OHIO DEPARTMENT OF TRANSPORTATION

2001-2003
OHIO STATEWIDE
HOUSEHOLD TRAVEL SURVEY

Technical Memorandum

August 2004

NuStats

3006 Bee Caves Rd., Suite A-300 ▪ Austin, Texas 78746
(512) 306-9065 ▪ fax (512) 306-9077 ▪ *www.nustats.com*

Contact: Jesse Casas, *Project Director*

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1. INTRODUCTION

This document provides details on the design, implementation and results of the 2001-2003 Ohio Statewide Household Travel Survey (Statewide Travel Survey), conducted between August 2001 and May 2003. The survey is an essential element in determining statewide and regional travel patterns. The project was conducted under the auspices of the Ohio Department of Transportation (ODOT).

The purpose of the study was to update the statewide database of household socioeconomic and travel information. In turn, updated data will be used to help refine travel estimates, models, and forecasts throughout the State and specifically for the nine smallest Metropolitan Planning Organizations (MPO). The study area consists of all counties of the State with the exception of those that are within the MPO boundaries of Cincinnati, Cleveland, and Columbus as shown in the following table. Cincinnati (OKI), Cleveland (NOACA), and Columbus (MORPC/LCATS) MPOs recently conducted their own household travel survey.

Two survey instruments were used for each of the household recruitment and data retrieval stages (see Appendix). The resultant data set will be used to fulfill the model's functions of estimating trip generation and distribution, mode choice, and assignments.

TABLE 1.1:
STUDY AREA DEFINITION

MPO	COUNTY
Toledo TMACOG	Lucas, Monroe (MI), Wood
Lima LACRPC	Allen
Dayton MVRPC	Greene, Miami, Montgomery
Springfiled CCSTS	Clark
Akron AMATS	Portage, Summit
Canton SCATS	Stark
Mansfield RCRPC	Richland
Steubenville BHJTS	Brooke (WV), Hancock (WV), Jefferson
Youngstown EDATS	Mahoning, Trumbull
"Rural"	Ashtabula, Auglaize, Belmont, Brown, Carroll, Columbiana, Crawford, Fulton, Lawrence, Washington, Adams, Ashland, Athens, Champaign, Clinton, Coshocton, Darke, Defiance, Erie, Fayette, Gallia, Guernsey, Hancock, Hardin, Harrison, Henry, Highland, Hocking, Jackson, Knox, Logan, Marion, Meigs, Mercer, Monroe, Morgan, Morrow, Muskingum, Noble, Ottawa, Paulding, Perry, Pike, Preble, Putnam, Ross, Sandusky, Scioto, Seneca, Shelby, Tuscarawas, Union, Van Wert, Vinton, Wayne, Williams, Wyandot

The Statewide Household Travel Survey, like all recent household travel surveys, relied on the willingness of area residents to complete diary records of their daily travel for a specified period of time (either a 24-hour or 48-hour period and for either a weekday or weekend). For this survey, the travel period was for 24 hours and covered a weekday, Monday, Tuesday, Wednesday, or Thursday. Travel dates were not assigned to the weekday preceding or following a holiday.

Household recruitment was conducted through a "recruitment interview" in which respondents were informed of the survey, its purpose and to request respondents to complete the diaries. Data on households and household members were also collected during the recruitment interview.

Participating households were assigned a specific "travel day" to record their travel, which typically occurred 10-12 days after recruitment and during which household members were asked to record travel information in their diaries for the specified 24-hour period. Beginning the day after the assigned date, attempts to contact households were made to retrieve the diary information. A total of 22,413 households were recruited to participate in the study. Of these, 16,494 households (74%) provided recruitment and travel/activity data, and the information was retrieved from all household members regardless of age. The results section in this memorandum contains weighted and expanded results based on the 16,112 households that passed all data quality checks and were deemed acceptable for delivery to ODOT.

While the sample is a good representation of households within the state and within each region, weights were applied to bring the households into proportion to the distribution of households, by county, according to the 2000 Census. These weights were also based on household size, income, and vehicle ownership by housing own/rent status as obtained from the 2000 Census data files. A detailed description of the weights is provided in the Survey Data Weighting and Expansion of this memorandum. Except when noted, all data in this report are weighted and expanded.

The Statewide Travel Survey used a scientifically formulated sample design, appropriate instruments for data collection, a package of written materials and internet-based methods to communicate with survey respondents, a toll-free survey hotline, and rigorous data collection, processing, and reporting procedures.

This Technical Memorandum presents the results and describes survey execution. It is organized into sections by major topic. The sections include:

1) Survey Introduction
2) Survey Instruments and Materials
3) Sampling Design and Procedures
4) Survey Pretest and Final Survey Design
5) Interviewer Training, Survey Methods, and Quality Control Procedures
6) Survey Data Weighting and Expansion
7) Survey Results
8) Survey Limitations

2. SURVEY INSTRUMENTS AND MATERIALS

This section details the survey instruments and materials used in the project. The survey instruments were developed based on ODOT's modeling needs and the required data variables were specified in collaboration with ODOT prior to the start of the survey. The survey included one survey instrument for each of the two data collection stages and materials were mailed to respondents immediately after the recruitment stage. The survey instruments and materials used in each stage are detailed below.

The survey followed a six-step process. 1) The recruitment call secured the household's participation in the study and obtained demographic information. 2) Personalized travel diaries were then prepared for all household members. 3) The diaries were mailed to each member of a household to be used during their assigned travel day to record all of their travel. 4) In addition, a reminder call was made to confirm receipt of the packet and answer any last minute questions prior to the assigned travel days. 5) Following the assigned travel day, a retrieval call was made to obtain the recorded information. 6) The retrieved data was edited and processed, then reported locations were geocoded to x/y coordinates.

Recruitment Interview. The purpose of the recruitment interview was to secure household participation in the study. The interview was conducted using Computer Assisted Telephone Interviewing (CATI) technology. The questionnaire introduction was specifically designed to obtain agreement on participation. The other objectives of the recruitment questionnaire were to collect information on the characteristics of the household and the individual people in the household. The recruitment questionnaire is included in Appendix A of this report.

Respondent Material Mailing. The day following recruitment, the demographic information was used to prepare personalized diaries to send to each member of the household. The diary was designed to be used by the respondent as a memory jogger during the retrieval interview. A personalized cover letter was also prepared and included in the packet, along with a "reminder sheet" reminding the household of its assigned travel date and to record their trips and activities in their diaries. These materials are included in Appendix B of this report.

Reminder Call. The night prior to the assigned travel day, a reminder call was made to each household to confirm receipt of the packet and answer any last minute questions. If the packet was not received by this time, the address was re-confirmed and a new travel date was assigned and the diary packet re-sent.

Retrieval Interview. Using CATI, the interviewers collected all travel information recorded by respondents for the designated 24-hour travel diary period. The CATI program prompted interviewers to gather all pertinent information, as well as reference the same trips made by other household members. A look-up table of frequently visited locations aided with the retrieval process. The retrieval questionnaire is included in Appendix C of this report.

3. SAMPLE DESIGN AND RESPONSE RATE

This section provides documentation of the sample design and response rate. Details in this chapter include the definition of the sample universe for each of the regions of the state and required sample size, sample selection, sample frame generation and sample preparation.

3.1 SURVEY UNIVERSE AND SAMPLE SIZE

The universe for the Statewide Travel Survey is defined as all households located within the State of Ohio with the exception of those counties in the jurisdiction of the Cincinnati, Cleveland, and Columbus MPO areas. The counties were grouped into one of the nine MPO regions and all other counties (not part of the Cincinnati, Cleveland, or Columbus MPO region) were grouped as "Rural." Each of the nine MPO regions required a minimum number of completed surveys. Table 3.1 includes each region, corresponding Year 2000 estimated number of households, and required sample size. The required number of samples for each county was based on its estimated proportional distribution of Year 2000 estimated number of households within its region (note that at the time this task was conducted, results of the 2000 Census were not yet available so estimates were used).

TABLE 3.1:
REGION DEFINITION AND SAMPLE SIZE

MPO COUNTY	2000 CENSUS ESTIMATE	REQUIRED SAMPLE SIZE	MPO COUNTY	2000 CENSUS ESTIMATE	REQUIRED SAMPLE SIZE	MPO COUNTY	2000 CENSUS ESTIMATE	REQUIRED SAMPLE SIZE
Toledo			"Rural"			"Rural" (cont.)		
Lucas	179,336	1,425	Ashtabula	39,098	58	Morrow	10,905	16
Monroe (MI)	14,700	117	Auglaize	17,138	25	Muskingum	31,264	46
Wood	45,152	359	Belmont	26,546	39	Noble	4,578	7
MPO Total	239,187	1,900	Brown	14,613	22	Ottawa	15,500	23
			Carroll	10,148		Paulding	7,331	11
Lima			Columbiana	41,939	15	Perry	12,274	18
Allen	40,526	1,300	Crawford	18,054	62	Pike	10,052	15
			Fulton	14,433	27	Preble	15,487	23
Dayton			Lawrence	23,558	21	Putnam	11,788	17
Greene	54,556	316	Washington	23,619	35	Ross	28,550	42
Miami	37,154	215	Adams	10,526	35	Sandusky	24,170	36
Montgomery	236,386	1,369	Ashland	19,368	16	Scioto	31,977	47
MPO Total	328,095	1,900	Athens	24,071	29	Seneca	21,033	31
			Champaign	14,457	35	Shelby	16,961	25
Springfield			Clinton	15,325	21	Tuscarawas	32,615	48
Clark	57,538	1,350	Coshocton	13,654	23	Union	14,106	21
			Darke	19,742	20	Van Wert	11,273	17
Akron			Defiance	14,781	29	Vinton	4,522	7
Portage	55,404	397	Erie	29,962	22	Wayne	38,949	57
Summit	209,724	1,503	Fayette	11,098	44	Williams	14,302	21
MPO Total	265,129	1,900	Gallia	12,433	16	Wyandot	8,165	12
			Guernsey	15,253	18	*Rural Total*	1,017,635	1,500
Canton			Hancock	26,207	22			
Stark	145,233	1,300	Hardin	11,923	39	*Grand Total*	*2,388,296*	*15,050*
			Harrison	5,907	18			

MPO County	2000 Census Estimate	Required Sample Size	MPO County	2000 Census Estimate	Required Sample Size	MPO County	2000 Census Estimate	Required Sample Size
Mansfield			Henry	11,055	9			
Richland	48,444	1,300	Highland	15,330	16			
			Hocking	10,887	23			
Steubenville			Holmes, OH	11,009	16			
Brooke (WV)	9,709	234	Huron, OH	21,709	16			
Hancock (WV)	13,283	320	Jackson	12,415	32			
Jefferson	30,916	746	Knox	20,191	18			
MPO Total	53,908	1,300	Logan	18,027	30			
			Marion	23,740	27			
Youngstown			Meigs	9,046	35			
Mahoning	104,280	704	Mercer	13,711	13			
Trumbull	88,321	596	Monroe	5,526	8			
MPO Total	192,601	1,300	Morgan	5,333	8			

The survey produced a sample size of 16,112 randomly selected households (surveys that passed all data quality checks and deemed deliverable to ODOT) with an overall reliability of ± 0.8 percentage points at the 95% confidence level with respect to household level attributes. Table 3.2 summarizes the standard error for various sample sizes.

TABLE 3.2:
STANDARD ERROR RATES AT THE 95% CONFIDENCE LEVEL

Sample Size	Standard Error
500	± 4.5
750	± 3.7
1,000	± 3.2
2,500	± 2.0
3,000	± 1.8
16,000	± 0.8

3.2 SAMPLE SELECTION

The survey employed a probability sample selection process to select households for inclusion in the study. The major requirement for probability samples is that the relative probability (or chance) that any household in the universe will be included is known. Once the sampling procedure is determined, selection of specific households for inclusion in the sample is left entirely to chance.

The type of probability sample used is stratified sampling in which the sample elements were drawn proportionately to the number of households for each county within a region. The sample was randomly generated across all telephone exchanges within each county.

The 2000 Census reveals that the overall percentage of households with telephones in the study area is 96.0%. As discussed in the weighting and expansion section of this memorandum, the actual percentage of truly non-telephone households (non-episodic) is about half of the Census percentage. The Census takes a snap-shot picture (survey of a single day) of whether a household has phone service or not. Households that did not have telephone service on the day of the Census more than likely did not have service due to a temporary service interruption (e.g. non-payment) and had the service reinstated at a later date. Table 3.3 shows the percentage of households with telephones, by region.

TABLE 3.3:
TELEPHONE COVERAGE

REGION	YEAR 2000 ESTIMATED NUMBER OF HOUSEHOLDS	PERCENTAGE OF HOUSEHOLDS W/PHONE*
Toledo (TMACOG) *	239,187	96%
Lima (LACRPC)	40,526	95%
Dayton (MV)RPC	328,095	96%
Springfield (CCSTS)	57,538	97%
Akron (AMATS)	265,129	96%
Canton (SCATS)	145,233	96%
Mansfield (RCRPC)	48,444	96%
Steubenville (BHJTS)	53,908	94%
Youngstown (EDATS)	192,601	96%
Rural	1,017,635	96%
Total		*96%*

**Source: U.S. Census, 2000*

3.3 SAMPLE FRAME GENERATION

The sample frame for the survey included listed and unlisted telephone numbers. A "listed" telephone number is a telephone number for which a household address can be identified; an "unlisted" telephone number is one for which a household address can not be identified.

Both the listed and unlisted telephone numbers were generated using random digit dial (RDD) procedures. Using a telephone database that contains the universe of listed business and residential telephone numbers, NuStats identified all the working blocks for telephone numbers in the study area. For each working exchange/block combination a comprehensive analysis was conducted to determine its efficiency. Telephone companies reserve certain exchange/block combinations strictly for commercial assignments while others may have a mix of business and residential use.

In generating the *listed* sample, NuStats included in the sample frame those exchange/block combinations with a minimum 70% residential listing. However, all exchange/block combinations (including those that have less than 70% residential listings) were used to generate the "unlisted" sample. This assured that mixed-use areas (both commercial and residential use) were not excluded from the sample frame. Using a minimum 70% residential listing cut-off minimized time spent screening out businesses during the recruitment stage.

Unlisted telephone numbers were generated based on the telephone exchanges and blocks identified from the listed sample generation. Telephone numbers were randomly generated from these exchange/block combinations and then compared to all phone numbers listed (business/government and residential) in the counties as identified in the telephone database. Any generated telephone numbers that are also listed within the database were eliminated from the sample frame thus providing assumed unlisted telephone numbers.

A recruitment goal of approximately 20,900 households assumes a retrieval rate (that is, percentage of recruited households that will be completed) of 72%. This recruitment sample size and retrieval rate goal produces a minimum of 15,050 completed surveys (minimum contractual requirement). The final number of 22,413 recruited households was higher than the goal to reach specific MPO sample size requirements. From these, a total of 16,112 completed and usable surveys were collected producing a completion rate of 72%. See this section on the discussion of the response rate.

3.4 SAMPLE PREPARATION

The sample was prepared for administration by organizing it into replicates. A replicate is a systematically selected sub-sample of the universe. The main benefit of using replicated samples is that the interviewers do not need to call the entire sample frame in order to ensure proper representation of the study area. When the quota of completed households is accomplished, it is only necessary to attempt to complete households in the current replicate that has been released or opened.

3.5 COMPONENT AND OVERALL RESPONSE RATES

The Response Rate is one of many diagnostic tools that survey researchers use to assess the potential level of non-response error. The Response Rate is not used to determine how much non-response error exists, or even whether it does exist. It is used as a tool to understand if it might exist and the possible reasons why it might have occurred.

The Statewide Travel Survey used a multistage survey approach (i.e., household recruitment and household retrieval). In this case, a rate is calculated for each survey stage — called the component response rate, then the overall response rate is determined by multiplying the rates together.

RECRUITMENT COMPONENT RESPONSE RATE

From the sampling frame, NuStats randomly selected over 200,000 telephone numbers for potential inclusion in the study. This is the pool from which households were identified and recruited for inclusion in the study. Telephone numbers were randomly generated throughout the State of Ohio with the exception of the Cincinnati, Columbus, and Cleveland MPO regions since these regions were relatively recently surveyed.

As shown in the following table, a total of 28,643 telephone numbers was found to be ineligible for the study (disconnects, business/government, and computer/fax). Dividing the eligible units (36,315) by the sum of the total eligible and ineligible units (36,315 +28,643=64,958) is the eligibility rate for the recruitment phase. The rate is 28%. This rate was used to determine the number of eligibility unknown numbers to allocate to the response rate calculation (28% of the total eligibility unknown of 64,566 – no answer, busy, answering machine, call backs – is 18,078).

The recruitment response rate is calculated using the following formula:

Recruitment Response Rate = Recruits / (Recruits+Refusals+42% of Eligibility Unknown Units)

Recruitment Response Rate = 22,413 / 22,413+13,902+18,078 = 22,413 / 54,393

Recruitment Response Rate = 41%

TABLE 3.4:
RECRUITMENT CALL OUTCOMES

CALL OUTCOME	FREQUENCY
Eligible Units	
Recruited	22,413
Refused to participate	13,902
Sub-Total Eligible	36,315
Ineligible Units	
Disconnected/non-working	20,689
Business/Government	3,904
Facsimile	2,360
Over Quota/ Not Qualified	1,690
Sub-Total Ineligible Units	28,643
Eligibility Unknown Units	
No answer	19,476
Call Back	22,258
Answering machine	20,603
Busy	1,305
Sub-Total Eligibility Unknown Units	64,566
Total:	*129,524*

RETRIEVAL COMPONENT RESPONSE RATE

The retrieval rate is then calculated using the same formula as the recruitment survey component rate. Of the total 22,413 recruited households, virtually all are eligible since the vast majority had been contacted previously. The retrieval component response rate is therefore the number of completed surveys divided by the total sample (i.e., all recruits) or 73.6%.

TABLE 3.5:
RETRIEVAL CALL OUTCOMES

CALL OUTCOME	FREQUENCY
Eligible Units	
Completed	16,494
Refused to participate	2,321
Pending (no answer, call backs, answering machines)	3,414
Disconnected/non-working	184
Total:	*22,413*

OVERALL RESPONSE RATE

In addition to the component rates, an overall response rate is calculated. The overall response rate can be computed using the following formula:

$$RR = \left(\frac{A_1}{A_1 + (C_1 * ER_1)} \right) * \left(\frac{A_2}{A_2 + (C_2 * ER_2)} \right)$$

Where,

RR = Overall Response Rate,

a_1 and a_2 = number of completed surveys for each of the two phases,

A_1 and A_2 = number of eligible telephone numbers for each of the two phases,

C_1 and C_2 = number of eligibility unknown for each of the two phases (note that in the retrieval phase all households are determined eligible and known since each was already recruited), and

ER_1 and ER_2 = eligibility rates for each of the three phases.

Using this formula, the ***Overall Response Rate is 30% (0.41 * 0.74)***. The response rate calculation uses the same formula prescribed by the Council of American Survey Research Organizations (CASRO).

In previous household travel surveys conducted across the US, the response rates varied between 20 and 24 percent using the same calculation method (accounting for a portion of the eligibility unknown in the denominator of the formula). For this survey, the response rate is above average but is typical for studies conducted in the mid-west.

4. INTERVIEWER TRAINING AND SURVEY PROCESS

The purpose of this section is to document the interviewer training procedures and the quality control procedures used in this study.

4.1 INTERVIEWER TRAINING

In addition to receiving rigorous and detailed industry-wide training NuStats provides to all interviewers, all interviewers were also required to successfully complete a project-specific training. The project manager and data collection manager designed a project-specific Interviewer Training Manual. All NuStats interviewers are trained using the most up-to-date materials and methods prescribed by the Marketing Research Association (MRA). This training takes place throughout the year and is unrelated to the project specific training that is the focus of the Interviewer Training Manual. The manual covers both general and specific information related to all data collection tasks for the Statewide Travel Survey.

Despite the fact that NuStats employs the largest, permanent interviewing staff trained in the conduct of household travel surveys in the country, each project is approached as a new project and all nuances explicitly addressed as if for the first time through the use of interviewer training manuals. This ensures that all interviewers understand the importance of the study and the need to collect complete and accurate data. A beginning concept that all interviewers understand at NuStats is the importance of "first contact" with each household. Knowing this "first step" into each household is the largest contributor to the household actually completing the survey.

Beginning with a project overview, including specific study objectives, the manual guides both interviewers and supervisors through all procedural issues including timelines, quotas and survey procedures. The manual also clearly identifies all survey management personnel as well as specific client contact information.

The manual then moves forward with task-specific training of recruitment interviews, refusal procedures and conversions, diary package contents and procedures, reminder calls and data retrieval methods.

NuStats firmly believes that open and clear communication from the onset of each project strengthens all training and data collection efforts. Therefore, all key personnel associated with the project, both internally and externally, participated in project start-up briefings and training sessions held in NuStats' data collection facilities.

Another part of the training dealt with the intricacies of the survey instruments themselves, with a separate training session held for each survey instrument involved. Details ranging from termination points and qualifiers for eligible respondents, to a careful review of skip patterns and rotations to group reviews of probing and clarifying techniques as they apply to the questionnaire were covered in great detail by project trainers. Mock interviews were conducted to help the interviewers quickly become familiar with the survey instruments, glossary of terms required for this project, and areas where the respondent might need further explanation.

The training also addressed common questions and how to maximize respondent participation in the survey. After passing a project-specific test, interviewers began work on the project and were monitored frequently and received specialized one-on-one training with supervisors and the project manager. Project trainers and supervisors regularly debriefed with interviewers and other project staff to keep everyone informed of any improvements to the interviewing process.

NuStats understood that respondents were going to refuse to participate in the survey. Since refusals are unavoidable, NuStats prepared for a certain percentage of refusals to occur during each stage of the interviewing process. The most experienced interviewers were trained to specifically handle refusals. Only those surveyors were allowed to call back respondents who refused to attempt to convince them to participate.

4.2 SURVEY METHODS

As detailed in the "Survey Instruments and Materials" chapter, the survey process followed a six-step plan.

1) The recruitment call secured the household's participation in the study and obtained demographic information, which was used to
2) Prepare personalized travel diaries for each household member.
3) The diaries, along with other materials, were then mailed to each member of a household and used during their assigned travel day to record all of their travel.
4) In addition, a reminder call was made to each household one to two days prior to the assigned travel date to confirm receipt of the packet and answer any last minute questions.
5) Following the assigned travel day, retrieval calls were made to obtain the recorded information. Several techniques were employed during the retrieval interview to help ensure that all trips were accounted for. These included a simple question of "did you make any stops along the way" as each new location was reported. Tracking whether any other household members also went on a given trip helped to ensure consistency within the household records as well as providing a method for ensuring that each household member then reported the shared trip. Proxy reporting and diary usage were also tracked for each respondent.
6) Data are edited and processed, and locations geocoded to x/y coordinates

These six steps comprise the most visible tasks involved in the survey process. However, there were seven additional "behind the scenes" steps involved. The survey followed a Continuous Data Flow, or CDF, process. This process was created for use in the New York Transportation Commission/New Jersey Transportation Planning Agency Household Interview Survey and has been continually refined over the past several years.

The CDF process has 13 essential stages each associated with a key aspect of the sample progression. Within each stage, there are also criteria that specify the standards by which sampled households can move to the next stage of the project.

The following table is provided to document the CDF stages from sample allocation to timely data delivery. The progression criteria are stated in the third column. Two types of reports are used to monitor progress: production reports show movement of the data (how many interviews completed last night, geocoding progress, etc.) and Exception Reports show lack of movement – how many households could not be geocoded and therefore did not move to the next CDF stage? Both are critical to successful completion of the project.

TABLE 4.1: CONTINUOUS DATA FLOW (CDF) PROCESS

STAGE	DAY	STAGE DESCRIPTION	PROGRESSION CRITERIA
1	1	Generate Sample	▪ None
2	2	Geocode Home Addresses	▪ Geocoded addresses go to Stage 3. ▪ Unmatched (geocode) listed addresses and unlisted addresses go to Stage 3.
3	3	Recruitment Interview – Sampled households are contacted to secure participation in the study. Those who agree to participate provide demographic data and are assigned a travel day.	▪ If the interview is completed, goes to Stage 4. ▪ If the interview is not completed, exception report is generated. ▪ If interview is not attempted, sample status is updated and sample is scheduled for callback according to sample management rules.
4	4	Geocode Habitual Addresses – work and school addresses are geocoded	▪ If address geocodes, goes to Stage 7. ▪ If address does not geocode, exception report generated and also proceeds to Stage 7 but flagged with address information need.
5	10	Diary Placement – A personalized diary packet is prepared and mailed to each recruited household.	▪ If packet is mailed, goes to Stage 6. ▪ If packet is not mailed, exception report generated to indicate reason.
6	14	Reminder Call – Recruited households are contacted to confirm receipt of diary packet and remind about upcoming travel day(s).	▪ If household is ready, goes to Stage 7. ▪ If household needs new packet, goes to Stage 5. ▪ If household is rescheduled, can go to Stage 5 or 7. ▪ If household refuses, exception report is generated and assigned to interviewer specializing in refusals.
7	15	Travel Day – Household members record travel on assigned day.	▪ None
8	16	Retrieval Interview – The first retrieval call is placed the day following travel or at a respondent-designated time. Data freshness standards control the length of time between travel days and data retrieval.	▪ If household provides data according to definition of "complete", goes to Stage 9. ▪ If household provides partial data, exception report is generated and household does not progress. ▪ If household did not record travel data and is rescheduled, can go to Stage 5 or 7. ▪ If household refuses, exception report is generated and assigned to interviewer specializing in refusals.
9	16	Field Edits – the night the retrieval interview is completed, work is checked for completeness.	▪ If work meets standards, goes to Stage 10. ▪ If work does not meet standards, exception report is generated and household is assigned for callback / correction
10	16	Data Processing – at the conclusion of each data collection shift, all data are processed and prepared for edit check and geocoding.	▪ If processed data meets completeness standards, goes to Stage 11. ▪ If processed data does not meet completeness standards, exception report is generated and household is assigned for correction / callback
11	17	Geocoding of Trip Ends – all new address information (new or updates to previously collected information) is geocoded through both batch and interactive processes.	▪ If geocoded, goes to Stage 12 ▪ If not geocoded, exception report is generated and household assigned for correction/callback ▪ Daily reports monitoring hit rates
12	17	Data Quality Checks – all data is subjected to visual inspection and edit check program to ensure quality standards and data specifications are met.	▪ If passes, goes to Stage 13 ▪ If fails, exception report is generated and household assigned for correction/callback ▪ Daily reports monitoring pass rates
13	22	Process complete – data ready for delivery.	▪ If process complete, data flagged for delivery and process ends. ▪ If process not complete and time thresholds crossed, exception report is produced and data specialist addresses household to ensure data movement.

Following the data collection procedures, the addresses collected during recruitment and retrieval were geocoded to x/y coordinates. More detail about this stage begins on the following page.

5. GEOCODING, DATA QUALITY CONTROL, AND DATA IMPUTATION

5.1 GEOCODING

All locations were geocoded using Arc View 3.1 using the June 2000 Geographic Data Technology's (GDT) Street Centerline Coverage Files. Home addresses were geocoded for listed households soon after sample generation. Home addresses that did not geocode were investigated and corrected during the recruitment interview. Each of the 16,112 household addresses was geocoded (100% match rate).

Work and school addresses for all household members collected during the retrieval interview were also geocoded. Addresses that did not geocode were researched through the Internet or through callback to the respondent. Ninety percent of the all work and school addresses traveled to are geocoded.

Addresses of non-home, work or school trips were also geocoded. Of the 43,298 unique trip addresses (non-home, work or school), 98% were geocoded. The table below summarizes the geocoding match rates. The minimum goal for this project was a 90% match rate for non-home addresses. As shown in the table, the match rates far exceeded this goal.

TABLE 5.1:
GEOCODING MATCH RATES

ADDRESS TYPE	UNIQUE LOCATIONS	# MATCHED	MATCH RATE
Home	16,112	16,112	100%
Work	20,509	19,718	96%
School	7,737	7,618	98%
Trips	43,298	42,805	99%

Note: Match Rate is defined as "Number Matched" divided by "Total Locations. " Work Locations include primary, secondary, and volunteer locations.

Geocoding occurred at three distinct stages in the survey after sample generation, recruitment, and retrieval.

- All listed sample (home addresses) were geocoded immediately after sample generation.
- All home addresses not yet geocoded and habitual work and school addresses were geocoded subsequent to the recruitment interview. Problem habitual work and school addresses were clarified during the retrieval interview.
- Trip end addresses were geocoded following the retrieval interview. The same process above were used to identify and resolve the problem addresses. If that failed, households were recontacted.

Each stage is unique, but all share the same underlying principles. The following section describes the generic geocoding process.

Prior to geocoding, electronic geographic coverage files will be prepared in Environmental Systems Research Institute's (ESRI) ArcView GIS Software. This step included joining county street coverage files together, setting the properties for matching, and indexing the files.

The basic geocoding process consists of four steps. These steps were performed each time addresses were matched to the geographic coverage files. The following outline describes these steps generally.

1) Prepare geocoding file. As addresses were submitted for geocoding, a table of address information was created in dBase format with a field containing concatenated address data. This table was sorted in various formats to make global changes. Global changes included correcting misspelled place names, misspelled city names, and correcting any other global address problems. The file was then imported into ArcView for geocoding. Additional information such as traffic analysis zones were loaded in ArcView.

2) Geocoding. Batch and/or interactive geocoding was performed on all addresses in the data files. This included all three address types (home, habitual school and work, and trips). A batch run is an automated process while interactive sessions are used to geocode addresses one at a time. In the batch run process, the sensitivity measure was not set to less than "85% corrective." Addresses received a status (AV_STATUS) variable of "M" for matched, "O" for out of area, "U" for unmatched. .

3) Attach coordinates. After addresses were geocoded, ArcView calculated and pulled longitude and latitude coordinates for the matched cases in decimal degrees to five decimal places. Additional information such as TAZ and geocoded zip code and city were also added. Then, the geocoded file is saved and exported to a tabular data file that was updated to the master data file.

4) Address research. The unmatched cases required further research efforts (manual address searches) to obtain the needed AV_STATUS of "M" (matched). Addresses that were not matched were researched and checked against a large array of materials, including:

   - Internet Directories
     - ✓ Zip2.com (online directory of all U.S. phone books containing schools, restaurants, shops, and other place names)
   - Electronic Directories
     - ✓ Street Atlas USA 7.0 (DeLorme)
     - ✓ Select Phone 2000 (ProCD)
   - Maps, Atlases, Gazetteers, and Street Finders
     - ✓ County and City Street Guides and Maps
     - ✓ Thomas Brothers Atlases
   - Telephone Directories
     - ✓ All available telephone directories

Steps 2 through 4 were repeated until the desired percentage of addresses were geocoded.

While blank addresses will be excluded, NuStats conducted several immediate checks on the data during recruitment and retrieval interviews so that the surveyors were not allowed to enter a blank address field. The surveyor is at least required to type in "don't know/ refused" in order for CATI to accept the response. NuStats, with five years of continuous geocoding experience in ArcView, has standard quality control checks. These detailed quality control checks were developed to ensure the most accurate data possible. Details of the geocoding quality control procedures are provided in the next section.

5.2 GEOCODING QUALITY CONTROL

Quality control procedures to check the accuracy of the geocoding were conducted. The main procedure involved sorting geocoded locations by county, then displaying all geocoded points for a particular county using the county coverage file. Any points falling outside the county boundaries were verified and re-geocoded if necessary. The final data file contains a geocoding quality control variable that identifies the action taken on a particular record, the quality control check performed and/or the outcome of the check.

Specifically, the quality controls included:

- Blank records were flagged in CATI and were not sent for geocoding until a proper address was collected.
- A random selection of 5% of the geocoded address file was reviewed in detail to ensure proper placement of the overall latitude/longitude points. This entailed using ArcView and displaying the points on the street layer and comparing the points with DeLorme.
- Daily tracking reports on the status of the overall geocoding including the quantity, quality and match rates.
- Since a cross-street geocode does not reference a zone (zip code or city) in ArcView, all cross-street geocodes were queried and analyzed to ensure proper placement of the geocodes.
- After completing a geocoded file, the geocoded zip code, and geocoded city was attached to the file. This was used to determine which of the four codes to use in the "quality control" flag field in the final data set.
- A "quality control" field was added to the data file. These include:

  1 = given zip code matches geocoded zip code and given city matches geocoded city

  2 = given zip code matches geocoded zip code

  3 = given city matches geocoded city

  4 = Visual confirmation was required - these records were imported back into ArcView and manually displayed, queried by city, and thoroughly reviewed to ensure an accurate geocode.

A second electronic check of the data involved calculating travel speeds and comparing them against mode-specific standards. A rate of speed is calculated and compared to a predetermined range of speeds deemed appropriate for each mode of travel. For multi-modal trips, a hierarchy of modes is often established and the rate of travel is subjected to the standards of the dominant mode.

This check was performed on all trip records for which both the origin and destination were successfully geocoded. The x/y coordinates were used to calculate a trip distance, while the reported travel times were used to calculate travel time.

The process was as follows:

1) ***Create File***. A file is created from the trip file that places the origin, destination, and travel data in one record (as opposed to two records in the trip file).

2) ***Calculate Distance.*** The distance formula is used and thus the following variables are added to the speed check file. The following is used to calculate distances when coordinates are given in degrees of latitude and longitude:

$$d = \sqrt{(x_o - x_d)^2 \cos^2[(y_o + y_d)/2] + (y_o - y_d)^2}$$

where,

x_o = longitude of origin
x_d = longitude of destination
y_o = latitude of origin
y_d = latitude of destination

The x and y coordinates are translated into decimal degrees before running this process and thus this formula yields a distance in decimal degrees. This is then converted to miles by multiplying the decimal degree distance by 69.1105 (factor that changes decimal degrees to miles on the curvature of the Earth).

3) ***Calculate Travel Time.*** The trip duration (expressed in minutes) is divided by 60 to get trip time in hours.

4) ***Calculate Speed.*** Miles are divided by hours to calculate the travel speed.

5) ***Compare Calculated Speed to Mode Thresholds***. The calculated speed is then compared to "reasonable" speed thresholds. Those trips with speeds within the bounds are acceptable, those outside are flagged for a check on time rounding. The proposed thresholds for this project include:

Auto trips.....0 to 70 mph
Bus.....0 to 35 mph
School Bus.....0 to 45 mph
Bicycle.....0 to 15 mph
Walk .....0 to 10 mph

6) ***Determine the Effect of Time Rounding on Trips with Speed Violations.*** Given the variations in reporting time as compared to the preciseness of calculated distance, a large proportion of speed violations actually result from respondents misreporting time. As such, the next step in the process is to vary the trip duration by up to 15 minutes to determine if that slight rounding would result in the speed becoming reasonable for the reported mode. Any trip records with speed violations that cannot be attributed to time rounding are flagged for visual inspection. A total of 646 trips, representing 0.5% of all trips had unresolved speed violations.

7) ***Visual Inspection.*** The remaining cases are then checked for these characteristics – respondent reporting incorrect mode, incorrect trip times, or reporting traveling to the same place consecutively (same shopping center or business center) thus, creating a distance of 0.

Once the data has passed all checks, the file is ready for a final pass prior to delivery. The purpose of this final pass is to eliminate duplicate geocodes for a single location, and ensure proper spelling of place names and cities.

5.3 DATA QUALITY CONTROL

The collected data were subjected to a rigorous edit check program, which performed automated global quality control checks of the data. These checks included both within file checks (intrafile) for consistency, as well as cross-file checks (interfile) for logic and compatibility.

The following are the general descriptions of the edit check programs implemented for each of the data files.

Across all Files:

- Range of values for each data item is valid, including values for non-response (logic: responses cannot be outside range).

Household File:

- Compare number of persons in household with number of person records in person file for that household.

Person File:

- Check to see if the number of persons indicated in the household file matches number of person records.
- Check to see if persons traveled on travel days. If not, reason must be provided.
- If person is not a licensed driver, check to make sure there are no trips in which they were a driver.

Trip File:

- Verify that each person has at least one place per day.
- Verify that household and person records exist for each sample number in the trip file.
- Check the travel times. Arrival at place (n) must be after departure from place (n-1). Arrival at place (n+1) must be after departure from place (n).
- Place numbers must be sequential and inclusive.
- Check to see if the person returned home at the end of each day. If not, flag as potential missing trip.
- Verify that each place has address and trip data associated with it.
- Ensure that activities are consistent with reported location.

5.4 DATA IMPUTATION

Inherently, surveys typically don't produce 100% item response due to various reasons such as respondent refusal, interviewer error, or data processing error among others. In any case, for purposes of this survey, it was important to maximum item response for critical input variables whether through direct data collection efforts or through data imputation.

The objective of imputing data is to "fill in" the missing data for those variables in which the survey respondent should have provided. For a number of variables, there will be missing data because certain respondents were not required to answer the question due to an eligibility requirement. For example, only respondents 15 years of age or older were asked if they are licensed to drive. Those under 15 will have this variable blank.

There are several methods for imputing data. 2000 Census Tract level data was used for imputing the income variable. This is the one variable that typically produces the lowest item response rate. For the Statewide Travel Survey, 13% (or, 2,159) of the 16,112 households refused to answer this question. Other critical model household input variables such as household size, number of workers, number of students, and number of licensed drivers have a 100% completion rate. The number of vehicles available had a response rate of 99.9% (10 households of the 16,112 refused to provide this information). Based on the item response rates as summarized in the following table, it was decided that data imputation was not needed for any variable in which data are missing with the exception of the income variable noted above. (All other variables not listed in the table have a 100% completion rate.)

TABLE 5.2:
HOUSEHOLD VARIABLES

VARIABLE	DESCRIPTION	# MISSING / TOTAL ELIGIBLE	COMPLETION RATE
INCOME	Total 1999 annual household income	2,161 / 16,115	86.60%
GUEST	Guests in household on travel day	987 / 16,115	94.00%
TRNSIENT	Number of transient visitors	999 / 16,115	94.00%
TIMES	Number of occurrences	29 / 529	94.50%
LENGTH	Lack of phone service length	18 / 529	96.60%
TRVEH	Number of vehicles used on travel day	486 / 16,115	97.00%
NO_PHLNS	Number of telephone lines	119 / 16,115	99.00%
NO_PHONE	Lack of phone service	111 / 16,115	99.00%
SHARE	Phone line sharing	67 / 16,115	99.60%
OWN	Owner/renter status	47 / 16,115	99.70%
RESTY	Type of dwelling unit	13 / 16,115	99.90%
TOTVEH	Number of HH vehicles	10 / 16,115	99.90%
BORVEH	Number of borrowed HH vehicles	6 / 15,473	99.90%
TRBRVEH	Number of borrowed HH vehicles	5 / 11,846	99.90%

In Table 5.3, the first two Industry and Occupation variables listed in the table are for the secondary job for respondents with more than one job. The *primary* job industry and occupation are at significantly higher response rates. All others are at 98% or higher.

TABLE 5.3:
PERSON VARIABLES

VARIABLE	DESCRIPTION	# MISSING / TOTAL ELIGIBLE	COMPLETION RATE
INDUST2	Employment2 industry	134 / 956	86.00%
OCCUP2	Occupation2 (Major Categories)	127 / 956	86.70%
HRSHOME	Hours worked at home	64 / 560	88.60%
INDUSTRY	Employment industry	925 / 17,552	94.70%
OCCUP	Occupation (Major Categories)	875 / 17,552	95.00%
PRIMACT	Primary Economic Activity	674 / 30,471	97.80%
AGE	Person X - Age	721 / 36,755	98.00%
STUDATTN	Attendance	149 / 8,003	98.10%
SCHOOL	Type of school enrolled in	111 / 8,003	98.60%

VARIABLE	DESCRIPTION	# MISSING / TOTAL ELIGIBLE	COMPLETION RATE
RELATION	Relation to head	474 / 36,755	98.70%
MOREJOBS	Number of Other Jobs	12 / 956	98.70%
DIARY	Whether or not person used diary to record trips	488 / 36,755	98.70%
LIC	Person X - Valid drivers license	293 / 30,935	99.10%
VOLNTEER	Volunteer Work	307 / 36,755	99.20%
GENDER	Person X - Gender	274 / 36,755	99.30%
WORKHOME	Work at home	82 / 17,552	99.50%
STUDENT	Student status	196 / 36,755	99.50%
JOBS	Person X-more than one job	46 / 17,552	99.70%

For the trip variables, there are eight of the approximately 27 variables in which some data are missing. Most of the missing data are within parking related variables.

TABLE 5.4:
TRIP VARIABLES

VARIABLE	DESCRIPTION	# MISSING / TOTAL ELIGIBLE	COMPLETION RATE
PRKLOC	Parking location	98 / 127	22.80%
TAXIFARE	Cost of taxi	19 / 35	45.70%
BUSFARE	Bus fare	83 / 413	79.90%
PRK_COST	Parking cost	3,499 / 88,946	96.10%
PL_TYPE	Place type	2,339 / 159,230	98.50%
PARKDIST	Distance (in blocks) parked from final destination	1,057 / 88,946	98.80%
PRK_UNIT	Parking cost unit	5 / 404	98.80%
TRP_ACT1	Primary trip activity	279 / 159,230	99.80%

A total of 1,702 addresses (work, school, or trips) were not geocoded to an x/y coordinate because of a lack of information provided by the respondent. Of these, 299 addresses were imputed using previous and subsequent trip locations. Other variables such as mode, and trip duration were taken into account during the imputation process. All imputed variables are flagged in the final data set.

The specific method for geocoding missing geocodes was to compute the times/distances between previous and missing location and between missing and subsequent locations and select a location in a straight-line path that is proportional to the computation. In a simplified example, if Point A (known location) is 10 minutes (or 10 miles) from the ungeocoded location (Point B) and is 30 minutes from the ungeocoded location to Point C, a location that is 1/4 the distance between Points A and C is selected in a straight-line path. Again, other variables were considered such as mode (i.e., If from Point A to Point B was via auto and from Point B to Point C was via transit, and using the scenario mentioned above, the mid-point may be selected instead of 1/4 the distance since auto can be assumed to travel further in a shorter time than transit.

6. SURVEY DATA WEIGHTING AND EXPANSION

The Ohio Household Travel Survey required predetermined sample sizes, by the nine selected MPO areas, to meet statistical reliability requirements within each region. Since the Cleveland, Columbus and Cincinnati MPO regions were not part of this survey effort (each had recently conducted their own regional household travel survey), creating a specific "statewide" weight factor for each MPO area is not required under this task – only a MPO-specific weights were needed.

Statistical weights were used to adjust the sample proportions to actual proportions as determined by 2000 Census data. The 2000 Census Transportation Planning Package (CTPP) data files were used for the weighting process while the 2000 Census SF1 and SF3 data files were used to validate the CTPP data, as applicable. The data used for the weighting and expansion for each MPO area were defined based on the Traffic Analysis Zones (TAZ) boundary definition within each MPO. The map in Figure 6.1 illustrates the geographic boundary of each MPO.

For the weighting process, the Mansfield MPO boundary was expanded to include all of Richland County while the two TAZs in Morrow and Ashland counties were eliminated from the boundary definition. In addition, the Dayton MPO area was expanded to include the Miami MPO area (i.e., all of Miami County) and Springfield was expanded to include all of Clark County rather than only portions of that county.

The final weight variable for each MPO in the Ohio Household Travel Survey is comprised of up to seven factors in which their product adjusts the survey data for the following key variables:

1) Household Size by Vehicles Available
2) Workers by Vehicles Available
3) Age of Head-of-Household
4) Income
5) Episodic Telephone Ownership
6) Probability of selection
7) County weight (if applicable for multi-county MPO regions)

6.1 WEIGHTING AND EXPANSION PROCESS

The weighting and expansion process utilized a step-wise, iterative process for each MPO region, as needed. Weight factors for each region are calculated individually then multiplied together and weighted (adjusted) to "match" Census parameters. The Akron MPO weighting process is used as an example.

1) Calculate each of the first six weight factors listed above by comparing the distribution of the survey sample versus the distribution from the CTPP data for the region. "Appendix F: Akron Sheet-1" in the attached tables summarizes the results of the initial weight factor calculation. (note that for Akron and all other MPO regions, the probability of selection weight factor is determined by taking the inverse of the number of telephone lines and therefore CTPP data are not needed to calculate this particular weight factor).
2) The weight factors are then applied to the survey data (to each of the appropriate variables), multiplied, and then the resulting product is normalized to the number of actual cases in the data set (i.e., to match weighted outputs to actual cases in the data file).
3) The steps of the weighting process can be viewed as "adjustments" to the survey data. Each weight is adjusted to CTPP data individually, holding all other weight factors constant in each step.

Weight factor one is calculated by dividing the CTPP distribution by the survey distribution and then multiplying by the existing factor.

4) After the previous weight factor is adjusted the expanded distribution will match the CTPP distribution (since it was specifically adjusted to match CTPP). Akron Sheet 3 shows how the adjustment to factor 1 made the two distributions match. Weight factors 2 - 5 are adjusted in the same step-to-step manner as Weight factor 1. Adjusting one weight factor and then normalizing product to match the actual number of records in the data set. Steps 2 and 3 are repeated to modify the next weight factor.

5) After factor 5 is adjusted, the data set is expanded to the MPO region's total number of households and the distribution of all 5 weight factors is verified against the CTPP distributions. If the distributions of the weighted data do not match the CTPP distributions, a second iteration of the weighting process was conducted (repeating the adjustments of weight factors 1 - 5), steps 2 - 4.

6) Factor 7 (County weight) is calculated last. When all factors are multiplied, the resulting number and distribution of households (for each variable) in the survey data matches the CTPP distributions and households. The resulting number of expanded households for each MPO region is summarized in Table 1 below and match the 2000 Census.

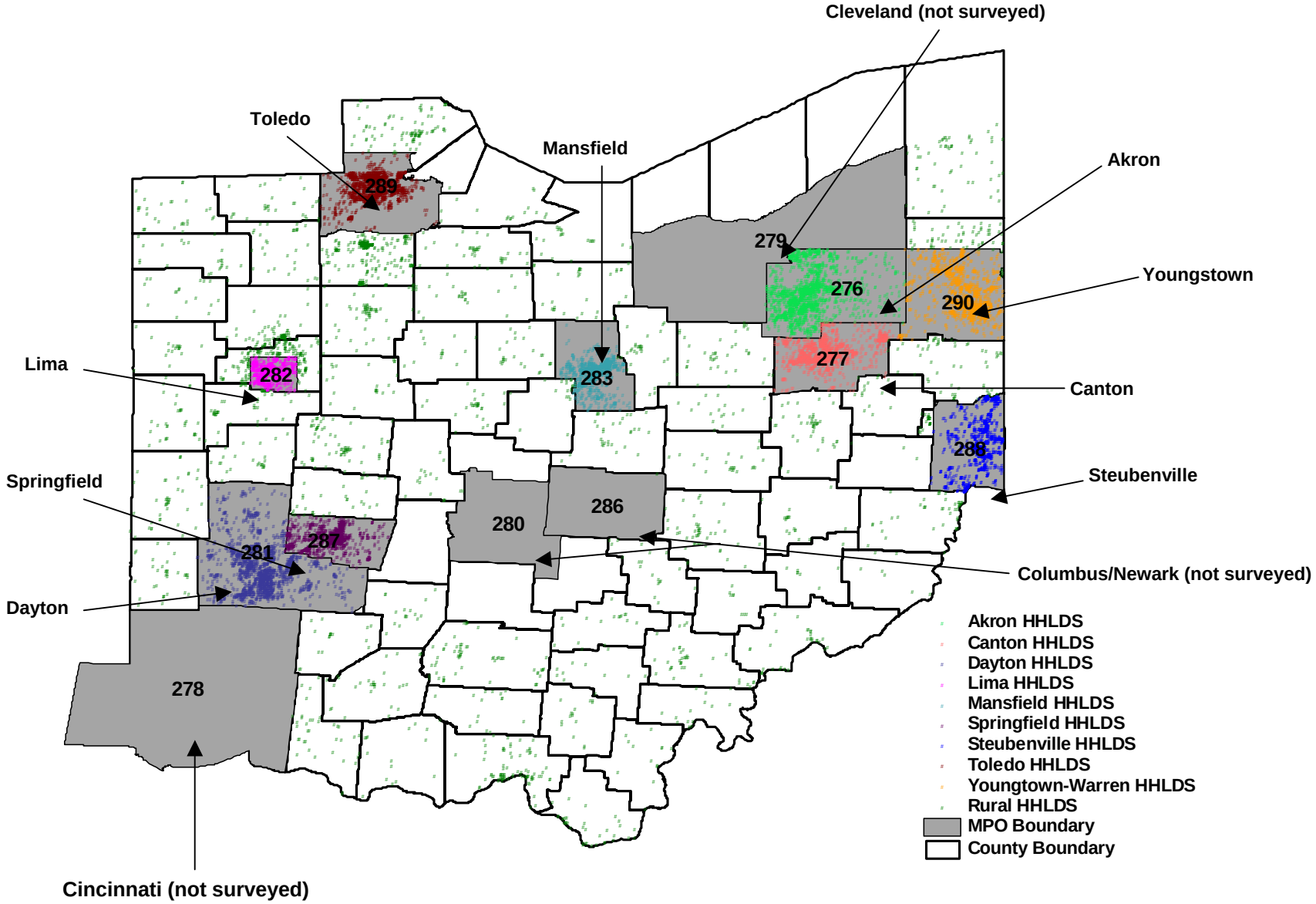
TABLE 6.1:
COMPLETED SURVEYS AND RESULTING EXPANSION BY MPO

MPO REGION	MPO ID	SURVEYED HOUSEHOLDS	SURVEY GOAL	EXPANDED HOUSEHOLDS*
Akron	276	1,936	1,900	277,168
Canton	277	1,319	1,300	149,393
Dayton (1)	281	1,950	1,900	322,901
Lima (2)	282	1,328	1,300	31,026
Mansfield (3)	283	1,304	1,300	49,560
Springfield	287	1,349	1,350	56,720
Steubenville (4)	288	1,276	1,300	53,391
Toledo (5)	289	1,869	1,900	220,326
Youngstown (6)	290	1,251	1,300	182,514
Rural	N/A	2,530	1,500	TBD
Cleveland	279	N/A	N/A	N/A
Cincinnati	278	N/A	N/A	N/A
Columbus/Newark	280/286	N/A	N/A	N/A
Total	*N/A*	*16,112*	*15,050*	

**Source: 2000 Census Transportation Planning Package, MPO boundaries defined by ODOT and are based on Traffic Analysis Zones.*

1. *Dayton and Miami MPO's combined in the survey and in the weighting and expansion.*
2. *Lima MPO included all of Allen County in the survey but only a part of the county in the weighting and expansion.*
3. *Mansfield MPO included all of Richland County in the survey and in the weighting and expansion.*
4. *Steubenville MPO included all of Jefferson (OH), Brooke (WV) and Hancock (WV) counties in the survey and in the weighting and expansion.*
5. *Toledo included all of Lucas (OH), Wood (OH) and Monroe (MI) counties in the survey but the weighting and expansion only included portions of all counties except for Lucas which included the whole county.*
6. *Youngstown MPO included all of Trumbull and Mahoning counties in the survey but the weighting and expansion only included portions of these two counties.*

FIGURE 6.1:
SURVEYED HOUSEHOLDS (N=16,112)



6.2 FACTOR CALCULATION

Factor 1. Household Size by Vehicles Available

The calculation of this weight factor is based on the 2000 Census CTPP data and actual survey data. For each MPO region, the survey distribution of vehicles available and Household Size is compared to the Census CTPP distribution for each cross-classification cell.

Factor 2. Workers by Vehicles Available

The calculation of this weight factor is based on the 2000 Census CTPP data and actual survey data. For each MPO region, the survey distribution of vehicles available and number of workers is compared to the Census CTPP distribution for each cross-classification cell.

Factor 3. Age of head-of-Household

The calculation of this weight factor is based on the 2000 Census CTPP data and actual survey data. For each MPO region, the survey distribution of age of the head of household is compared to the Census CTPP distribution for each classification cell.

Factor 4. Income

The calculation of this weight factor is based on the 2000 Census CTPP data and actual survey data. For each MPO region, the survey distribution income is compared to the Census CTPP distribution for each classification cell.

Factor 5. Episodic Telephone Ownership

To account for non-telephone owning households in a telephone survey, an adjustment is required using data reported by those households reporting episodic telephone ownership. Episodic phone service is characterized by phone service being turned on or off over a given period of time, largely due to a lack of financial resources. As households are able to pay their phone bills, their service is re-activated, only to be de-activated again at a later date due to non-payment. This is a different type of household from the true non-telephone household, where no telephone service was established. It is also a different type of household than those without phone service for less than 2 weeks, as these represent service interruptions due to telephone company repairs or weather events rather than ability to pay.

As shown in the following table, less than one-half of one percent of surveyed households reported being without a telephone for 2 weeks or longer. These households represent other non-telephone households in the state where non-ownership is "episodic."

TABLE 6.2:
EPISODIC TELEPHONE OWNERSHIP AS REPORTED IN SURVEY — STATEWIDE

LENGTH OF TIME WITHOUT SERVICE	FREQUENCY	PERCENT
Never without service in past 12 months	15,583	96.7%
Less than 2 weeks (Non-episodic)	460	2.9%
2 weeks or longer (Episodic)	69	0.4%
Total:	*16,112*	*100.0%*

To determine the weighting factor required in adjusting for episodic telephone ownership, the data were compared to non-telephone ownership as reported by the Bureau of the Census (SF3 2000 Census data) for the entire State of Ohio. Census shows 2.2% of all households did not have phone service on April 1, 2000 ((this includes both non-episodic and true non-telephone ownership households). In reality, about half of the non-telephone households are episodic since the Census survey asks if there is phone service available on April 1 (i.e., does not ask if non-service is temporary, or episodic and therefore might not be a permanent situation). Although no technical papers have been published that can serve as a resource in this area, this half-rate is determined based on NuStats' experience in conducting in-person interviews and postcard follow-up surveys with non-telephone households on other studies. Based on NuStats' experience, the distribution must be adjusted so that the episodic households could be compared with the Census episodic household estimates. Since only about one-half of the episodic households are truly non-telephone households, the more accurate amount is slightly more than one percent (1.1%). Once the adjustment is made, this factor is a straightforward calculation, as shown in the following table. (This factor is the data adjusted for episodicity divided by the survey percent.) In this case, 0.011 (which is the percent value adjusted for episodic telephone ownership) is divided by the survey percentage (0.004) and the factor is 2.750000. Each of the 69 households that are determined as proxies for non-telephone households will have an episodic telephone ownership factor of 2.750000 in the data files. All other cases (16,046) will have a factor of 0.992972.

TABLE 6.3:
EPISODIC TELEPHONE OWNERSHIP FACTOR — STATEWIDE

IS PHONE SERVICE EPISODIC?	SURVEY RESPONDENTS	SURVEY PERCENT	CENSUS PERCENT	DATA ADJUSTED FOR EPISODICITY (1/2 OF CENSUS VALUE)	FACTOR3
No	16,043	99.60%	97.80%	98.90%	0.992972
Yes	69	0.40%	2.20%	1.10%	2.750000
Total:	*16,112*	*100.00%*	*100.00%*	*100.00%*	

Factor 6. Probability of selection by Number of Telephone Lines

The survey must take into account differential probabilities of selection in the sample generation stage. Under ideal conditions, assuming that the study area is relatively homogenous with respect to telephone ownership, one would only need to take into account the sample size by county and the estimated universe of households within that sample stratum. However, households with more than one phone line have a higher probability of being selected in the study than households with one telephone line. To account for this uneven probability of selection, a weight is applied to each household based on its number of phone lines (not including those dedicated for fax/modem since these are typically not answered as voice based) and is simply the inverse of the number of telephone lines. For example, if a respondent reports having two telephone lines, then the weight factor is 0.5. The following table summarizes the distribution of households by number of telephone lines (excluding fax/modem dedicated) and its corresponding weight factor for each sampled household.

TABLE 6.4:
PROBABILITY OF SELECTION WEIGHT FACTORS

NUMBER OF TELEPHONE LINES	FREQUENCY	PERCENT	FACTOR
1	13,98	86.3%	1.00
2	1,657	10.3%	0.50
3+	547	3.4%	0.33
Total	*16,112*	*100.0%*	

Factor 7. County Weight

The calculation of this factor is a fairly straightforward process. First, the natural or proportionate distribution of the households, by county, within each MPO is considered. The proportional distribution for each county is calculated as the number of Year 2000 Census households for the county divided by the total number of households in MPO region.

The weight factor is then calculated for each county by dividing the number of proportional sample size by the final number of samples collected.

7. SURVEY RESULTS

7.1 HOUSEHOLD DATA

The following are results from the household-level data variables by region. Trip rates by household demographics can be found in the Trip Data section.

The table below indicates for each metropolitan planning region the distribution of households according to size. Mean household size ranges from a low of 2.15 in Lima to a high of 2.38 in Rural (MPO 10 & 11; hereafter Rural). Household size and the average number of trips per household are positively related – based on this study, mean trips per household ranged from 2.98 in one-person households to 14.9 in households which contained four or more persons.

While Rural exhibited the highest percentage of households with four or more persons, they did not generate the largest numbers of trips. Canton, ranked second among MPO regions with 23 percent of households containing four or more persons generated the most trips – 8.76 per household during the 24-hour survey period.

TABLE 7.1:
HOUSEHOLD SIZE DISTRIBUTION AND MEAN HOUSEHOLD SIZE

MPO	ITEM	1-PERSON	2-PERSON	3-PERSON	4 + PERSON	TOTAL
Akron (AMATS)	N	75,015	97,495	43,936	60,722	277,168
	R%	27.1	35.2	15.9	21.9	100.0
	Mean			2.30		
Canton (SCATS)	N	38,901	52,190	23,917	34,386	149,394
	R%	26.0	34.9	16.0	23.0	100.0
	Mean			2.36		
Dayton (MV)RPC	N	92,199	112,258	50,882	67,562	322,901
	R%	28.6	34.8	15.8	20.9	100.0
	Mean			2.23		
Lima (LACRPC)	N	8,723	10,785	5,094	6,424	31,026
	R%	28.1	34.8	16.4	20.7	100.0
	Mean			2.15		
Mansfield (RCRPC)	N	13,590	17,799	7,295	10,876	49,560
	R%	27.4	35.9	14.7	21.9	100.0
	Mean			2.21		
Springfield (CCSTS)	N	14,723	20,034	9,336	12,627	56,720
	R%	26.0	35.3	16.5	22.3	100.0
	Mean			2.31		
Steubenville (BHJTS)	N	14,824	19,665	9,326	9,576	53,391
	R%	27.8	36.8	17.5	17.9	100.0
	Mean			2.28		
Toledo (TMACOG)	N	63,230	72,508	34,716	49,873	220,327
	R%	28.7	32.9	15.8	22.6	100.0
	Mean			2.22		
Youngstown (EDATS)	N	52,108	61,879	29,368	39,159	182,514
	R%	28.6	33.9	16.1	21.5	100.0
	Mean			2.32		
Rural (Non-MPO area)	N	274,308	402,606	201,775	276,546	1,155,235
	R%	23.7	34.9	17.5	23.9	100.0
	Mean			2.38		
Total	*N*	*647,620*	*867,219*	*415,645*	*567,750*	*2,498,234*
	R%	*25.9*	*34.7*	*16.6*	*22.7*	*100.0*
	Mean			*2.28*		

In addition to household size, vehicle ownership is strongly correlated with the number of trips households make on a daily basis. Larger households are also more likely to maintain larger number of vehicles. Across all 10 MPO regions, only 3 percent of households with 4 or more persons did not own a vehicle. A majority of these households were found in Dayton (24%) and Rural (38%).

As in the case of household size, vehicle ownership is positively related to the number of trips generated per household. Households that own three or more vehicles generated twice the number of trips generated by households with only one vehicle (11.46 compared to 5.24).

The highest percentage of zero-vehicle households is found in Steubenville. This is somewhat related to income as median household income in this region is the lowest ($32,415) compared to the other nine MPO region, and nearly $4,000 less than the next lowest MPO region.

TABLE 7.2:
VEHICLE OWNERSHIP DISTRIBUTION AND MEAN VEHICLE OWNERSHIP

REGION	ITEM	0-VEHICLES	1-VEHICLE	2-VEHICLES	3+ VEHICLES	TOTAL
Akron (AMATS)	N	19,059	89,474	116,296	52,339	277,168
	R%	6.9	32.3	42.0	18.9	100.0
	Mean	1.84				
Canton (SCATS)	N	9,999	47,171	62,824	29,399	149,393
	R%	6.7	31.6	42.1	19.7	100.0
	Mean	1.83				
Dayton (MV)RPC	N	26,782	110,719	127,054	58,346	322,901
	R%	8.3	34.3	39.3	18.1	100.0
	Mean	1.75				
Lima (LACRPC)	N	2,659	10,796	12,225	5,346	31,026
	R%	8.6	34.8	39.4	17.2	100.0
	Mean	1.74				
Mansfield (RCRPC)	N	3,729	16,079	19,429	10,323	49,560
	R%	7.5	32.4	39.2	20.8	100.0
	Mean	1.83				
Springfield (CCSTS)	N	4,283	19,027	21,952	11,458	56,720
	R%	7.6	33.5	38.7	20.2	100.0
	Mean	1.80				
Steubenville (BHJTS)	N	4,815	18,641	20,391	9,544	53,391
	R%	9.0	34.9	38.2	17.9	100.0
	Mean	1.73				
Toledo (TMACOG)	N	18,605	80,376	86,555	34,790	220,326
	R%	8.4	36.5	39.3	15.8	100.0
	Mean	1.68				
Youngstown (EDATS)	N	14,369	64,059	70,886	33,199	182,514
	R%	7.9	35.1	38.8	18.2	100.0
	Mean	1.75				
Rural (Non-MPO area)	N	77,322	333,115	458,924	285,874	1,155,235
	R%	6.7	28.8	39.7	24.7	100.0
	Mean	1.95				
Total	*N*	*181,623*	*789,457*	*996,536*	*530,618*	*2,498,234*
	R%	*7.3*	*31.6*	*39.9*	*21.2*	*100.0*
	Mean	*1.85*				

Table 7.3 provides a variety of indicators for each MPO region. Most of the MPO regions are fairly similar in terms of the number of persons, workers, students, and licensed drivers per household. Nevertheless, there are some differences to note. The lower rate of workers per household in the Steubenville area is related to the larger proportion of individuals not in the labor force in this region (45.1%). A fair amount of these individuals are not in the labor force due to age – 14 percent of Steubenville's residents are 70 years or older.

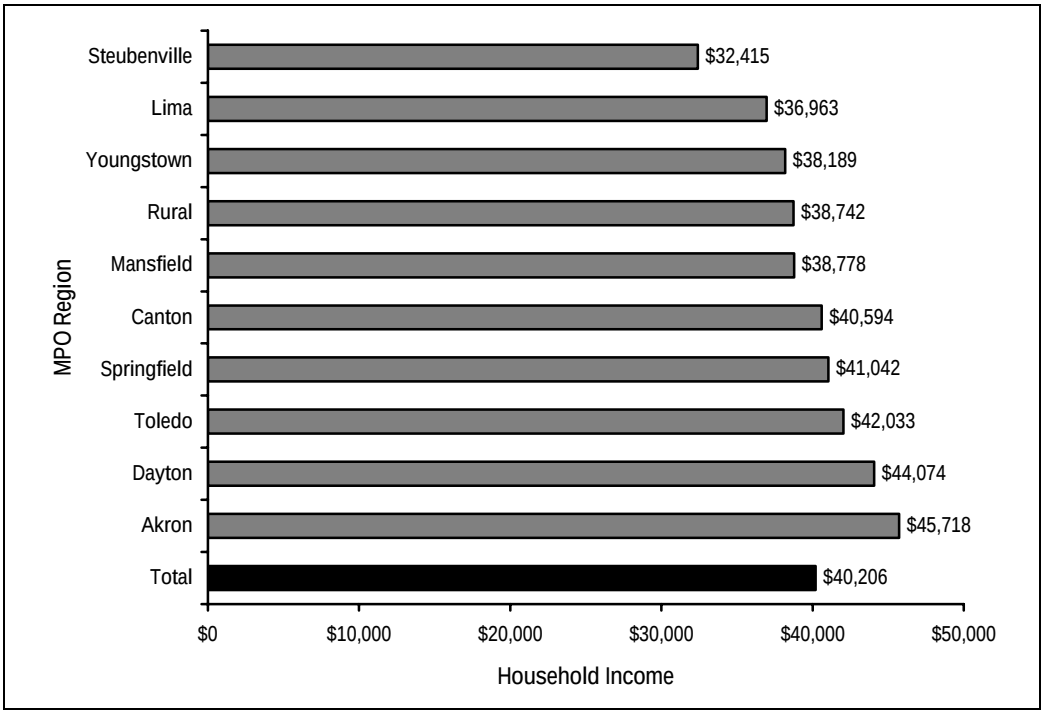
TABLE 7.3:
MEAN NUMBER OF PERSONS, WORKERS, STUDENTS, AND LICENSED DRIVERS PER HOUSEHOLD

REGION	PERSONS	WORKERS	STUDENTS	LICENSED DRIVERS
Akron (AMATS)	2.42	1.20	0.64	1.71
Canton (SCATS)	2.47	1.19	0.63	1.72
Dayton (MV) RPC	2.39	1.15	0.65	1.65
Lima (LACRPC)	2.40	1.09	0.63	1.62
Mansfield (RCRPC)	2.47	1.13	0.58	1.66
Springfield (CCSTS)	2.48	1.13	0.65	1.69
Steubenville (BHJTS)	2.35	0.97	0.51	1.65
Toledo (TMACOG)	2.44	1.14	0.71	1.65
Youngstown (EDATS)	2.39	1.07	0.57	1.67
Rural (Non-MPO area)	2.54	1.21	0.68	1.79
Total	*2.48*	*1.17*	*0.66*	*1.73*

Figure 7.1 details the median household income for each MPO region as well as across all regions[1]. Income dynamics in each of these regions is vitally important to transportation planning because (like household size and vehicle ownership), income explains a fair portion of the difference in travel behavior. Part of this correlation is due to the primary relationship between income and vehicle ownership.

However, even among households with 3 or more vehicles, higher-income households tend to generate more trips (12.49 among households earning $60,000 or more compared to 9.30 among households earning less than $40,000.

FIGURE 7.1:
MEDIAN HOUSEHOLD INCOME BY MPO REGION

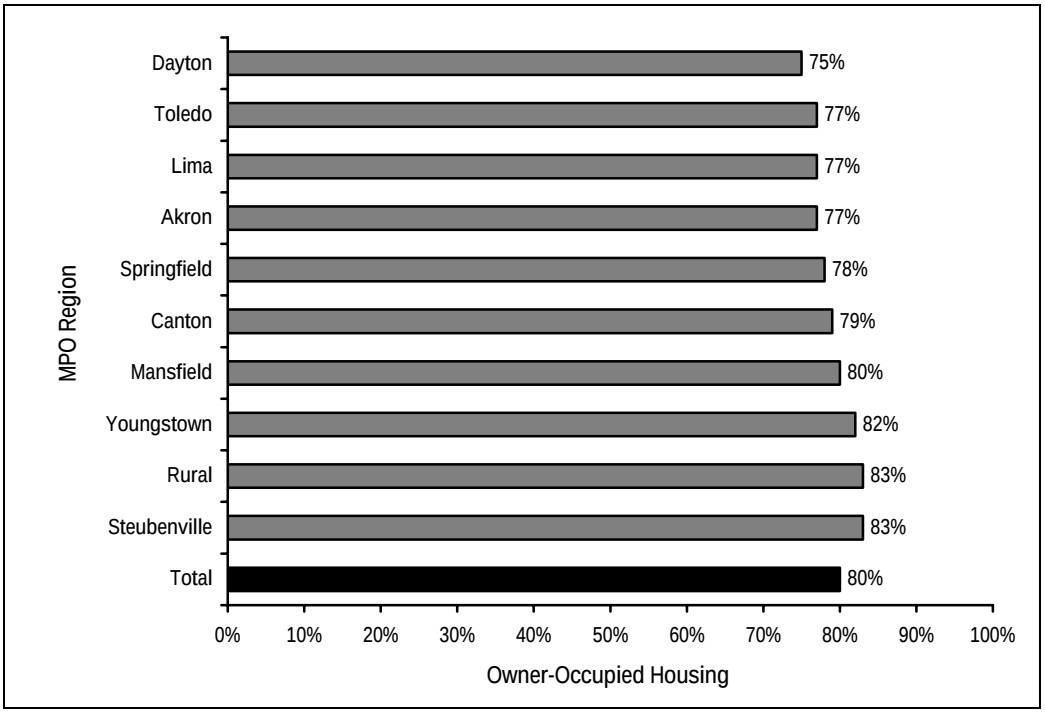


[1] Income data was collected categorically in the administration of the survey, so these figures have been calculated based on traditional techniques for determining median income from categorical distributions.

All of the MPO regions under study exhibited higher owner-occupied housing rates than either the State of Ohio (69.1 percent) or the US (66.2 percent). The Steubenville region is skewed based on the fact that the age structure of the population within that MPO region is skewed towards older age cohorts. Census 2000 data reveals that the share of population aged 65 years and older in that region is roughly 18 percent (compared to 12 percent for the nation, and 13 and 15 for Ohio and West Virginia respectively). The Rural MPO and Youngstown also show an overall higher rate of owner-occupied housing. Using the same reasoning as with Steubenville, Youngstown's population is roughly 17 percent aged 65 years and older.

Households living in owner-occupied housing generate significantly higher numbers of trips per household (8.35) compared to those living in renter-occupied housing (6.06).

FIGURE 7.2:
PERCENT OWNER-OCCUPIED HOUSING BY MPO

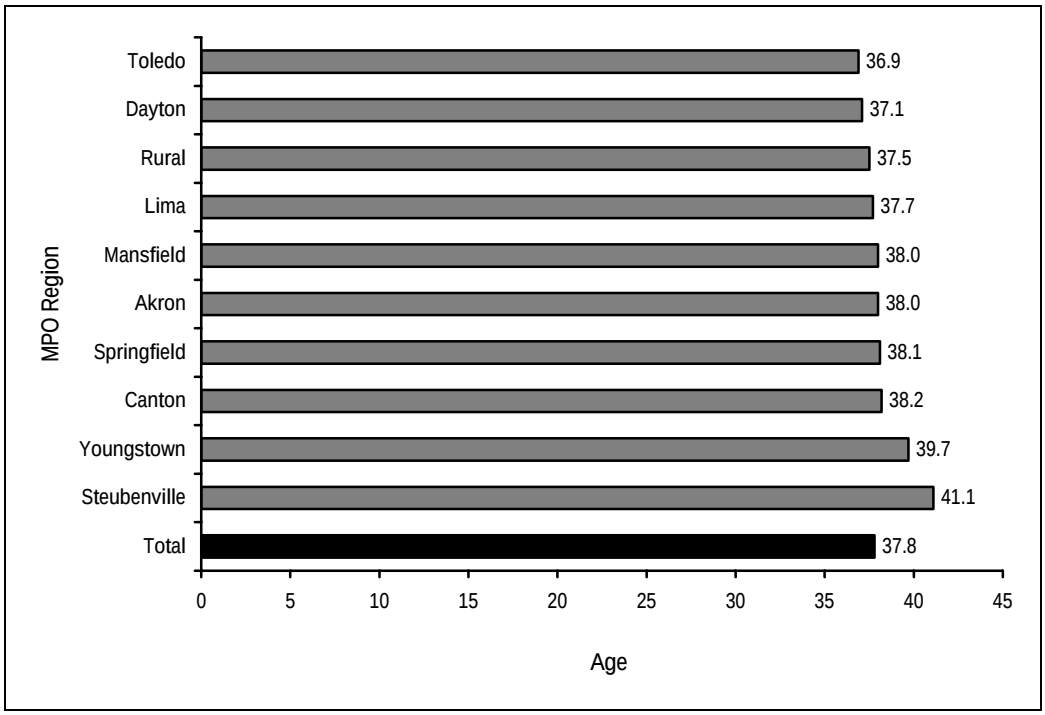


7.2 PERSON DATA

The following are results from the person-level data variables by region. Trip rates by person demographics can be found in the Trip Data section.

Figure 7.3 indicates the median age of residents among the different MPO regions. As mentioned previously, Steubenville and Youngstown contain a high proportion of older individuals relative to the other regions and the total (all regions combined). All other regions are fairly similar in terms of their age structure with a range of only 1.3 years between the remaining MPO regions.

FIGURE 7.3:
MEDIAN AGE BY METROPOLITAN PLANNING REGION



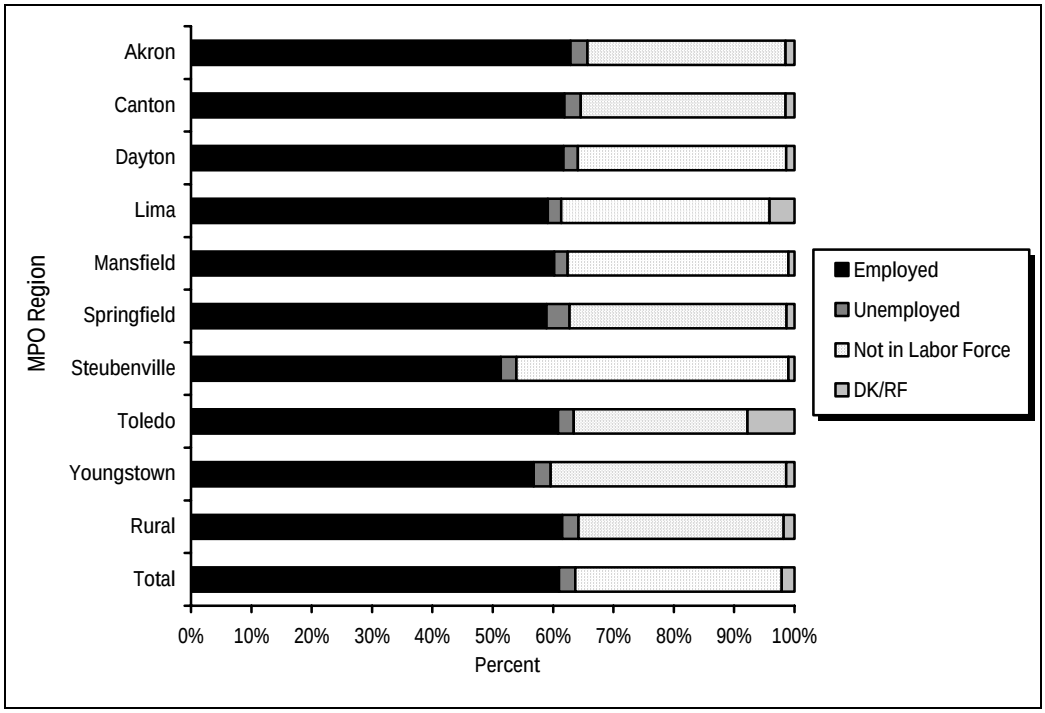
Areas with the highest proportions of working-age individuals tend to generate high trip rates. Trips are added to home-work trips, generally including errands, personal business, or other trips that are made between the trip "ends" of home and work. Akron, which exhibits the 3rd highest trip rate (8.24 trips/household) also has the highest proportion of respondents aged 25-54 and the largest proportion of individuals employed full or part time. Age and trip generation are somewhat curvilinear – trip generation increases with age through prime working years, then recedes past 55.

TABLE 7.4:
TRIPS PER PERSON BY AGE COHORT

AGE COHORT	TRIPS PER PERSON
0-15 Years	2.78
16-24 Years	4.07
25-39 Years	6.90
40-54 Years	6.84
55-69 Years	4.85
70 Years or More	2.82

Figure 7.4 details the proportion of the population within each MPO region according to labor force status. As displayed above, employed represents those working full or part time, Unemployed is isolated to those who are unemployed and actively looking for work. All other responses (except did not respond which is contained in DK/RF) were categorized as not in the labor force.

FIGURE 7.4:
LABOR FORCE STATUS BY METROPOLITAN PLANNING REGION



Employment rates were highest in Akron and Canton and lowest in Steubenville. Labor force status has a positive effect on trip rate generation – those working full or part time generated twice the number of trips than others. Table 7.5 indicates the top industries for those employed full or part time by region.

TABLE 7.5:
TOP INDUSTRY BY REGION

REGION	INDUSTRY	FREQUENCY	PERCENT
Akron (AMATS)	Miscellaneous Services	39,335	11.8
Canton (SCATS)	Miscellaneous Services	22,035	12.4
Dayton (MV)RPC	Miscellaneous Services	48,249	13.0
Lima (LACRPC)	Healthcare / Social Assistance	4,232	12.5
Mansfield (RCRPC)	Manufacturing – Durable Goods	6,425	11.5
Springfield (CCSTS)	Healthcare / Social Assistance	8,189	12.7
Steubenville (BHJTS)	Healthcare / Social Assistance	7,545	14.6
Toledo (TMACOG)	Healthcare / Social Assistance	32,844	13.1
Youngstown (EDATS)	Healthcare / Social Assistance	27,693	14.2
Rural (Non-MPO area)	Miscellaneous Services	164,420	11.7
Total	*Miscellaneous Services*	*333,257*	*11.4*

7.3. TRIP DATA

The following tables indicate estimates based on analysis of trip information collected from sampled households. Trip information was collected from each member of the household regardless of age. A total of 122,463 trips were profiled in the course of this survey. Given that travel information collected during the data collection period is representative, expanded counts of trips estimates that on an average day, 19.7 million trips are generated across the 10 regions analyzed in this report.

Table 8.6 indicates for each region the total person trips and vehicle-person trips per household and per person. Person trips include trips by all modes. Vehicle-person trips are driver or passenger trips in private vehicles (in auto/van/truck). A high ratio of vehicle-person trips to total person trips indicates lower use of alternative forms of transportation such as carpooling, public transportation or biking. The highest trip rates were generated in the Canton region (8.76) while the lowest was found in Steubenville. Steubenville's lower trip rates can be attributed to its higher proportion of older residents.

TABLE 7.6:
SUMMARY TRIP RATES BY REGION

REGION	TOTAL TRIPS		TOTAL VEHICLE TRIPS	
	PER HOUSEHOLD	PER PERSON	PER HOUSEHOLD	PER PERSON
Akron (AMATS)	8.24	5.22	7.50	3.10
Canton (SCATS)	8.76	5.49	7.94	3.22
Dayton (MV)RPC	7.76	4.99	6.98	2.92
Lima (LACRPC)	7.71	4.88	7.15	2.98
Mansfield (RCRPC)	8.49	5.27	7.81	3.17
Springfield (CCSTS)	8.03	5.00	7.33	2.96
Steubenville (BHJTS)	6.87	4.46	6.25	2.66
Toledo (TMACOG)	8.06	5.06	7.32	3.00
Youngstown (EDATS)	7.56	4.83	6.87	2.88
Rural (Non-MPO area)	7.78	4.79	6.95	2.74
Total	*7.90*	*4.94*	*7.12*	*2.87*

Table 7.7 on the following page details for each region the distribution of trips by travel mode. Vehicle driver and vehicle pass are by far the highest mode of usage – slightly more than 9 of 10 trips generated across all 10 regions fell into this mode. Public transportation usage was highest in Dayton (1.4) and Toledo (0.9), somewhat explained by the higher number of students found in those areas as well as slightly higher proportions of zero-vehicle households.

TABLE 7.7:
TRIP MODE DISTRIBUTION BY REGION

REGION	ITEM	VEHICLE DRIVER	VEHICLE PASS	CAR/ VANPOOL	PUBLIC TRANSIT	SCHOOL BUS	WALK	OTHER*/ REFUSED
Akron (AMATS)	N	1,595,540	483,563	14,706	16,408	98,554	67,098	7,217
	R%	69.9	21.2	0.6	0.7	4.3	2.9	0.3
Canton (SCATS)	N	889,230	297,422	4,291	4,774	66,132	43,467	3,323
	R%	68.0	22.7	0.3	0.4	5.1	3.3	0.3
Dayton (MV)RPC	N	1,673,519	579,448	8,637	36,179	117,167	82,443	9,551
	R%	66.8	23.1	0.3	1.4	4.7	3.3	0.4
Lima (LACRPC)	N	166,622	55,168	1,615	735	8,709	5,130	1,155
	R%	69.7	23.1	0.7	0.3	3.6	2.1	0.5
Mansfield (RCRPC)	N	283,696	103,257	1,945	2,189	18,663	9,196	1,668
	R%	67.4	24.5	0.5	0.5	4.4	2.2	0.4
Springfield (CCSTS)	N	306,523	109,069	2,439	1,973	24,982	9,089	1,158
	R%	67.3	24.0	0.5	0.4	5.5	2.0	0.3
Steubenville (BHJTS)	N	242,287	91,381	2,149	642	17,339	12,283	552
	R%	66.1	24.9	0.6	0.2	4.7	3.4	0.2
Toledo (TMACOG)	N	1,203,353	409,153	13,423	15,608	58,672	59,470	17,110
	R%	67.7	23.0	0.8	0.9	3.3	3.3	1.0
Youngstown (EDATS)	N	960,143	294,452	4,585	3,654	78,421	33,630	4,137
	R%	69.6	21.4	0.3	0.3	5.7	2.4	0.3
Rural (Non-MPO area)	N	6,010,009	2,024,107	77,488	23,002	473,519	331,089	49,368
	R%	66.9	22.5	0.9	0.3	5.3	3.7	0.5
Total (units in 000s)	***N***	*13,330.9*	*4,447.0*	*131.3*	*105.2*	*962.2*	*652.9*	*95.2*
	R%	*67.6*	*22.6*	*0.7*	*0.5*	*4.9*	*3.3*	*0.5*

**Bicycle included with "Other"*

Table 7.8 details trips and trip rates for the primary trip purposes reported in the survey. The number of trips (as exhibited in the table below) is fairly consistent amongst the different regions with Canton showing the largest average number of trips per household and showed the highest average number of trips per household in roughly half of the individual primary trip activities. Steubenville shows the lowest average number of trips per household and shows the fewest average trips per household in most of the primary trip activities. Looking at the overall trips per household, the difference between the Steubenville to the next lowest region, Lima, is greater than the difference between Canton and the next highest trips per household, Mansfield, .61 to .5. Once again, the population of Steubenville is generally older and therefore less active in terms of trip generation.

TABLE 7.8:
NUMBER OF TRIPS BY ACTIVITY BY REGION AND
AVERAGE NUMBER OF TRIPS PER HOUSEHOLD BY ACTIVITY BY REGION

ACTIVITY		AKRON	CANTON	DAYTON	LIMA	MANSFIELD	SPRINGFIELD	STEUBENVILLE	TOLEDO	YOUNGSTOWN	RURAL	TOTAL
# of Households		1,936	1,319	1,950	1,328	1,304	1,349	1,276	1,869	1,251	2,530	*1,6112*
Go Home	Total Trips	5,493	3,971	5,282	3,383	3,645	3,694	3,044	4,993	3,488	6,801	*43,794*
	Mean / HH	2.84	3.01	2.71	2.55	2.80	2.74	2.39	2.67	2.79	2.69	*2.72*
Out of Home:												
Social, Recreation	Total Trips	1,176	868	1,034	772	825	696	684	1,198	779	1,530	*9,562*
	Mean / HH	0.61	0.66	0.53	0.58	0.63	0.52	0.54	0.64	0.62	0.60	*0.59*
Paid Work	Total Trips	1,875	1,241	1,858	1,191	1,175	1,287	920	1,741	1,073	2,511	*14,872*
	Mean / HH	0.97	0.94	0.95	0.90	0.90	0.95	0.72	0.93	0.86	0.99	*0.92*
Other	Total Trips	1,131	765	995	932	987	793	500	1423	186	1,128	*8,840*
	Mean / HH	0.58	0.58	0.51	0.70	0.76	0.59	0.39	0.76	0.15	0..45	*0.55*
Change Mode	Total Trips	40	22	52	9	11	19	18	17	12	38	*238*
	Mean / HH	0.02	0.02	0.03	0.01	0.01	0.01	0.01	0.01	0.01	0.02	*0.01*
School	Total Trips	844	541	748	377	435	516	390	686	463	1005	*6005*
	Mean / HH	0.44	0.41	0.38	0.28	0.33	0.38	0.31	0.37	0.37	0.40	*0.37*
Personal Business	Total Trips	1,946	1,506	1,815	1,247	1,426	1,469	1,155	1,584	1,225	2,386	*15,759*
	Mean / HH	1.01	1.14	0.93	0.94	1.09	1.09	0.91	0.85	0.98	0.94	*0.98*
Eat Meal	Total Trips	623	528	697	594	593	551	389	702	482	975	*6134*
	Mean / HH	0.32	0.40	0.36	0.45	0.45	0.41	0.30	0.38	0.39	0.39	*0.38*
Volunteer	Total Trips	102	78	107	77	76	47	65	61	59	140	*812*
	Mean / HH	0.05	0.06	0.05	0.06	0.06	0.03	0.05	0.03	0.05	0.06	*0.05*
Pick Up/Drop Off	Total Trips	1,144	840	1,194	599	740	715	578	1,051	591	1,284	*8,736*
	Mean / HH	0.59	0.64	0.61	0.45	0.57	0.53	0.45	0.56	0.47	0.51	*0.54*
Shopping	Total Trips	1,568	1,193	1,343	1,047	1,149	1,039	1,013	1,602	1,092	1,878	*12,924*
	Mean / HH	0.81	0.90	0.69	0.79	0.88	0.77	0.79	0.86	0.87	0.74	*0.80*
All Activities	*Total Trips*	*15,953*	*11,554*	*15,132*	*10,239*	*11,071*	*10,833*	*8,766*	*15,064*	*9,458*	*19,683*	*12,7676*
	Mean / HH	*8.24*	*8.76*	*7.76*	*7.71*	*8.49*	*8.03*	*6.87*	*8.06*	*7.56*	*7.78*	*7.90*

Trip duration (as exhibited in the Table 7.9) indicates to some extent the distance traveled by respondents based on activity. The activities listed include returning to home, work, school, and shopping, among others. Change mode refers to travel to some "mode" transfer point. This is highest in Lima and Toledo and some indication of the amount of drivers using park-and-ride transport services. One of the highest trip durations, as one would expect, is found in trips in which the destination is "paid work". These are highest in those areas with the greatest population (Akron, Canton, and Dayton). Steubenville's high trip duration in this category is most likely due to inter-state commuting between counties in West Virginia to Ohio. The lowest trip durations tend to be among activities more likely to be located within local areas – change mode, volunteer, pick-up/drop off, and shopping.

TABLE 7.9:
TRIP DURATION BY PRIMARY ACTIVITY BY REGION

ACTIVITY	AKRON	CANTON	DAYTON	LIMA	MANSFIELD	SPRINGFIELD	STEUBENVILLE	TOLEDO	YOUNGSTOWN	RURAL	TOTAL
Go Home	19.1	18.0	18.5	16.7	18.1	18.3	19.9	18.4	18.5	19.7	*19.1*
Out of Home:											
Social, Recreation	20.7	16.7	19.6	17.5	20.6	17.1	20.5	21.4	18.9	19.8	*19.7*
Paid Work	22.7	21.7	20.6	15.9	18.0	21.3	23.7	19.4	20.1	21.0	*20.9*
Other	26.2	24.5	20.8	25.3	24.2	23.8	27.1	27.4	31.1	23.7	*24.6*
Change Mode	12.1	10.7	9.8	43.4	11.8	12.6	12.3	25.9	12.8	12.1	*11.9*
School	17.4	16.2	17.6	17.6	20.5	19.4	19.0	17.8	18.9	20.0	*18.8*
Personal Business	17.5	16.3	18.5	17.9	16.6	16.4	17.6	16.8	17.4	17.8	*17.6*
Eat Meal	14.5	14.9	15.3	14.3	15.1	13.5	15.9	16.5	15.8	16.1	*15.7*
Drive (No Stated Purpose)	15.4	27.0	22.6	39.3	23.2	43.1	30.3	21.6	26.7	17.8	*21.7*
Volunteer	15.4	16.4	16.6	14.6	12.6	14.8	14.1	16.0	11.7	12.6	*14.0*
Pick Up/Drop Off	15.5	13.3	14.1	13.1	14.7	13.9	14.9	14.7	13.4	14.3	*14.3*
Shopping	14.0	15.0	14.4	13.3	12.9	14.3	16.3	13.9	13.6	16.2	*15.0*
All Activities	*18.6*	*17.3*	*17.9*	*16.4*	*17.4*	*17.6*	*19.2*	*18.0*	*17.9*	*18.8*	*18.4*

APPENDIX A. RECRUITMENT QUESTIONNAIRE

02/02/13 16:50

1: **SAMPN**

=> +1 if 1>0

IMPORTED SAMPLE NUMBER

(1/ 48)

9999999

2: **LISTD**

=> +1 if 1>0

IMPORTED LISTED OR UNLISTED NUMBER?

(1/ 55)

LISTED....1
UNLISTED....2

01/08/30 11:48

3: **REP**

=> +1 if 1>0

REPLICATE

(1/ 56)

$E

02/03/13 9:00

4: **STYPE**

=> +1 if 1>0

SAMPLE TYPE

(1/ 58)

NORMAL....0
NORMAL....1
PLANTS....2
SAMPLE TYPE 3....3

02/03/15 15:38

5: **CTFIP**

=> +1 if 1>0

IMPORTED COUNTY FIPS CODE

(1/ 59)

Adams....39001
Allen....39003
Ashland....39005
Ashtabula....39007
Athens....39009
Auglaize....39011
Belmont....39013
Brooke, WV....54009
Brown....39015
Butler....39017
Carroll....39019
Champaign....39021
Clark....39023
Clermont....39025
Clinton....39027
Columbiana....39029
Coshocton....39031
Crawford....39033
Cuyahoga....39035
Darke....39037
Defiance....39039
Delaware....39041
Erie....39043
Fairfield....39045
Fayette....39047
Franklin....39049
Fulton....39051
Gallia....39053
Geauga....39055
Greene....39057
Guernsey....39059
Hamilton....39061
Hancock, OH....39063
Hancock, WV....54029
Hardin....39065
Harrison....39067
Henry....39069
Highland....39071
Hocking....39073
Holmes....39075
Huron....39077
Jackson....39079
Jefferson....39081
Knox....39083
Lake....39085
Lawrence....39087
Licking....39089
Logan....39091
Lorain....39093
Lucas....39095
Madison....39097
Mahoning....39099
Marion....39101
Medina....39103
Meigs....39105
Mercer....39107
Miami....39109
Monroe, MI....26115
Monroe, OH....39111
Montgomery....39113
Morgan....39115
Morrow....39117
Muskingum....39119
Noble....39121
Ottawa....39123
Paulding....39125
Perry....39127
Pickaway....39129
Pike....39131
Portage....39133
Preble....39135
Putnam....39137
Richland....39139
Ross....39141
Sandusky....39143

Scioto 39145
Seneca 39147
Shelby 39149
Stark 39151
Summit 39153
Trumbull 39155
Tuscarawas 39157
Union 39159
Van Wert 39161
Vinton 39163
Warren 39165
Washington 39167
Wayne 39169
Williams 39171
Wood 39173
Wyandot 39175

01/03/29 9:37

6: **MPO**

=> +1 if 1>0

MPO GROUP

(1/ 64)

$E
TMACOG 01
LACRPC 02
MVRPC 03
CCSTS 04
AMATS 05
SCATS 06
RCRPC 07
BHJTS 08
EDATS 09
RURAL NON-MPO 10

7: **PHONE**

=> +1 if 1>0

IMPORTED PHONE NUMBER

(1/ 66)

999-999-9999

```
Hello, this is -----, calling on behalf of the Ohio Department of
Transportation. May I please speak with<NAME                          >
We began an interview concerning your household's travel patterns and I
would like to complete that interview now.

IF THERE IS NO NAME HERE, THEN THIS IS NOT A PARTIAL SO RESTART

&INTRO
```

8: **INTRO**

=> +1 if NOT INT=PC

INTRO ON RETURN

(1/ 78)

Continue where I left off.....1 => LASTQ
Restart at the beginning .....2 => INT01

```
Hi - my name is _____ and I'm calling on behalf of Ohio Department of
Transprotation. We're conducting a study to better understand how people travel
in the area to help plan future transportation needs.  With the information
you and other households provide, transportation planners and public officials
can develop strategies for making wise transit and highway investments.  The
study is purely a research effort and any information you provide will be held
in strict confidence.  Let me assure you that we are not trying to sell you
anything or solicit funds.

May I please speak with<FNAME          ><LNAME         >?

DISPOSITION: @INT01 PRESS F1 FOR LIST
```

9: **INT01**

Hi - my name is _____ and I'm calling on behalf of...

(1/ 79)

Continue ..... OK D
No Answer..... NA => /END
Busy..... BZ => /END
Answering Machine .....AM => /END
Disconnect .....DC => /END
Computer/Fax Machine..... FX => /END
Business/Government.....BG => /END
Deaf/Language Barrier..... LB => /END
1st Refusal .....R1 => /END
Call Back .....CB => /CB
Spanish Callback ..... SC => /END

10: **LANG**

=> * if 1

Would you rather continue the interview in English or Spanish?

(1/ 81)

English..... 1
Spanish 2

00/11/28 19:18

11: **ADVLT**

=> INT03 if ADVLT=3

A few days ago, we sent a letter to your home to tell you about the Ohio Statewide Tranportation Study. It is sponsored in part by the Ohio Department of Transportation. The Ohio Department of Transportation is an agency responsible for transportation planning in your area. Did you receive the letter?

(1/ 82)

Yes..... 1
No 2
NO LETTER SENT ..... 3 N
DK 8
RF 9

12: **WOULD**

=> * if V01(ADVLT=1)*1+V01(ADVLT=2,8,9)*2

COMPUTED QUESTION WOULD HAVE

(1/ 83)

..... 1
would have..... 2

13: **START**

PRESS ENTER TO CONTINUE

As the letter<WOULD >indicated, we're conducting a study about people's travel patterns and transportation needs in your area. This kind of study is the only way important types of information can be collected.

(1/ 84)

CONTINUE..... 1 D

```
For this Travel Study, your household will use diaries to write down where
they go for a 1-day period. You'll receive the diaries, along with information
to verify the legitimacy of this study, in the next few days. Local agencies,
like the Ohio Department of Transportation, will combine your information with
that of other households in the region. This will help them to make decisions
about how to improve the transportation system in Ohio over the next 20 years.


@INT03
```

14: **INT03**

For this Travel Study, your household will use diaries...

(1/ 85)

CONTINUE..... OK D
1ST REFUSAL, SPECIAL INTERVIEWER CALLBACK R1
..... => END
HARD REFUSAL. THE RESPONDENT SERIOUSLY DOES NOT WANT US TO CALL AGAIN..... RF => END

15: **HHVEH**

To prepare your diaries, I need to get some information about your household. How many autos, vans and trucks of 1 ton capacity or less are kept at home foruse by your household?

(1/ 87)

$E 0 9

ZERO	00	=> HHSIZ
ONE	01	
TWO	02	
THREE	03	
FOUR	04	
FIVE	05	
SIX	06	
SEVEN	07	
EIGHT	08	
NINE OR MORE	09	
DK	98	
RF	99	

16: **HHBOR**

Of these vehicles, how many are being borrowed from someone not living at this housheold? THERE ARE<HHVEH>VEHICLES IN THIS HOUSEHOLD

(1/ 89)

$E 0 9

ZERO	00	
ONE	01	
TWO	02	
THREE	03	
FOUR	04	
FIVE	05	
SIX	06	
SEVEN	07	
EIGHT	08	
NINE OR MORE	09	
DK	98	
RF	99	

17: **HHSIZ**

How many people, including yourself, live in your household?

(1/ 91)

$E 1 10

ONE	01	
TWO	02	
THREE	03	
FOUR	04	
FIVE	05	
SIX	06	
SEVEN	07	
EIGHT	08	
NINE	09	
TEN OR MORE	10	
DK	98	
RF	99	

18: **RESTY**

Do you live in a...

(1/ 93)

Unattached Single Family Home	1	
Duplex	2	
Apartment	3	
Condominium or townhouse	4	
Mobile home or trailer	5	
Group quarters (dorms, barracks, etc)	6	
Other, SPECIFY	7	O
DK/RF	9	

19: **OWN**

Do you own or rent this home?

(1/ 94)

Own/buying	1	
Rent	2	
OTHER, SPECIFY	7	O
DK/RF	9	

20: **HSTAT**

=> /+1 if 1>0

HOME STATE

(1/ 95)

OHIO	OH	D

02/04/13 17:43

21: **HCNTY**

What county do you live in? IF DK, ASK: Is it<CTFIP > IF STILL DK, ASK IF SOMEONE ELSE IN THE HOUSEHOLD KNOWS

(1/ 97)

Adams	39001	=> INT10
Allen	39003	=> INT10
Ashland	39005	
Ashtabula	39007	
Athens	39009	
Auglaize	39011	=> INT10
Belmont	39013	
Brooke, WV	54009	
Brown	39015	=> INT10
Butler	39017	
Carroll	39019	
Champaign	39021	=> INT10
Clark	39023	
Clermont	39025	
Clinton	39027	=> INT10
Columbiana	39029	
Coshocton	39031	
Crawford	39033	
Cuyahoga	39035	
Darke	39037	=> INT10
Defiance	39039	=> INT10
Delaware	39041	=> /INT10
Erie	39043	
Fairfield	39045	
Fayette	39047	=> INT10
Franklin	39049	
Fulton	39051	
Gallia	39053	
Geauga	39055	
Greene	39057	
Guernsey	39059	
Hamilton	39061	
Hancock, OH	39063	=> INT10
Hancock, WV	54029	
Hardin	39065	=> INT10
Harrison	39067	
Henry	39069	=> INT10
Highland	39071	=> INT10
Hocking	39073	
Holmes	39075	
Huron	39077	
Jackson	39079	
Jefferson	39081	
Knox	39083	
Lake	39085	
Lawrence	39087	
Licking	39089	
Logan	39091	=> INT10
Lorain	39093	
Lucas	39095	=> INT10
Madison	39097	
Mahoning	39099	
Marion	39101	
Medina	39103	
Meigs	39105	
Mercer	39107	=> INT10
Miami	39109	
Monroe, MI	26115	=> INT10
Monroe, OH	39111	
Montgomery	39113	
Morgan	39115	
Morrow	39117	
Muskingum	39119	
Noble	39121	
Ottawa	39123	
Paulding	39125	=> INT10
Perry	39127	
Pickaway	39129	
Pike	39131	=> INT10
Portage	39133	
Preble	39135	=> INT10
Putnam	39137	=> INT10
Richland	39139	
Ross	39141	=> INT10
Sandusky	39143	
Scioto	39145	=> INT10
Seneca	39147	
Shelby	39149	=> INT10
Stark	39151	
Summit	39153	
Trumbull	39155	
Tuscarawas	39157	
Union	39159	=> INT10
Van Wert	39161	=> INT10
Vinton	39163	=> INT10
Warren	39165	
Washington	39167	
Wayne	39169	
Williams	39171	
Wood	39173	=> INT10
Wyandot	39175	

01/08/29 17:19

22: **VHADD**

Where is your home located? READ ADDRESS TO RESPONDENT. IS IT CORRECT? ADDRESS:<HADDR > APT/STE:<HSUIT > CITY:<HCITY > ZIP CODE:<HZIP1> <CKADD >

(1/ 102)

YES	1	=> PHLNS
NO	2	

```
ÚÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ¿    YOU CAN'T ENTER A "BLANK",
³ THIS INFORMATION IS CRITICAL. PROBE FOR IT! ³    IF NEEDED, TYPE: DK
ÀÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ

 What is your Zip Code?     @HZIP1  99999=DK/RF

 What city do you live in? @CITYX  PRESS F2 FOR TABLE; 777=OTHER, SPECIFY;
                                                      999=DK/RF
 What is your address?
 @HADDR

 Do you have an apartment or suite number? What is it?    @HSUIT    BLANK
                                                                    IS OK
 Can you tell me the name of the nearest cross street where you live?
 @HXSTR
```

23: **HZIP1**

PHYSICAL HOME ADDRESS

HOME ZIP CODE

(1/ 103)

99999

DK/RF 99999

01/03/27 16:43

24: **CITYX**

PHYSICAL HOME ADDRESS

HOME CITY

(1/ 108)

$T1

NOT FOUND, ENTER RESPONSE .... 7777 O

DK/RF 9999

25: **HADDR**

PHYSICAL HOME ADDRESS

HOME ADDRESS

(1/ 112)

Z*****************************

26: **HSUIT**

PHYSICAL HOME ADDRESS

HOME APARTMENT/SUITE

(1/ 142)

27: **HXSTR**

PHYSICAL HOME ADDRESS

HOME CROSS STREET

(1/ 150)

Z*****************************

28: **HCITY**

=> * if	MST(CITYX,HCITY)

COMPUTED CITY

(1/ 180)

01/08/29 17:20

29: **CKADD**

=> * if	IF((HXSTR==0 OR HADDR==0 OR HCITY==0),1,2)

CHECK ADDRESS FIELDS FOR BLANKS

(1/ 205)

PART OF THE ADDRESS INFO IS BLANK. TRY AGAIN. 1
..... => VHADD
ÿ.....2

01/08/29 17:08

30: **PHLNS**

How many telephone lines are in your household that are NOT dedicated to a fax machine or modem?

(1/ 206)

$E 0 20
DK.....98
RF.....99

31: **NOPHN**

Have there been times within the past 12 months when the home you were living in did not have telephone service for reasons other than brief service or equipment problems?

(1/ 208)

YES.....1
NO.....2 => SHARE
DK/RF.....9 => SHARE

32: **TIMES**

How many times were you without phone service in the past 12 months? FORMAT: 1-24

(1/ 209)

$E 1 24
DK/RF.....99

33: **LENGT**

During the most recent occurrence, how long were you without phone service? Was it...

(1/ 211)

Less than 1 week.....1
1-2 weeks.....2
2 weeks to less than 1 month.....3
1 month to less than 3 months.....4
3 months to less than 6 months.....5
6 months to less than 1 year.....6
More than 1 year.....7
DK.....8
RF.....9

34: **SHARE**

How many other households share a phone line with your household?

(1/ 212)

NONE.....0
ONE.....1
TWO.....2
THREE.....3
FOUR.....4
DK/RF.....9

35: **ACINC**

=> INCOM else => +1 if	NOT ACINC=WR AND NOT ACINC=99 AND ACINC>02

IMPORTED FROM ADVANCE CALLS

(1/ 213)

Above $40K.....01
Below $40K.....02
Less than $20,000.....11
$20,000 to $39,999.....12
$40,000 to $59,999.....13
$60,000 and above.....14
DK/RF.....99

01/03/26 8:32

36: **INCA**

=> +1 if	ACINC=01 OR ACINC=02

What will be the total household income in 2000 from all sources before taxes,for all members of your household? Was it above or below $40,000? IF DK/RF, REMIND RESPONDENT OF THE IMPORTANCE OF THE SURVEY AND THE IMPORTANCEOF THE INFORMATION TO MAKE SURE WE INCLUDE ALL TYPES OF HOUSEHOLDS.

(1/ 215)

$E 1 2
Above 40K.....01 => INCB
Below 40K.....02 => INCC
DK/RF.....99 => INCOM

37: **INCB**

=> +1 if	NOT INCA=01 AND NOT ACINC=01

I will read you a series of income ranges. Please stop me when I read the range that is closest to your household's. IF DON'T KNOW OR REFUSED, REMIND RESPONDENT OF THE IMPORTANCE OF THE SURVEY AND THE IMPORTANCE OF THE INFORMATION TO MAKE SURE WE INCLUDE ALL TYPES OF HOUSEHOLDS

(1/ 217)

$E 20 25
$40,000 to $59,999.....13 => INCOM
$60,000 and above.....14 => INCOM
DK/RF.....99 => INCOM

38: **INCC**

=> +1 if	NOT INCA=02 AND NOT ACINC=02

I will read you a series of income ranges. Please stop me when I read the range that is closest to your household's. IF DON'T KNOW OR REFUSED, REMIND RESPONDENT OF THE IMPORTANCE OF THE SURVEY AND THE IMPORTANCE OF THE INFORMATION TO MAKE SURE WE INCLUDE ALL TYPES OF HOUSEHOLDS

(1/ 219)

$E 11 19
Less than $20,000.....11
$20,000 to $39,999.....12
DK/RF.....99

39: **INCOM**

=> * if	IF((ACINC=99 OR ACINC=WR),IF((NOT INCC=99 AND NOT INCC=WR),INCC,IF((NOT INCB=99 AND NOT INCB=WR),INCB,IF((NOT INCA=99 AND NOT INCA=WR),INCA,99))),ACINC)_

COMPUTED

(1/ 221)

Above $40K.....01
Below $40K.....02
Less than $20,000.....11
$20,000 to $39,999.....12
$40,000 to $59,999.....13
$60,000 and above.....14
DK/RF.....99

40: **PEOPL**

PRESS ENTER TO CONTINUE

Now I need to get some information about each person in your household, so I can prepare individual diaries. Again, I want to assure you that this information is for research purposes only and will be kept strictly confidential. In addition, the information you provide will only be used when combined with that provided by other households in the county. Earlier, you indicated that there were<HHSIZ>persons in your household.

(1/ 223)

CONTINUE.....1 D

41: **PSAMP**

=> * if	SAMPN

COMPUTED PERSON SAMPLE NUMBER BEGIN PERSON ROSTER

(1/ 224)

9999999

42: **PERNO**

=> * if $R

COMPUTED PERSON NUMBER

(1/ 231)

$E 1 10

PERSON 1 01
PERSON 2 02
PERSON 3 03
PERSON 4 04
PERSON 5 05
PERSON 6 06
PERSON 7 07
PERSON 8 08
PERSON 9 09
PERSON 10+ 10

43: **FIRST**

=> * if V01($R==1)*1+V01(HHSIZ==2 AND $R==2)*2+V01(HHSIZ>2 AND $R>=2)*3

COMPUTED QUESTION FIRST NAME QUESTION

(1/ 233)

What is your first name? VERIFY THAT THIS IS THE RESPONDENT 1
.....
What is the first name of the other person living in your home? 2
.....
What is the first name of the next person in your home, from oldest to youngest?
..... 3

44: **FNAME**

<***PERNO*** >

<FIRST > IF REFUSED, ENTER "PERSON X", WHERE X IS THE PERSON NUMBER. EXAMPLE: PERSON 3

(1/ 234)

A**********

45: **LNAME**

<***PERNO*** >

What is<FNAME >'s last name? IF REFUSED, TYPE: REFUSED

(1/ 254)

A**********

46: **RESP**

<***PERNO*** >

IS THIS PERSON THE RESPONDENT? ONLY THE PERSON YOU ARE SPEAKING TO CAN BE THE RESPONDENT.

(1/ 274)

YES 1
NO 2

47: **YOUR**

=> * if IF(($R==1),1,2)

COMPUTED QUESTION your, their

(1/ 275)

your 1
their 2

48: **GEND**

<***PERNO*** >

What is<YOUR >gender? DON'T ASK FOR RESPONDENT

(1/ 276)

MALE 1
FEMALE 2
DK/RF 9

49: **AGE**

<***PERNO*** >

What is<YOUR >age in years? IF LESS THAN 1, ENTER 0

(1/ 277)

$E

98 years and older 98
DK/RF 99

50: **RELAT**

<***PERNO*** >

What is<YOUR >relationship to you? DON'T ASK FOR RESPONDENT

(1/ 279)

SELF 1
Husband/wife/unmarried partner 2
Son/Daughter 3
Mother/Father/Mother In-law/Father In-law 4
Other relative 5
Non-relative 6
Household help 7
DK/RF 9

51: **YOU**

=> * if IF(($R==1),1,2)

COMPUTED you, they

(1/ 280)

you 1
they 2

52: **LIC**

=> +1 if AGE<15

<***PERNO*** >

Do<YOU >have a valid driver's license?

(1/ 281)

Yes 1
No 2
DK 8
RF 9

01/04/11 13:15

53: **PRIMA**

=> +1 if AGE<16

<***PERNO*** >

Which of the following best describes<YOUR >current work situation?

(1/ 282)

$E

Work Full-time 01
Work Part-time 02
Homemaker 03
Retired 04
Disabled 05
Unemployed, but looking 06
Unemployed, but not looking 07
OTHER, SPECIFY ..... 97 O
DK 98
RF 99

01/04/13 10:40

54: **VLSCH**

<***PERNO*** >

Do<YOU >volunteer on a full-time or part-time basis?

(1/ 284)

Yes, full-time 1
Yes, part-time 2
No ..... 3 => JOBS
DK ..... 8 => JOBS
RF ..... 9 => JOBS

55: **VSTAT**

<***PERNO*** >

Do<YOU >do<YOUR >volunteer work in Ohio?

(1/ 285)

AA

Ohio ..... OH D
Indiana ..... IN
Kentucky ..... KY
West Virginia ..... WV
Pensylvania ..... PA
Michigan ..... MI

02/03/15 15:40

56: **VCNTY**

<PERNO >

Which county do<YOU >do<YOUR >volunteer work in? THE STATE IS:<VSTAT >
IF IT'S NOT ON THIS LIST, IT'S OUT OF AREA. SELECT 77777 (OTHER)

(1/ 287)

Adams	39001
Allen	39003
Ashland	39005
Ashtabula	39007
Athens	39009
Auglaize	39011
Belmont	39013
Brooke, WV	54009
Brown	39015
Butler	39017
Carroll	39019
Champaign	39021
Clark	39023
Clermont	39025
Clinton	39027
Columbiana	39029
Coshocton	39031
Crawford	39033
Cuyahoga	39035
Darke	39037
Defiance	39039
Delaware	39041
Erie	39043
Fairfield	39045
Fayette	39047
Franklin	39049
Fulton	39051
Gallia	39053
Geauga	39055
Greene	39057
Guernsey	39059
Hamilton	39061
Hancock, OH	39063
Hancock, WV	54029
Hardin	39065
Harrison	39067
Henry	39069
Highland	39071
Hocking	39073
Holmes	39075
Huron	39077
Jackson	39079
Jefferson	39081
Knox	39083
Lake	39085
Lawrence	39087
Licking	39089
Logan	39091
Lorain	39093
Lucas	39095
Madison	39097
Mahoning	39099
Marion	39101
Medina	39103
Meigs	39105
Mercer	39107
Miami	39109
Monroe, MI	26115
Monroe, OH	39111
Montgomery	39113
Morgan	39115
Morrow	39117
Muskingum	39119
Noble	39121
Ottawa	39123
Paulding	39125
Perry	39127
Pickaway	39129
Pike	39131
Portage	39133
Preble	39135
Putnam	39137
Richland	39139
Ross	39141
Sandusky	39143
Scioto	39145
Seneca	39147
Shelby	39149
Stark	39151
Summit	39153
Trumbull	39155
Tuscarawas	39157
Union	39159
Van Wert	39161
Vinton	39163
Warren	39165
Washington	39167
Wayne	39169
Williams	39171
Wood	39173
Wyandot	39175
OUT OF STATE	77777
DK/RF	99999

```
ÚÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ¿
³ THIS INFORMATION IS IMPORTANT, PROBE FOR IT! ³
ÀÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ

 What is the Zip Code?      @VZIP   99999=DK/RF

 What city is that in? @VCITX  PRESS F2 FOR TABLE; 777=OTHER, SPECIFY
                                                   999=DK/RF
 What is the name of the organization?   BLANK NOT ALLOWED, ENTER DK IF NEEDED
 @VNAME

 What is the address?          IF DK/RF, GET 2 CROSS STREETS
 @VADDR

 Is there an apartment or suite number? What is it?   @VSUIT    BLANK IS OK

 What is the name of the nearest cross street(s) there?
 @VXSTR
 IF NO ADDRESS, YOU MUST GET 2 CROSS STREETS
```

01/08/29 17:30

57: **VZIP**

VOLUNTEER ADDRESS

VOLUNTEER ZIP CODE

(1/ 292)

99999
DK/RF 99999

01/03/27 16:43

58: **VCITX**

VOLUNTEER ADDRESS

VOLUNTEER CITY CODE

(1/ 297)

$T1
NOT FOUND, ENTER RESPONSE .... 7777 O
DK/RF 9999

01/08/29 17:22

59: **VNAME**

VOLUNTEER ADDRESS

VOLUNTEER PLACE NAME

(1/ 301)

Z*****************************

60: **VADDR**

VOLUNTEER ADDRESS

VOLUNTEER ADDRESS

(1/ 331)

61: **VSUIT**

VOLUNTEER ADDRESS

VOLUNTEER SUITE

(1/ 391)

62: **VXSTR**

VOLUNTEER ADDRESS

VOLUNTEER CROSS STREET

(1/ 399)

63: **VCITY**

=> * if MST(VCITX,VCITY)

COMPUTED CITY

(1/ 469)

01/04/11 13:16

64: **JOBS**

=> STUDE if NOT PRIMA=01 AND NOT PRIMA=02

<*PERNO*>

Are<you >employed in more than one paying job?

(1/ 494)

Yes	1	
No	2	=> OCCUP
DK/RF	9	=> OCCUP

00/11/28 21:19

65: **MOREJ**

<*PERNO*>

How many OTHER jobs do<YOU >have?

(1/ 495)

One	1
Two	2
Three or more	3
DK/RF	9

00/11/28 21:25

66: **OCCUP**

<*PERNO*>

What is<YOUR >primary occupation?

(1/ 496)

Agriculture, forestry, and fishing	11	
Mining	12	
Construction	13	
Manufacturing	14	
Transportation, comunications, electric, gas and sanitary services	15	
Wholesale trade	16	
Retail trade	17	
Finance, insurance, and real estate	18	
Services	19	
Public administration	20	
Education	21	
Medical	22	
Professional/Scientific	23	
OTHER, SPECIFY	97	O
DK/RF	99	

67: **INDUS**

<*PERNO*>

In what type of business or industry do<YOU >work?

(1/ 498)

Agriculture/Forestry/Fishing	11	
Mining	21	
Utilities	22	
Construction	23	
Manufacturing - Nondurable goods	31	
Manufacturing - Durable goods	32	
Wholesale trade	42	
Retail trade	44	
Transportation and Warehousing	48	
Information	51	
Finance or Insurance	52	
Real Estate	53	
Professional, Scientific, and Technical services	54	
Management of companies and enterprises	55	
Administrative and support services	56	
Educational Services	61	
Healthcare and social assistance	62	
Arts, entertainment, and recreation	71	
Accommodations and food services	72	
Other Services (excluding public administration)	81	
Public Administration	92	
OTHER, SPECIFY	97	O
DK	98	
RF	99	

01/04/16 7:43

68: **WHOME**

<*PERNO*>

Do<YOU >work at home on a regular basis?

(1/ 500)

Yes	1	
No	2	=> PSTAT
DK/RF	9	=> PSTAT

69: **HORSH**

<*PERNO*>

How many hours per week on average do<YOU >work at home? FORMAT: 1-112 HOURS

(1/ 501)

$E 1 112

DK/RF 999

70: **PSTAT**

<*PERNO*>

Do<YOU >work in Ohio?

(1/ 504)

AA

Ohio	OH	D
Indiana	IN	
Kentucky	KY	
West Virginia	WV	
Pensylvania	PA	
Michigan	MI	

02/03/15 15:40

71: **PCNTY**

<PERNO >

Which county do<YOU >do<YOU >work in? THE STATE IS:<PSTAT > IFT IT'S NOT ON THIS LIST, IT'S OUT OF AREA. SELECT 77777 (OTHER).

(1/ 506)

Adams 39001
Allen 39003
Ashland 39005
Ashtabula 39007
Athens 39009
Auglaize 39011
Belmont 39013
Brooke, WV 54009
Brown 39015
Butler 39017
Carroll 39019
Champaign 39021
Clark 39023
Clermont 39025
Clinton 39027
Columbiana 39029
Coshocton 39031
Crawford 39033
Cuyahoga 39035
Darke 39037
Defiance 39039
Delaware 39041
Erie 39043
Fairfield 39045
Fayette 39047
Franklin 39049
Fulton 39051
Gallia 39053
Geauga 39055
Greene 39057
Guernsey 39059
Hamilton 39061
Hancock, OH 39063
Hancock, WV 54029
Hardin 39065
Harrison 39067
Henry 39069
Highland 39071
Hocking 39073
Holmes 39075
Huron 39077
Jackson 39079
Jefferson 39081
Knox 39083
Lake 39085
Lawrence 39087
Licking 39089
Logan 39091
Lorain 39093
Lucas 39095
Madison 39097
Mahoning 39099
Marion 39101
Medina 39103
Meigs 39105
Mercer 39107
Miami 39109
Monroe, MI 26115
Monroe, OH 39111
Montgomery 39113
Morgan 39115
Morrow 39117
Muskingum 39119
Noble 39121
Ottawa 39123
Paulding 39125
Perry 39127
Pickaway 39129
Pike 39131
Portage 39133
Preble 39135
Putnam 39137
Richland 39139
Ross 39141
Sandusky 39143
Scioto 39145
Seneca 39147
Shelby 39149
Stark 39151
Summit 39153
Trumbull 39155
Tuscarawas 39157
Union 39159
Van Wert 39161
Vinton 39163
Warren 39165
Washington 39167
Wayne 39169
Williams 39171
Wood 39173
Wyandot 39175
OUT OF STATE 77777
DK/RF 99999

```
ÚÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ¿
³ THIS INFORMATION IS IMPORTANT, PROBE FOR IT! ³
ÀÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ

 What is the Zip Code?      @PZIP   99999=DK/RF

 What city is that in? @PCITX  PRESS F2 FOR TABLE; 777=OTHER, SPECIFY;
                                                    999=DK/RF
 What is the name of the organization? @PNAMX  PRESS F1 FOR CODES

 What is the address?   @PADD  PRESS F1 FOR CODES; IF DK/RF, GET 2 CROSS STREETS
 @PADDR

 Is there an apartment or suite number? What is it?   @PSUIT    BLANK IS OK

 What is the name of the nearest cross street(s) there?
 @PXSTR
 IF ADDRESS IS UNKNOWN, YOU MUST GET 2 CROSS STREETS
```

72: **PZIP**

WORK ADDRESS

WORK ZIP CODE

(1/ 511)

99999
DK/RF 99999

01/03/27 16:44

73: **PCITX**

WORK ADDRESS

WORK CITY CODE

(1/ 516)

$T1
NOT FOUND, ENTER RESPONSE .... 7777 O
DK/RF 9999

74: **PNAMX**

WORK ADDRESS -- IF NOT SELF EMPLOYED, SELECT 3

WORK NAME

(1/ 520)

SELF EMPLOYED AT HOME 1
SELF EMPLOYED-NOT AT HOME 2
OTHER, SPECIFY .... 3 O
DK/RF 9

75: **PADD**

WORK ADDRESS

What is the address of<YOUR >workplace?

(1/ 521)

HOME 1
COMPLETE ADDRESS GIVEN 2
CROSS STREETS GIVEN 3
DK/RF 9

76: **PADDR**

=> +1 if	NOT PADD=2

WORK ADDRESS

WORK ADDRESS

(1/ 522)

77: **PSUIT**

WORK ADDRESS

WORK SUITE NUMBER

(1/ 582)

78: **PXSTR**

WORK ADDRESS - FORMAT: STREET1 & STREET2

WORK CROSS STREET

(1/ 590)

79: **PCITY**

=> * if MST(PCITX,PCITY)

COMPUTED CITY

(1/ 660)

80: **PNAME**

=> * if MST(PNAMX,PNAME)

MOVE WORK NAME TO TEXT FIELD

(1/ 685)

81: **OCCU2**

=> STUDE if NOT JOBS=1

<***PERNO*** >

What is<YOUR >occupation in<YOUR >second job?

(1/ 720)

Agriculture, forestry, and fishing	11	
Mining	12	
Construction	13	
Manufacturing	14	
Transportation, comunications, electric, gas and sanitary services	15	
Wholesale trade	16	
Retail trade	17	
Finance, insurance, and real estate	18	
Services	19	
Public administration	20	
Education	21	
Medical	22	
Professional/Scientific	23	
OTHER, SPECIFY	97	O
DK/RF	99	

82: **INDU2**

<***PERNO*** >

In what type of business or industry do<YOU >work in your second job?

(1/ 722)

Agriculture/Forestry/Fishing	11	
Mining	21	
Utilities	22	
Construction	23	
Manufacturing - Nondurable goods	31	
Manufacturing - Durable goods	32	
Wholesale trade	42	
Retail trade	44	
Transportation and Warehousing	48	
Information	51	
Finance or Insurance	52	
Real Estate	53	
Professional, Scientific, and Technical services	54	
Management of companies and enterprises	55	
Administrative and support services	56	
Educational Services	61	
Healthcare and social assistance	62	
Arts, entertainment, and recreation	71	
Accommodations and food services	72	
Other Services (excluding public administration)	81	
Public Administration	92	
OTHER, SPECIFY	97	O
DK	98	
RF	99	

83: **WSTAT**

<***PERNO*** >

Do<YOU >work in Ohio?

(1/ 724)

AA

Ohio	OH	D
Indiana	IN	
Kentucky	KY	
West Virginia	WV	
Pensylvania	PA	
Michigan	MI	

84: **WCNTY**

<PERNO >

Which county do<YOU >do<YOU >work in? THE STATE IS:<WSTAT > FOR ANY STATE OTHER THAN OHIO, SELECT 77777 (OTHER).

(1/ 726)

Adams 39001
Allen....39003
Ashland 39005
Ashtabula 39007
Athens 39009
Auglaize 39011
Belmont....39013
Brown....39015
Butler 39017
Carroll 39019
Champaign 39021
Clark....39023
Clermont 39025
Clinton 39027
Columbiana 39029
Coshocton 39031
Crawford 39033
Cuyahoga 39035
Darke....39037
Defiance 39039
Delaware 39041
Erie....39043
Fairfield....39045
Fayette....39047
Franklin....39049
Fulton 39051
Gallia....39053
Geauga 39055
Greene....39057
Guernsey 39059
Hamilton 39061
Hancock 39063
Hardin 39065
Harrison 39067
Henry 39069
Highland....39071
Hocking....39073
Holmes....39075
Huron 39077
Jackson....39079
Jefferson....39081
Knox....39083
Lake....39085
Lawrence....39087
Licking....39089
Logan 39091
Lorain....39093
Lucas....39095
Madison 39097
Mahoning....39099
Marion....39101
Medina 39103
Meigs 39105
Mercer....39107
Miami....39109
Monroe....39111
Montgomery....39113
Morgan....39115
Morrow 39117
Muskingum 39119
Noble....39121
Ottawa....39123
Paulding 39125
Perry....39127
Pickaway....39129
Pike 39131
Portage 39133
Preble 39135
Putnam 39137
Richland 39139
Ross....39141
Sandusky....39143
Scioto 39145
Seneca 39147
Shelby 39149
Stark....39151
Summit 39153
Trumbull....39155
Tuscarawas 39157
Union 39159
Van Wert 39161
Vinton....39163
Warren 39165
Washington....39167
Wayne....39169
Williams 39171
Wood 39173
Wyandot 39175
OUT OF STATE 77777
DK/RF 99999

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ÚÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ¿
³ THIS INFORMATION IS IMPORTANT, PROBE FOR IT! ³
ÀÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ

 What is the Zip Code?      @WZIP   99999=DK/RF

 What city is that in? @WCITX  PRESS F2 FOR TABLE; 777=OTHER, SPECIFY;
                                                    999=DK/RF
 What is the name of the organization? @WNAMX  PRESS F1 FOR CODES

 What is the address?   @WADD  PRESS F1 FOR CODES; IF DK/RF, GET 2 CROSS STREETS
 @WADDR

 Is there an apartment or suite number? What is it?   @WSUIT    BLANK IS OK

 What is the name of the nearest cross street(s) there?
 @WXSTR
 IF ADDRESS IS UNKNOWN, YOU MUST GET 2 CROSS STREETS
```

85: **WZIP**

WORK ADDRESS

WORK ZIP CODE

(1/ 731)

99999
DK/RF 99999

01/03/27 16:44

86: **WCITX**

WORK ADDRESS

WORK CITY CODE

(1/ 736)

$T1
NOT FOUND, ENTER RESPONSE ....7777 O
DK/RF 9999

87: **WNAMX**

WORK ADDRESS -- IF NOT SELF EMPLOYED, SELECT 3

WORK NAME

(1/ 740)

SELF EMPLOYED AT HOME....1
SELF EMPLOYED-NOT AT HOME 2
OTHER, SPECIFY....3 O
DK/RF 9

88: **WADD**

WORK ADDRESS

What is the address of<YOUR >workplace?

(1/ 741)

HOME 1
COMPLETE ADDRESS GIVEN 2
CROSS STREETS GIVEN....3
DK/RF 9

89: **WADDR**

=> +1 if	NOT PADD=2

WORK ADDRESS

WORK ADDRESS

(1/ 742)

90: **WSUIT**

WORK ADDRESS

WORK SUITE NUMBER

(1/ 802)

91: **WXSTR**

WORK ADDRESS - FORMAT: STREET1 & STREET2

WORK CROSS STREET

(1/ 810)

92: **WCITY**

=> * if MST(WCITX,WCITY)

COMPUTED CITY

(1/ 880)

93: **WNAME**

=> * if MST(WNAMX,WNAME)

MOVE WORK NAME TO TEXT FIELD

(1/ 905)

02/04/13 11:58

94: **STUDE**

<PERNO >

Do<YOU >attend school or take classes?

(1/ 940)

Yes	1	
No	2	=> LDTRP
DK/RF	9	=> LDTRP

95: **ATTEN**

<PERNO >

Are<YOU >attending school full-time or part-time?

(1/ 941)

Full-time	1	
Part-time	2	
DK/RF	9	

01/04/11 13:14

96: **SCHOL**

<PERNO >

In what type or level of school are<YOU >enrolled?

(1/ 942)

Daycare/Pre-School	1	
K - 12	2	
Post-Secondary (College, university)	3	
Vocational/Technical	4	
OTHER, SPECIFY	7	O
DK/RF	9	

97: **SSTAT**

<PERNO >

Do<YOU >go to school in Ohio?

(1/ 943)

AA

Ohio	OH	D
Indiana	IN	
Kentucky	KY	
West Virginia	WV	
Pensylvania	PA	
Michigan	MI	

02/03/15 15:41

98: **SCNTY**

<PERNO >

Which county do<YOU >do<YOU >go to school in? THE STATE IS:<SSTAT > IF IT'S NOT ON THIS LIST, IT'S OUT OF AREA. SELECT 77777 (OTHER).

(1/ 945)

Adams	39001
Allen	39003
Ashland	39005
Ashtabula	39007
Athens	39009
Auglaize	39011
Belmont	39013
Brooke, WV	54009
Brown	39015
Butler	39017
Carroll	39019
Champaign	39021
Clark	39023
Clermont	39025
Clinton	39027
Columbiana	39029
Coshocton	39031
Crawford	39033
Cuyahoga	39035
Darke	39037
Defiance	39039
Delaware	39041
Erie	39043
Fairfield	39045
Fayette	39047
Franklin	39049
Fulton	39051
Gallia	39053
Geauga	39055
Greene	39057
Guernsey	39059
Hamilton	39061
Hancock, OH	39063
Hancock, WV	54029
Hardin	39065
Harrison	39067
Henry	39069
Highland	39071
Hocking	39073
Holmes	39075
Huron	39077
Jackson	39079
Jefferson	39081
Knox	39083
Lake	39085
Lawrence	39087
Licking	39089
Logan	39091
Lorain	39093
Lucas	39095
Madison	39097
Mahoning	39099
Marion	39101
Medina	39103
Meigs	39105
Mercer	39107
Miami	39109
Monroe, MI	26115
Monroe, OH	39111
Montgomery	39113
Morgan	39115
Morrow	39117
Muskingum	39119
Noble	39121
Ottawa	39123
Paulding	39125
Perry	39127
Pickaway	39129
Pike	39131
Portage	39133
Preble	39135
Putnam	39137
Richland	39139
Ross	39141
Sandusky	39143

Scioto 39145
Seneca 39147
Shelby 39149
Stark 39151
Summit....................39153
Trumbull 39155
Tuscarawas....................39157
Union 39159
Van Wert....................39161
Vinton 39163
Warren 39165
Washington 39167
Wayne 39169
Williams....................39171
Wood....................39173
Wyandot....................39175
OUT OF STATE....................77777
DK/RF....................99999

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ÚÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ¿
³ THIS INFORMATION IS IMPORTANT, PROBE FOR IT! ³
ÀÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ

 What is the Zip Code?      @SZIP   99999=DK/RF

 What city is that in? @SCITX  PRESS F2 FOR TABLE; 777=OTHER, SPECIFY
                                                   999=DK/RF
 What is the name of the school?  BLANK NOT ALLOWED, ENTER DK IF NEEDED
 @SNAME

 What is the address?          IF DK/RF, GET 2 CROSS STREETS
 @SADDR

 Is there a suite number? What is it?           @SSUIT    BLANK IS OK

 What is the name of the nearest cross street(s) there?
 @SXSTR
 IF NO ADDRESS, GET 2 CROSS STREETS
```

99: **SZIP**

SCHOOL ADDRESS

SCHOOL ZIP CODE

(1/ 950)

99999

DK/RF....................99999

01/03/27 16:45

100: **SCITX**

SCHOOL ADDRESS

SCHOOL CITY CODE

(1/ 955)

$T1

NOT FOUND, ENTER RESPONSE ....7777 O

DK/RF....................9999

101: **SNAME**

SCHOOL ADDRESS

SCHOOL NAME

(1/ 959)

Z*****************************

102: **SADDR**

SCHOOL ADDRESS

SCHOOL ADDRESS

(1/ 989)

103: **SSUIT**

SCHOOL ADDRESS

SCHOOL SUITE NUMBER

(1/1049)

104: **SXSTR**

SCHOOL ADDRESS - CROSS STREETS FORMAT: STREET1 & STREET2

SCHOOL CROSS STREET

(1/1057)

105: **SCITY**

=> * if	MST(SCITX,SCITY)

COMPUTED CITY

(1/1127)

02/03/20 16:54

106: **LDTRP**

Has/Have<YOU >made any trips to a place 50 miles or more away from your home in the past two weeks? THIS IS FOR ALL MODES OF TRAVEL, INCLUDING PLANES, TRAINS AND AUTOMOBILES, ANDFERRIES.

(1/1152)

YES....................1

NO ....2 => PREND

02/03/20 16:56

107: **LDCNT**

How many, counting each way as a separate trip? PROBE BEFORE ACCEPTING DK/RF. REMEMBER, EACH WAY IS A SEPERATE TRIP. MAKE SURETHEY UNDERSTAND THAT. RANGE: 1 - 89

(1/1153)

$E 1 89

ONLY ONE. MAKE SURE THEY REALLY MEAN 1 ONE-WAY TRIP01

....

DK ....98 => PREND

RF ....99 => PREND

02/03/20 16:58

108: **LWOR1**

1ST TRIP

Was the first trip a regular commute to work?

(1/1155)

YES....................1 => LWOR2

NO 2

DK ....8 => LWOR2

RF ....9 => LWOR2

02/03/20 16:59

109: **LCIT1**

1ST TRIP

What was the City or town and State of the main destination? CITY COLLECTED HERE, STATE IN THE NEXT QUESTION.

(1/1156)

$T1

NOT FOUND, SPECIFY ....7777 O

DK/RF 9999

02/03/20 17:02

110: **LSTA1**

1ST TRIP

SELECT STATE GIVEN IN PREVIOUS QUESTION

(1/1160)

AA

ALABAMA	AL
ALASKA	AK
ARIZONA	AZ
ARKANSAS	AR
CALIFORNIA	CA
COLORADO	CO
CONNECTICUT	CT
DELAWARE	DE
DISTRICT OF COLUMBIA	DC
FLORIDA	FL
GEORGIA	GA
HAWAII	HI
IDAHO	ID
ILLINOIS	IL
INDIANA	IN
IOWA	IA
KANSAS	KS
KENTUCKY	KY
LOUISIANA	LA
MAINE	ME
MARYLAND	MD
MASSACHUSETTS	MA
MICHIGAN	MI
MINNESOTA	MN
MISSISSIPPI	MS
MISSOURI	MO
MONTANA	MT
NEBRASKA	NE
NEVADA	NV
NEW HAMPSHIRE	NH
NEW JERSEY	NJ
NEW MEXICO	NM
NEW YORK	NY
NORTH CAROLINA	NC
NORTH DAKOTA	ND
OHIO	OH
OKLAHOMA	OK
OREGON	OR
PALAU	PW
PENNSYLVANIA	PA
RHODE ISLAND	RI
SOUTH CAROLINA	SC
SOUTH DAKOTA	SD
TENNESSEE	TN
TEXAS	TX
UTAH	UT
VERMONT	VT
VIRGINIA	VA
WASHINGTON	WA
WEST VIRGINIA	WV
WISCONSIN	WI
WYOMING	WY

02/03/20 17:03

111: **LPUR1**

1ST TRIP

What was the main reason for going to that place?

(1/1162)

Entertainment/ Recreation	1	
Visit Friends/ Relatives	2	
Work-related	3	
School-related	4	
Personal Business	5	
OTHER, SPECIFY	7	O
DK/RF	9	

02/03/20 17:04

112: **LSTO1**

1ST TRIP

How many stops were made along the way? RANGE: 0 - 89

(1/1163)

$E 0 89

NONE	00
DK	98
RF	99

02/03/20 17:12

113: **LWOR2**

=> PREND if LDCNT<2

2ND TRIP

Was the second trip a regular commute to work?

(1/1165)

YES	1	=> LWOR3
NO	2	
DK	8	=> LWOR3
RF	9	=> LWOR3

02/03/20 17:07

114: **LCIT2**

2ND TRIP

What was the City or town and State of the main destination? CITY COLLECTED HERE, STATE IN THE NEXT QUESTION.

(1/1166)

$T1

NOT FOUND, SPECIFY	7777	O
DK/RF	9999	

02/03/20 17:07

115: **LSTA2**

2ND TRIP

SELECT STATE GIVEN IN PREVIOUS QUESTION

(1/1170)

AA

ALABAMA	AL
ALASKA	AK
ARIZONA	AZ
ARKANSAS	AR
CALIFORNIA	CA
COLORADO	CO
CONNECTICUT	CT
DELAWARE	DE
DISTRICT OF COLUMBIA	DC
FLORIDA	FL
GEORGIA	GA
HAWAII	HI
IDAHO	ID
ILLINOIS	IL
INDIANA	IN
IOWA	IA
KANSAS	KS
KENTUCKY	KY
LOUISIANA	LA
MAINE	ME
MARYLAND	MD
MASSACHUSETTS	MA
MICHIGAN	MI
MINNESOTA	MN
MISSISSIPPI	MS
MISSOURI	MO
MONTANA	MT
NEBRASKA	NE
NEVADA	NV
NEW HAMPSHIRE	NH
NEW JERSEY	NJ
NEW MEXICO	NM
NEW YORK	NY
NORTH CAROLINA	NC
NORTH DAKOTA	ND
OHIO	OH
OKLAHOMA	OK
OREGON	OR
PALAU	PW
PENNSYLVANIA	PA
RHODE ISLAND	RI
SOUTH CAROLINA	SC
SOUTH DAKOTA	SD
TENNESSEE	TN
TEXAS	TX
UTAH	UT
VERMONT	VT
VIRGINIA	VA
WASHINGTON	WA
WEST VIRGINIA	WV
WISCONSIN	WI
WYOMING	WY

02/03/20 17:07

116: **TPUR2**

2ND TRIP

What was the main reason for going to that place?

(1/1172)

Entertainment/ Recreation	1	
Visit Friends/ Relatives	2	
Work-related	3	
School-related	4	
Personal Business	5	
OTHER, SPECIFY	7	O
DK/RF	9	

02/03/20 17:07

117: **LSTO2**

2ND TRIP

How many stops were made along the way? RANGE: 0 - 89

(1/1173)

$E 0 89

NONE	00
DK	98
RF	99

02/03/20 17:12

118: **LWOR3**

=> PREND if LDCNT<3

3RD TRIP

Was the third trip a regular commute to work?

(1/1175)

YES	1	=> LWOR4
NO	2	
DK	8	=> LWOR4
RF	9	=> LWOR4

02/03/20 17:08

119: **LCIT3**

3RD TRIP

What was the City or town and State of the main destination? CITY COLLECTED HERE, STATE IN THE NEXT QUESTION.

(1/1176)

$T1

NOT FOUND, SPECIFY	7777	O
DK/RF	9999	

02/03/20 17:08

120: **LSTA3**

3RD TRIP

SELECT STATE GIVEN IN PREVIOUS QUESTION

(1/1180)

AA

ALABAMA ..... AL
ALASKA ..... AK
ARIZONA ..... AZ
ARKANSAS ..... AR
CALIFORNIA ..... CA
COLORADO ..... CO
CONNECTICUT ..... CT
DELAWARE ..... DE
DISTRICT OF COLUMBIA ..... DC
FLORIDA ..... FL
GEORGIA ..... GA
HAWAII ..... HI
IDAHO ..... ID
ILLINOIS IL
INDIANA ..... IN
IOWA ..... IA
KANSAS ..... KS
KENTUCKY ..... KY
LOUISIANA ..... LA
MAINE ..... ME
MARYLAND ..... MD
MASSACHUSETTS ..... MA
MICHIGAN ..... MI
MINNESOTA ..... MN
MISSISSIPPI ..... MS
MISSOURI ..... MO
MONTANA ..... MT
NEBRASKA ..... NE
NEVADA ..... NV
NEW HAMPSHIRE ..... NH
NEW JERSEY ..... NJ
NEW MEXICO ..... NM
NEW YORK ..... NY
NORTH CAROLINA ..... NC
NORTH DAKOTA ..... ND
OHIO ..... OH
OKLAHOMA ..... OK
OREGON ..... OR
PALAU ..... PW
PENNSYLVANIA ..... PA
RHODE ISLAND ..... RI
SOUTH CAROLINA ..... SC
SOUTH DAKOTA ..... SD
TENNESSEE ..... TN
TEXAS ..... TX
UTAH ..... UT
VERMONT ..... VT
VIRGINIA ..... VA
WASHINGTON ..... WA
WEST VIRGINIA ..... WV
WISCONSIN ..... WI
WYOMING ..... WY

02/03/20 17:08

121: **LPUR3**

3RD TRIP

What was the main reason for going to that place?

(1/1182)

Entertainment/ Recreation 1
Visit Friends/ Relatives 2
Work-related 3
School-related 4
Personal Business 5
OTHER, SPECIFY ..... 7 O
DK/RF 9

02/03/20 17:08

122: **LSTO3**

3RD TRIP

How many stops were made along the way? RANGE: 0 - 89

(1/1183)

$E 0 89

NONE 00
DK 98
RF 99

02/03/20 17:12

123: **LWOR4**

=> PREND if LDCNT<4

4TH TRIP

Was the fourth trip a regular commute to work?

(1/1185)

YES ..... 1 => LWOR5
NO 2
DK ..... 8 => LWOR5
RF ..... 9 => LWOR5

02/03/20 17:09

124: **LCIT4**

4TH TRIP

What was the City or town and State of the main destination? CITY COLLECTED HERE, STATE IN THE NEXT QUESTION.

(1/1186)

$T1

NOT FOUND, SPECIFY ..... 7777 O
DK/RF 9999

02/03/20 17:09

125: **LSTA4**

4TH TRIP

SELECT STATE GIVEN IN PREVIOUS QUESTION

(1/1190)

AA

ALABAMA	AL
ALASKA	AK
ARIZONA	AZ
ARKANSAS	AR
CALIFORNIA	CA
COLORADO	CO
CONNECTICUT	CT
DELAWARE	DE
DISTRICT OF COLUMBIA	DC
FLORIDA	FL
GEORGIA	GA
HAWAII	HI
IDAHO	ID
ILLINOIS	IL
INDIANA	IN
IOWA	IA
KANSAS	KS
KENTUCKY	KY
LOUISIANA	LA
MAINE	ME
MARYLAND	MD
MASSACHUSETTS	MA
MICHIGAN	MI
MINNESOTA	MN
MISSISSIPPI	MS
MISSOURI	MO
MONTANA	MT
NEBRASKA	NE
NEVADA	NV
NEW HAMPSHIRE	NH
NEW JERSEY	NJ
NEW MEXICO	NM
NEW YORK	NY
NORTH CAROLINA	NC
NORTH DAKOTA	ND
OHIO	OH
OKLAHOMA	OK
OREGON	OR
PALAU	PW
PENNSYLVANIA	PA
RHODE ISLAND	RI
SOUTH CAROLINA	SC
SOUTH DAKOTA	SD
TENNESSEE	TN
TEXAS	TX
UTAH	UT
VERMONT	VT
VIRGINIA	VA
WASHINGTON	WA
WEST VIRGINIA	WV
WISCONSIN	WI
WYOMING	WY

02/03/20 17:09

126: **LPUR4**

4TH TRIP

What was the main reason for going to that place?

(1/1192)

Entertainment/ Recreation	1	
Visit Friends/ Relatives	2	
Work-related	3	
School-related	4	
Personal Business	5	
OTHER, SPECIFY	7	O
DK/RF	9	

02/03/20 17:09

127: **LSTO4**

4TH TRIP

How many stops were made along the way? RANGE: 0 - 89

(1/1193)

$E 0 89

NONE	00
DK	98
RF	99

02/03/20 17:13

128: **LWOR5**

=> PREND if LDCNT<5

5TH TRIP

Was the fifth trip a regular commute to work?

(1/1195)

YES	1	=> LWOR6
NO	2	
DK	8	=> LWOR6
RF	9	=> LWOR6

02/03/20 17:10

129: **LCIT5**

5TH TRIP

What was the City or town and State of the main destination? CITY COLLECTED HERE, STATE IN THE NEXT QUESTION.

(1/1196)

$T1

NOT FOUND, SPECIFY	7777	O
DK/RF	9999	

02/03/20 17:10

130: **LSTA5**

5TH TRIP

SELECT STATE GIVEN IN PREVIOUS QUESTION

(1/1200)

AA

ALABAMA	AL
ALASKA	AK
ARIZONA	AZ
ARKANSAS	AR
CALIFORNIA	CA
COLORADO	CO
CONNECTICUT	CT
DELAWARE	DE
DISTRICT OF COLUMBIA	DC
FLORIDA	FL
GEORGIA	GA
HAWAII	HI
IDAHO	ID
ILLINOIS	IL
INDIANA	IN
IOWA	IA
KANSAS	KS
KENTUCKY	KY
LOUISIANA	LA
MAINE	ME
MARYLAND	MD
MASSACHUSETTS	MA
MICHIGAN	MI
MINNESOTA	MN
MISSISSIPPI	MS
MISSOURI	MO
MONTANA	MT
NEBRASKA	NE
NEVADA	NV
NEW HAMPSHIRE	NH
NEW JERSEY	NJ
NEW MEXICO	NM
NEW YORK	NY
NORTH CAROLINA	NC
NORTH DAKOTA	ND
OHIO	OH
OKLAHOMA	OK
OREGON	OR
PALAU	PW
PENNSYLVANIA	PA
RHODE ISLAND	RI
SOUTH CAROLINA	SC
SOUTH DAKOTA	SD
TENNESSEE	TN
TEXAS	TX
UTAH	UT
VERMONT	VT
VIRGINIA	VA
WASHINGTON	WA
WEST VIRGINIA	WV
WISCONSIN	WI
WYOMING	WY

02/03/20 17:10

131: **LPUR5**

5TH TRIP

What was the main reason for going to that place?

(1/1202)

Entertainment/ Recreation	1	
Visit Friends/ Relatives	2	
Work-related	3	
School-related	4	
Personal Business	5	
OTHER, SPECIFY	7	O
DK/RF	9	

02/03/20 17:10

132: **LSTO5**

5TH TRIP

How many stops were made along the way? RANGE: 0 - 89

(1/1203)

$E 0 89

NONE	00
DK	98
RF	99

02/03/20 17:13

133: **LWOR6**

=> PREND if LDCNT<6

6TH TRIP

Was the sixth trip a regular commute to work?

(1/1205)

YES	1	=> PREND
NO	2	
DK	8	=> PREND
RF	9	=> PREND

02/03/20 17:11

134: **LCIT6**

6TH TRIP

What was the City or town and State of the main destination? CITY COLLECTED HERE, STATE IN THE NEXT QUESTION.

(1/1206)

$T1

NOT FOUND, SPECIFY	7777	O
DK/RF	9999	

02/03/20 17:11

135: **LSTA6**

6TH TRIP

SELECT STATE GIVEN IN PREVIOUS QUESTION

(1/1210)

AA

ALABAMA ..... AL
ALASKA ..... AK
ARIZONA ..... AZ
ARKANSAS ..... AR
CALIFORNIA ..... CA
COLORADO ..... CO
CONNECTICUT ..... CT
DELAWARE ..... DE
DISTRICT OF COLUMBIA ..... DC
FLORIDA ..... FL
GEORGIA ..... GA
HAWAII ..... HI
IDAHO ..... ID
ILLINOIS IL
INDIANA ..... IN
IOWA ..... IA
KANSAS ..... KS
KENTUCKY ..... KY
LOUISIANA ..... LA
MAINE ..... ME
MARYLAND ..... MD
MASSACHUSETTS ..... MA
MICHIGAN ..... MI
MINNESOTA ..... MN
MISSISSIPPI ..... MS
MISSOURI ..... MO
MONTANA ..... MT
NEBRASKA ..... NE
NEVADA ..... NV
NEW HAMPSHIRE ..... NH
NEW JERSEY ..... NJ
NEW MEXICO ..... NM
NEW YORK ..... NY
NORTH CAROLINA ..... NC
NORTH DAKOTA ..... ND
OHIO ..... OH
OKLAHOMA ..... OK
OREGON ..... OR
PALAU ..... PW
PENNSYLVANIA ..... PA
RHODE ISLAND ..... RI
SOUTH CAROLINA ..... SC
SOUTH DAKOTA ..... SD
TENNESSEE ..... TN
TEXAS ..... TX
UTAH ..... UT
VERMONT ..... VT
VIRGINIA ..... VA
WASHINGTON ..... WA
WEST VIRGINIA ..... WV
WISCONSIN ..... WI
WYOMING ..... WY

02/03/20 17:11

136: **LPUR6**

6TH TRIP

What was the main reason for going to that place?

(1/1212)

Entertainment/ Recreation 1
Visit Friends/ Relatives 2
Work-related 3
School-related 4
Personal Business 5
OTHER, SPECIFY ..... 7 O
DK/RF 9

02/03/20 17:11

137: **LSTO6**

6TH TRIP

How many stops were made along the way? RANGE: 0 - 89

(1/1213)

$E 0 89

NONE 00
DK 98
RF 99

01/03/29 9:18

138: **PREND**

PERSON<PERNO >

END OF PERSON ROSTER YOU HAVE FINISHED<PERNO > IN A<HHSIZ>PERSON HOUSEHOLD

(1/1215)

GO TO NEXT PERSON 1
DONE WITH HH MEMBERS ..... 2 => NOWRK

01/04/11 13:17

139: **NOWRK**

=> * if CSM(IF((PRIMA=01 OR PRIMA=02),1,0))

COMPUTED NUMBER OF WORKERS

(2/ 160)

$E

NONE 00
ONE 01
TWO 02
THREE 03
FOUR 04
FIVE 05
SIX 06
SEVEN 07
EIGHT 08

01/03/29 9:20

140: **NOSTU**

=> * if CSM(IF((STUDE=1),1,0))

COMPUTED NUMBER OF STUDENTS

(2/ 162)

$E

NONE 00
ONE 01
TWO 02
THREE 03
FOUR 04
FIVE 05
SIX 06
SEVEN 07
EIGHT 08

01/03/29 9:20

141: **NOLIC**

=> * if CSM(IF((LIC=1),1,0))

COMPUTED NUMBER OF DRIVERS

(2/ 164)

$E

NONE 00
ONE 01
TWO 02
THREE 03
FOUR 04
FIVE 05
SIX 06
SEVEN 07
EIGHT 08

02/02/13 13:57

142: **LDQ1**

Has anyone in your household made any trips to a place 50 miles or more away from your home in the past two weeks? THIS IS FOR ALL MODES OF TRAVEL, INCLUDING PLANES, TRAINS AND AUTOMOBILES.M

(2/ 166)

YES.....1
NO.....2 => ASSN

02/02/13 15:03

143: **LDQ2**

How many, counting each way as a separate trip? PROBE BEFORE ACCEPTING DK/RF. REMEMBER, EACH WAY IS A SEPERATE TRIP. MAKE SURETHEY UNDERSTAND THAT. RANGE: 1 - 89

(2/ 167)

$E 1 89
ONLY ONE. MAKE SURE THEY REALLY MEAN 1 ONE-WAY TRIP.01
.....
DK.....98 => ASSN
RF.....99 => ASSN

02/02/13 14:05

144: **LDQ3A**

=> +1 if LDQ2>1

Was that trip a regular commute to work?

(2/ 169)

YES.....1 => ASSN
NO.....2 => LDQ5A
DK.....8 => LDQ5A
RF.....9 => LDQ5A

02/02/13 14:06

145: **LDQ3B**

=> +1 if LDQ2=01

Were any of those trips regular commute trips to work?

(2/ 170)

YES.....1
NO.....2 => LDQ5B
DK.....8 => LDQ5B
RF.....9 => LDQ5B

02/02/13 15:03

146: **LDQ4**

Counting each way as a separate trip, how many were regular work commute trips? PROBE BEFORE ACCEPTING DK/RF. RANGE: 1 - 89

(2/ 171)

$E 1 89
ALL OF THEM.....90 => ASSN
ONLY ONE. MAKE SURE THIS IS WHAT THEY MEAN. 01
..... => LDQ5B
DK.....98 => LDQ5C
RF.....99 => LDQ5C

02/02/13 14:15

147: **LDQ5A**

=> +1 if LDQ3A=WR

How many stops were made along the way? RANGE: 0 - 89

(2/ 173)

$E 0 89
NONE.....00 => ASSN
DK.....98
RF.....99

02/02/13 13:56

148: **LDQ5B**

=> ASSN if LDQ5A>0

For all trips, how many stops were made along the way? PROBE BEFORE ACCEPTING DK/RF. RANGE: 0 - 89

(2/ 175)

$E 0 89
NONE.....00 => ASSN
DK.....98
RF.....99

02/02/13 14:29

149: **LDQ5C**

=> +1 if LDQ5B>0

For all non-work trips, how many stops were made along the way? PROBE BEFORE ACCEPTING DK/RF. RANGE: 0 - 89

(2/ 177)

$E 0 89
NONE.....00
DK.....98
RF.....99

02/05/28 12:29

150: **ASSN**

Okay, we're almost finished. First, we'd like everyone in your household to keep track of their travel on READ DATE. Is this okay?

(2/ 179)

Monday, 3/4 ..... 564 N
Tuesday, 3/5 ..... 565 N
Wednesday, 3/6 ..... 566 N
Thursday, 3/7 ..... 567 N
Monday, 3/11 ..... 571 N
Tuesday, 3/12 ..... 572 N
Wednesday, 3/13 ..... 573 N
Thursday, 3/14 ..... 574 N
Monday, 3/18 ..... 578 N
Tuesday, 3/19 ..... 579 N
Wednesday, 3/20 ..... 580 N
Thursday, 3/21 ..... 581 N
Monday, 3/25 ..... 585 N
Tuesday, 3/26 ..... 586 N
Wednesday, 3/27 ..... 587 N
Thursday, 3/28 ..... 588 N
Monday, 4/1 ..... 592 N
Tuesday, 4/2 ..... 593 N
Wednesday, 4/3 ..... 594 N
Thursday, 4/4 ..... 595 N
Monday, 4/8 ..... 599 N
Tuesday, 4/9 ..... 600 N
Wednesday, 4/10 ..... 601 N
Thursday, 4/11 ..... 602 N
Monday, 4/15 ..... 606 N
Tuesday, 4/16 ..... 607 N
Wednesday, 4/17 ..... 608 N
Thursday, 4/18 ..... 609 N
Monday, 4/22 ..... 613 N
Tuesday, 4/23 ..... 614 N
Wednesday, 4/24 ..... 615 N
Thursday, 4/25 ..... 616 N
Monday, 4/29 ..... 620 N
Tuesday, 4/30 ..... 621 N
Wednesday, 5/1 ..... 622 N
Thursday, 5/2 ..... 623 N
Monday, 5/6 ..... 627 N
Tuesday, 5/7 ..... 628 N
Wednesday, 5/8 ..... 629 N
Thursday, 5/9 ..... 630 N
Monday, 5/13 ..... 634 N
Tuesday, 5/14 ..... 635 N
Wednesday, 5/15 ..... 636 N
Thursday, 5/16 ..... 637 N
Monday, 5/20 ..... 641 N
Tuesday, 5/21 ..... 642 N
Wednesday, 5/22 ..... 643 N
Thursday, 5/23 ..... 644 N
Wednesday, 5/28 ..... 650 N
Thursday, 5/29 ..... 651 N
Monday, 6/3 ..... 655 N
Tuesday, 6/4 ..... 656 N
Wednesday, 6/5 ..... 657 N
Thursday, 6/6 658

151: **GUEST**

Will there be any overnight, out-of-state guests staying at your home on that date? REMEMBER THIS IS "OVERNIGHT", "OUT OF STATE" ONLY.

(2/ 182)

YES 1
NO ..... 2 => MAIL
DON'T KNOW ..... 8 => MAIL
REFUSED ..... 9 => MAIL

152: **VINUM**

How many guests will you have? PROBE BEFORE ACCEPTING DK/RF

(2/ 183)

$E
DK/RF ..... 99 => MAIL

153: **NAMES**

Can I get their names so we can prepare diaries for them? IF NO, LET THE RESPONDENT KNOW THAT WE ARE GOING TO GIVE THEM A DIFFERENT ASSIGNMENT DATE SO THAT VISITORS DON'T NEED TO TRACK TRAVEL.

(2/ 185)

YES 1
NO ..... 2 => ASSN

154: **GSAMP**

=> * if SAMPN

COMPUTED VISITOR SAMPLE NUMBER BEGIN VISITOR ROSTER

(2/ 186)

9999999

155: **GUENO**

=> * if $R

COMPUTED VISITOR NUMBER

(2/ 193)

$E 01 10
VISITOR 1 01
VISITOR 2 02
VISITOR 3 03
VISITOR 4 04
VISITOR 5 05
VISITOR 6 06
VISITOR 7 07
VISITOR 8 08
VISITOR 9 09
VISITOR 10 10

156: **VFNAM**

<***GUENO*** >

What is the first name of the visitor?

(2/ 195)

157: **GREND**

GUEST<GUENO >

END OF VISITOR ROSTER YOU HAVE FINISHED<GUENO > OF THE<VINUM>VISITORS EXPECTED

(2/ 215)

GO TO NEXT VISITOR 1
DONE WITH HH VISITORS ..... 2 => MAIL

158: **MAIL**

Earlier you indicated that your home was located at READ ADDRESS. ADDRESS:<HADDR > APT/STE:<HSUIT > CITY:<HCITY > ZIP CODE:<HZIP1> Is this also your mailing address?

(2/ 486)

YES - Okay, let me make sure I've got it right. READ ADDRESS ONE LAST TIME. IT IS CRUCIAL THAT THIS BE CORRECT..... 1 D => VPHON
NO 2

```
                        ÚÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ¿
                        ³  MAILING ADDRESS  ³
                        ÀÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ

     ADDRESS INFO: @MADDR
             CITY: @MCITX  PRESS F2 FOR TABLE; 777=OTHER, SPECIFY; 999=DK/RF
        ZIP CODE: @MZIP1  DK/RF=ALL 9'S
           STATE: @MSTAT  ENTER 2 CHARACTER STATE ABBREVIATION



     NOTE!! NONE OF THIS INFO CAN BE "BLANK". PROBE FOR IT!
```

159: **MADDR**

MAILING ADDRESS

(2/ 487)

Z**********

01/03/27 16:45

160: **MCITX**

MAILING CITY

(2/ 517)

$T1
NOT FOUND, ENTER RESPONSE ..... 7777 O
DK/RF 9999

161: **MZIP1**

MAILING ZIP CODE

(2/ 521)

99999
DK/RF.....99999

01/04/11 11:33

162: **MSTAT**

STATE

(2/ 526)

AA
OHIO .....OH

163: **MCITY**

=> * if MST(MCITX,MCITY)

COMPUTED CITY

(2/ 528)

164: **VPHON**

And I'd like to confirm that I reached you at<PHONE >. Is this correct?

(2/ 553)

YES.....1 D => +2
NO.....2

165: **TEL01**

What phone number did I reach you at? FORMAT: ###-###-####

(2/ 554)

999-999-9999

166: **DIFPH**

A few days after we mail your diaries, we want to call to make sure you've received them and also to remind you of the day we need you to track your travel for. When we do this, should we call you at this number or is there a different number where you would prefer to be called? THE NUMBER IS: $N

(2/ 566)

YES, THIS NUMBER OK.....1 D => APPT
NO, CALL DIFFERENT NUMBER 2

167: **OTHPH**

And what is the number? FORMAT: ###-###-####

(2/ 567)

999-999-9999

168: **APPT**

Would you prefer to be called in the...

(2/ 579)

Morning 1
Afternoon.....2
Evening.....3
No best time.....4
DK/RF.....9

01/03/27 16:49

169: **INCEN**

PRESS ENTER TO CONTINUE

Thank you very much for your time and cooperation in completing this phase of the study. It is becase of citizens such as yourself that transportation planners are able to design systems that are efficient and effective for the members the community to use. To show our appreciation for your willingness to participate in the study, your household will be placed in a drawing to win1 of 10 pairs of airline tickets anywhere in the continental United States.

(2/ 580)

Continue.....1 D

```
Thank you for helping us. We'll call you on the day before your travel day
to make sure you received your diaries and to answer any questions you might
have. At anytime you can reach us at 1-877-261-4621.
Thank you and have a nice evening/day. Goodbye.


@THANK
```

170: **THANK**

PRESS ENTER TO CONTINUE

(2/ 581)

END OF SURVEY.....1 D

02/03/21 16:42

171: **PERSU**

WAS IT EASY OR HARD TO GET THIS COMPLETE? HOW MUCH ADDITIONAL EFFORT DID IT TAKE FOR YOU TO GET THIS COMPLETE?

(2/ 582)

NONE ..... 1 => INT
ADDITIONAL EFFORT REQUIRED (THEY WERE A LITTLE TOUCHY)
..... 2 => INT
ADVANCED EFFORT REQUIRED (IT WAS HARD. THEY HAD TO BE CONVINCED) ..... 3 => INT

02/04/13 17:45

172: **INT10**

Although you are not qualified to continue with our study today, we appreciate your time. Thank you and goodbye.

(2/ 583)

NOT QUALIFIED ..... NQ => /END

02/03/21 15:18

173: **INT**

Enter Final Disposition.

(2/ 585)

Continue	OK	N	=> /END
No Answer	NA	N	=> /END
Busy	BZ	N	=> /END
Answering Machine	AM	N	=> /END
Disconnect	DC	N	=> /END
Computer/Fax Machine	FX	N	=> /END
Business/Government	BG	N	=> /END
1st Refusal	R1	N	=> /END
Refused	RF		=> /END
Deaf/Language Barrier	LB	N	=> /END
Complete	CM	CD	=> /END
Call Back	CB	N	=> /CB
Partial Complete	PC		=> /CB
Over Quota	OQ		=> /END
Not Qualified	NQ	N	=> /END
Spanish Callback	SC	N	=> /END

174: **NOTES**

ENTER NOTES FOR SUPERVISOR YOU WON'T BE ABLE TO READ YOUR NOTE LATER, SO MAKE SURE IT SAYS WHAT YOU WANT.

(2/ 587)

ENTER NOTES ..... 1 O

175: **F8**

ENTER NOTES TO INTERVIEWERS BE CAUTIOUS! ANYONE CAN READ WHAT YOU PUT HERE.

(2/ 588)

ENTER NOTES ..... 1 O

176: **CB**

What would be a good day and time to call you back?

(2/ 589)

$CHS

177: **NAME**

Who should I ask for when I call back? ASK FOR FULL NAME

(2/ 601)

APPENDIX B. TRAVEL DIARY PACKET MATERIALS

THE
OHIO DEPARTMENT OF TRANSPORTATION

1980 West Broad Street
Columbus, Ohio 43223

Bob Taft, Governor
Gordon Proctor, Director

November 17, 2000

FULL NAME
ADDRESS
CITY, OH ZIP

Dear FULL NAME:

The Ohio Department of Transportation (ODOT) is conducting a comprehensive study of travel in your region of the state to obtain a better understanding of Ohio resident's future transportation needs. The department is interviewing one out of every 300 households in Ohio, and we are pleased to inform you that your household was randomly chosen to participate in this very important study.

With your help, the information provided to the department will be used when planning future transportation projects and improvements over the next 20 years.

For the first part of the survey, you will receive a phone call from an associate of NuStats, an independent research firm, who will collect information about your household. In the second part of the survey, you will be asked to keep a diary of where, when, and how you make trips for a one-day period. Many people do not realize how many trips they make in a single day until they keep a diary; I am sure you will find it interesting! Please know all the information you provide is confidential.

If you have any questions, please contact Jesse Casas of NuStats at (800) 447-8287 or Brian Cunningham of the Ohio Department of Transportation at (614) 466-7170.

Sincerely,

Gordon Proctor

Gordon Proctor
Director

Enclosure

THE
OHIO DEPARTMENT OF TRANSPORTATION

1980 West Broad Street
Columbus, Ohio 43223

Bob Taft, Governor
Gordon Proctor, Director

November 17, 2000

FULL NAME
ADDRESS
CITY, OH ZIP

Dear FULL NAME:

Thank you for agreeing to participate in the **Ohio Statewide Household Travel Survey**. You and your family are helping to improve local transportation in your region and throughout the state.

With good information on how, why, and where people make their daily trips, transportation planners and public officials can make better use of increasingly scarce resources and can develop strategies for making wise transit and highway investments. Your participation is important for reaching these goals.

The survey is being conducted by NuStats on behalf of the Ohio Department of Transportation (ODOT). NuStats ensures that **all information collected is strictly confidential and will be used for research purposes only**. The information from your household will be used only in combination with data from other participating residents.

A survey specialist will *call to collect your information right after your assigned travel day.* Please keep your diaries until we call you.

We appreciate your time and your help to help with this very important project. If you have comments or questions, please call Jesse Casas, NuStats, at (800) 447-8287, extension 2226 or Brian Cunningham of the Ohio Department of Transportation at (614) 466-7170.

Sincerely,

Gordon Proctor

Gordon Proctor
Director

Enclosure

Why participate?

Everyone needs to travel . . . and wants to travel on uncongested roads. The growing number of cars in the region not only leads to congested roads but also to polluted skies.

Throughout the state of Ohio, local communities invest millions of dollars each year in improving local transportation and air quality. The survey information is needed to spend that money wisely in the future for:

- Improving highways to reduce congestion.
- Changing bus routes to provide more convenient service.
- Building sidewalks and bike paths.
- Reducing air pollution from cars and trucks.

Questions?

Please call:

Jesse Casas
NuStats
1-800-447-8287, ext. 2226
jcasas@nustats.com

www.nustats.com/ohiotrav.htm

NuStats

Brian Cunningham
Ohio Department of Transportation
(ODOT)
614-466-7170

www.dot.state.oh.us

Ohio Statewide Household Travel Survey

You're Part of a Select Group!

Your household has been selected to participate in a very important survey that will help shape the future of transportation in Ohio.

Your Participation is Important!

What is this survey about?

The Ohio Statewide Household Travel Survey is a major study of travel patterns and transportation needs throughout all regions of the state. The study will collect and analyze travel behavior data from residents and will be used as the foundation for transportation planning by the Ohio Department of Transportation (ODOT). Similar studies have been conducted across the country.

This survey will ensure that your local transportation system is meeting the needs of travelers. The information will be used by transportation planners to determine where and when traffic is most congested - as well as what travel modes are most used - so that solutions can be devised to reduce traffic congestion.

Special thanks . . .

NuStats appreciates your participation in this very important study. As a token of our appreciation, your household will be placed in a raffle to win one of ten pairs of airline tickets to anywhere in the continental US *(up to $500 in value for each ticket).* Participation is not required to be included in the drawing.

But what if I don't travel much?

While your households' information alone may not seem important to you, it is your answers combined with those of 15,000 other households that will aid transportation planners. The scientific process by which you were randomly selected will assure reliable findings.

What does your Participation Involve?

Your participation is critical for shaping the future of transportation in Ohio. NuStats uses a well-tested three-phase survey method.

Phase 1: Recruitment

NuStats conducts a telephone interview with a random sample of households in the region. You will be asked to provide information about your household, such as household income, whether you own or rent your home, how many vehicles are available for use by your household, how many telephone lines you have, among others. The telephone surveyor also collects information about each member of your household, such as age, employment status, and work and school information. The analysis of such information ensures that all types of households with a wide range of travel patterns are selected to participate.

Phase 2: Travel Diary

The survey requires that travel information from all types of people is collected -- no matter how much they travel or what age they are. So NuStats will provide personal travel diaries to all members of your household. These diaries should be carried on the assigned travel day and used to record travel details. Parents can complete the diaries of any children age 12 and younger.

It is important that you record exact addresses in your diaries. This information helps planners calculate how long it takes you to get from place to place and to figure out solutions for making it easier for you and others. Therefore, all of the places you go, such as work, school, gas station, ATM, friends house, coffee shop, etc., should be recorded in detail.

Phase 3: Information Retrieval

After your travel day, NuStats will call to collect the diary information from each household member. If your information is already recorded in the diaries, the interview is relatively quick. NuStats needs to talk directly to each person age 13 and older so a specific appointment (day and time) is made.

Statement of confidentiality

We guarantee that the information you provide will remain entirely confidential. We do not sell phone lists to anyone. The information from all participants will be grouped for analysis and used by the state and your local governments to help plan the future of transportation.

Helpful Hints

- ✓ A PLACE is a location that has a new or different address.
- ✓ Write down all PLACES visited, even short walks, trips, or stops (e.g. getting coffee on the way to work or going through the drive-through at a fast food restaurant).
- ✓ Write complete addresses for each PLACE you visit. Include:
  - exact place or business name,
  - complete street address,
  - city,
  - county,
  - zipcode,
  - a street that crosses near the address, and
  - a landmark (a unique place that is found on a map, such as a church, park, shopping mall, lake, bridge, etc.)
- ✓ Record the exact times that you arrive and leave each PLACE.

Thank You!

Keep your household's completed diaries near the phone and we'll call you the day after your travel day.

If you need any help completing your diary, please call us toll-free at:

1-877-261-4621

Personal One-Day Travel Diary for:

Survey conducted by NuStats on behalf of the Ohio Department of Transportation (ODOT)

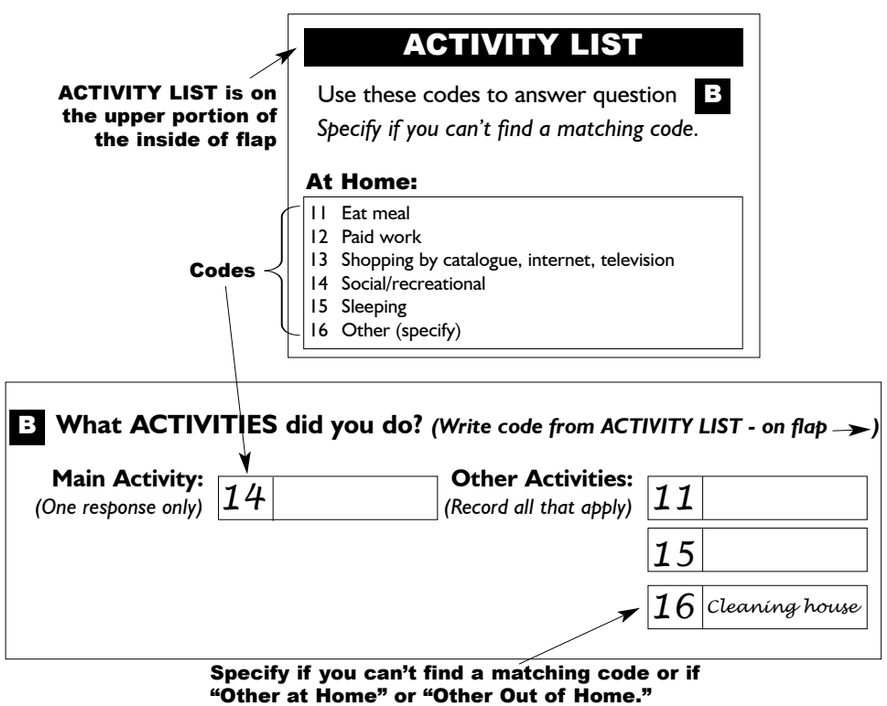
NuStats

Questions? Please call toll free:
1-877-261-4621

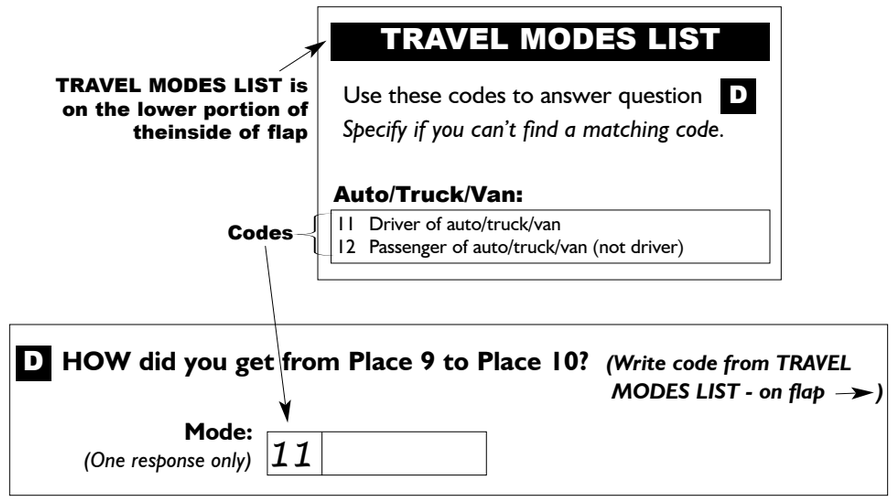
Diary Instructions

Use this diary to record **PLACES** visited, **TRIPS** made, and the **ACTIVITIES** you did at each **PLACE**. Specifically, you should record the following, in as much detail as possible:

- ✓ **PLACES** visited (place name; exact address and/or cross-streets, county, city, and zipcode are critical for assessing areas with traffic congestion). A **PLACE** is any location you travel to whether it's for just a few minutes (such as a gas station, drive-through window, dropping your child off at school, etc.) or for many hours (work, attending a sporting event, etc.). If you have already provided your household members' work and school addresses, you do not need to record them in the diary.
- ✓ **TIMES** you began and ended each trip (be as exact as possible - to the minute helps us assess how long it takes to get from one place to another). Your travel day begins at 3:00 am and ends at 2:59 am the following day.
- ✓ **ACTIVITIES** or **WHAT YOU DID** at each place (example: watching TV or social/recreational activities). Use the ACTIVITY LIST to help you. First write the code for the main activity you did in the first box and then write in the codes for any other activities you did in the other boxes. The following example is helpful:



- ✓ **MODES** or how you traveled to each place you visited. Identify the code for your travel mode on the TRAVEL MODES LIST and write it in the box provided under question D. Following is an example:



The day after your travel date, a professionally trained NuStats interviewer will call to collect your household's information. For anyone who is unable to complete a diary, we ask that a parent or other adult complete the diary for them. After the interview, please mail back all diaries in the postage-paid envelope.

We guarantee that the information you provide will remain entirely confidential. We do not sell phone lists to anyone. The information from all participants will be grouped for analysis and used by the state and your local governments to help plan the future of transportation in your area.

Questions? Please call 1-877-261-4621

Thank you for helping shape the future of transportation in Ohio!

ACTIVITY LIST

Use these codes to answer question **B**

Specify if you can't find a matching code.

At Home:

11 Eat meal
12 Paid work
13 Shopping by catalogue, internet, television
14 Social/recreational
15 Sleeping
16 Other *(specify)*

Out of Home:

17 Paid work
18 School
19 Volunteer work
20 Pick-up/drop-off person
21 Social, recreation/church
22 Catch a bus, train or airplane
23 Transfer from a bus, train, or airplane to another
24 Shop
25 Personal business
26 Eat meal
27 Go for a drive
28 Other *(specify)*

TRAVEL MODES LIST

Use these codes to answer question **D**

Specify if you can't find a matching code.

Auto/Truck/Van:

11 Driver of auto/truck/van
12 Passenger of auto/truck/van (not driver)

Carpool:

13 Carpool driver
14 Carpool passenger

Vanpool:

15 Vanpool driver
16 Vanpool passenger

Public Transit:

17 Bus

Other Modes:

18 School bus
19 Taxi/paid limo
20 Walk
21 Bicycle
22 Motorcycle, moped
23 Other *(specify)*

PLACE 1

Begin here. **For this diary, your day begins at 3:00 am.**
Most people are home asleep at 3:00 am. If this is the case with you, then check **"My Home,"** record the exact time you left for the first time, and write all the activities you did before leaving.

A WHAT is this Place?

☐ My Home ☐ My School
☐ My Primary Workplace ☐ Another Place

Name of Place (if any) or nearest landmark (e.g. building name)

Street Address

City *County* *Zip Code*

&

Nearest Cross Streets

B What ACTIVITIES did you do? ***(Write code from ACTIVITY LIST - on flap →)***

Main Activity: *(One response only)* | **Other Activities:** *(Record all that apply)*

C Was this your ONLY PLACE for the day? ☐ Done

If not, what TIME did you LEAVE? : am / pm **Next Place →**
(Please be as exact as possible)

PLACE 2

A WHAT is this Place?

☐ My Home ☐ My School
☐ My Primary Workplace ☐ Another Place

Please provide as much of the address as possible:

Place name: _____

Address/City: _____

County/Zip: _____

Cross streets: _____

B What ACTIVITIES did you do? ***(Write code from ACTIVITY LIST - on flap →)***

Main Activity: *(One response only)* | **Other Activities:** *(Record all that apply)*

C What TIME did you ARRIVE? : am / pm
(Please be as exact as possible)

D HOW did you get from Place 1 to Place 2? ***(Write code from TRAVEL MODES LIST - on flap →)***

Mode: *(One response only)*

E If you got there by:

Auto/Truck/Van ***Modes: 11-16***

Total number of people traveling? (including the driver)

Number of household members traveling? (including the driver)

Distance (in blocks) parked from final destination?

Public Transit ***Mode: 17***

Which bus route did you use?

F Was this your LAST PLACE for the day? ☐ Done

If not, what TIME did you LEAVE? : am / pm **Next Place →**
(Please be as exact as possible)

PLACE 3

A WHAT is this Place?

☐ My Home ☐ My School
☐ My Primary Workplace ☐ Another Place

Please provide as much of the address as possible:

Place name: _____
Address/City: _____
County/Zip: _____
Cross streets: _____

B What ACTIVITIES did you do? ***(Write code from ACTIVITY LIST - on flap →)***

Main Activity: *(One response only)* | | |

Other Activities: *(Record all that apply)* | | |
| | |
| | |

C What TIME did you ARRIVE? *(Please be as exact as possible)* : am / pm

D HOW did you get from Place 2 to Place 3? ***(Write code from TRAVEL MODES LIST - on flap →)***

Mode: *(One response only)* | | |

E If you got there by:

Auto/Truck/Van ***Modes: 11-16***

Total number of people traveling? (including the driver) | |
Number of household members traveling? (including the driver) | |
Distance (in blocks) parked from final destination? | |

Public Transit ***Mode: 17***

Which bus route did you use? _____

F Was this your LAST PLACE for the day? ☐ Done

If not, what TIME did you LEAVE? : am / pm **Next Place →**
(Please be as exact as possible)

PLACE 4

A WHAT is this Place?

☐ My Home ☐ My School
☐ My Primary Workplace ☐ Another Place

Please provide as much of the address as possible:

Place name: _____
Address/City: _____
County/Zip: _____
Cross streets: _____

B What ACTIVITIES did you do? ***(Write code from ACTIVITY LIST - on flap →)***

Main Activity: *(One response only)* | | |

Other Activities: *(Record all that apply)* | | |
| | |
| | |

C What TIME did you ARRIVE? *(Please be as exact as possible)* : am / pm

D HOW did you get from Place 3 to Place 4? ***(Write code from TRAVEL MODES LIST - on flap →)***

Mode: *(One response only)* | | |

E If you got there by:

Auto/Truck/Van ***Modes: 11-16***

Total number of people traveling? (including the driver) | |
Number of household members traveling? (including the driver) | |
Distance (in blocks) parked from final destination? | |

Public Transit ***Mode: 17***

Which bus route did you use? _____

F Was this your LAST PLACE for the day? ☐ Done

If not, what TIME did you LEAVE? : am / pm **Next Place →**
(Please be as exact as possible)

PLACE 5

A WHAT is this Place?

☐ My Home ☐ My School
☐ My Primary Workplace ☐ Another Place

Please provide as much of the address as possible:

Place name: _____
Address/City: _____
County/Zip: _____
Cross streets: _____

B What ACTIVITIES did you do? ***(Write code from ACTIVITY LIST - on flap →)***

Main Activity: *(One response only)* | | |
Other Activities: *(Record all that apply)* | | |
| | |
| | |

C What TIME did you ARRIVE? *(Please be as exact as possible)* : am / pm

D HOW did you get from Place 4 to Place 5? ***(Write code from TRAVEL MODES LIST - on flap →)***

Mode: *(One response only)* | | |

E If you got there by:

Auto/Truck/Van ***Modes: 11-16***

Total number of people traveling? (including the driver) | |
Number of household members traveling? (including the driver) | |
Distance (in blocks) parked from final destination? | |

Public Transit ***Mode: 17***

Which bus route did you use? _____

F Was this your LAST PLACE for the day? ☐ Done

If not, what TIME did you LEAVE? : am / pm **Next Place →**
(Please be as exact as possible)

PLACE 6

A WHAT is this Place?

☐ My Home ☐ My School
☐ My Primary Workplace ☐ Another Place

Please provide as much of the address as possible:

Place name: _____
Address/City: _____
County/Zip: _____
Cross streets: _____

B What ACTIVITIES did you do? ***(Write code from ACTIVITY LIST - on flap →)***

Main Activity: *(One response only)* | | |
Other Activities: *(Record all that apply)* | | |
| | |
| | |

C What TIME did you ARRIVE? *(Please be as exact as possible)* : am / pm

D HOW did you get from Place 5 to Place 6? ***(Write code from TRAVEL MODES LIST - on flap →)***

Mode: *(One response only)* | | |

E If you got there by:

Auto/Truck/Van ***Modes: 11-16***

Total number of people traveling? (including the driver) | |
Number of household members traveling? (including the driver) | |
Distance (in blocks) parked from final destination? | |

Public Transit ***Mode: 17***

Which bus route did you use? _____

F Was this your LAST PLACE for the day? ☐ Done

If not, what TIME did you LEAVE? : am / pm **Next Place →**
(Please be as exact as possible)

PLACE 7

A WHAT is this Place?

☐ My Home ☐ My School
☐ My Primary Workplace ☐ Another Place

Please provide as much of the address as possible:

Place name: _____
Address/City: _____
County/Zip: _____
Cross streets: _____

B What ACTIVITIES did you do? ***(Write code from ACTIVITY LIST - on flap →)***

Main Activity: *(One response only)* | | |
Other Activities: *(Record all that apply)* | | |
| | |
| | |

C What TIME did you ARRIVE? *(Please be as exact as possible)* : am / pm

D HOW did you get from Place 6 to Place 7? ***(Write code from TRAVEL MODES LIST - on flap →)***

Mode: *(One response only)* | |

E If you got there by:

Auto/Truck/Van ***Modes: 11-16***

Total number of people traveling? (including the driver) | |
Number of household members traveling? (including the driver) | |
Distance (in blocks) parked from final destination? | |

Public Transit ***Mode: 17***

Which bus route did you use? _____

F Was this your LAST PLACE for the day? ☐ Done

If not, what TIME did you LEAVE? : am / pm **Next Place →**
(Please be as exact as possible)

PLACE 8

A WHAT is this Place?

☐ My Home ☐ My School
☐ My Primary Workplace ☐ Another Place

Please provide as much of the address as possible:

Place name: _____
Address/City: _____
County/Zip: _____
Cross streets: _____

B What ACTIVITIES did you do? ***(Write code from ACTIVITY LIST - on flap →)***

Main Activity: *(One response only)* | | |
Other Activities: *(Record all that apply)* | | |
| | |
| | |

C What TIME did you ARRIVE? *(Please be as exact as possible)* : am / pm

D HOW did you get from Place 7 to Place 8? ***(Write code from TRAVEL MODES LIST - on flap →)***

Mode: *(One response only)* | |

E If you got there by:

Auto/Truck/Van ***Modes: 11-16***

Total number of people traveling? (including the driver) | |
Number of household members traveling? (including the driver) | |
Distance (in blocks) parked from final destination? | |

Public Transit ***Mode: 17***

Which bus route did you use? _____

F Was this your LAST PLACE for the day? ☐ Done

If not, what TIME did you LEAVE? : am / pm **Next Place →**
(Please be as exact as possible)

PLACE 9

A WHAT is this Place?

☐ My Home ☐ My School
☐ My Primary Workplace ☐ Another Place

Please provide as much of the address as possible:

Place name: _____
Address/City: _____
County/Zip: _____
Cross streets: _____

B What ACTIVITIES did you do? ***(Write code from ACTIVITY LIST - on flap →)***

Main Activity: *(One response only)* | | |

Other Activities: *(Record all that apply)* | | |
| | |
| | |

C What TIME did you ARRIVE? *(Please be as exact as possible)* : am / pm

D HOW did you get from Place 8 to Place 9? ***(Write code from TRAVEL MODES LIST - on flap →)***

Mode: *(One response only)* | | |

E If you got there by:

Auto/Truck/Van ***Modes: 11-16***

Total number of people traveling? (including the driver) | |
Number of household members traveling? (including the driver) | |
Distance (in blocks) parked from final destination? | |

Public Transit ***Mode: 17***

Which bus route did you use? _____

F Was this your LAST PLACE for the day? ☐ Done

If not, what TIME did you LEAVE? : am / pm **Next Place →**
(Please be as exact as possible)

PLACE 10

A WHAT is this Place?

☐ My Home ☐ My School
☐ My Primary Workplace ☐ Another Place

Please provide as much of the address as possible:

Place name: _____
Address/City: _____
County/Zip: _____
Cross streets: _____

B What ACTIVITIES did you do? ***(Write code from ACTIVITY LIST - on flap →)***

Main Activity: *(One response only)* | | |

Other Activities: *(Record all that apply)* | | |
| | |
| | |

C What TIME did you ARRIVE? *(Please be as exact as possible)* : am / pm

D HOW did you get from Place 9 to Place 10? ***(Write code from TRAVEL MODES LIST - on flap →)***

Mode: *(One response only)* | | |

E If you got there by:

Auto/Truck/Van ***Modes: 11-16***

Total number of people traveling? (including the driver) | |
Number of household members traveling? (including the driver) | |
Distance (in blocks) parked from final destination? | |

Public Transit ***Mode: 17***

Which bus route did you use? _____

F Was this your LAST PLACE for the day? ☐ Done

If not, what TIME did you LEAVE? : am / pm **Next Place →**
(Please be as exact as possible)

Did you have a busy day?

If you have used all of the previous pages, use the chart below to keep information on other places you went.
Don't forget to record your times!

PLACE #	WHAT is this place?	Place NAME and ADDRESS	What ACTIVITIES did you do?	What TIME did you ARRIVE?	HOW did you get there?	What TIME did you LEAVE?
11				: am/pm		: am/pm
12				: am/pm		: am/pm
13				: am/pm		: am/pm
14				: am/pm		: am/pm
15				: am/pm		: am/pm
16				: am/pm		: am/pm
17				: am/pm		: am/pm
18				: am/pm		: am/pm
19				: am/pm		: am/pm
20				: am/pm		: am/pm

Checklist

Please remember to:

- ☑ Write down all places visited.
- ☑ Write complete addresses for all places visited.
- ☑ Record accurate start and end times.

APPENDIX C. RETRIEVAL QUESTIONNAIRE

00/02/11 13:39

1: **SAMPN**

=> +1 if 1>0

IMPORTED SAMPLE NUMBER

(1/ 56)

9999999

2: **PHONE**

=> +1 if 1>0

IMPORTED PHONE NUMBER

(1/ 63)

3: **LISTD**

=> +1 if 1>0

COMPUTED QUESTION LISTED OR UNLISTED NUMBER

(1/ 75)

LISTED....1
UNLISTED....2

4: **HFNAM**

=> +1 if 1>0

RESPONDENT FIRST NAME

(1/ 76)

5: **HLNAM**

=> +1 if 1>0

RESPONDENT LAST NAME

(1/ 106)

00/04/27 7:46

6: **STYPE**

=> +1 if 1>0

IMPORTED SAMPLE TYPE

(1/ 136)

NORMAL....0
NORMAL....1
COLD CALL....2
COLD CALL, URBAN....3

00/12/11 17:11

7: **HCNTY**

=> +1 if 1>0

IMPORTED COUNTY FIPS CODE

(1/ 137)

Adams....39001
Allen....39003
Ashland....39005
Ashtabula....39007
Athens....39009
Auglaize....39011
Belmont....39013
Brown....39015
Butler....39017
Carroll....39019
Champaign....39021
Clark....39023
Clermont....39025
Clinton....39027
Columbiana....39029
Coshocton....39031
Crawford....39033
Cuyahoga....39035
Darke....39037
Defiance....39039
Delaware....39041
Erie....39043
Fairfield....39045
Fayette....39047
Franklin....39049
Fulton....39051
Gallia....39053
Geauga....39055
Greene....39057
Guernsey....39059
Hamilton....39061
Hancock....39063
Hardin....39065
Harrison....39067
Henry....39069
Highland....39071
Hocking....39073
Holmes....39075
Huron....39077
Jackson....39079
Jefferson....39081
Knox....39083
Lake....39085
Lawrence....39087
Licking....39089
Logan....39091
Lorain....39093
Lucas....39095
Madison....39097
Mahoning....39099
Marion....39101
Medina....39103
Meigs....39105
Mercer....39107
Miami....39109
Monroe....39111
Montgomery....39113
Morgan....39115
Morrow....39117
Muskingum....39119
Noble....39121
Ottawa....39123
Paulding....39125
Perry....39127
Pickaway....39129
Pike....39131
Portage....39133
Preble....39135
Putnam....39137
Richland....39139
Ross....39141
Sandusky....39143
Scioto....39145
Seneca....39147
Shelby....39149

Stark 39151
Summit 39153
Trumbull 39155
Tuscarawas 39157
Union 39159
Van Wert 39161
Vinton 39163
Warren 39165
Washington 39167
Wayne 39169
Williams 39171
Wood 39173
Wyandot 39175

8: **MPO**

=> +1 if 1>0

MPO GROUP

(1/ 142)

$E
TMACOG 01
LACRPC 02
MVRPC 03
CCSTS 04
AMATS 05
SCATS 06
RCRPC 07
BHJTS 08
EDATS 09
RURAL NON-MPO 10

00/12/11 17:57

9: **INT01**

Hi - my name is _____ and I'm calling on behalf of the Ohio Department of Transportation about the survey your household recently completed. May I please speak with<HFNAM ><HLNAM >?

(1/ 144)

Continue	OK	D	=> +2
Called Back, But Respondent Not Available	NR		=> /CB
Respondent Has Moved	NQ		=> /END
No Answer	NA		=> /END
Busy	BZ		=> /END
Answering Machine	AM		=> /END
Disconnect	DC		=> /END
Computer/Fax Machine	FX		=> /END
Business/Government	BG		=> /END
Call Back	CB		=> /CB
1st Refusal	R1		=> /END
Wrong Number, Need To Research	WN		=> /END
Reschedule, Callback	RT		=> /ASSNS
Reschedule, Need to Re-Mail, Callback	RM		=> /ASSNM
Respondent Will Mail In Diaries	ML		=> /END

00/12/11 17:58

10: **INTRO**

Hi - my name is ----- and I'm calling on behalf of the Ohio Department of Transportation about the survey your household recently completed. May I please speak with<NAME >? We began an interview concerning your household's travel, and I would like to complete that interview now.

(1/ 146)

Continue where you left off	1	=> LASTQ
Start back at the beginning	2	=> INT01

01/08/29 17:05

11: **ASSNM**

=> +1 if NOT INT01=RM

****** RESPONDENT NEEDS DIARY PACKET RESENT***

SELECT NEW ASSIGNEMNT FOR RESENDING DIARY PACKET

(1/ 147)

Monday, 9/10 354
Tuesday, 9/11 355
Wednesday, 9/12 356
Thursday, 9/13 357
Monday, 9/17 361
Tuesday, 9/18 362
Wednesday, 9/19 363
Thursday, 9/20 364
Monday, 9/24 368
Tuesday, 9/25 369
Wednesday, 9/26 370
Thursday, 9/27 371
Monday, 10/1 375
Tuesday, 10/2 376
Wednesday, 10/3 377
Thursday, 10/4 378
Monday, 10/8 382
Tuesday, 10/9 383
Wednesday, 10/10 384
Thursday, 10/11 385
Monday, 10/15 389
Tuesday, 10/16 390
Wednesday, 10/17 391
Thursday, 10/18 392
Monday, 10/22 396
Tuesday, 10/23 397
Wednesday, 10/24 398
Thursday, 10/25 399
Monday, 10/29 403
Tuesday, 10/30 404
Wednesday, 10/31 405
Thursday, 11/1 406
Monday, 11/5 410
Tuesday, 11/6 411
Wednesday, 11/7 412
Thursday, 11/8 413
Monday, 11/12 417
Tuesday, 11/13 418
Wednesday, 11/14 419
Thursday, 11/15 420
Monday, 11/19 424
Tuesday, 11/20 425
Wednesday, 11/21 426
Thursday, 11/22 427
Monday, 11/26 431
Tuesday, 11/27 432
Wednesday, 11/28 433
Thursday, 11/29 434
Monday, 12/3 438
Tuesday, 12/4 439
Wednesday, 12/5 440
Thursday, 12/6 441
Monday, 12/10 445
Tuesday, 12/11 446
Wednesday, 12/12 447
Thursday, 12/13 448

01/08/29 17:05

12: **ASSNS**

=> +1 if NOT INT01=RT

****** RESPONDENT NEEDS SIMPLE RESCHEDULE, NO RESEND***

SELECT NEW ASSIGNMENT

(1/ 150)

Monday, 9/10 354
Tuesday, 9/11 355
Wednesday, 9/12 356
Thursday, 9/13 357
Monday, 9/17 361
Tuesday, 9/18 362
Wednesday, 9/19 363
Thursday, 9/20 364
Monday, 9/24 368
Tuesday, 9/25 369
Wednesday, 9/26 370
Thursday, 9/27 371
Monday, 10/1 375
Tuesday, 10/2 376
Wednesday, 10/3 377
Thursday, 10/4 378
Monday, 10/8 382
Tuesday, 10/9 383
Wednesday, 10/10 384
Thursday, 10/11 385
Monday, 10/15 389
Tuesday, 10/16 390
Wednesday, 10/17 391
Thursday, 10/18 392
Monday, 10/22 396
Tuesday, 10/23 397
Wednesday, 10/24 398
Thursday, 10/25 399
Monday, 10/29 403
Tuesday, 10/30 404
Wednesday, 10/31 405
Thursday, 11/1 406
Monday, 11/5 410
Tuesday, 11/6 411
Wednesday, 11/7 412
Thursday, 11/8 413
Monday, 11/12 417
Tuesday, 11/13 418
Wednesday, 11/14 419
Thursday, 11/15 420
Monday, 11/19 424
Tuesday, 11/20 425
Wednesday, 11/21 426
Thursday, 11/22 427
Monday, 11/26 431
Tuesday, 11/27 432
Wednesday, 11/28 433
Thursday, 11/29 434
Monday, 12/3 438
Tuesday, 12/4 439
Wednesday, 12/5 440
Thursday, 12/6 441
Monday, 12/10 445
Tuesday, 12/11 446
Wednesday, 12/12 447
Thursday, 12/13 448

01/08/29 17:05

13: **ASSN**

=> * if IF((INT01=RM),ASSNM,IF((INT01=RT),ASSNS,ASSN))

COMPUTED ASSN

(1/ 153)

Monday, 9/10 354
Tuesday, 9/11 355
Wednesday, 9/12 356
Thursday, 9/13 357
Monday, 9/17 361
Tuesday, 9/18 362
Wednesday, 9/19 363
Thursday, 9/20 364
Monday, 9/24 368
Tuesday, 9/25 369
Wednesday, 9/26 370
Thursday, 9/27 371
Monday, 10/1 375
Tuesday, 10/2 376
Wednesday, 10/3 377
Thursday, 10/4 378
Monday, 10/8 382
Tuesday, 10/9 383
Wednesday, 10/10 384
Thursday, 10/11 385
Monday, 10/15 389
Tuesday, 10/16 390
Wednesday, 10/17 391
Thursday, 10/18 392
Monday, 10/22 396
Tuesday, 10/23 397
Wednesday, 10/24 398
Thursday, 10/25 399
Monday, 10/29 403
Tuesday, 10/30 404
Wednesday, 10/31 405
Thursday, 11/1 406
Monday, 11/5 410
Tuesday, 11/6 411
Wednesday, 11/7 412
Thursday, 11/8 413
Monday, 11/12 417
Tuesday, 11/13 418
Wednesday, 11/14 419
Thursday, 11/15 420
Monday, 11/19 424
Tuesday, 11/20 425
Wednesday, 11/21 426
Thursday, 11/22 427
Monday, 11/26 431
Tuesday, 11/27 432
Wednesday, 11/28 433
Thursday, 11/29 434
Monday, 12/3 438
Tuesday, 12/4 439
Wednesday, 12/5 440
Thursday, 12/6 441
Monday, 12/10 445
Tuesday, 12/11 446
Wednesday, 12/12 447
Thursday, 12/13 448

00/02/11 13:35

14: **SCRP1**

=> /CB if INT01=RT OR INT01=RM

PRESS ENTER TO CONTINUE

I'm calling to collect your travel information. First I need to verify that the information we show for your household is correct. I'd like to start by verifying the address where you live. Is it READ ADDRESS FROM SAMPLE SHEET? MAKE CORRECTIONS ON SAMPLE SHEET

(1/ 156)

CONTINUE ..... 1 D

15: **HHSIZ**

ENTER NUMBER AND IF YOU'RE SURE, PRESS ENTER TWICE

Our records show that there are READ NUMBER BELOW people living in your household. Is this correct? MAKE CORRECTIONS ON SAMPLE SHEET AND BELOW

(1/ 157 - 159)

$E 1 10

ONE 01
TWO 02
THREE 03
FOUR 04
FIVE 05
SIX 06
SEVEN 07
EIGHT 08
NINE 09
TEN OR MORE 10

16: **VERHM**

PRESS ENTER TO CONTINUE

Okay- now I need to confirm the name, age and gender we have for each household member. VERIFY NAME, AGE, GENDER, IF EMPLOYED AND IF STUDENT FOR EACH MEMBER OF THE FAMILY. MAKE CORRECTIONS ON THE SAMPLE SHEET.

(1/ 161)

CONTINUE ..... 1 D

17: **INT03**

DO YOU HAVE AN ADDRESS/CROSS STREETS LOCATION FOR ALL HABITUAL ADDRESSES FOR EVERY PERSON??? IF YOU DON'T AND THE INFORMANT REFUSES, REMIND THEM THAT WE NEED THIS INFORMATION TO CONTINUE THE SURVEY AT ALL. TELL THEM THAT THIS INFORMATION WILL HELP TRANSPORTATION PLANNERS TO MAKE THEIR WORK AND SCHOOL COMMUTES BETTER, SAFER AND FASTER. ASK THEM TO RECONSIDER, PLEASE. PROBE!!!

(1/ 162)

YOU HAVE ADDRESS INFO FOR ALL HABITUAL PLACES FOREACH PERSON ..... OK D
THE RESPONDENT ABSOLUTELY REFUSES TO GIVE US THE INFORMATION. THANK AND TERMINATE. NH => /END

01/04/27 9:55

18: **HHVEH**

ENTER NUMBER AND IF YOU'RE SURE, PRESS ENTER TWICE

In terms of vehicles available to your household, we show that you have READ NUMBER BELOW available. Is that right? ENTER THE CORRECT NUMBER OF VEHICLES ON SAMPLE SHEET AND BELOW. THEN CONFIRM YEAR, MAKE AND MODEL FOR EACH VEHICLE.

(1/ 164 - 166)

$E 0 9

NONE 00
ONE 01
TWO 02
THREE 03
FOUR 04
FIVE 05
SIX 06
SEVEN 07
EIGHT 08
NINE OR MORE 09

01/04/27 9:55

19: **USECR**

How many vehicles were used by members of your household during your travel day?

(1/ 168)

$E 0 9

NONE ..... 00 => VINUM
ONE 01
TWO 02
THREE 03
FOUR 04
FIVE 05
SIX 06
SEVEN 07
EIGHT 08
NINE OR MORE 09
DON'T KNOW ..... 98 => VINUM
REFUSED ..... 99 => VINUM

01/04/27 9:55

20: **NONHV**

Of the<USECR>vehicles used on your travel day, how many were borrowed from someone not living in your household?

(1/ 170)

$E 0 9

NONE 00
ONE 01
TWO 02
THREE 03
FOUR 04
FIVE 05
SIX 06
SEVEN 07
EIGHT OR MORE 08
DON'T KNOW 09
REFUSED 99

21: **VINUM**

And we show that there were READ NUMBER overnight, out-of-town visitors at your home on your travel day. Is this correct? VERIFY NUMBER OF GUESTS AND THEIR NAME, AGE AND GENDER ON SAMPLE SHEET

(1/ 172)

$E

DK/RF 99

01/04/11 15:11

22: **TRANS**

How many persons such as delivery people, plumbers, telephone technicians, neighbors, friends, or other non-overnight visitors ENTERED your home on your travel day that you are aware of? NOTE THAT THE OPERATIVE WORD HERE IS "ENTERED". IF THEY JUST STOOD AT THE DOOR, THEY DON'T COUNT.

(1/ 174)

$E

DK/RF 99

01/04/11 13:28

23: **INT02**

Great, now I'd like to collect the trip information your household recorded for<ASSN > We'll begin with your information. Do you have your diaries handy? COLLECT ALL TRIPS FOR EACH PERSON IN THE HOUSEHOLD. COLLECT HH MEMBERS FIRST, VISITORS LAST!!!

(1/ 176)

YES, HAS DIARIES OR WILL GET THEM..... OK D
NO, DOESN'T HAVE DIARIES. YOU WILL NEED TO RECONSTRUCT THE TRAVEL DAYS WITH THE RESPONDENT.... RE
REFUSED, DOESN'T WANT TO PARTICIPATE.R1 => /END

24: **TSAMP**

=> * if SAMPN

SAMPLE NUMBER FOR PLACE

(1/ 178)

9999999

25: **TROW**

=> * if $R

COMPUTED WHAT ROW IS THIS?

(1/ 185)

$E

26: **HHVIS**

ARE YOU COLLECTING HH MEMBER OR VISITOR TRIPS??

(1/ 188)

HH MEMBER 1
VISITOR.....2

27: **PREVP**

=> * if IF(($R>1),RXY($R-1,PERNO)+RXY($R,TSAMP-TSAMP),00)

COMPUTED PREVIOUS PERSON

(1/ 189)

$E 0 9
00.....00
01.....01
02.....02
03.....03
04.....04
05.....05
06.....06
07.....07
08.....08
09.....09

28: **PREVV**

=> * if IF(($R>1),RXY($R-1,VISNO)+RXY($R,TSAMP-TSAMP),00)

COMPUTED PREVIOUS VISITOR

(1/ 191)

$E 0 9
00.....00
01.....01
02.....02
03.....03
04.....04
05.....05
06.....06
07.....07
08.....08
09.....09

29: **PREVT**

=> * if IF(($R==1),0,RXY($R-1,PLANO)+RXY($R,TSAMP-TSAMP))

COMPUTED PREVIOUS PLACE

(1/ 193)

$R.2

```
  Row<trow>
                        Household Size:<hhsiz>

                          Previous³Current
                          ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
                  HH Member:<prevp>³@perno
                    Visitor:<prevv>³@visno
                       Trip:<prevt>³@plano
                                   ³
```

01/04/13 13:02

30: **PERNO**

=> +1 if HHVIS=2

PREVIOUS PERSON<PREVP>

ENTER THE NUMBER OF THE PERSON WHOSE TRIP INFO YOU ARE GETTING NOW THIS NUMBER IS ON THE SAMPLE SHEET THE HOUSEHOLD SIZE IS<HHSIZ>PERSONS

(1/ 198)

$E 1 10
01 01
02 02
03 03
04 04
05 05
06 06
07 07
08 08
09 09
10 10

31: **VISNO**

=> +1 if HHVIS=1

PREVIOUS PERSON<PREVP>

VISITOR NUMBER

(1/ 200)

$E 1 10
01 01
02 02
03 03
04 04
05 05
06 06
07 07
08 08
09 09
10 10

32: **PLANO**

PERSON<PERNO> PREVIOUS PLACE<PREVT>

ENTER THE PLACE NUMBER "WHERE YOU WERE AT 3AM" IS ALWAYS PLACE 1

(1/ 202)

$R.2 1 50

33: **INTRA**

=> +1 if PREVP==PERNO

PERSON<PERNO> PLACE<PLANO>

WAS THIS PERSON INTERVIEWED?

(1/ 207)

YES..... 1
NO 2

99/12/13 14:48

34: **INTRV**

=> * if IF((PREVP<>PERNO),INTRA, RXY($R-1,INTRV)+RXY($R,TSAMP-TSAMP))

YES/NO

(1/ 208)

YES..... 1
NO 2

35: **THEY**

=> * if V01(INTRV=1)*1+V01(INTRV=2)*2

COMPUTED QUESTION YOU, THEY

(1/ 209)

you 1
they 2

36: **THEM**

=> * if V01(INTRV=1)*1+V01(INTRV=2)*2

COMPUTED QUESTION YOU, THEM

(1/ 210)

you....1
them....2

37: **THEIR**

=> * if V01(INTRV=1)*1+V01(INTRV=2)*2

COMPUTED YOUR, THEIR

(1/ 211)

your....1
their....2

38: **PROXY**

=> +1 if PLANO>1.00 OR INTRV=1

PERSON<PERNO> PLACE<PLANO>

WHICH PERSON SERVED AS PROXY? ENTER PERSON NUMBER AGAIN, PERSON NUMBER CAN BE FOUND ON PRINTOUT

(1/ 212)

$E 1 10
PERSON 1....01
PERSON 2....02
PERSON 3....03
PERSON 4....04
PERSON 5....05
PERSON 6....06
PERSON 7....07
PERSON 8....08
PERSON 9....09
PERSON 10....10

39: **DIARY**

=> +1 if PREVP==PERNO

PERSON<PERNO> PLACE<PLANO>

Did<THEY >use<THEIR >diary to record<THEIR >travel?

(1/ 214)

Yes....1 D
No....2
DK/RF....9

40: **TOTPL**

=> +1 if PREVP==PERNO

PERSON<PERNO> PLACE<PLANO>

How many total places did<THEY>visit over the course of the travel day?

(1/ 215)

$E
DK/RF....999

01/04/13 10:44

41: **PTYPE**

PERSON<PERNO> PLACE<PLANO>

IF PLACE 1: Okay - Where were/was<THEY>at 3 am on<THEIR>travel day? OTHERWISE: Where did<THEY >go next? ÿ AFTER THEY TELL YOU, SAY: Did<THEY >make any stops along the way for any reason, such as to drop someone off or change travel modes? IF THEY SAY "WORK", ASK IF PRIMARY, SECONDARY, OR VOLUNTEER JOB

(1/ 218)

HOME....1 => TIME1
PRIMARY WORKPLACE....2
SECONDAY WORKPLACE....3
VOLUNTEER JOB....4
SCHOOL (DAYCARE, K-12TH)....5 => TIME1
COLLEGE/VOCATIONAL SCHOOL....6 => TIME1
PREVIOUSLY ENTERED PLACE/SOMEONE ELSE'S HABITUAL ADDRESS (NOT THE PERSON WHOSE INFO YOU ARE GETTING NOW. IE MOM DROPS KIDS OFF AT SCHOOL. 7
NEW PLACE (ASK IF THAT IS IN OHIO. IF NOT,IT'S OUT OF THE STUDY AREA SO, SELECT #8) 8
OUT OF THE TRAVEL STUDY AREA. ANYWHERE OUTSIDE THE STATE OF OHIO. 9

00/12/11 17:23

42: **PLTYP**

PERSON<PERNO> PLACE<PLANO>

What kind of a place is this?

(1/ 219)

$E 1 9
Office building....01
Retail....02
Industrial site....03
Medical....04
Educational (12th grade or less)....05
Educational (College, trade)....06
Government....07
Residential....08
OTHER, SPECIFY....97 O
DK/RF....99

43: **LOCAT**

PERSON<PERNO> PLACE<PLANO>

Does the place have a name? IF THEY GAVE YOU AN EXACT NAME IN PREVIOUS QUESTION, ENTER IT HERE

(1/ 221)

RECORD RESPONSE....1 DO
DK/RF....9

01/04/11 14:06

44: **RORHA**

=> +1 if NOT PTYPE=7

PERSON<PERNO> PLACE<PLANO>

ARE YOU GOING TO ENTER A PREVIOUS ROW OR SOMEONE ELSE'S HABITUAL ADDRESS?

(1/ 222)

PREVIOUS ROW....1
SOMEONE ELSE'S HABITUAL ADDRESS....2

45: **ROWNO**

=> +1 if NOT RORHA=1

PERSON<PERNO> PLACE<PLANO>

<LOCAT > ENTER ROW NUMBER OF A PREVIOUSLY ENTERED PLACE (NUMBER ONLY)

(1/ 223)

$E 1 50

46: **LOCNO**

=> +1 if NOT RORHA=2

PERSON<PERNO> PLACE<PLANO>

<LOCAT > ENTER HABITUAL ADDRESS LOCATION NUMBER (NUMBER ONLY) THIS IS LOCATED ON THE PRINTOUT

(1/ 225)

$R

01/04/11 14:06

47: **TNUM**

=> * if IF((RORHA=1),ROWNO,IF((RORHA=2),LOCNO,$R))

COMPUTED FOR LOCATION NUMBER

(1/ 230)

01/04/13 10:45

48: **PLCTY**

=> +1 if PTYPE=2-4,7,9

Which county is this located in?

(1/ 235)

Adams 39001
Allen 39003
Ashland 39005
Ashtabula 39007
Athens 39009
Auglaize 39011
Belmont 39013
Brown 39015
Butler 39017
Carroll 39019
Champaign 39021
Clark 39023
Clermont 39025
Clinton 39027
Columbiana 39029
Coshocton 39031
Crawford 39033
Cuyahoga 39035
Darke 39037
Defiance 39039
Delaware 39041
Erie 39043
Fairfield 39045
Fayette 39047
Franklin 39049
Fulton 39051
Gallia 39053
Geauga 39055
Greene 39057
Guernsey 39059
Hamilton 39061
Hancock 39063
Hardin 39065
Harrison 39067
Henry 39069
Highland 39071
Hocking 39073
Holmes 39075
Huron 39077
Jackson 39079
Jefferson 39081
Knox 39083
Lake 39085
Lawrence 39087
Licking 39089
Logan 39091
Lorain 39093
Lucas 39095
Madison 39097
Mahoning 39099
Marion 39101
Medina 39103
Meigs 39105
Mercer 39107
Miami 39109
Monroe 39111
Montgomery 39113
Morgan 39115
Morrow 39117
Muskingum 39119
Noble 39121
Ottawa 39123
Paulding 39125
Perry 39127
Pickaway 39129
Pike 39131
Portage 39133
Preble 39135
Putnam 39137
Richland 39139
Ross 39141
Sandusky 39143
Scioto 39145
Seneca 39147
Shelby 39149
Stark 39151
Summit 39153
Trumbull 39155
Tuscarawas 39157
Union 39159
Van Wert 39161
Vinton 39163
Warren 39165
Washington 39167
Wayne 39169
Williams 39171
Wood 39173
Wyandot 39175
OUT OF STATE 77777
DK/RF 99999

01/04/13 10:45

49: **CITYX**

=> TIME1 if PTYPE=2-4

PERSON<PERNO> PLACE<PLANO>

Can you tell me which city that is in? IF THEY WENT OUT THE AREA, SELECT 997 AND ENTER THE CITY NAME PRESS F1 FOR CITY LIST

(1/ 240)

$T1

NOT FOUND, ENTER RESPONSE ..... 997 O
DK/RF 999

50: **CITY**

=> * if MST(CITYX,CITY)

CITY TEXT

(1/ 243)

00/12/11 17:18

51: **STATE**

PERSON<PERNO> PLACE<PLANO>

Is this in Ohio? IF THIS IS OUT OF THE COUNTRY, SELECT 97 AND ENTER PROVINCE/STATE AND COUNTRY.

(1/ 268)

OHIO	OH	D
ALABAMA	AL	
ALASKA	AK	
ARIZONA	AZ	
ARKANSAS	AR	
BRITISH COLUMBIA	BC	
CALIFORNIA	CA	
COLORADO	CO	
CONNECTICUT	CT	
DELAWARE	DE	
DISTRICT OF COLUMBIA	DC	
FLORIDA	FL	
GEORGIA	GA	
HAWAII	HI	
IDAHO	ID	
ILLINOIS	IL	
INDIANA	IN	
IOWA	IA	
KANSAS	KS	
KENTUCKY	KY	
LOUISIANA	LA	
MAINE	ME	
MARYLAND	MD	
MASSACHUSETTS	MA	
MICHIGAN	MI	
MINNESOTA	MN	
MISSISSIPPI	MS	
MISSOURI	MO	
MONTANA	MT	
NEBRASKA	NE	
NEW HAMPSHIRE	NH	
NEW JERSEY	NJ	
NEW MEXICO	NM	
NEVADA	NV	
NEW YORK	NY	
NORTH CAROLINA	NC	
NORTH DAKOTA	ND	
OKLAHOMA	OK	
OREGON	OR	
PENNSYLVANIA	PA	
RHODE ISLAND	RI	
SOUTH CAROLINA	SC	
SOUTH DAKOTA	SD	
TENNESSEE	TN	
TEXAS	TX	
UTAH	UT	
VERMONT	VT	
VIRGINIA	VA	
WASHINGTON	WA	D
WEST VIRGINIA	WV	
WISCONSIN	WI	
WYOMING	WY	
OTHER, SPECIFY	97	O

01/04/11 14:34

52: **ADDR**

=> TIME1 if	PTYPE=9 OR PTYPE=7

PERSON<PERNO> PLACE<PLANO>

What is the street address there? RECORD FULL STREET ADDRESS RECORD PO BOX AS DK/RF AS THEY ARE NOT GEO-CODABLE IF THEY DON'T KNOW, SELECT "9", AND YOU'LL GO TO CROSS STREETS

(1/ 270)

ENTER RESPONSE	1	DO
DK/RF	9	

01/04/11 14:07

53: **XSTRT**

=> +1 if	ADDR=1

PERSON<PERNO> PLACE<PLANO>

Can you tell me the names of two cross streets nearest that location? FORMAT: STREET 1 & STREET 2 IF THEY DON'T KNOW, SELECT "9", AND YOU'LL GO TO LANDMARKS

(1/ 271)

ENTER RESPONSE	1	DO
DK/RF	9	

01/04/12 14:13

54: **LAND**

=> +1 if	ADDR=1 OR XSTRT=1

PERSON<PERNO> PLACE<PLANO>

Can you tell me a landmark nearby? A LANDMARK IS WELL KNOWN LOCATION WHICH IS UNIQUE AND CAN BE FOULD ON A MAP. EXAMPLES OF A LANDMARK WOULD BE A UNIVERSITY, PARK, SCHOOL, LARGE BUILDING, FACTORY ETC.

(1/ 272)

ENTER RESPONSE	1	DO
DK/RF	9	

01/04/11 14:08

55: **PLZIP**

PERSON<PERNO> PLACE<PLANO>

What is the zip code at that location? IF OUT OF THE COUNTRY, SELECT DK/RF.

(1/ 273)

99999

DK/RF	99999

56: **TIME1**

=> * if	IF(($R==1),0000,RXY($R-1,DEPTM)+RXY($R,TSAMP)-TSAMP)

GET PREVIOUS TIME

(1/ 278)

57: **TIME2**

=> * if	(TRC(TIME1/60)*100)+TIME1-(TRC(TIME1/60)*60)

COMPUTED QUESTION TO MAKE RETRIEVED TIME LOOK LIKE A TIME

(1/ 282)

01/04/11 14:08

58: **ARRTM**

PERSON<PERNO> PLACE<PLANO> PREVIOUS TIME<TIME2>

IF PLACE 1, ENTER 0300 OTHERWISE: What time did<THEY>get there? ENTER IN MILITARY TIME, HHMM 0000-MIDNIGHT, 1200-NOON, 2359-11:59PM, 0030-12:30AM

(1/ 286)

$H

00/12/14 17:20

59: **TPUR1**

PERSON<PERNO> PLACE<PLANO>

And what was<THEIR >main activity there?

(1/ 290)

$E 1 9

No other activities	00	N
At home: eat meal	11	
At home: paid work	12	
At home: shopping by catalogue, Internet, television	13	
At home: social/recreational	14	
Sleeping	15	
At home: Other (SPECIFY)	16	O
Out of home: paid work	17	
Out of home: school	18	
Out of home: volunteer work	19	
Out of home: pick-up/drop-off person	20	
Out of home: social, recreation/church	21	
Out of home: catch a bus, train or airplane	22	
Out of home: transfer from one bus, train, or airplane to another bus, train, or airplane	23	
Out of home: shop	24	
Out of home: personal business	25	
Out of home: eat meal	26	
Out of home: go for a drive	27	
Out of home: Other (SPECIFY)	28	O
DK/RF	99	

00/12/14 17:21

60: **TPUR2**

PERSON<PERNO> PLACE<PLANO>

And what other activities did<THEY>do there?

Elimination => 18 (TPUR1)

(1/ 292 - 294 - 296)

$E 0 9

No other activities	00	
At home: eat meal	11	
At home: paid work	12	
At home: shopping by catalogue, Internet, television	13	
At home: social/recreational	14	
Sleeping	15	
At home: Other (SPECIFY)	16	O
Out of home: paid work	17	
Out of home: school	18	
Out of home: volunteer work	19	
Out of home: pick-up/drop-off person	20	
Out of home: social, recreation/church	21	
Out of home: catch a bus, train or airplane	22	
Out of home: transfer from one bus, train, or airplane to another bus, train, or airplane	23	
Out of home: shop	24	
Out of home: personal business	25	
Out of home: eat meal	26	
Out of home: go for a drive	27	
Out of home: Other (SPECIFY)	28	O
DK/RF	99	

00/12/14 17:23

61: **MODE**

=> CHECK if PLANO==1.00

PERSON<PERNO> PLACE<PLANO>

What was<THEIR>main means of travel to this place? NOTE: MODE 89 IN DIARY IS 97 HERE.

(1/ 298)

Auto/van/truck driver	11	
Auto/van/truck passenger	12	
Carpool driver	13	
Carpool passenger	14	
Vanpool driver	15	
Vanpool passenger	16	
Bus (Public transit)	17	
School Bus	18	
Taxi/paid limo	19	
Walk	20	
Bicycle	21	
Motorcyle, moped	22	
Other, SPECIFY	97	O
DK/RF	99	X

99/12/13 14:57

62: **OTHTR**

PERSON<PERNO> PLACE<PLANO>

How many others traveled with<THEM>? NOT INCLUDING THE PERSON YOU'RE ON

(1/ 300)

$E

DK/RF	99	

99/12/13 14:50

63: **HHMEM**

=> +1 if OTHTR==0

PERSON<PERNO> PLACE<PLANO>

Of those, how many were household members?

(1/ 302)

$E

DK/RF	99	

99/12/13 14:58

64: **PERTP**

=> +1 if OTHTR==0 OR HHMEM==0

PERSON<PERNO> PLACE<PLANO>

Who was/were the person(s)? PERSON #s OF HOUSEHOLD MEMBERS TRAVELING ALONG THESE NUMBERS ARE ON THE SAMPLE SHEET

(1/ 304 - 306 - 308 - 310 - 312)

$E 1 10

01	01	
02	02	
03	03	
04	04	
05	05	
06	06	
07	07	
08	08	
09	09	
MORE THAN 5 PERSONS, SPECIFY THOSE NOT ENTERED ABOVE IN THIS FORMAT: ## ## ## ##	10	O
DK/RF	99	X

65: **NONHH**

=> * if IF((OTHTR<>99 AND HHMEM<>99),OTHTR-HHMEM,98)

COMPUTED NON-HHMEMBERS

(1/ 314)

$E

DK/CAN'T TELL	98	

66: **DISPL**

=> /AGAIN else => +1 if HHMEM>0

COMPUTED QUESTION

00/12/14 17:28

67: **BFARE**

=> TFARE if NOT MODE=17

PERSON<PERNO> PLACE<PLANO>

How much did<THEY>pay for the trip? ? FORMAT: 999.99

(1/ 316)

$R.2

FREE RIDE .....000000 => +2

DK/RF.....999999 => +2

68: **FTYPE**

PERSON<PERNO> PLACE<PLANO>

How did<THEY>pay for the trip?

(1/ 322)

Cash.....1

Pass 2

Transfer.....3

DK/RF.....9

00/12/14 17:32

69: **TFARE**

=> +1 if NOT MODE=19

PERSON<PERNO> PLACE<PLANO>

How much did<THEY>pay for the trip? ? FORMAT: 999.99

(1/ 323)

$R.2

FREE RIDE 000000

DK/RF.....999999

01/04/13 10:58

70: **PRKCO**

=> CHECK if NOT(MODE=11 OR MODE=13 OR MODE=15)

PERSON<PERNO> PLACE<PLANO>

How much did it cost to park where<THEY >went?

(1/ 329)

$R.2

FREE.....000000 => PDIST

DK/RF.....999999

00/12/11 17:38

71: **PRKUN**

PERSON<PERNO> PLACE<PLANO>

And was that... READ LIST

(1/ 335)

Hourly 1

Daily.....2

Weekly 3

Monthly.....4

Quarterly 5

Annually.....6

Other 7

DK/RF.....9

00/12/11 17:41

72: **PDIST**

PERSON<PERNO> PLACE<PLANO>

How far away did<THEY >have to park from<THEIR >final destination? IN BLOCKS RANGE: 0 TO 20

(1/ 336)

$E 0 20

NONE 00

DK/RF.....99

01/04/13 11:03

73: **PLOC**

=> +1 if PDIST<4 OR PDIST=99

PERSON<PERNO> PLACE<PLANO>

Can you tell me the location of where<THEY >parked? Just give me the cross streets of the nearest intersection. FORMAT: STREET1, STREET2

(1/ 338)

RECORD CROSS STREETS ..... 1 DO

DK 8

RF 9

74: **CHECK**

PERSON<PERNO> PLACE<PLANO>

Did<THEY>go anywhere else that day? IF THEY WENT OUT OF THE STUDY AREA, ASK IF THEY CAME BACK INTO THE STUDY AREA THAT DAY. IF THEY SAY "YES", SELECT "Yes". OTHERWISE, SELECT "No" <NOGO >: IF THE WORD "FALSE" APPEARS TO THE LEFT, CHANGE TO THE "Yes" CHOICE

(1/ 339)

Yes..... 1

No 2

75: **DEPTM**

PERSON<PERNO> PLACE<PLANO> PREVIOUS TIME <ARRTM>

IF LAST PLACE OF THE DAY, ENTER 0259 OTHERWISE: What time did<THEY>leave for the next place? ENTER IN MILITARY TIME, HHMM 0000-MIDNIGHT, 1200-NOON, 2359-11:59PM, 0030-12:30AM

(1/ 340)

$H

76: **NOGO**

=> ADDEL if (CHECK=1 AND PLANO==1) OR PLANO>1

PERSON<PERNO> PLACE<PLANO>

So,<THEY>made no trips, including for work or school?

(1/ 344)

TRUE: Why not?..... 1 O

FALSE..... 2 => CHECK

77: **ADDEL**

PERSON<PERNO> PLACE<PLANO>

INDICATE WHETHER THIS IS AN ADDITION/DELETION OR OKAY

(1/ 345)

THIS PLACE IS OKAY ..... 1 D

THIS IS AN ADDITION 2

DELETE THIS PLACE 3

78: **NEXT**

SELECT CHOICE AND IF YOU'RE SURE, PRESS ENTER TWICE

YOU ARE ON<PERNO > IN A<HHSIZ>PERSON HOUSEHOLD YOU JUST DID PLACE<PLANO> MORE PLACES?<CHECK>

(1/ 346 - 347)

Next Place, Day, Person..... 1 D

Done With This Household..... 2 => FUTUR

79: **REND1**

=> * if 1

LOOP TO NEXT ROW AUTOMATICALLY

(1/ 348)

01/04/10 12:39

80: **FUTUR**

We are sometimes interested in making return calls to survey respondents. Would you object to receiving calls sometime during this next year to provide your opinions on important issues related to transportation in Ohio?

(1/9583)

NO OBJECTIONS-ENTER IN PANEL..... 1

WANTS NO FURTHER CALLS 2

DK/RF 9

00/02/11 13:14

81: **THANK**

PRESS ENTER TO CONTINUE

Okay, great. Those are all the questions I have for you today. We appreciate you for taking the time to help us with this important study. Please mail back your diaries in the enclosed postage paid envelope. Thank you and good day/evening.

(1/9584)

END OF SURVEY ..... 1 D

01/04/16 8:35

82: **INT**

Enter Final Disposition.

(1/9585)

Continue	OK	N	=> /END
Respondent Not Available	NR	N	=> /END
Respondent Has Moved	NQ	N	=> /END
No Answer	NA	N	=> /END
Busy	BZ	N	=> /END
Answering Machine	AM	N	=> /END
Disconnect	DC	N	=> /END
Computer/Fax Machine	FX	N	=> /END
Business/Government	BG	N	=> /END
Refused	RF		=> /END
Callback	CB		=> /CB
Complete	CM	C	
First Refusal	R1		=> /END
Partial Complete, Callback	PC		=> /CB
Wrong Number, Need to Research	WN	N	=> /END
Respondent Absolutely Refuses to Give Habitual Address Information	NH	N	=> /END
Respondent Needs to Resechedule, No Resend, CALLBACK	RT		=> /CB
Respondent Needs to Resechedule, Need to Resend, CALLBACK	RM		=> /CB
Respondent is Mailing Diaries	ML		=> /END
Over Quota	OQ		=> /END

83: **POPUP**

YOUR COMPUTER IS PROCESSING THE TRIP INFO NOW. WHEN IT IS DONE, IT WILL DISPLAY THE TABLE OF TRIPS FOR THE HOUSEHOLD. IF THERE IS A PROBLEM, YOU CAN CALL THE RESPONDENT BACK. USE REVIEW MODE ONLY!!! DO NOT USE CALLBACK/INBOUND MODE TO GET BACK INTO THE SURVEY!!! MAKE A NOTE OF THE QUEST # (BOTTOM OF SCREEN), TO USE IN REVIEW MODE.

(1/9587)

PRESS ENTER TO CONTINUE ..... 1 D => /TRA01

84: **NOTES**

Feedback to Supervisor

ENTER ANY NOTES/FEEDBACK THAT YOU HAVE FOR THE FIELD SUPERVISOR. YOU WILL NOT BE ABLE TO ACCESS THIS AFTER YOU ENTER IT. THE QUESTION CLEARS ITSELF EACH TIME YOU CALL IT UP WITH THE F5 KEY. EACH NOTE IS APPENDED TO THE REST IN THE FILE.

(1/9588)

NOTES/FEEDBACK TO FIELD SUPERVISOR ... 1 DO

85: **F8**

Notes for Interviewers

Enter any notes that you might need for future reference. Press enter to begin your notes. FOR EXAMPLE, PARTIAL COMPLETE NOTES, CALLBACK NOTES, ETC

(1/9589)

Enter notes ..... 1 DO

86: **AGAIN**

=> * if TROW

THIS PROCEDURE REMINDS THE INTERVIEWER TO MAKE A NOTE OF THE ROSTER NUMBER BECAUSE THERY WILL BE SEEING THIS PLACE AGAIN

(1/9590)

```
                              ÚÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ¿
                              ³  IMPORTANT NOTE!  ³
                              ÀÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÙ

                        More than one household member went to this place.
                        Make a note for future reference to this place:

 Row#   Loc#       Place Name                                    Who Went
                   Address
ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
<again><TNUM >    <LOCAT:O                                      ><PERTP:1><PERTP:2>
                   <ADDR:O                                      ><PERTP:3><PERTP:4>
                   <CITY                                        ><PERTP:5>

                    Enter OK when you have it writen down: @tell
```

87: **TELL**

screen for interviewer

(1/9592)

WROTE INFO DOWN ..... OK D

88: **TRA01**

=> * if CSM(IF((PERNO=01),1,0))

COMPUTED

(1/9594)

$E

89: **CHKH1**

=> TRDON else => +1 if HHSIZ==1

COMPUTED

(1/9596)

90: **TRA02**

=> * if CSM(IF((PERNO=02),1,0))

COMPUTED

(1/9597)

$E

91: **CHKH2**

=> TRDON else => +1 if HHSIZ==2

COMPUTED

(1/9599)

92: **TRA03**

=> * if CSM(IF((PERNO=03),1,0))

COMPUTED

(1/9600)

$E

93: **CHKH3**

=> TRDON else => +1 if HHSIZ==3

COMPUTED

(1/9602)

94: **TRA04**

=> * if CSM(IF((PERNO=04),1,0))

COMPUTED

(1/9603)

$E

95: **CHKH4**

=> TRDON else => +1 if HHSIZ==4

COMPUTED

(1/9605)

96: **TRA05**

=> * if CSM(IF((PERNO=05),1,0))

COMPUTED

(1/9606)

$E

97: **CHKH5**

=> TRDON else => +1 if HHSIZ==5

COMUTED

(1/9608)

98: **TRA06**

=> * if CSM(IF((PERNO=06),1,0))

COMPUTED

(1/9609)

$E

99: **CHKH6**

=> TRDON else => +1 if HHSIZ==6

COMPUTED

(1/9611)

100: **TRA07**

=> * if CSM(IF((PERNO=07),1,0))

COMPUTED

(1/9612)

$E

101: **CHKH7**

=> TRDON else => +1 if HHSIZ==7

COMPUTED

(1/9614)

102: **TRA08**

=> * if CSM(IF((PERNO=08),1,0))

COMPUTED

(1/9615)

$E

103: **CHKH8**

=> TRDON else => +1 if HHSIZ==8

COMPUTED

(1/9617)

104: **TRA09**

=> * if CSM(IF((PERNO=09),1,0))

COMPUTED

(1/9618)

$E

105: **CHK10**

=> TRDON else => +1 if HHSIZ==9

COMPUTED

(1/9620)

106: **TRA10**

=> * if CSM(IF((PERNO=10),1,0))

COMPUTED

(1/9621)

$E

```
Trip Summary for this Household of<hhsiz>Persons

              Person   ³Total
              ÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄÄ
              Person 1 ³<tra01>
              Person 2 ³<tra02>
              Person 3 ³<tra03>
              Person 4 ³<tra04>
              Person 5 ³<tra05>
              Person 6 ³<tra06>
              Person 7 ³<tra07>
              Person 8 ³<tra08>
              Person 9 ³<tra09>
              Person 10³<tra10>

          PRESS ENTER WHEN READY @TRDON
```

107: **TRDON**

PRESS ENTER WHEN READY

(1/9623)

CONTINUE..... OK D => /END

99/12/28 10:44

108: **CB**

What day and time would be best to call you back?

(1/9625)

$CHS

109: **NAME**

Who should I ask for when I call back? ASK FOR FULL NAME

(1/9637)

$P

00/02/11 13:37

110: **REASN**

=> END if NOT (INT01=RT OR INT01=RM)

PRESS ENTER TO CONTINUE

ENTER THE REASON YOU HAD TO RESCHEDULE THIS RESPONDENT

(1/9667)

ENTER REASON ..... 1 D

APPENDIX D. MATRIX OF DATA ITEMS

Code List

Var Name	Value/Label
RESTY	1= Unattached Single Family Home
	2= Duplex
	3= Apartment
	4= Condominium or townhouse
	5= Mobile home or trailer
	6= Group quarters (dorms, barracks, etc)
	7= Other (specify)
	9 = DK/RF
INCOME	1=Above $40,000 (No additional information provided)
	2=Below $40,000 (No additional information provided)
	11= Less than $20,000
	12= $20,000 to $39,999
	13= $40,000 to $59,999
	14=$60,000 and above
	99= DK/RF
LENGTH	1=Less than 1 week
	2=1-2 weeks
	3=2 weeks to less than 1 month
	4=1 month to less than 3 months
	5=3 months to less than 6 months
	6=6 months to less than 1 year
	7=More than 1 year
	8=DK
	9=REFUSED
RELATION	1= SELF
	2= Husband/wife/unmarried partner
	3= Son/Daughter
	4= Mother/Father/Mother In-law/Father In-law
	5= Other relative
	6= Non-relative
	7= Household help
	9= DK/RF
PRIMACT	1= Work Full-time
	2= Work Part-time
	3= Homemaker
	4= Retired
	5= Disabled
	6= Unemployed, but looking
	7= Unemployed, but not looking
	97=Other, specify
	98=DK
	99=RF
OCCUP	11= Agriculture, forestry, and fishing

Var Name	Value/Label
	12= Mining
	13= Construction
	14=Manufacturing
	15=Transportation, communications, electric, gas and sanitary services
	16= Wholesale trade
	17= Retail trade
	18= Finance, insurance, and real estate
	19= Services
	20= Public administration
	21=Education
	22=Medical
	23=Professional/Scientific
	97= Other
	99=DK/RF
INDUSTRY	11=Agriculture/Forestry/Fishing
	21=Mining
	22=Utilities
	23=Construction
	31=Manufacturing - Nondurable goods
	32=Manufacturing - Durable goods
	42=Wholesale trade
	44=Retail trade
	48=Transportation and Warehousing
	51=Information
	52=Finance or Insurance
	53=Real Estate
	54=Professional, Scientific, and Technical services
	55=Management of companies and enterprises
	56=Administrative and support services
	61=Educational Services
	62=Healthcare and social assistance
	71=Arts, entertainment, and recreation
	72=Accommodations and food services
	81=Other Services (excluding public administration)
	92=Public Administration
	97=Other, specify
	98=Don't Know
	99=Refused
SCHOOL	1=Daycare/Pre-School
	2=K-12
	3=Post-Secondary (College, university)
	4= Vocational/Technical
	7=Other

Var Name	Value/Label
	9=DK/RF
PTYPE	1=Home
	2=Primary Workplace
	3=Secondary Workplace
	4=Volunteer Job
	5=School (Daycare, K-12)
	6=School (College, Vocational)
	7=Someone else's habitual address/previously entered place
	8=New place
	9=Out of study area
ACTIVITY	9=At home: household activities
	10=At home: personal hygiene
	11= At home: eat meal
	12= At home: paid work
	13= At home: shopping by catalogue, Internet, television
	14= At home: social/recreational
	15= Sleeping
	16=At home: Other (specify)
	17= Out of home: paid work
	18= Out of home: school
	19= Out of home: volunteer work
	20= Out of home: pick-up/drop-off person
	21= Out of home: social, recreation/church
	22= Out of home: catch a bus, train or airplane
	23= Out of home: transfer from one bus, train, or airplane to another
	24= Out of home: shop
	25= Out of home: personal business
	26= Out of home: eat meal
	27= Out of home: go for a drive
	28= Out of home: Other (specify)
	29= Out of home: work-related
	30= Out of home: school-related
	99= DK/RF

Var Name	Value/Label
MODE	11= Auto/van/truck driver
	12= Auto/van/truck passenger
	13= Carpool driver
	14= Carpool passenger
	15= Vanpool driver
	16= Vanpool passenger
	17= Bus (public transit)
	18= School Bus
	19= Taxi/paid limo
	20= Walk
	21= Bicycle
	22= Motorcycle, moped
	97= Other (specify)
	99= DK/RF
PL_TYPE	1= Office building
	2= Retail
	3= Industrial site
	4= Medical
	5= Educational (12th grade or less)
	6= Educational (College, trade)
	7= Government
	8= Residential
	9=Public place
	97= Other (specify)
	99=DK/RF
QCFLAG	1=Given city, given zip code match geocity and geozip
	2=Given zip code matches geozip
	3=Given city matches geocity for non-metropolitan areas
	4=Manually point verified
SPEEDFLG	0=No Speed Violation
	1=Respondent Error - same area/different trip (miles=0)
	2=Add 5 minutes and will pass speed check
	3=Add 10 minutes and will pass speed check (geocoding verified)
	4=Add 15 minutes and will pass speed check (geocoding verified)
	5=Unresolved Speed Violation

Item	Var Name	Variable Description	Data Type	Field Width	IZU name	IZU Program or Stage	Values	Skips	Actual Question Text (Interviewers' Version)
H-1	RECTYPE	Record Type	N	1			1 = "Household Record"		
H-2	HH_ID	HH ID Number	N	7	SAMPN	OHAC			
H-3	CALLS	Number of calls to recruit	N	2	S_APP	PPROC	Number of calls to recruit household		Summary Variable (Post-processed)
H-4	PERSUADE	Persuasion level	N	1	PERSU	OHRC	1=None; 2=Additional effort during screening; 3=Advanced effort during screening; 4=Additional effort during retrieval; 5=Advanced effort during retrieval		Summary Variable (Post-processed)
H-5	HHADDR	Household Location Reference Number	N	10		OHRC			Reference code to Location File
H-6	ASSN	Date of assigned travel date	N	3	ASSN	OHRC			
H-7	TRVLDYWK	Day-of-week	N	3		PPROC	1=Monday; 2=Tuesday; 3=Wednesday; 4=Thursday		
H-8	ADVLT	Advance Letter	N	1	ADVLT	OHRC	1=Yes; 2=No; 3=Not Mailed; 8=Don't know; 9=Refused		Did you receive the letter that describes the survey?
H-9	TRIPS	Number of Trips	N	3		PPROC			Summary Variable (Post-processed)
H-10	STAYHOME	Number of HH members home	N	2		PPROC	Ordinal Variable		Number of household members who did not travel on travel date (post-processed)
H-11	GUEST	Guests in household on travel day	N	1	GUEST	OHRC / OHRT	1=Yes, 2=No, 8=DK, 9=RF		Will there be any overnight, out-of-state guests staying at your home on that date?
H-12	VISITORS	Number of overnight visitors	N	2	VINUM	OHRC	Number of overnight visitors		How many overnight visitors, who live outside of Ohio, do you expect on your assigned travel date?
H-13	TRNSIENT	Number of transient visitors	N	2	TRANS	OHRT	Number of transient visitors who entered the home		How many persons such as delivery people, plumbers, telephone technicians, neighbors, or other non-overnight visitors ENTERED your home on your travel day that you are aware of?
H-14	WORKERS	Number of Workers	N	2	NOWRK	OHRC			Summary Variable (Post-processed)
H-15	STUDENTS	Number of Students	N	2	NOSTU	OHRC			Summary Variable (Post-processed)
H-16	DRIVERS	Number of Drivers	N	2	NOLIC	OHRC			Summary Variable (Post-processed)
H-17	HHSIZE	No. of persons in household	N	2	HHSIZ	OHRC	Ordinal Variable		How many people, including yourself, live in your household? [includes all persons who sleep there at least 3 nights per week]
H-18	RESTY	Type of dwelling unit	N	1	RESTY	OHRC	Code set RESTYPE		Do you live in a . . .
H-19	O_RESTY	Other type of dwelling	C	60	O_RESTY	OHRC			
H-20	OWN	Owner/renter status	N	1	OWN	OHRC	1=Own; 2=Rent; 7=Other (specify); 9=DK/RF	Asked if RESTY = 1, 2, 4, 5 or 7	Do you own or rent your home?
H-21	O_OWN	Other owner/renter status	C	60	O_OWN	OHRC			
H-22	TOTVEH	Number of HH vehicles	N	2	HHVEH	OHRC	Ordinal Variable		How many autos, vans & trucks of 1 ton capacity or less are kept at home for use by your household?
H-23	BORVEH	Number of borrowed HH vehicles	N	2	HHBOR	OHRC	Ordinal Variable		Of these vehicles, how many are being borrowed from someone not living at this household?
H-24	TRVEH	Number of vehicles used on travel day	N	2	USECR	OHRT	Ordinal Variable		How many autos, vans & trucks of 1 ton capacity or less were used by members of your household on your travel day?
H-25	TRBRVEH	Number of borrowed HH vehicles	N	2	NONHV	OHRT	Ordinal Variable		Of the vehicles used by members of your household on your travel day, how many of these were borrowed from someone not living at this household?

Item	Var Name	Variable Description	Data Type	Field Width	IZU name	IZU Program or Stage	Values	Skips	Actual Question Text (Interviewers' Version)
H-26	INCOME	Total 1999 annual household income	N	2	INCOM	OHRC	Code set INCOME		What was the total household income in 1999 from all sources before taxes, for all members of your household? I will read you a series of income ranges. Please stop me when I read the range that is closest to your household's.
H-27	NO_PHLNS	Number of telephone lines	N	2	PHLNS	OHRC	Ordinal Variable		How many telephone lines are in your household that are NOT dedicated to a fax machine or modem?
H-28	NO_PHONE	Lack of phone service	N	2	NOPHN	OHRC	1=Yes; 2=No; 8=DK; 9=RF		Have there been times within the past 12 months when the home you were living in did not have telephone service for reasons other than brief service or equipment problems?
H-29	TIMES	Number of occurrences	N	2	TIMES	OHRC	Number of occurrences in past 12 months without phone service	Asked if NO_PHONE = 1	How many times were you without phone service in the past 12 months?
H-30	LENGTH	Lack of phone service length	N	1	LENGT	OHRC	Code set LENGTH	Asked if NO_PHONE = 1	During the most recent occurrence, how long were you without phone service? Was it . . .
H-31	SHARE	Phone line sharing	N	1	SHARE	OHRC	Ordinal Variable		How many other households share a phone line with your household?
P-1	RECTYPE	Record Type	N	1			2 = "Person Record"		
P-2	HH_ID	HH ID Number	N	7	SAMPN	OHRC			
P-3	PER_ID	Person ID Number	N	2	PERNO	OHRC			
P-4	RESP	Respondent flag	N	1	RESP	OHRC	1=Yes; 2=No		Is this person the respondent?
P-5	RELATION	Relation to head	N	2	RELAT	OHRC	Code set RELATION		What is X's relationship to you?
P-6	GENDER	Person X - Gender	N	1	GEND	OHRC	1=Male, 2=Female, 9=DK/RF		What is X's gender? (Don't ask for respondent)
P-7	AGE	Person X - Age	N	3	AGE	OHRC	Ordinal Variable; 98=98+ years; 99=DK/RF		What is X's age in years?
P-8	LIC	Person X - Valid drivers license	N	1	LIC	OHRC	1=Yes; 2= No; 8=Don't know; 9=Refused	Asked if AGE => 15	Does X have a valid driver's license?
P-9	PRIMACT	Primary Econcomic Activity	N	1	PRIMA	OHRC	Code set PRIMACT	Asked if AGE => 16	Which of the following best describes your current work situation? Do you . . .
P-10	O_PRIMACT	Other Primary Activity	C	60	O_PRIMA	OHRC			
P-11	W1_ADDR	Work1 Reference Number	N	7		OHRC			Reference code to Location File
P-12	OCCUP	Occupation (Major Categories)	N	2	OCCUP	OHRC	Code set OCCUP	Asked if PRIMACT = 1 or 2	What is your primary occupation?
P-13	O_OCCUP	Other	C	60	O_OCCUP	OHRC			
P-14	INDUSTRY	Employment industry	N	2	INDUS	OHRC	Code set INDUSTRY	Asked if PRIMACT = 1 or 2	In what type of business or industry do you work?
P-15	O_INDUS	Other employment industry	C	60	O_INDUS	OHRC			
P-16	WORKHOME	Work at home	N	1	WHOME	OHRC	1=Yes; 2=No; 9=DK/RF	Asked if PRIMACT = 1 or 2	Do you work at home on a regular basis?
P-17	HRSHOME	Hours worked at home	N	2	HORSH	OHRC	999=DK/RF	Asked if WORKHOME = 1	How many hours per week on average do you work at home?
P-18	JOBS	Person X-more than one job	N	1	JOBS	OHRC	1=Yes; 2=No; 9=Refused	Asked if PRIMACT = 1 or 2	Is X employed in more than one paying job?
P-19	MOREJOBS	Number of Other Jobs	N	2	MOREJ	OHRC	Ordinal Variable; 9=DK/RF	Asked if JOBS = 1	How many OTHER jobs does X have?
P-20	W2_ADDR	Work2 Reference Number	N	10		OHRC			Reference code to Location File
P-21	OCCUP2	Occupation2 (Major Categories)	N	2	OCCU2	OHRC	Code set OCCUP	Asked if JOBS = 1	What is your occupation at X's second job?
P-22	O_OCCUP2	Other	C	60	O_OCCU2	OHRC			
P-23	INDUST2	Employment2 industry	N	2	INDU2	OHRC	Code set INDUSTRY	Asked if JOBS = 1	In what type of business or industry does X work for the second job?
P-24	O_INDUS2	Other employment2 industry	C	60	O_INDU2	OHRC			
P-25	STUDENT	Student status	N	1	STUDE	OHRC	1=Yes; 2= No; 9=DK/RF		Does X attend school or take classes?
P-26	STUDATTN	Attendance	N	1	ATTEN	OHRC	1=Full-time; 2=Part-time; 9=DK/RF	Asked if STUDENT = 1	Is X attending school full-time or part-time?

Item	Var Name	Variable Description	Data Type	Field Width	IZU name	IZU Program or Stage	Values	Skips	Actual Question Text (Interviewers' Version)
P-27	SCHOOL	Type of school enrolled in	N	1	SCHOL	OHRC	Code set SCHOOL	Asked if STUDENT = 1	In what type or level of school is X enrolled?
P-28	O_SCHOOL	Other type of school	C	60	O_SCHOL	OHRC			
P-29	S_ADDR	School Reference Number	N	10		OHRC			Reference code to Location File
P-30	VOLNTEER	Volunteer Work	N	1	VLSCH	OHRC	1=Yes, fulltime; 2=Yes, parttime; 3=No; 8=DK; 9=RF		Does X perform volunteer work outside the home?
P-31	V_ADDR	Volunteer location Reference Number	N	7		OHRC	99998=varies, 99999=DK/RF		Reference code to Location File
P-32	TRIPS	Number of trips made on travel date	N	3		PPROC	Ordinal Variable		
P-33	NOTRIPS	Explanation for zero-trips	C	60	O_NOGO	OHRT			What is the reason why you did not make any trips on (travel date)?
P-34	FNAME	First Name	C	30	FNAME	OHRC			
P-35	LNAME	Last Name	C	30	LNAME	OHRC			
P-36	INTRVWD	Whether or not person was interviewed	N	1	INTRA	OHRT	1=Yes; 2=No		
P-37	PROXY	Whether or not person served as proxy	N	1	PROXY	OHRT	HH member who served as proxy		Which person served as proxy?
P-38	DIARY	Whether or not person used diary to record trips	N	1	DIARY	OHRT	1=Yes; 2= No; 9=Don't know		Did X use the travel diary to record trips made on travel date?
G-1	RECTYPE	Record Type	N	1			3 = "Guest Record"		
G-2	HH_ID	HH ID Number	N	7	SAMPN	OHRC			
G-3	GUEST_ID	Person ID Number	N	2	GUENO	OHRC			
G-4	GNAME	Overnight visitor	C	60	VFNAM	OHRC			What is the first name of the visitor?
G-5	TRIPS	Number of trips made on travel date	N	3		PPROC	Ordinal Variable		
G-6	NOTRIPS	Explanation for zero-trips	C	60	O_NOGO	OHRT			What is the reason why you did not make any trips on (travel date)?
G-7	INTRVWD	Whether or not person was interviewed	N	1	INTRA	OHRT	1=Yes; 2=No		
G-8	PROXY	Whether or not person served as proxy	N	1	PROXY	OHRT	1=Yes; 2=No		
G-9	DIARY	Whether or not person used diary to record trips	N	1	DIARY	OHRT	1=Yes; 2= No; 9=Don't know		Did X use the travel diary to record trips made on travel date?
T-1	RECTYPE	Record Type	N	1			Trip Record Type = 4		
T-2	HH_ID	HH ID Number	N	7					
T-3	PER_ID	Person ID Number	N	2					
T-4	PL_NO	Place number	N	2					
T-5	LOCNO	Location Reference Number	N	10		OHRT			Reference code to Location File
T-6	PTYPE	Place	N	1	PTYPE	OHRT	Code Set PTYPE		
T-7	PL_TYPE	Place type	N	2	PLTYP	OHRT	PLTYPE		What kind of a place is this?
T-8	O_PLTYPE	Other place type	C	60	O_PLTYP	OHRT			
T-9	TRP_ACT1	Primary trip activity	N	2	TPUR1	OHRT	ACTIVITY		What was the primary activity you did on your first/next trip?
T-10	O_ACT1	Other	C	60	O_TPUR1	OHRT			
T-11	TRP_ACT2	Secondary trip activity 1	N	10	TPUR2.1	OHRT	ACTIVITY		What other activities did you do on this trip?
T-12	TRP_ACT3	Secondary trip activity 2	N	10	TPUR2.2	OHRT	ACTIVITY		What other activities did you do on this trip?
T-13	TRP_ACT4	Secondary trip activity 3	N	10	TPUR2.3	OHRT	ACTIVITY		What other activities did you do on this trip?
T-14	O_ACT2	Other	C	60	O_TPUR2	OHRT			
T-15	MODE	Mode of trip	N	2	MODE	OHRT	Code Set MODE		How did you get to the place?
T-16	O_MODE	Other mode of trip	C	60	O_MODE	OHRT			
T-17	BUSFARE	Bus fare	N	8.2	BFARE	OHRT	0=free; 999999=DK/RF	Asked if MODE = 17	How much did you pay for the bus ride?
T-18	FAREUNIT	Bus fare unit	N	1	FTYPE	OHRT	1=Cash; 2=Pass; 3=Transfer; 9=DK/RF	Asked if BUSFARE > 0 and < 999999	How much did you pay for the trip?
T-19	TAXIFARE	Cost of taxi	N	5.2	TFARE	OHRT		Asked if MODE = 19	How much did you pay for the taxi ride?
T-20	PARTY	Number of people on trip	N	2	OTHTR	OHRT			How many others traveled with you?

Item	Var Name	Variable Description	Data Type	Field Width	IZU name	IZU Program or Stage	Values	Skips	Actual Question Text (Interviewers' Version)
T-21	HH_MEM	Number of household members on trip	N	1	HHMEM	OHRT	Ordinal Variable	Asked if MODE = 11 to 16 or 20 to 22	Of these, how many were household members?
T-22	PER_TRP	HH Persons on trip	N	20	PERTP	OHRT	Person # on trip	Asked if HHMEM > 0	Who was the person?
T-23	NONHH	Number of non-household members on trip	N	1	NONHH	OHRT	Ordinal Variable	Asked if MODE = 11 to 16 or 20 to 22	How many non-household members were on this trip with you?
T-24	PARKDIST	Distance (in blocks) parked from final destination	N	1	PDIST	OHRT	00=none; 99=DK/RF	Asked if MODE = 11, 13, 15	How far away did you have to park from your destination? (in blocks)
T-25	PRKLOC	Parking location	N	10	PLOC	OHRT	1=Xstreet, 8=DK, 9=RF	Asked if PARKDIST>3 and <99	Can you tell me the location of where you parked? Just give me the cross streets of the nearest location.
T-26	O_PRKLOC	Parking location crossstreet	C	60	O_PLOC	OHRT			
T-27	PRK_COST	Parking cost	N	8.2	PRKCO	OHRT	0=free; 999999=DK/RF	Asked if MODE = 11, 13, 15	How much did it cost to park where you went?
T-28	PRK_UNIT	Parking cost unit	N	2	PRKUN	OHRT	1=Hourly; 2=Daily; 3=Weekly; 4=Monthly; 5=Quarterly; 6=Annually; 7=Other; 9=DK/RF	Asked if PRK_COST > 0 and < 999999	And was that . . .
T-29	ARR_HR	Arrival hour	N	2	ARRTM.1	OHRT	Military time		What time did you arrive at place X?
T-30	ARR_MIN	Arrival minute	N	2	ARRTM.2	OHRT	Military time		What time did you arrive at place X?
T-31	DEP_HR	Departure hour	N	2	DEPTM.1	OHRT	Military time		What time did you depart from place X?
T-32	DEP_MIN	Departure minute	N	2	DEPTM.2	OHRT	Military time		What time did you depart from place X?
T-33	TRPDUR	Trip Duration	N	5		PPROC			Post-processed
T-34	ACTDUR	Activity Duration	N	5		PPROC			Post-processed
T-35	SPDFLAG	Speed Check Flag	N	1		PPROC			Post-processed
GT-1	RECTYPE	Record Type	N	1			Guest Trip Record Type = 5		
GT-2	HH_ID	HH ID Number	N	7					
GT-3	GUEST_ID	Guest ID Number+C132	N	2					
GT-4	PL_NO	Place number	N	2					
GT-5	LOCNO	Location Reference Number	N	10		OHRT			Reference code to Location File
GT-6	PTYPE	Place	N	1	PTYPE	OHRT	Code Set PTYPE		
GT-7	PL_TYPE	Place type	N	2	PLTYP	OHRT	PLTYPE		What kind of a place is this?
GT-8	O_PLTYPE	Other place type	C	60	O_PLTYP	OHRT			
GT-9	TRP_ACT1	Primary trip activity	N	2	TPUR1	OHRT	ACTIVITY		What was the primary activity you did on your first/next trip?
GT-10	O_ACT1	Other	C	60	O_TPUR1	OHRT			
GT-11	TRP_ACT2	Secondary trip activity	N	10	TPUR2.1	OHRT	ACTIVITY		What other activities did you do on this trip?
GT-12	TRP_ACT3	Secondary trip activity 2	N	10	TPUR2.2	OHRT	ACTIVITY		What other activities did you do on this trip?
GT-13	TRP_ACT4	Secondary trip activity 3	N	10	TPUR2.3	OHRT	ACTIVITY		What other activities did you do on this trip?
GT-14	O_ACT2	Other	C	60	O_TPUR2	OHRT			
GT-15	MODE	Mode of trip	N	2	MODE	OHRT	Code Set MODE		How did you get to the place?
GT-16	O_MODE	Other mode of trip	C	60	O_MODE	OHRT			
GT-17	BUSFARE	Bus fare	N	8.2	BFARE	OHRT		Asked if MODE = 17	How much did you pay for the bus ride?
GT-18	FAREUNIT	Bus fare unit	N	1	FTYPE	OHRT	1=Cash; 2=Pass; 3=Transfer		How much did you pay for the trip?
GT-19	TAXIFARE	Cost of taxi	N	5.2	TFARE	OHRT		Asked if MODE = 19	How much did you pay for the taxi ride?
GT-20	PARTY	Number of people on trip	N	2	OTHTR	OHRT			How many others traveled with you?
GT-21	HH_MEM	Number of household members on trip	N	1	HHMEM	OHRT	Ordinal Variable	Asked if MODE = 11 to 16 or 20 to 22	Of these, how many were household members?
GT-22	PER_TRP	HH Persons on trip	N	20	PERTP	OHRT	Person # on trip	Asked if HHMEM > 0	Who was the person?
GT-23	NONHH	Number of non-household members on trip	N	1	NONHH	OHRT	Ordinal Variable	Asked if MODE = 11 to 16 or 20 to 22	How many non-household members were on this trip with you?
GT-24	PARKDIST	Distance (in blocks) parked from final destination	N	1	PDIST	OHRT		Asked if MODE = 11	How far away did you have to park from your destination? (in blocks)

Item	Var Name	Variable Description	Data Type	Field Width	IZU name	IZU Program or Stage	Values	Skips	Actual Question Text (Interviewers' Version)
GT-25	PRKLOC	Parking location	N	10	PLOC	OHRT	1=Xstreet, 8=DK, 9=RF	Asked if PARKDIST>3	Can you tell me the location of where you parked? Just give me the cross streets of the nearest location.
GT-26	O_PRKLOC	Parking location crossstreet	C	60	O_PLOC	OHRT			
GT-27	PRK_COST	Parking cost	N	8.2	PRKCO	OHRT			How much did it cost to park where you went?
GT-28	PRK_UNIT	Parking cost unit	N	2	PRKUN	OHRT	1=Hourly; 2=Daily; 3=Weekly; 4=Monthly; 5=Quarterly; 6=Annually; 8=Other; 9=DK/RF		And was that . . .
GT-29	ARR_HR	Arrival hour	N	2	ARRTM	OHRT	Military time		What time did you arrive at place X?
GT-30	ARR_MIN	Arrival minute	N	2	ARRTM	OHRT	Military time		What time did you arrive at place X?
GT-31	DEP_HR	Departure hour	N	2	DEPTM	OHRT	Military time		What time did you depart from place X?
GT-32	DEP_MIN	Departure minute	N	2	DEPTM	OHRT	Military time		What time did you depart from place X?
GT-33	TRPDUR	Trip Duration	N	5		PPROC			Post-processed
GT-34	ACTDUR	Activity Duration	N	5		PPROC			Post-processed
GT-35	SPDFLAG	Speed Check Flag	N	1		PPROC			Post-processed
L-1	RECTYPE	Record Type	N	1			Trip Record Type = 6 (Location Data)		
L-2	LOCNO	Location number	N	10			Ordinal Variable		
L-3	LOCTYPE	Place type	N	1			1=home, 2=school, 3=work1, 4=work2, 5=trip, 6=volunteer		
L-4	LOCATION	Name of place	C	60	LOCAT	OHRT			What is the name of the location to where you went?
L-5	ADDRESS	Place address	C	60	ADDR	OHRT			
L-6	XSTREET	Place xstreets	C	60	XSTRT	OHRT			
L-7	LANDMARK	Nearest Landmark	C	60	LAND	OHRT			
L-8	CITY	Place city	C	60	CITY	OHRT			
L-9	COUNTY	Place County	N	2	PLCTY	OHRT	County Code List		
L-10	STATE	State	C	2	STATE	OHRT			
L-11	ZIP	Zip code	N	5	PLZIP	OHRT			
L-12	XCORD	Longitude of place	N	18.5		GEO			
L-13	YCORD	Latitude of place	N	18.5		GEO			
L-14	AV_STATUS	Arcview Status	C	1		GEO	M=Matched, U=Unmatched, C=Cursor Match, O=Out of State		
L-15	AV_ADD	Arcview Address	C	60		GEO			
L-16	AV_ZONE	Arcview Zip Code	N	5		GEO			
L-17	AV_SCORE	Arcview Score	N	3		GEO			
L-18	AV_SIDE	Arcview Side	C	1		GEO			
L-19	GEOCITY	Geocoded City	C	60		GEO			
L-20	GEOZIP	Geocoded Zip Code	N	5		GEO			
L-21	FIPSCODE	Fipscode	N	10		GEO			
L-22	QCFLAG	GIS Quality Control	N	1		GEO	Code set QCFLAG		

Variable	Description
W1	HHSIZE by Vehicles
W2	HH Workers by Vehicles
W3	Age of Head of Household
W4	HH Income
W5	Non Telephone
W6	Phone Lines
FWEIGHT	Product of 6 Weights
NWEIGHT	Normalization Factor
FNWEIGHT	Product of F and N Weights
EXPANFAC	HH Expansion Factor
EXPWGT	Expanded Final Weight

APPENDIX E. PILOT STUDY REPORT

Ohio Department of Transportation

Ohio Statewide Travel Demand Forecasting Model Household Travel Survey

Pilot Study Report

(February 2001)

NuStats

3006 Bee Caves Rd., Suite A-300 • Austin, Texas 78746
(512) 306-9065 • fax (512) 306-9077 • www.nustats.com

Ohio Statewide
Travel Demand Forecasting Model
Household Travel Survey
Pilot Report

State of Ohio
Department of Transportation
Office of Technical Services

This report was published in cooperation with the United States Department of Transportation, Federal Highway Administration.

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1. Introduction

This report documents the design, implementation, and results of a household travel survey pilot test conducted as part of the Ohio Statewide Travel Demand Forecasting Model program for the Ohio Department of Transportation. The survey is being conducted by NuStats, under sub-contract to Parsons Brinckerhoff. The household travel survey data collected will be an essential element in the transportation planning and modeling efforts for the state of Ohio.

1.1 - Background

The Ohio Statewide Household Travel Survey is a comprehensive travel survey of 15,050 households located in all geographic areas, with the exception of the Columbus, Cincinnati, and Cleveland planning regions. The planning agencies in each of these regions recently completed a household travel survey. The objective of this survey is to collect the data necessary to update regional transportation models and plans. This includes information on work and non-work trip generation, trip distribution, and mode choice.

The Ohio Statewide Household Travel Survey is based on telephone interviews of selected households from within the study area. Households are randomly selected, using a sampling plan that is stratified on vehicle ownership and number of workers, household size and vehicle ownership, and by income. All members of selected households are provided a diary to record their travel information for one 24-hour period with a travel day of Tuesday, Wednesday or Thursday.

1.2 – Pilot Test Purpose

During the months of November and December 2000, NuStats conducted a pilot test of procedures and instruments designed for use as part of the Ohio Statewide Household Travel Survey. The objectives of the pilot test were to evaluate and refine the survey procedures, survey materials and the Computer-Assisted Telephone Interviewing (CATI) programs. The pilot test was designed as a “dress rehearsal” and allowed for the full evaluation of the survey procedures from sample generation to data file preparation. Specific areas of assessment included:

- Examining stages of data-flow procedures and the quality assurance process.
- Evaluating respondent reaction (and client participants) to the survey process and exploration of local levels of respondent cooperation and response rates.
- Evaluating project staff training and performance.

Throughout all pilot activities, the objective was to target areas for improvement prior to the start of the recruitment effort. The role of the pretest was a critical one in the study – it was not designed to “make everyone comfortable,” as that approach would result in inadequate and insufficient evaluation of the process. It is referred to as a “dress rehearsal” specifically for this reason – it is a road test of all systems to ensure everything is in place and ready for full-study implementation.

2. Methods

The purpose of this section is to summarize the methods used to conduct the pilot test. Each section contains a description of a specific procedure used in the pilot test and are in the order in which the procedures were implemented. Recommendations for changes in the study materials and procedures are presented in the final section of this report.

2.1 - Sample Design and Performance

A total of 378 pieces of sample were generated (including six ODOT staff plants) to produce a total of 30 completed surveys of which four are plants. It is NuStats' standard practice to ask our clients to be included, as respondents, in the pilot test to garner the maximum amount of feedback. For the pilot, random sample was generated for Allen County only.

Table 1 shows, by household size and auto ownership, the distribution of recruited households. As directed by ODOT, the three and four or more person cells under the zero-vehicle category are combined in the sample goals. The one, two and three or more vehicle cells under the one-person household category are also combined.

Table 1
Household Size by Vehicle Ownership Distribution
Recruited Households
(n=49)

	Household Size				
Vehicle Ownership	**1**	**2**	**3**	**4+**	**Total**
0	0	0	1	0	1
1	7	4	0	2	13
2	0	14	3	8	25
3+	0	2	4	4	10
Totals	**7**	**20**	**8**	**14**	**49**

Table 2 shows the actual distribution of completed surveys and the expected distribution for the pilot by household size and auto ownership.

Table 2
Household Size by Auto Ownership Distribution
Retrieved Households/Expected
(n=30)

	Household Size				
Vehicle Ownership	**1**	**2**	**3**	**4+**	**Total**
0	0/2	0/1	0/0	0/0	0/3
1	6/7	2/4	0/0	1/0	9/11
2	0/0	10/11	0/1	5/0	15/12
3+	0/0	2/0	2/2	2/1	6/3
Totals	**6**	**14**	**2**	**8**	**30**

There were no surveys completed for the zero-vehicle category. Based on the pilot sample size of 30, it was expected that a total of three surveys would have been completed. The zero-vehicle category has been historically the most difficult to fill. NuStats will monitor this issue during the full study. For those cells that are not being filled on a timely basis, special effort will be made to maximize the response rates through specific assignments to the most experienced interviewers and special attention to callbacks.

2.2 Survey Materials

Five sets of survey materials were tested during the pilot:

1. Advance Call questionnaire – Used to verify or elicit address information and to collect key demographic data for sample allocation. This is the first stage of communicating the purpose of the project.

2. Advance mailing – An introductory letter and brochure are mailed to households that complete the advance call survey. The letter and brochure provide more detailed information about the survey and contact information for questions.

3. Recruitment questionnaire – Used to collect detailed household and person demographic data and also elicits the household commitment to participate in the survey (assign a travel date).

4. Travel diary packet – A packet cover letter, a diary that serves as a memory jogger used by survey respondents to record key travel data, and a reminder sheet are mailed to recruited households. Of the 73 persons represented in the pilot, 54 or 74% report using their diaries to record their trips as shown in Table 3 below.

Table 3
Diary Usage
(n=73 persons)

Used Diary	Frequency	Percent
Yes	54	74%
No	19	26%
Total	73	100%

5. Travel data retrieval questionnaire – Used to collect travel data.

The recruitment and retrieval questionnaires were programmed in the Computer Assisted Telephone Interviewing (CATI) system. These programs eliminate the need for data entry as the telephone interviewers, themselves, input data as they conduct the interview. In addition, available responses to most questions were categorized to minimize the need for post-coding.

2.3 Data Collection

Up to three interviewers were assigned to conduct each stage of the pilot test including advance calls, recruitment and retrieval. One research technician supervised the telephone interviewers while a research coordinator managed the overall data collection effort. A data quality control technician initially reviewed each completed survey (validation) while the final logic checks were

conducted by the data services unit (edit check).

2.3.1 Advance Calls and Component Response Rate

Ohio Pilot Advance Calls were conducted between November 1 and November 5, 2000. From the sampling frame, NuStats randomly selected 378 telephone numbers for inclusion in the study. From this sample, a total of 92 surveys were completed.

As shown in Table 4 below, NuStats identified 96 telephone numbers that were ineligible (e.g. disconnects, business/government, computer/fax and out of area). Dividing the total eligible units (163) and a portion of the eligibility unknown units (51 or 43% of the total eligibility unknown)[1] by the number of advance call completes (agreed to receive the letter) is the response rate for the advance call phase. The response rate is 43.0%. The appendix contains a copy of the advance call questionnaire.

Table 4
Advance Call Outcomes
(n=378)

Call Outcome	Frequency	Percent
Eligible Units		
Advance Call Complete	92	24.3%
First Refusal	44	11.6%
Final Refusal	27	7.1%
Sub-Total Eligible	*163*	*43%*
Ineligible Units		
Computer/Fax	6	1.6%
Business/Government	14	3.7%
Disconnect	76	20.1%
Sub-Total Ineligible	*96*	*25.4%*
Eligibility Unknown Units		
Busy	7	1.9%
Answering Machine	60	15.9%
No Answer	52	13.8%
Sub-Total Eligibility Unknown	*119*	*31.6%*
Total	***378***	***100.0%***

2.3.2 Recruitment and Component Response Rate

Pilot study recruitment was conducted between November 29 and December 8, 2000. Forty-nine of the 92 advance called households completed the recruitment phase and were assigned a travel date. Table 4 presents the outcomes of the recruitment calls.

The response rate for the recruitment call phase is the total eligible sample (which in the phase is 100% since all households are deemed eligible as an outcome of the advance call stage) divided by the total number of recruits. The calculated response rate is 53.3%. Table 5 on the following page summarizes the recruitment outcomes.

[1] The percentage is defined as the percentage of eligible of the total sample. In this case, 163 divided by 378.

Table 5
Recruitment Call Outcomes
(n=92)

Call Outcome	Frequency	Percent
Eligible Units		
Recruited	49	53.3%
Refused	20	21.8%
Pending	23	24.9%
Total	***92***	***100.0%***

The appendix contains a copy of the recruitment questionnaire.

2.3.3 Retrieval and Component Response Rate

Data retrieval occurred from December 11 to December 20, 2000. A total of 30 households completed the survey. One survey was a partial complete in which a subsequent contact with the household could not be made to complete the survey. Two households refused to complete the survey (4.1%) while the remaining 17 households (34.7%) were not contacted after a few additional attempts to do so during the time frame available for the pilot.

The response rate for the retrieval phase is the total eligible sample (which in the phase is 100% since all households are deemed eligible as an outcome of the recruitment call stage) divided by the total number of completes. The calculated response rate is 61%. Table 6 summarizes the retrieval outcomes.

Table 6
Retrieval Call Outcomes
(n=49)

Call Outcome	Frequency	Percent
Eligible Units		
Recruited	30	61.2%
Refused	2	4.1%
Pending	17	34.7%
Total	***49***	***100.0%***

The appendix contains a copy of the retrieval questionnaire.

2.3.4 Overall Response Rate

Using Council of American Survey Research Organization (CASRO) guidelines, the response rate is calculated as the product of the component response rates. The formula use is:

$$RR = \left(\frac{a_1}{A_1+(C_1 * ER_1)}\right) * \left(\frac{a_2}{A_2+(C_2 * ER_2)}\right) * \left(\frac{a_3}{A_3+(C_3 * ER_3)}\right)$$

Where,

RR is the Overall Response Rate,
a_1, a_2 and a_3 are the number of completed surveys for each of the three phases,
A_1, A_2 and A_3 are the number of eligible telephone numbers for each of the three phases,
C_1, C_2 and C_3 are the number of eligibility unknown for each of the three phases, and
ER_1, ER_2 and ER_3 are the eligibility rates for each of the three phases.

Using this formula, the Overall Response Rate is 14.0% (0.430 * 0.533 * 0.610). This response rate is significantly below the industry average for household travel surveys. An overall response rate of 20-22% is the minimum that is expected. The short time frame for both advance calls and recruitment during the pilot significantly impacted the overall response rate. During the full study, more time is allowed for additional callbacks to put closure on pending (eligibility unknown) outcomes during the advance call and recruitment stages.

2.4 Advance Call and Respondent Diary Packet Mailing

After a household has agreed to either receive additional information about the project (advance call) or agree to participate in the survey (recruitment), a mailing of relevant materials is conducted within 24 hours of the call.

The advance mailing includes a personalized cover letter that explains the purpose of the survey and contact information for questions and a brochure that provides a more detailed explanation of what the data will be used for and the steps involved. The appendix contains the advance letter and brochure.

2.5 – Reminder Calls

A reminder call was placed to all 49 recruited households the night prior to the assigned travel day. There are two main purposes for this call. The first purpose is to confirm receipt of the diary packet and the second is to answer any last minute questions.

If a household did not receive their packet, the mailing address is verified and any corrections are made at that time. For addresses originally recorded in error, the household is rescheduled for another travel date and a new packet is mailed to the household the following day. For those households in which the mailing address is correct, the household is asked to record their trips for the same day the following week; this assumes that the packet is only late in delivery. If, at the time of the next reminder call the household still has not received a diary, a new packet is prepared and mailed.

During the pilot, of the households contacted during the reminder call phase, two households did not receive their packets prior to their assigned travel date. During the full study, standard procedures noted above will be followed.

2.6 – Data Collection Productivity

2.6.1 Advance Calls

Of those 92 advance call completes, 93% were completed on the first two dialing attempts. The average length of the interview was just under four minutes. The average number of completes per hour was 5.3 which was significantly higher than the expected 4.0. Interviewers felt that respondents in Allen County were very interested and receptive of the survey.

2.6.2 Recruitment Calls

Of the 49 recruited households, 71.4% were completed within the first two attempts. The average length of the recruitment interview was slightly longer than 16 minutes. The average number of recruits per hour was 2.7. This is slightly higher than the expected 2.4 recruits per hour.

2.6.3 Retrieval Calls

The 30 completes averaged just over 16 minutes in length. The productivity was on target with the estimated completes per hour of 1.8. The completion rate of 61% (number retrieved as a percentage of recruited) was lower than anticipated. Repeated attempts across various days of the week and times of the day during the full study will increase the completion rate closer to the expected 72%.

2.7 Geocoding Procedures

The term “geocoding” defines the process of evaluating address information with the goal of assigning an exact latitude and longitude. This process took place throughout the pilot test, beginning with geocoding of home addresses, continuing with geocoding the habitual addresses (work and school), and concluding with non-home and non-habitual (work, school) trip ends.

Home addresses were geocoded soon after sample generation. Home addresses that did not geocode were investigated and corrected during the recruitment interview. All but two home addresses of recruited households were able to be geocoded. These two were not geocodable based on the coverage files provided by the local MPO.

Work and school addresses for all household members were collected during the recruitment interview. Work and school addresses that did not geocode were investigated and corrected either during the reminder or retrieval calls. During the full study, cities, counties, schools and major employers will be nested within the CATI system to avoid typographical errors by interviewers.

Addresses of trip origins and destinations were geocoded within 48 hours of data retrieval. All addresses that did not geocode during the recruitment stage prompted the interviewer to ask the respondent for greater detail for those addresses. NuStats nearly achieved the geocoding standards for the home, habitual (work/school when combined) and for all trip addresses. During the full study, call backs to households and other means of address research will be conducted so that NuStats’ minimum matching standards are met. Table 7 summarizes the geocoding results.

Table 7
Geocoding Outcomes

Address Type	Unique Locations	# Out of Area	Number Matched	Match Rate	Minimum Standard
Home	30	0	28	93%	100%
Work	28	6	20	91%	95%
School	18	0	16	89%	95%
Trip	95	6	75	84%	90%
Total	171	12	139	87%	

At the time of the pilot, a limited number of geocoding resources were available for areas beyond Allen County. Addresses outside of Allen County did not go through a thorough geocoding effort because of this. Since the pilot, NuStats secured statewide coverage files from Geographic Data Technologies (GDT) to aid in the geocoding process.

2.8 Data Processing

Data inspection was conducted in an on-going manner, from review of frequencies from the CATI program after the first few days of data collection to review of data during processing and editing.

Data checks (noted below) were conducted using data check programs written in Microsoft Access. The program is tailored specifically for this project.

NuStats reviewed the pilot data to ensure data conforms to the following standards:

Across all Files:
- Range of values for each data item is valid, including values for non-response.

Household File:
- Compare number of persons in household with number of person records in person file for that household.

Person File:
- Verify that the number of places recorded for each person is at least as many as the number of places the respondent indicates visiting (at start of retrieval interview).
- Verify driver's license information (licensed to drive or not) is included for ages greater than 15.
- Verify each student's education status is given.
- Verify each working person's employment status is given.
- Verify all work information is complete.
- Verify all school information is complete.
- Verify person's reporting no travel is correct. Need reason for no travel.

Trip File:

- Verify that each person has at least one place per day.
- Verify that household and person records exist for each sample number in the trip file.
- Place numbers must be sequential and inclusive.
- Verify that each place has address and trip data associated with it.
- Verify all loop trips - during data retrieval stage (i.e. start and end locations the same)

Location File:

- Verify all matched locations have x/y coordinates.
- Verify all unmatched/out of area locations that do not have x/y coordinates.
- Verify all Household locations that are in the location file.

Speed Check Violations:

As a final check on the geocoding and trip data, NuStats uses the geocoded point data, trip duration and mode specifications to confirm that the calculated speed (miles per hour) approximates thresholds of "reasonable" speed. Those cases in which speed seems excessive are reviewed for both geocoding accuracy and respondent-reported time reasonableness. The process is as follows:

- **Create File.** A file is created from the trip file that places the origin, destination, and associated data in one record (as opposed to two individual origin and destination records in the trip file).

- **Calculate Distance.** The distance formula is used and thus the following variables are added to the speed check file.

The following is used to calculate distances when coordinates are given in degrees of latitude and longitude:

$$d = \sqrt{(x_o - x_d)^2 \cos^2[(y_o + y_d)/2] + (y_o - y_d)^2}$$

where

x_o = longitude of origin
x_d = longitude of destination
y_o = latitude of origin
y_d = latitude of destination

The x and y coordinates are translated into decimal degrees before running this process so that this formula yields a distance in decimal degrees. The output is then converted to miles by multiplying the decimal degree distance by 69.1105 (factor that changes decimal degrees to miles on the curvature of the Earth).

- **Calculate Travel Time.** The trip duration (expressed in minutes) is divided by 60 to calculate the trip time in hours.

- **Calculate Speed.** Miles are divided hours to calculate the travel speed.

- **Compare Calculated Speed to Mode Thresholds.** The calculated speed is then compared to "reasonable" speed thresholds. Those trips with speeds within the bounds are acceptable while those outside are flagged for a manual check on trip arrival or departure time. The proposed thresholds for this project are:

Auto trips	0 to 70mph
Bus	0 to 35mph
School Bus	0 to 45mph
Bicycle	0 to 15mph
Walk	0 to 10mph

- **Determine the Effect of Time Rounding on Trips with Speed Violations.** Given the variations in reporting time as compared to the preciseness of calculated distance, a large proportion of speed violations actually result from respondents inaccurately reporting the trip arrival or departure time. As such, the next step in the process is to vary the trip duration by up to 15 minutes to determine if that slight rounding would result in the speed becoming reasonable for the reported mode. Any trip records with speed violations that cannot be attributed to time rounding are flagged for visual inspection.

- **Visual Inspection.** The remaining cases are then checked for these characteristics – respondent reporting incorrect mode, incorrect trip times, or reporting traveling to the same place consecutively (same shopping center or business center) thus, creating a distance of 0. As necessary, these cases are also verified through callbacks to the household.

Table 8
Speed Check Outcomes

Speed Violation Flag	Frequency	Percent
No Speed Violation	205	99%
Miles=0, Respondent Error (same area different locations)	0	0%
Add 5 Minutes, Passes Speed Check	3	1%
Add 10 minutes, Passes Speed Check	0	0%
Add 15 minutes, Passes Speed Check	0	0%
Total	208	100%

3. Results

The following results are based on the 30 retrieved households, unweighted. This section summarizes the household, person and trip characteristics.

3.1 Household Characteristics

The 30 households have the following characteristics:

- Average household size is 2.4
- Average number of workers per household is 0.93
- Average number of students per household is 0.60
- Average number of licensed drivers per household is 1.8
- Average number of vehicles owned per household is 1.9
- Median 1999 total household income is $40,760
- Slightly more than eight in ten households (83%) live in a single family detached home
- Slightly more than eight in ten (83%) also own their home
- Average number of weekday trips per household per day is 6.9
- Average number of weekday trips per person per day is 2.9

Table 9
Number of People per Household
(n=30)

Household Size	Frequency	Percent
1	6	20.0%
2	14	46.7%
3	2	6.7%
4+	8	26.6%
Total	***30***	***100%***

Table 10
Number of Workers per Household
(n=30)

Number of Workers	Frequency	Percent
0	10	33.3%
1	12	40.0%
2	8	26.7%
3+	0	0%
Total	***30***	***100.0%***

Table 11
Number of Students per Household
(n=30)

Number of Students	Frequency	Percent
0	20	66.7%
1	4	13.3%
2	4	13.3%
3	2	6.7%
Total	***30***	***100.0%***

Table 12
Number of Licensed Drivers per Household
(n=30)

Number of Drivers	Frequency	Percent
0	0	0%
1	7	23.3%
2	21	70.0%
3	2	6.7%
Total	***30***	***100.0%***

Table 13
1999 Household Income Distribution
(n=30)

Income	Frequency	Percent
Less than $20,000	4	13.3%
$20,000 to $39,999	8	26.7%
$40,000 to $59,999	6	20.0%
$60,000 or more	8	26.7%
Less than $40,000 (not specific)	2	6.7%
Greater than $40,000 (not specific)	2	6.7%
DK/RF	0	0%
Total	***30***	***100.0%***

Table 14
Residence Type
(n=30)

Residence Type	Frequency	Percent
Unattached Single Family	25	83.3%
Duplex	1	3.3%
Apartment	3	10.0%
Other (specify)	1	3.3%
Total	***30***	***100.0%***

Table 15
Household Ownership Status
(n=30)

Ownership Status	Frequency	Percent
Own	25	83.3%
Rent	5	16.7%
Total	***30***	***100.0%***

3.2 Person Characteristics

The 30 households represent 73 persons. The following are the person characteristics for the retrieved households.

- More than nine in ten (95%) of persons fifteen or older are licensed to drive
- Of those 16 or older, more than one half (53%) are employed either full- or part-time
- Of the students, just less than eight in ten (78%) are in K-12th
- Nearly one in five (18%) report doing volunteer work

Table 16
Licensed Drivers
(n=58)

Licensed Driver	Frequency	Percent
Yes	55	94.8%
No	3	5.1%
Total	**58**	**100.0%**

Note: All household members age 15 or older

Table 17
Employment Status
(n=57)

Employment Status	Frequency	Percent
Work Full-time	22	38.6%
Work – Part-time	8	14.0%
Homemaker	9	15.8%
Retired	13	22.8%
Disabled	1	1.8%
Unemployed, but looking	2	3.5%
Unemployed and not looking	2	3.5%
Total	***57***	***100.0%***

Note: All household members age 16 or older

Table 18
School Type/Level
(n=18)

School	Frequency	Percent
Daycare/Pre-school	0	0%
K-12th grade	14	77.8%
Post Secondary – College, University	1	5.6%
Vocational/Technical	1	5.6%
Other (specify)	2	11.1%
Total	**18**	**100.0%**

Note: Respondents indicating student status

Table 19
Volunteer Work
(n=57)

Volunteer Status	Frequency	Percent
Yes	10	17.5%
No	47	82.5%
Total	**57**	**100.0%**

Note: All household members age 16 or older

3.3 Trip Characteristics

The 30 households made a total of 208 trips. The following are the trip characteristics for the retrieved households.

- The average weekday trips per household is 6.9.
- Slightly less than seven in ten (69%) of all trips were made as “auto/van/truck driver”
- Two percent of all trips were made by walking
- Other than to return home or to go to work (15%), shopping (13%) and personal business trips (11%) were the most frequent trip activities
- Peak trip departure time occurs during mid-afternoon (2 to 4 p.m.) with 26% of all trips
- Peak trip arrival time also occurs during mid-afternoon with 25% of all trips

Table 20
Trip Mode
(n=208)

Trip Mode	Frequency	Percent
Auto/van/truck Driver	143	68.8%
Auto/van/truck Passenger	58	27.9%
School Bus	3	1.4%
Walk	4	1.9%
Total	**57**	**100.0%**

Table 21
Trip Activity
(n=208)

Trip Activity	Frequency	Percent
At home: eat meal	34	16.3%
At home: paid work	1	0.5%
At home: shopping by catalogue, Internet, television	1	0.5%
At home: social/recreational	25	12.0%
Sleeping	15	7.2%
At home: Other (specify)	3	1.4%
Out of home: paid work	32	15.4%
Out of home: school	15	7.2%
Out of home: volunteer work	1	0.5%
Out of home: pick-up/drop-off person	19	9.1%
Out of home: social/recreation/church	1	0.5%
Out of home: shop	26	12.5%
Out of home: personal business	23	11.1%
Out of home: eat meal	11	5.3%
Out of home: Other (specify)	1	0.5%
Total	208	100.0%

Table 22
Trip Departure Time Distribution
(n=208)

Trip Departure Time	Frequency	Percent
6 a.m. to 7:59 a.m.	33	15.9%
8 a.m. to 9:59 a.m.	25	12.0%
10 a.m. to 11:59 a.m.	22	10.6%
Noon to 1:59 p.m.	28	13.5%
2 p.m. to 3:59 p.m.	55	26.4%
4 p.m. to 5:59 p.m.	20	9.6%
6 p.m. to 7:59 p.m.	15	7.2%
8 p.m. to 9:59 p.m.	7	3.4%
10 p.m. to 11:59 p.m.	1	0.5%
Midnight to 5:59 a.m.	2	1.0%
Total	208	100%

Table 23
Trip Arrival Time Distribution
(n=208)

Trip Arrival Time	Frequency	Percent
6 a.m. to 7:59 a.m.	29	13.9%
8 a.m. to 9:59 a.m.	26	12.5%
10 a.m. to 11:59 a.m.	22	10.5%
Noon to 1:59 p.m.	23	11.0%
2 p.m. to 3:59 p.m.	51	24.5%
4 p.m. to 5:59 p.m.	28	13.5%
6 p.m. to 7:59 p.m.	18	8.7%
8 p.m. to 9:59 p.m.	7	3.4%
10 p.m. to 11:59 p.m.	2	1.0%
Midnight to 5:59 a.m.	2	1.0%
Total	208	100%

4. NuStats and ODOT Pilot Evaluation

The pilot test allows the evaluation and assessment of the survey materials, survey instruments, and procedures prior to launching the full study. For this pilot test, the evaluation team included the NuStats project manager, research coordinator, research technician, data collection interviewers, a random selection of respondents, and ODOT staff.

ODOT staff was invited to be included in the pool of sampled respondents. These individuals were not identifiable to the data collection coordinator or interviewers so that a cross-section of interviewers could be evaluated.

The following is a synopsis of the feedback from the evaluation groups. A detailed evaluation by the ODOT participants and NuStats' response to each item is provided in the Appendix to this report.

The ODOT project manager asked the ODOT staff pilot participants to evaluate the pilot based on the following questions:

1. "When were the contact calls made (time of day, time of week), were the calls distributed, were they at convenient times, if you requested a certain call back time, was it honored?"

2. "Were the callers personable, were they knowledgeable, did they conduct the interview fluently or did they hesitate, stutter, seem confused, appear to be reading etc.?"

3. "How many phone contacts did you receive, how long was each contact, were any of them annoyingly long, did they tell you how long it would be and if so, was it actually that long?"

4. "Did any questions seem too personal. Did they ask things you weren't expecting, what?"

5. "Did you receive the survey materials on time, too early, too late?"

6. "Were the survey materials clear, did you understand what to do or was it confusing, if so where?"

7. "Give me any other comments you have or suggestions for changes."

Categorizing the feedback from the evaluation team, three main issues came out. Three of the issues fall under the general theme of interviewer training. The main issues are questionnaire and survey materials flow, interviewer project knowledge, geographic knowledge and calling procedures. Each of these areas is addressed in this section.

4.1 Questionnaire and Survey Materials Flow

A few questions are repeated at various stages of the survey process. These include key demographic variables that are used to track the cross-classification quotas such as household size, vehicle ownership and income. One person suggested that the income question not be repeated.

Some respondents found it annoying to having to refer back to the mode and activity list during the retrieval interview. Respondents recorded in their diary and reported during the interview the numeric code, but the interviewers asked the respondent to verify the text description. NuStats will ask the interviewers to record the code and state the activity description rather than pose the activity as a question.

Overall the diary materials were clear. However, the diary needs to be clear that the home, work and school addresses do not have to be recorded (these addresses are collected during recruitment and do not have to be collected during the retrieval phase). Clarifying the wording on the mode category auto/van/truck driver to "driving auto/van/truck" and auto/van/truck passenger to "auto/van/truck passenger (not driving)" was also suggested. Clarification is also needed about the number of persons in the vehicle. Emphasis needs to be made that the number includes the driver

4.2 Interviewer Project Knowledge

Three of the four ODOT staff participants thought the interviewers were competent and courteous. One ODOT staff agreed with this, but thought that the interviewer he spoke to was not very knowledgeable about the survey. Additional training is needed with regard to the data collection process particularly if a respondent does not have the detailed information for another member of the household (e.g. work address). Training is also needed so that interviewers can respond to inquiries about the need for specific data items.

Interviewers will need to be able to tell respondents the length of the survey when asked. Rather than say "a few more minutes" interviewers will have a chart that shows the average interview length ranges by household size.

4.3 Geographic Knowledge

Interviewers will go through a more thorough geographic training than what was provided during the pilot. Emphasis will be placed on study area layout (e.g. location of major cities), pronunciation of city names, and major landmarks. Because the data collection process will "move" from one area of the state to the next over the course of the project, specific geographic briefings will be held. Although trips will occur throughout the state even when collecting data for a specific region, it will be helpful to emphasize the specific region since the majority of the trips will be made within that particular region.

4.4 Calling Procedures

Virtually all calls were made during the weekdays from early afternoon to evening. It was suggested that calls be spread out during the week and at various times of the day. This calling procedure will occur during the full study. During the pilot, the amount of time allotted to complete the surveys before the end of the year holidays was not conducive to this. In addition,

the small number of households needed and the assignment of weekday travel dates allowed NuStats to complete each of the advance call, recruitment and retrieval phases within a few days during the week which didn't allow for weekend calling unless additional households were needed. One ODOT participant asked to be called back but was not because a day later the data collection was completed. During the full study, NuStats will make at least 12 attempts on a household unless the survey is completed before then.

Calls are typically made during the evening; this is the time that is most productive in contacting people at home. However, those households that we cannot contact in the evening will also be called during the day. Non-contacts during the week will also be attempted during the weekend.

When interviewers were asked to call back respondents at a certain time it was honored. The Computer Assisted Telephone Interviewing (CATI) system NuStats uses has a sample management module that allows the input for specific callback appointments.

5. Conclusions and Recommendations

Overall, the pilot test was successful in terms of the procedures and the collection of the necessary data. However, there are several areas that need improvement. The area needing the most improvement is in interviewer training. The pilot evaluation team observed that a few of the interviewers did not appear to be knowledgeable enough about the study to provide clear, concise answers to questions posed by the respondents. With a more comprehensive training, interviewers will be well prepared for the full study. NuStats has already implemented a test that each interviewer must take and pass prior to being assigned completion of each data collection stage. A more thorough geographic training session will also be provided that covers the study area geography, city names, and major landmarks.

In this section, suggestions are provided for improvements to the survey process as well as the survey materials. The first part contains recommended changes, by survey task, while the second part contains recommended changes to the survey materials.

5.1 Survey Process

5.1.1 Advance Calls

Advance call productivity was higher than expected. It is anticipated that with the implementation of a public communications effort, a higher participation rate can be achieved thus maximizing overall response rates.

The income question will be removed from the questionnaire and the questions will be move after the respondent has agreed to receive additional information about the survey. The brochure can be modified to provide more details about the specific survey process to help respondents better understand the overall project.

5.1.2 Recruitment

As noted in the previous section and detailed in the Appendix to this report, the pilot evaluation team noticed the interviewers were not familiar enough with the script as they should be and they sounded like they were “reading from a script.” Another main concern was the interviewers did not have a clear understanding of the objective of the survey. In order to improve all of these areas of concern, a more comprehensive training session will be conducted prior to the implementations of the full study. The training session will include general information about the study, and geographic orientation, recruitment script run-through and role-playing. The training session will end with an exam given to each interviewer. A score of 75% or higher must be achieved prior to dialing on the project.

5.1.3 Retrieval

Overall retrieval went very well. A 61% completion rate was achieved. However, interviewers could become more familiar with the geography for the study area and become more comfortable with the script. As will be done prior to the recruitment effort, there will be a very thorough training session prior to starting retrieval for the full study. There will also be an exam following this training session. A score of 75% or higher must also be achieved by each

interviewer prior to dialing during this data collection phase.

Interviewers will also be asked not to pose the mode and activity description as a question. Respondents are allowed to record a numerical code in their diaries and that's how interviewers are recording them during the interview. However, interviewers should only state the mode or activity so that the respondent does not have to flip back and forth to verify the code. If for example a respondent records the code for "walk" the interviewer will record the code and repeat "walk." The respondent will know at this point whether or not the correct code was used. During the pilot some interviewers asked "was that walk?" and the respondent had to verify.

5.1.4 Geocoding

The geocoding match rates were close to the anticipated goal. The pilot did not serve as a good test for the street coverage since not all participating MPOs have coverage files available or did not provide them to NuStats at the time of the pilot. NuStats purchased a statewide coverage file from Geographic Data Technologies (GDT) for use on this project but did not receive it in time for the pilot. This coverage file will lend support to any MPO-provided files or to the most recent TIGER files. In some regions where no files are available, it will serve as the sole coverage file source for geocoding. NuStats is confident the match rate goals for the project will be made with this statewide coverage file and through respondent call backs, more detailed address researches using a multitude of resources including the Internet, and interviewer probing.

5.2 Survey Materials

5.2.1 Cover Letters

The only change needed is to include a new ODOT contact person.

5.2.2 Brochure
Although the brochure was adequate for pilot, NuStats recently tested a more detailed brochure for another travel survey that includes the specific stages of the survey process. The more detailed brochure proved to be more informative to respondents; respondents are made aware of what is expected of them when they participate in the survey. The revised brochure will be provided at the pilot results meeting which has not occurred at the time of the writing of this report so no decision has been made on whether or not to use this version.

5.2.3 Diary

Three changes are recommended for the diary. 1) Make it more clear that the home, work and school addresses do not have to be recorded in the diary since that information was already collected during the recruitment stage. 2) Clarify the mode for driver and passenger. These should read "driver of auto/van truck" and "passenger of auto/van/truck (not driver)." 3) Clarify that the number of persons in the vehicle should include the driver.

APPENDIX F. AKRON SHEET-1

UNWEIGHTED (RAW) SURVEY DISTRIBUTIONS

Vehicles \ HHSize	1	2	3	4+	
0	3.2%	0.8%	0.3%		
1	24.9%	7.5%	1.9%	1.0%	
2		32.1%	5.6%	9.8%	
3+			5.5%	7.4%	1

Vehicles \ Workers	0	1	2	3+	
0	3.3%	0.9%			
1	14.0%	14.6%	1.2%		
2	8.9%	15.4%	19.7%	0.5%	
3+	2.4%	5.6%	9.8%	3.7%	1

Age of Householder		
	<18	0.1%
	18-24	4.0%
	25-34	12.0%
	35-44	18.3%
	45-54	23.6%
	55-64	18.0%
	65-74	11.3%
	75+	12.7%
	RF	0.0%
	0	100.0%

Income		
	Less than $20,000	15.0%
	$20,000 to $39,999	26.6%
	$40,000 to $59,999	25.1%
	$60,000 or more	33.3%
	0	100.0%

Non-Telephone Proxy	
Telephone	99.7%
Non-telephone	0.3%

Probability of Selection	# of Lines	
	1	85.7%
	2	10.9%
	3	3.4%
		100.0%

CTPP SURVEY DISTRIBUTIONS

Vehicles \ HHSize	1	2	3	4+	
0	4.7%	1.3%	1.3%		
1	22.2%	8.5%	3.0%	2.7%	
2		24.1%	7.5%	11.6%	
3+			5.1%	7.9%	1

Vehicles \ Workers	0	1	2	3+	
0	4.9%	2.5%			
1	12.9%	16.7%	3.1%		
2	6.4%	14.2%	19.7%	1.2%	
3+	1.2%	4.4%	7.9%	4.8%	1

Age of Householder		
	<18	0.1%
	18-24	5.0%
	25-34	16.7%
	35-44	22.2%
	45-54	20.7%
	55-64	13.2%
	65-74	11.4%
	75+	10.6%
	RF	
		100.0%

Income		
	Less than $20,000	20.6%
	$20,000 to $39,999	25.7%
	$40,000 to $59,999	20.6%
	$60,000 or more	33.1%
	Total	100.0%

Non-Telephone Proxy	
Telephone	99.3%
Non-telephone	0.7%
	1

Probability of Selection	# of Lines
	1
	2
	3

WEIGHT FACTOR

Vehicles \ HHSize	1	2	3	4+
0	1.500281	1.710902	5.198672	5.198672
1	0.890021	1.129985	1.616008	2.593020
2	0.890021	0.749252	1.328266	1.186979
3+	0.890021	0.749252	0.929838	1.070117

Vehicles \ Workers	0	1	2	3+
0	1.487581	2.851192	2.851192	2.851192
1	0.918188	1.143624	2.617834	2.617834
2	0.711788	0.925670	0.997501	2.607313
3+	0.498824	0.789935	0.812564	1.302876

Age of Householder	
<18	2.276051
18-24	1.253127
25-34	1.390780
35-44	1.213299
45-54	0.880888
55-64	0.730720
65-74	1.005442
75+	0.835384
RF	1

Income	
Less than $20,000	1.378573
$20,000 to $39,999	0.965260
$40,000 to $59,999	0.820269
$60,000 or more	0.993022
RF	1

Non-Telephone Proxy	
Telephone	0.995387
Non-telephone	2.781477

Probability of Selection	# of Lines
1	1.000000
2	0.500000
3	0.333333