Universe: First location at 3 a.m.

Question Text: NONE (Never shown)

Response Options: <1> Home

<4> Work

<96> Another location

Response Format: HIDDEN

Required Answer: YES

ORIGIN DEPARTURE TIME

D10_DEP_TIME

Universe: STTRAVEL = 1 or 3 (Respondent was at a location at 3 a.m. on travel day)

Question Text: <PROXY=0> "What time did you leave this location?"

<PROXY=1> "What time did <FNAME> leave this location?"

Instructions Text: Please enter a time before 3:00 AM on <ASSN+1>.

Response Options: <DEP_HOUR>___ ___: <DEP_MIN>___ ___ ☐ AM ☐ PM

<2> "I did not leave this location. This was my last stop of the day."

Response Format: Open-ended, radio button, check box

Required Answer: YES

TRIP DETAIL

NEXT DESTINATION

DEST_#
Universe: Asked of each destination, i.e. every location visited after origin location (i.e., location at 3 a.m.)
Question Text: <If PROXY=0> "Where did you go next?"
<If PROXY=1> "Where did FNAME_# go next?"
Response Options: <1> Home
<2> Primary workplace
<3> Secondary workplace
<4> Main School/ College
<5> A previously listed location
<99> Some other location
Response Format: Radio button
Required Answer: YES

PREVIOUS LOCATION

PRV_LOC_#
Universe: DEST=5 and only shown if respondent has reported new locations in addition to home, work, or school
Question Text: "Which location was that? Was it..."
Response Options: <1> D_NAME1
<2> D_NAME2
<3> D_NAME3
LIST ALL HERETOFORE REPORTED LOCATIONS
<99> "Some other location"
Response Format: Radio buttons
Required Answer: YES

DESTINATION NAME

D_NAME_#
Universe: DEST=99 or PRV_LOC=99
Question Text: ""What is the NAME of location number <location number>?"?"
Instructions Text: Example: Grandma's house, Trader Joe's, Library, etc.
Response Format: Open-ended
Required Answer: YES

DESTINATION TYPE

D_TYPE_#
Universe: DEST=99 or PRV_LOC=99 (destination not on list of known locations)
Question Text: "How would you describe destination number <location number>?"
Response Options: <1> Residential (home or apartment)

<2> Business

<3> Park or beach

<5> Other, please specify:

<999> "Don't know"

<998> "Prefer not to say"

Response Format: Radio buttons and open-ended
Required Answer: NO

DESTINATION TYPE OF PLACE – OTHER

D_TYPE_OTHER

Universe: D_TYPE_# = 5

Question Text: "How would you describe this location?"

Response Format: Open-ended
Required Answer: NO

DESTINATION ADDRESS 1

D_ADDRESS_#
Universe: DEST=99 or PRV_LOC=99 (destination not on list of known locations)
Question Text: "What is destination number <location number>'s address (D_NAME)?"
Response Options: <DADD>: Street Name or Nearest Cross Streets: : _____
<DCITY> City: _____
<DSTAT> State: _____
<DZIP> Zip Code: _____
MASK:
<999> "Don't know"
<998> "Prefer not to say"

<997> No answer
Response Format: Open-ended and check boxes
Required Answer: NO

ARRIVAL TIME

ARR_TIME_#
Universe: Asked of each destination, i.e. every location visited after origin location (i.e., location at 3 a.m.)

Question Text: <PROXY=0> "What time did you ARRIVE at location number <location number> (D_NAME)?"
<PROXY=1> "What time did FNAME_# ARRIVE at location number <location number> (D_NAME)?"
Instructions Text: "Please enter a time after 10:00 AM on <ASSN> and no later than 2:59 AM on <ASSN+1>"
Response Options: <DEP_HOUR>___ ___: <DEP_MIN>___ ___ ❍ AM ❍PM
Response Format: Open-ended and radio button
Required Answer: YES

DEPARTURE TIME

DEP_TIME_#
Universe: ALL

Question Text: <PROXY=0> "What time did you leave location number <location number>?"
<PROXY=1> "What time did FNAME_# leave location number <location number>?"
Instructions Text: "Please enter a time after 10:00 AM on <ASSN> and no later than 2:59 AM on <ASSN+1>"
Response Options: <DEP_HOUR>___ ___: <DEP_MIN>___ ___ ❍ AM ❍PM
<2> "I did not leave this location. This was my last stop of the day."
Response Format: Open-ended, radio button, check box
Required Answer: YES

TRIP PURPOSE

ACTIVITY AT LOCATION

TRP_PRPS_#
Universe: All

Question Text: <PROXY=0>"What was your PRIMARY activity at destination

number <location number> (D_NAME)?"
<PROXY=1>"What was FNAME_#'s PRIMARY activity at destination number <location number> (D_NAME)?"

Response Options:

<1> **Paid work** (employment/job-related work at place of employment, home, or remotely)
<2> **Home activities** (sleeping, chores, walking dog)
<3> **Attend classes** (daycare, childcare, elem. school, high school, college, professional)
<4> **Other school activities** (studying, student meetings, school clubs/associations)
<5> **Personal business** (ATM, banking, medical, salon)
<6> **Major shopping** (appliances, cars, home furnishings, clothes)
<7> **Everyday shopping** (grocery, drug store, gas)
<8> **Visiting friends/relatives**
<9> **Participate in recreation/leisure** (running, hiking, playing sports, exercising, social groups)
<10> **Attend entertainment, sports, cultural events** (watching concerts, movies, plays, museum, attending sports games)
<11> **Dining and drinking** (restaurant, drive-thru, cup of coffee, bar and pub)
<12> **Religious/community** (worship, wedding, funeral, volunteer work, civic meetings)
<13> **Pick-up/Drop-off passenger(s)** (pick up spouse, drop-off child)
<15> **Other**:_____ text box size: 1 row, 50 alphanumeric characters>

Response Format: Radio button, open-ended
Required Answer: YES

TRIP MODE

TRP_MODE
Universe: All
Question Text: <PROXY=0>"What type of transportation did you use to go to destination number <location number> (D_NAME)?"
<PROXY=1>"What type of transportation did FNAME_# use to go to destination number <location number> (D_NAME)?"
Instructions Text: "Mark only one box to indicate the method of transportation used to travel the longest distance"
Response Options:
<4> "School Bus"
<6> "Metrorail"
<8> "Tri-Rail"
<7> "Metromover"
<5> "Commuter Bus"

<3> "Local Bus (Breeze, Metrobus, Palm Tran)"
<1> "Car, truck, or van
"*This includes station wagons, company cars, light trucks of 1-ton capacity or less, truck cabs, mini buses, and private limousines"*
<2> "Motorcycle/Moped"
<9> "Taxicab"
<10> "Shared-car services (Lyft, Uber, Zip Car)"
<11> "Bicycle"
<12> "Walked"
<13> "Other method – please specify:"

Response Format: Radio button, open-ended
Required Answer: YES

TRANSIT ACCESS MODE

TRANSIT_ACC
Universe: Transportation mode = bus or rail
Question Text: <PROXY=0>"How did you get from trip origin to the first transit vehicle on this trip?"
<PROXY=1>"How did FNAME_# get from trip origin to the first transit vehicle on this trip?"
Instructions Text: "Mark only one box to indicate the method of transportation used to travel the longest distance to transit"
Response Options: <1> "Walked"
<2> "Biked"
<3> "Drove alone"
<4> "Got dropped off"
<5> "Rode with someone"

<997> "No answer"

Response Format: Radio buttons
Required Answer: YES

TRANSIT EGRESS

TRANSIT_EGR
Universe: Transportation mode = bus or rail
Question Text: <PROXY=0>"How did you get from the last transit vehicle on this trip to your next destination?"
<PROXY=1>"How did FNAME_# get from the last transit vehicle on this trip to your next destination?"

Instructions Text: ”Mark only one box to indicate the method of transportation used to travel the longest distance from transit to the destination”

Response Options:
<1> “Walked”
<2> “Biked”
<3> “Drove alone”
<4> “Got dropped off”
<5> “Rode with someone”

<997> “No answer”

Response Format: Radio buttons
Required Answer: YES

TRIP ROSTER

TRP_ROST

Universe: If transportation mode = car, truck, or van ask for all household sizes
If transportation mode not = car, truck, or van ask only for household sizes of 2 or more

Question Text: <PROXY=0>“ How many people, including you, travelled together on this trip to location number <location number>?”

<PROXY=1>>“ How many people, including <FNAME>, travelled together on this trip to location number <location number>?”

Instructions Text: <PROXY=0> Include other household members, family members, friends, or coworkers. Please do not include other transit riders or persons you may be sharing a car pooler trip with.”

<PROXY=1> Include other household members, family members, friends, or coworkers. Please do not include other transit riders or persons <FNAME> may be sharing a car pooler trip with.”

Response Options: Open-ended: _____

<996> Not Applicable

<998> Prefer not to say

<999> “Don’t know”

<997> “No answer”

Response Format: Open-ended and radio buttons
Required Answer: NO

HOUSEHOLD MEMBERS

HH_MMBRS
Universe: Trip roster > 1
Question Text: <PROXY=0> "Who was with you or accompanied you on this trip?"
<PROXY=1> "Who was with < FNAME_#> / accompanied < FNAME_#> on this trip?"
Instructions Text: "Check all that apply"
Response Options: <1> FNAME_#
<2> FNAME_#
<3> FNAME_#
LIST ALL APPLICABLE HOUSEHOLD MEMBERS
……..
<11> "Other non-household member(s)"

<999> "Don't know"
<998> "Prefer not to say"
<997> "No answer"
Response Format: Check boxes
Required Answer: NO

DRIVER OR PASSENGER

DRVR_PASS
Universe: Transportation mode = car, truck, van, or motorcycle AND trip roster > 1 AND person is 14 years of age or older
Question Text: <PROXY=0>"Were you the driver or passenger?"
<PROXY=1>"Was FNAME_# the driver or passenger?"
Response Options: <1> "Driver"
<2> "Passenger"
<3> "Prefer not to say"
<997> "No answer"
Response Format: Radio buttons
Required Answer: NO

TOLL PAID

TOLL
Universe: Transportation mode = car, truck, van, or motorcycle AND TOLLUSE for day not =2 (NO)

Question Text: "Did you pay a toll as part of this trip?"
Response Options: <1> "No"
<2> "Yes"
<3> "Don't know"
<997> "No answer"
Response Format: Radio buttons
Required Answer: NO

THANK YOU

THNX
Universe: (DEP_TIME = 2 AND DAY = 2)
Screen Text: "Thank you.
You have completed both days of your travel diary."
Response Format: N/A
Required Answer: YES

HOUSEHOLD COMPLETE

HHCMPLT
Universe: Household complete DAY 1 AND Household complete DAY 2
Screen Text: **"**You have completed both days of travel for the entire household.
The Southeast Florida Transportation Council would like to thank you for your participation. Your travel data will help us create better transportation options for everyone.
If you have any questions, please contact us at:
Toll Free: "800-334-4614"
Email: "seftcsurvey@srbi.com"
Website: "www.seftctravelsurvey.org
You may now close this window."

Appendix B

Census Tract Control Totals

Table B-1: Households by annual income, cluster control totals

Annual Household Income	Census Tract Cluster #						
	1	2	3	4	5	6	7
Less than $24,999	45	22	7	19	37	39	63
$25,000 - $49,999	46	22	30	71	75	50	102
$50,000 - $74,999	40	16	14	76	87	45	104
$75,000 or more	50	25	67	306	173	58	265
Total households	181	85	118	472	372	192	534

Table B-2: Households by size, cluster control totals

Household Size	Census Tract Cluster #						
	1	2	3	4	5	6	7
One person	98	53	40	85	121	70	272
Two persons	58	27	65	229	141	78	214
Three persons	14	4	7	71	63	27	30
Four or more persons	11	1	6	87	47	17	18
Total households	181	85	118	472	372	192	534

Table B-3: Households by workers in the household, cluster control totals

Workers in Household	Census Tract Cluster #						
	1	2	3	4	5	6	7
Zero workers	52	43	64	110	95	54	130
One worker	89	34	32	169	150	83	263
Two or more workers	40	8	22	193	127	55	141
Total households	181	85	118	472	372	192	534

Appendix C

Household Data Dictionary

DATA ITEM	VARIABLE LABEL	VALID VALUES
HHID (PK)	Household ID	Numeric, 6 digits
USERID	PIN number	Alphanumeric, 5 characters
DAY_Flag	Flag identifying how many days a household completed their diary assigment	0= No Days 1= All household members completed the first day 2= All household members completed the first and second day
MAILFIRSTN	First Name Mailing	alphanumeric, 30 characters max
MAILLASTN	Last Name Mailing	alphanumeric, 30 characters max
EMAIL_1	Head of HH Email Address	A. Alphanumeric, valid email format B. <998> “Prefer not to say” C. <997> “No answer”
PHONE_1	Head of HH Phone number	A. Numeric, 10 characters B. <998> “Prefer not to say” C. <997> “No answer”
MAILADDR	Street Address	Character
MAILSUITE	Apt/Suite	Character
MAILCITY	City	Character
MAILSTATE	State	Character
COUNTY	County	Character
MAILZIP	Zip code	Numeric, 5 digits or NULL
HHSIZE	Household size	<1> 1 <2> 2 <3> 3 <4> 4 <5> 5 <6> 6 <7> 7 <8> 8 <9> 9 <10> 10 or more
LANG	Language preference	<9> English <10> Spanish <1036> Haitian Creole
DIARYMO	Diary Mode	<1> Internet <2> Phone
GPS	GPS Flag	<0> No GPS <1> GPS
ASSN	Assignment date	Date in the format: MM/DD/YYYY
ASSN1	Assignment date + 1	Date in the format: MM/DD/YYYY
AGE18	Respondent 18 or over	<1> “Yes” <2> “No”

DATA ITEM	VARIABLE LABEL	VALID VALUES
Opinion1a	Overall transportation	<1> "Excellent" <2> "Very Good" <3> "Good" <4> "Fair" <5> " Poor" <999> "Don't Know" <997> No answer
Opinion1b	Public bus and rail service	<1> "Excellent" <2> "Very Good" <3> "Good" <4> "Fair" <5> " Poor" <999> "Don't Know" <997> No answer
Opinion1c	Bicycle lanes and sidewalks	<1> "Excellent" <2> "Very Good" <3> "Good" <4> "Fair" <5> " Poor" <999> "Don't Know" <997> No answer
Opinion1d	Community roads and highways	<1> "Excellent" <2> "Very Good" <3> "Good" <4> "Fair" <5> " Poor" <999> "Don't Know" <997> No answer
Mode1a	Use bus and rail	<1> "Every Day" <2> "A few days a week" <3> "A few days a month" <4> "A few days a year" <5> "Never" <999> "Don't know" <997> "No answer"
Mode1b	Car service	<1> "Every Day" <2> "A few days a week" <3> "A few days a month" <4> "A few days a year" <5> "Never" <999> "Don't know" <997> "No answer"
Mode1c	Walk	<1> "Every Day" <2> "A few days a week" <3> "A few days a month" <4> "A few days a year" <5> "Never" <999> "Don't know" <997> "No answer"
Mode1d	Bike	<1> "Every Day" <2> "A few days a week" <3> "A few days a month"

DATA ITEM	VARIABLE LABEL	VALID VALUES
		<4> “A few days a year“ <5> “Never” <999> “Don’t know” <997> “No answer”
Mode1e	Personal vehicle	<1> “Every Day” <2> “A few days a week” <3> “A few days a month” <4> “A few days a year“ <5> “Never” <999> “Don’t know” <997> “No answer”
Traffic_O	Traffic Congestion Opinion	<1> “Very congested” <2> “Moderately congested” <3> “Slightly congested” <4> “Not at all congested <999> “Don’t Know” <997> “No answer”
TOTVEH	Number of vehicles	A. numeric, 0-99 B. “None”[11]
ABIKES	Number of adult bicycles	A. numeric, 1-99 B. <0> “None” C. <999> “Don’t Know” D. <997> “No answer”
TOLL_OWN	Toll transponder ownership	<1> “Yes” <2> “No” <999> “Don’t Know” <997> “No answer”
TEXTCONS	Consent to get reminders by text message	<1> “Yes” <2> “No” <997> “No answer”
DIARYCONSENT	Household Consent	<1> “Yes” <2> “No” <997> “No answer”
REFUSALCONVERT	Household Refusal Conversion	<1> “Internet” <2> “Phone” <9> “No thank you” <997> “No answer”
MAILCONF	Confirm Mail Address	<1> “Yes, this is my mailing address” <2> “No, this is not my mailing address”
RENT	Household Tenure	<1> “Owned by you or someone in this household?” <2> “Rented? <3> “Occupied without payment of rent?”

[11] Note that 0 (zero) and 'None' both signify that it is a zero-vehicle household

DATA ITEM	VARIABLE LABEL	VALID VALUES
		<999> "Don't know" <998> "Prefer not to say"
SEASONAL	Seasonal home	<1> "Yes" <2> "No" <999> "Don't know" <998> "Prefer not to say" <997> "No answer"
SEASONAL2	Seasonal Months	<1> "Up to 1 month" <2> "2 months" <3> "3 months" <4> "4 months" <5> "5 months" <6> "6 months" <7> "7 months" <8> "8 months" <9> "9 months" <10> "10 months" <11> "11 or more months
DWELLING	Dwelling type	<1> "A mobile home" <2> "A one-family house" <3> "A building with 2 or more apartments" <4> "Boat, RV, van, or something else." <999> "Don't know"
INCOME_Range	Categorical Household Income	<1> "Less than $10,000" <2> "$10,000 to $14,999" <3> "$15,000 to $24,999" <4> "$25,000 to $34,999" <5> "$35,000 to $49,999" <6> "$50,000 to $74,999" <7> "$75,000 to $99,999" <8> "$100,000 to $149,999" <9> "$150,000 to $199,999" <10> "$200,000 or more <999> "Don't know" <998> "Prefer not to say"
INCOME_50K	Income below or above $50,000	<1> "Less than $50,000" <2> "$50,000 or more" <999> "Don't know" <998> "Prefer not to say" <997> "No answer"
RDATE	Recruit Date	Date in the format: MM/DD/YYYY
LOCCONFIRM	Confirm Location (Home) Address	<1> Yes, this is my current home <2> No, this is not my current home
LOCADD	Home Street Address	Text, 50 characters max Not NULL
LOCSUIT	Home Apartment or Suite	Text, 50 characters max Or NULL
LOCCITY	Home City	Text, 50 characters max Not NULL

DATA ITEM	VARIABLE LABEL	VALID VALUES
LOCSTAT	Home State	Text, 50 characters max Or NULL
LOCZIP	Home ZIP code	Text, 5 characters max Not NULL

Person Data Dictionary

DATA ITEM	VARIABLE LABEL	VALID VALUES
HHID	Household ID	Numeric, 6 digits
HHPERSONID	HHPERSONID **(PK)**	HHID+PERSONID_01:10
GPS	GPS Flag	<0> No GPS <1> GPS
ASSN	Assignment date	Date in the format: MM/DD/YYYY
ASSN1	Assignment date + 1	Date in the format: MM/DD/YYYY
EMAIL	Email Address	A. Alphanumeric, valid email format B. <998> “Prefer not to say” C. <997> “No answer”
GENDER	Person Gender	<1> “Male” <2> “Female” <998> “Prefer Not to Say” <997> “No answer”
AGE	Person Age	Numeric, 0-100 For person1, age must be 18 or older (AGE_1 >=”18”) <997> “No answer”
AGE2	Person Age Category	<1> “Under 3 years old” <2> “3 to 5 years old” <3> “6 to 13 years old” <4> “14 to 17 year old” <5> “18 to 64 year old” <6> “64 to 84 years old” <7> “85 years and over”
RELATIONSHIP	Relationship Status	<0> Contact person <1> Husband or wife <2> Son or daughter (biological child, adopted child or stepchild) <3> Brother or sister <4> Father or mother <5> Grandchild <6> Parent-in-law <7> Son-in-law or daughter-in-law <8> Other relative <9> Roomer or boarder <10> Housemate or roommate <11> Unmarried partner <12> Foster child <13> Other nonrelative <998> Prefer Not to Say
DRIVE	Person Driver Status	<0> Not asked (N/A), same as NULL <1> Yes <2> No <999> Don't Know <998> Prefer Not to Say <997> “No answer”

DATA ITEM	VARIABLE LABEL	VALID VALUES
HISP	Person Hispanic Origin	<1> Yes <2> No <998> Prefer Not to Say <997> “No answer”
RACE1	White	<0> Not Selected <1> White
RACE2	Black/ African American	<0> Not Selected <1> Black/ African American
RACE3	American Indian or Alaska Native	<0> Not Selected <1> American Indian or Alaska Native
RACE4	Asian	<0> Not Selected <1> Asian
RACE5_OTHER	Other Race	Text, max 15 characters or NULL
RACE998	Race - Prefer not to say	<0> Not Selected <1> 998
RACE999	Race - No answer	<0> Not Selected <1> 997
EDUSTATUS	Person Education Status	<1> “Attended school or college in person” <2> "Attended homeschool or online classes part or most of the time” <3> “Did not attend school or college” <998> “Prefer not to say” <997> “No answer”
EDULEVEL	Person Education Level or Grade	<1> Nursery school, preschool <2> Kindergarten <3> Grade 1 through 12 <4> College undergraduate years (freshman to senior) <5> Graduate or professional school beyond a bachelor's degree (for example: MA or PhD program, or medical or law school) <6> Vocational or technical school <999> Don't know <998> Prefer not to say <997> No answer or NULL (if not applicable)
EDUTENURE	Person Education Full-time or Part-time status	<1> Full-time <2> Part-time <999> Don't know <998> Prefer not to say <997> No answer or NULL (if not applicable)
RDATE	Recruit Date	Date in the format: MM/DD/YYYY
TRANSIT_PASS	Transit pass ownership	<1> “Yes” <2> “No” <999> “Don’t know” <998> “Prefer not to say” <997> “No answer” or NULL

DATA ITEM	VARIABLE LABEL	VALID VALUES
WRK_STS	Work Status	<1> “Yes” <2> “No” <3> “Retired” <4> “Disabled and unable to work” <999> “Don’t know” <998> “Prefer not to say” <997> “No answer” or NULL
JOB_STS	Job Status	<1> “Yes” <2> “No” <3> “Retired” <4> “Disabled and unable to work” <999> “Don’t know” <998> “Prefer not to say” <997> “No answer” or NULL
COUNT_JOBS	Number of Jobs	<1> “One (1) for pay job” <2> “Two (2) for pay jobs” <3> “Three (3) or more for pay jobs <999> “Don’t know” <998> “Prefer not to say” <997> “No answer” or NULL
WRK_AMNT	Hours Worked (primary job)	A. 1-99 B. <999> “Don’t know” <998> “Prefer not to say” <997> “No answer” or NULL
WRK_FLX	Flexible Work Schedule	<1> “Yes” <2> “No” <999> “Don’t know” <998> “Prefer not to say” <997> “No answer” or NULL
OCCP	Occupation	<1> Architecture and Engineering <2> Arts, Design, Entertainment, Sports, and Media <3> Building and Grounds Cleaning and Maintenance <4> Business and Financial Operations <5> Community and Social Services <6> Computer and Mathematical <7> Construction and Extraction <8> Education, Training, and Library <9> Farming, Fishing, and Forestry <10> Food Preparation and Serving Related <11> Healthcare Practitioners and Technical <12> Healthcare Support <13> Installation, Maintenance, and Repair <14> Legal <15> Life, Physical, and Social Science

DATA ITEM	VARIABLE LABEL	VALID VALUES
		<16> Management <17> Military Specific <18> Office and Administrative Support <19> Personal Care and Service <20> Production <21> Protective Service <22> Sales and Related <23> Transportation and Material Moving <24> Other, please describe: _____ <999> “Don’t know” <998> “Prefer not to say” <997> “No answer” <999> “Don’t know” <998> “Prefer not to say” <997> “No answer” or NULL
OCCP_OTHER	Occupation - other	<1> Agriculture, Forestry, Fishing and Hunting <2> Mining, Quarrying, and Oil and Gas Extraction <3> Utilities <4> Construction <5> Wholesale Trade <6> Information and Communication <7> Finance and Insurance <8> Real Estate and Rental and Leasing <9> Professional, Scientific, and Technical Services <10> Management of Companies and Enterprises <11> Administrative and Support and Waste Management and Remediation Services <12> Educational Services <13> Health Care and Social Assistance <14> Arts, Entertainment, and Recreation <15> Accommodation and Food Services <16> Other Services (except Public Administration) <17> Public Administration <18> Manufacturing <19> Retail Trade <20> Transportation and Warehousing <21> Other, please describe:_____ <999> “Don’t know” <998> “Prefer not to say” 997> “No answer” Or NULL
INDUSTRY	Industry	<1> Agriculture, Forestry, Fishing and Hunting <2> Mining, Quarrying, and Oil and Gas Extraction <3> Utilities <4> Construction <5> Wholesale Trade <6> Information and Communication <7> Finance and Insurance

DATA ITEM	VARIABLE LABEL	VALID VALUES
		<8> Real Estate and Rental and Leasing <9> Professional, Scientific, and Technical Services <10> Management of Companies and Enterprises <11> Administrative and Support and Waste Management and Remediation Services <12> Educational Services <13> Health Care and Social Assistance <14> Arts, Entertainment, and Recreation <15> Accommodation and Food Services <16> Other Services (except Public Administration) <17> Public Administration <18> Manufacturing <19> Retail Trade <20> Transportation and Warehousing <21> Other, please describe:_____ <999> "Don't know" <998> "Prefer not to say" 997> "No answer" Or NULL
WRK_LOC	Work Location 1	<1> "Current Home" <2> "Another location – Not home" <3> "Varies" or NULL
WRK_LOC2	Work Location 2	<1> "Current Home" <2> "Another location – Not home" <3> "Varies" or NULL
PARK_PASS	Parking at Work 1	<1> Parking is free at my primary job (or business). <2> Parking is not free at my primary job (or business), and my employer does not reimburse the cost <3> Parking is not free at my primary job (or business), and my employer does reimburse the cost <999> "Don't know" <998> "Prefer not to say" <997> "No answer" or NULL
PARK_PASS2	Parking at Work 2	<1> Parking is free at my secondary job (or business). <2> Parking is not free at my secondary job (or business), and my employer does not reimburse the cost <3> Parking is not free at my secondary job (or business), and my employer does reimburse the cost <999> "Don't know" <998> "Prefer not to say" <997> "No answer" or NULL

DATA ITEM	VARIABLE LABEL	VALID VALUES
PRINAME	Name Primary Work	Text, 50 characters max Or NULL
PRIADD	Street Address Primary Work	Text, 50 characters max Or NULL
PRICITY	City Primary Work	Text, 50 characters max Or NULL
PRISTATE	State Primary Work	Text, 50 characters max Or NULL
PRIZIP	ZIP code Primary Work	Text, 5 characters max Or NULL
SECNAME	Name Secondary Work	Text, 50 characters max Or NULL
SECADDR	Street Address Secondary Work	Text, 50 characters max Or NULL
SECCITY	City Secondary Work	Text, 50 characters max Or NULL
SECSTATE	State Secondary Work	Text, 50 characters max Or NULL
SECZIP	ZIP code Secondary Work	Text, 5 characters max Or NULL
SCHNAME	School Name	50 alphanumeric characters Or NULL
SCHLADDR	Street Address School	Text, 50 characters max Not NULL
SCHLCITY	City School	Text, 50 characters max Not NULL
SCHLSTATE	State School	Text, 50 characters max Or NULL
SCHLZIP	ZIP code School	Text, 5 characters max Or NULL
DAY_Flag	Flag identifying how many days a household completed their diary assigment	0= No Days 1= Person completed the first day 2= Person completed the first and second day
HHCOMPA	Day two complete flag	0= Not completed 1= Person completed the day one of the diary
HHCOMPB	Day two complete flag	0= Not completed 1= Person completed the day two of the diary

Trip Data Dictionary

DATA ITEM	VARIABLE LABEL	VALID VALUES
HHID	Household ID	6 digit number, unique for each household
HHPERSONID (PK)	Household Person ID	HHID||PERSONID_01:10
TRIPNO	Trip Number	1:15 (trip counter for each respondent) 0= did not travel on this date.
TRIPID	Person Trip ID	HHPERSONID||MMDDYY||TRIP_NO
USERID	PIN number	Alphanumeric, 5 characters
HHSIZE	Household size	<1> 1 <2> 2 <3> 3 <4> 4 <5> 5 <6> 6 <7> 7 <8> 8 <9> 9 <10> 10 or more
PROXY	Proxy	<0> No <1> Yes
ORIGIN	Next Destination	<1> Home <2> Primary workplace <3> Secondary workplace <4> Main School/ College <5> A previously listed location <99> Some other location
OTYPE	Origin Type	<1> Residential (home or apartment) <2> Business <3> Park or beach <4> Bus stop, Metrorail station, or other public transportation stop[12] <5> Other, please specify: <999> "Don't know" <998> "Prefer not to say"
OTYPEoth	Origin Type, Other	50 alphanumeric characters Or NULL
ONAME	Origin Name	50 alphanumeric characters Or NULL
OADDR	Origin Street Address	50 alphanumeric characters[13] Or NULL
OCITY	Origin City	50 alphanumeric characters Or NULL

[12] Option 4 was removed when transit access and transit egress questions were added.
[13] If the trip origin is Home, the address reported in the diary may differ from the home address reported in the household file. The household file documents the address reported in the recruit survey.

DATA ITEM	VARIABLE LABEL	VALID VALUES
OSTATE	Origin State	50 alphanumeric characters Or NULL
OZIP	Origin Zip Code	5 alphanumeric characters Or NULL
OACT	Activity at Origin	<1> Paid work (employment/job-related work at place of employment, home, or remotely) <2> Home activities (sleeping, chores, walking dog) <3> Attend classes (daycare, childcare, elem. school, high school, college, professional) <4> Other school activities (studying, student meetings, school clubs/associations) <5> Personal business (ATM, banking, medical, salon) <6> Major shopping (appliances, cars, home furnishings, clothes) <7> Everyday shopping (grocery, drug store, gas) <8> Visiting friends/relatives <9> Participate in recreation/leisure (running, hiking, playing sports, exercising, social groups) <10> Attend entertainment, sports, cultural events (watching concerts, movies, plays, museum, attending sports games) <11> Dining and drinking (restaurant, drive-thru, cup of coffee, bar and pub) <12> Religious/community (worship, wedding, funeral, volunteer work, civic meetings) <13> Pick-up/Drop-off passenger(s) (pick up spouse, drop-off child) <14> Change transportation type (drive to Tri-Rail, walk to local bus stop) <15> Other:_____ text box size: 1 row, 50 alphanumeric characters>
OACToth	Activity at Origin, Other	50 alphanumeric characters Or NULL
DESTINATION	Next Destination	<1> Home <2> Primary workplace <3> Secondary workplace <4> Main School/ College <5> A previously listed location <99> Some other location
DTYPE	Destination Type	<1> Residential (home or apartment) <2> Business <3> Park or beach <4> Bus stop, Metrorail station, or other public

DATA ITEM	VARIABLE LABEL	VALID VALUES
		transportation stop[14] <5> Other, please specify: <999> “Don’t know” <998> “Prefer not to say”
DTYPEoth	Destination Type, Other	50 alphanumeric characters Or NULL
DNAME	Destination Name	50 alphanumeric characters Or NULL
DADDR	Destination Street Address	50 alphanumeric characters[15] Or NULL
DCITY	Destination City	50 alphanumeric characters Or NULL
DSTATE	Destination State	50 alphanumeric characters Or NULL
DZIP	Destination Zip Code	5 alphanumeric characters Or NULL
DACT	Activity at Destination	<1> Paid work (employment/job-related work at place of employment, home, or remotely) <2> Home activities (sleeping, chores, walking dog) <3> Attend classes (daycare, childcare, elem. school, high school, college, professional) <4> Other school activities (studying, student meetings, school clubs/associations) <5> Personal business (ATM, banking, medical, salon) <6> Major shopping (appliances, cars, home furnishings, clothes) <7> Everyday shopping (grocery, drug store, gas) <8> Visiting friends/relatives <9> Participate in recreation/leisure (running, hiking, playing sports, exercising, social groups) <10> Attend entertainment, sports, cultural events (watching concerts, movies, plays, museum, attending sports games) <11> Dining and drinking (restaurant, drive-thru, cup of coffee, bar and pub) <12> Religious/community (worship, wedding, funeral, volunteer work, civic meetings) <13> Pick-up/Drop-off passenger(s) (pick up spouse, drop-off child) <14> Change transportation type (drive to Tri-

[14] Option 4 was removed when transit access and transit egress questions were added.
[15] If the trip destination is Home, the address reported in the diary may differ from the home address reported in the household file. The household file documents the address reported in the recruit survey.

DATA ITEM	VARIABLE LABEL	VALID VALUES
		Rail, walk to local bus stop) <15> Other:_____ text box size: 1 row, 50 alphanumeric characters>
DACToth	Activity at Destination, Other	50 alphanumeric characters Or NULL
TRPMODE	Trip Mode	<1> “Car, truck, or van “This includes station wagons, company cars, light trucks of 1-ton capacity or less, truck cabs, mini buses, and private limousines” <2> “Motorcycle/Moped” <3> “Local Bus (Breeze, Metrobus, Palm Tran)” <4> “School Bus” <5> “Commuter Bus” <6> “Metrorail” <7> “Metromover” <8> “Tri-Rail” <9> “Taxicab” <10> “Shared-car services (Lyft, Uber, Zip Car)” <11> “Bicycle” <12> “Walked” <13> “Other method"
TRPMODEother	Trip Mode, Other	50 alphanumeric characters Or NULL
TRPROST	Trip Roster	Open-ended: _____ <996> Not Applicable <998> Prefer not to say <999> “Don’t know” <997> “No answer”
HHMMBRS	Household Members	<1> FNAME_1 <2> FNAME_2 …….. <9> FNAME_9 <11> “Other non-household member(s)” <997> “No answer” <999> “Don’t know” <998> “Prefer not to say”
HHMMBRS1	Household Member 1	<0> Not Selected <1> FNAME_1
HHMMBRS2	Household Member 2	<0> Not Selected <1> FNAME_2
HHMMBRS3	Household Member 3	<0> Not Selected <1> FNAME_3
HHMMBRS4	Household Member 4	<0> Not Selected <1> FNAME_4
HHMMBRS5	Household Member 5	<0> Not Selected <1> FNAME_5
HHMMBRS6	Household Member 6	<0> Not Selected <1> FNAME_6

DATA ITEM	VARIABLE LABEL	VALID VALUES
HHMMBRS7	Household Member 7	<0> Not Selected <1> FNAME_7
HHMMBRS8	Household Member 8	<0> Not Selected <1> FNAME_8
HHMMBRS9	Household Member 9	<0> Not Selected <1> FNAME_9
HHMMBRS10	Household Member 10	<0> Not Selected <1> FNAME_10
HHMMBRS11	Other Non-Household Members	<0> Not Selected <1> Other Non-Household Members
HHMMBRS997	Household Members - No answer	<0> Not Selected <1> 997
DRVRPASS	Driver or Passenger	<1> “Driver” <2> “Passenger” <3> “Prefer not to say” <997> “No answer”
TOLL	Toll Paid, Day	<1> “No” <2> “Yes” <3> “Don’t know” <997> “No answer”
TRIPSEC	Trip duration in seconds	Numeric
ODATE	Date of trip origin	Date in the format MM/DD/YYYY
OTIME	Time of trip origin	Time in military time format HH:MM:SS
DDATE	Date of trip destination	Date in the format MM/DD/YYYY
DTIME	Time of trip destination	Time in military time format HH:MM:SS
OLON	Origin Longitude	Numeric
OLAT	Origin Latitude	Numeric
DLON	Destination Longitude	Numeric
DLAT	Desination Latitude	Numeric
STUDYDAY	Study Travel Day	<1> Day 1, <2> Day 2
OGEOSRC	Locator used for geocoding origin	Text
OGEOTYPE	Geocoding match type of origin	<A> Automatic, <M> Manual
OGEOPREC	Geocoding precision for origin	<0> Ungeocoded, <1> Exact match, <2> Street, <3> Zip Code
DGEOSRC	Locator used for geocoding destination	Text
DGEOTYPE	Geocoding match type of destination	<A> Automatic, <M> Manual
DGEOPREC	Geocoding precision for destination	<0> Ungeocoded, <1> Exact match, <2> Street, <3> Zip Code
SLMILES	Straight-line trip distance (as the crow flies)	Numeric, distance in miles

DATA ITEM	VARIABLE LABEL	VALID VALUES
SLMPH	Average Trip speed (mph) for straight-line distance	Numeric, miles per hour
STTRAVEL	Trip start	<1> At a location other than home <2> Traveling between locations (driving, walking, on an airplane, etc.) <3> Home
DAY_travel	Flag identifying how many days a household completed their diary assigment	null = Not complete 1= Person completed the first day 2= Person completed the first and second day