



2004-2005
Comprehensive Household Travel
Data Collection Program

MI Travel Counts



Final Report Appendices

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MI Travel Counts Pilot Report



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Executive Summary

Quoting from a review of the Pilot by Peter Stopher, Ph.D., a MI Travel Counts subconsultant and an internationally recognized expert in travel survey design and execution:

“ This appears to have been a successful pilot that promises well for the full data collection effort. The few changes that have been made are useful and show the value of the pilot survey process. (The Pilot) has helped to refine the final procedures in important ways, and that paves the way for a high quality program.”

This Pilot Report evaluates the effectiveness of sixteen different task elements. The general outcome of these evaluations as documented in the report is:

1. Public Awareness Plan

The Plan was implemented and responses to notification letters to the legislature and local planning agencies and to press releases were positive. No complaints were received. No changes in the Public Awareness Plan are recommended

2. Toll-Free Information Number

As a result of the Pilot, no changes are recommended to the toll-free number protocol. No complaints were received.

3. Functional Website

No changes to the MI Travel Counts website are recommended after the Pilot. The website is considered by MORPACE to be a significant asset for encouraging participation in the study.

4. Sample Design Technical Document and Procedures

The Pilot response rates are adequate to very good. The Pilot participation rate of 55% is well above the 50% expected average rate obtained by other travel inventories conducted within recent years. Pilot CATI sample tallies for both the recruit and the retrieval are attached as Appendix A.

In regard to achieving the representativeness of the sample, close, real-time monitoring will be necessary to achieve Census proportionality within sampling area, household size, number of household vehicles, number of workers, and household income. Corrective actions in the form of a higher number of callbacks to households in difficult to fill data cells, rescheduling of underrepresented recruited households, and increased or targeted sampling frames will most likely be required.

5. Data Collection Methodology Plan

No recommendations for changes in the Data Collection Methodology Plan are considered necessary as a result of the Pilot.

6. Pre-Notification Letter

The pre-notification letter significantly increased the participation of households in the project. Only minor revisions in wording were recommended as a result of the Pilot and the MDOT Project's phone number was changed. The revised pre-notification letter is attached as Appendix B.

7. Recruit Instrument and CATI recruit script and system

As a result of either MDOT/MORPACE monitoring of Pilot recruit interviews or post processing data checks a few minor changes in the recruit instrument are recommended and include:

- Adding “bus or” transit to the transit pass question for greater respondent understanding (“Do you have a bus or transit pass?”)
- If the respondent has a transit pass, adding a question as to how much they pay for the pass in dollars and cents, and then on what basis (annual, monthly, weekly, etc.)
- Adding “nearest” to the cross streets question (“What are the nearest cross streets?”)
- For both household members and visitors, adding “16 years or older” and “currently” to the employment question (“Including yourself, how many of the people, **16 years of age or older**, living in your household are **currently** employed?”)
- Combining the city and township questions for easier sample area identification (“What city or township do you live in?”)
- For both household members and visitors, asking age, first as an open-ended question to save interviewing time, and then reading age response categories for those who refuse or don’t know exact age.
- If CATI monitoring by age within *sampling areas* indicates that Census targets have been reached for persons age 65 or older, the following question will be added to the beginning of the recruit: “Is anyone in you household under age 65?” If not, the household will be terminated.

Recommended changes in the recruit instrument are further detailed in Appendix C.

8. Diary Cover Letter

In the diary cover letter, the word "statistical" has been taken out and the rest of the sentence has been modified as follows: “The information you provide will only be used for the statistical purposes of this study. It will be kept **confidential** and **secure**.” The MDOT project director’s phone number has also been revised. The revised Diary cover letter is attached as Appendix D.

9. Diary

A review of the 50 diaries received by mail strongly indicates that respondents fully understood the instructions, content, format, and flow. The following minor changes are recommended for the diary.

- In the Activity Choices definitions on page 2, added explanation will be given to Work: Work (employment and job-related activities)
- The “Start Recording Here” note will be deleted. The “Start Here” in the black box will be changed to “Start **Recording** Here”.
- As per modeling requirement clarifications from PB, a global change will be made: Moped will be moved from the “Bicycle/Moped” category to the “Motorcycle” category.
- Other minor changes were made in the bulleted instructions on page 1.

10. Person Information Sheet

The purpose of the Person Information Sheet is to let each member of the household know what personal information is required of them in order for their retrieval interview to be

complete. Respondents fully understood the instructions, content, format, and flow. The following minor changes are recommended:

- The first answer category for work flexibility will be changed to: “I have no flexibility in my work schedule.”
- Moped will be moved from the “Bicycle/Moped” category to the “Motorcycle” category.
- For clarity, changing the industry question wording to: “What is (your/NAME’s) **employer’s** industry?”

11. Reminder script

No changes are recommended for the reminder script.

12. Data Retrieval Instrument and CATI retrieval CATI script and system

The length of the retrieval interview per person and per household is at the outside limits of average lengths for household travel inventories, but there were less than five mid-interview household terminations. Offering mailback and Internet options for data retrieval are essential to reducing respondent burden, especially for 3+ person households. Minor changes recommended include the following:

- Delete the "at this location" at the end of the question: “What time did (you/NAME) ARRIVE?”
- Added additional city names
- Adding text to the question and an interviewer note: “Are you/Is NAME currently attending **any level of** school?”
- To match the updated person information sheet, the first answer category should be changed to: “I have no flexibility in **my work schedule.**”
- For clarity, changing the industry question to: “What is (your/NAME’s) **employer’s** industry?” Also adding the following interviewer note: (IF NEEDED: By industry, we mean the employer’s principal business or activity.)
- Moped will be moved from the “Bicycle/Moped” category to the “Motorcycle” category
- Minor wording changes in questions regarding bus, dial-a-ride, and taxi-/shuttle provider and payment questions
- Deleting the probe of “Did you stop anywhere along the way?” per discussions at the MDOT project meeting on February 26th.
- Assuring times come up for the accompanying household member when a trip was previously reported by another member.
- A few additional changes to the retrieval instrument made as a result of the Pilot are shown under Task Element 15: Data Coding and Quality Control Manual and Procedures.

13. Interviewer Training Manual

All changes made to project instruments and materials will be made to and updated in the MI Travel Counts Interviewer Training Manual. A handout will be added to the Interviewer Guidebook with additional information on the activity codes.

14. Data Coding Structure

As a result of MDOT review at the February 26, 2004 meeting, minor changes were made to the code lists including expansion of column width to accommodate TAZ numbers and adding

fields for the originally reported location address. Complete revised variable code lists are provided in Excel file format as Appendix E to this Pilot Report.

15. Data Coding and Quality Control Manual and Procedures

As part of the Data Coding and Quality Control Manual, MORPACE Post-Processing Data Checks have been developed. The revised document is attached as Appendix F. This list includes MORPACE benchmarks that are used to judge data quality. Finally, a List of Post-Processing Audit Checks by PB is provided as Appendix G.

MORPACE's Pilot frequency results (Appendix H_1 through H_4) and post processing data checks show that data is consistent, missing data is minimal, and an appropriate level of data detail has been collected. To accomplish completed data information objectives and reach sampling targets, detailed sampling in-area monitoring will be necessary to assure proportional geographic representation and filling of sampling data cells. This monitoring will also be required to assure sampling representation by household size and age of persons and to determine whether declining rates in reported Day 2 trips are acceptable. Agreement with these goals is also expected to require the implementation of the following alternative strategies:

1. Increasing callbacks to difficult to reach data cell households for both the recruit and the retrieval (including day time retrieval interviewing).
2. Increasing sample replicates and/or ordering targeted sampling frames (such as supplemental income targeted RDD samples within areas).
3. Rescheduling recruited households who fail to complete the retrieval for all household members on their assigned travel days.
4. Developing and implementing special techniques to assure acceptable Day 2 trip rates. Such techniques might include an interviewer script when 3 a.m. at the end of the first travel day is reached to the effect that "it is very important to the results of this study that you report as much detail about all of your locations and travel for this next 24 hours as you did for the last 24 hours."
5. If CATI monitoring by age within sampling areas indicates that Census targets have been reached for persons 65 or older, the following question will be added to the beginning of the recruit: "Is anyone in you household under age 65?" If not, the household will be terminated.

Parsons Brinckerhoff (PB) conducted audit checks of Pilot data as specified in the Data Coding and Quality Control Manual. Inconsistencies in data found were minor and correctable. Using TransCAD, PB conducted time and speed checks between trip origin and destination points and constructed a questionable trip list based on the results. Additionally, PB constructed a table for review of possible non-geocoding errors or corrections. MORPACE then reviewed these two trip audit tables, and data for questionable households comprehensively as specified in the Manual. Based on findings, MORPACE-PB recommended that 11 households (8.7%) be deleted from the final Pilot dataset (9 due to time and distance problems that could not be corrected and 2 based on missing more than one geocode).

To minimize time and distance problems for MI Travel Counts, MORPACE_PB have recommended to following changes:

1. Due to the number of short trips identified by PB's time and distance trips criteria for speed checks have been modified as follows:

Trips less than 2 miles in length and also 30 minutes in time will be considered acceptable due to short distance and time. Trips that are flagged

will have 10 minutes added and subtracted from the trip length and new speed computed. If the new speed is still not within the speed parameters, the record will be flagged and reviewed.

2. Adding a programmed question to the CATI to confirm with the respondent that the trip took over one hour to complete, when this is recorded.
3. Increased emphasis on phone room supervisor and interviewer training in regard to time recording.
4. Adding two questions at the end of the daily travel collection which are (if the respondent reported any trips over one hour during their travel period):

Did any of the trips you've reported take significantly longer than usual? (Yes/No)

(IF YES)

Was this due to: (READ LIST)

- 01 Weather (rain or snow)
- 02 Construction
- 03 An accident
- 04 Traffic congestion

16. Geocoding Manual

For the Pilot, all locations (home, school, work, and trip locations) were put through an extensive geocoding process according to the MI Travel Counts Geocoding Procedures Manual, which details the requirements and steps for geocoding. Pilot geocoding results are show in Table 7, beginning on page 33. The Pilot met the specified requirements of the Geocoding Procedures Manual. No recommendations in addition to those specifications of the Manual are recommended as a result of the Pilot.

Subconsultant reviews of the Pilot and this report can be found in section D starting on page 35.

A. Introduction

The objective of MI Travel Counts is to obtain accurate information on travel characteristics for use in developing and calibrating travel demand forecasting models for the state and 14 Metropolitan Planning Organizations within the state of Michigan. To accomplish this, the state has been stratified into seven sampling areas. Each stratum is defined by a collection of counties or other geographically defined entities that are either geographically contiguous, or similar with respect to the types of travel patterns and behaviors generated by households within those sampling areas. The seven sampling areas are the following:

1. SEMCOG (Southeast Michigan Council of Governments)
2. Small Cities
3. Upper Peninsula Rural
4. Northern Lower Peninsula Rural
5. Southern Lower Peninsula Rural
6. Transportation Management Areas (TMAs)
7. Small Urban-Modeled Areas

Specifically, the purpose of the MI Travel Counts program is to collect data on travel over a 48-hour period for all members of 14,280 households. (2,040 within each of seven sampling areas defined in the MI Travel Counts Sample Design Technical Document.) Sampling within area will be proportional to the 2000 Census 5-percent sample Public Use Microdata Areas (PUMAs) data in terms of the demographic variables of interest: household size, number of vehicles, and number of workers. MI Travel Counts is designed to collect data on the number, length, purpose, mode, and time of day that activities and trips are made by persons within each sampled household during an assigned 48-hour period. Basic demographic and attribute household and person information is also collected. In addition, each respondent is asked about long distance trips over 100 miles that they have made within the past three months. Overnight visitors to recruited households will be asked to report their travel for the period of their visit that coincides with their host household's assigned 48-hour travel recording period.

Draft initial and initial data collection instruments, procedures, and protocols for collecting the desired activity and travel data were developed in conjunction with MDOT from November 6th of 2003 until January 23rd of 2004. Study design includes the following draft task elements:

1. Public Awareness Plan
2. Toll-Free Information Number
3. Functional Website
4. Sample Design Technical Document and Procedures
5. Data Collection Methodology Plan
6. Pre-Notification Letter
7. A Recruit Instrument and Computer Assisted Telephone Interview (CATI) recruit script and system
8. Diary Cover Letter
9. Diary
10. Person Information Sheet
11. Reminder Script
12. Data Retrieval Instrument and CATI script and system
13. Interviewer Training Manual
14. Data Coding Structure
15. Quality Control Manual
16. Geocoding Procedures Manual

B. Pilot Parameters and Criteria

The purpose of the Pilot is to test the performance of the above draft materials and procedures. A Pilot of the data collection effort was conducted from January 26th to February 10th of 2004. The above draft materials and procedures were tested with the following exceptions:

1. Within area sample monitoring procedures and parameters based on census data were not tested as part of the Pilot. The contract proposal specified a Pilot sample size of 100 completed households; 126 households were actually completed. Regardless, the Pilot sample size is insufficient to evaluate data cell filling difficulties on an in-area basis. Evaluation on a statewide level is included in this Pilot Report and is expected to reflect general in-area data cell filling difficulties and requirements. Within sampling area proportional attainment difficulties cannot be evaluated in the Pilot, given area small sample sizes.
2. While the Public Awareness Plan was implemented successfully, additional press releases and follow-ups were postponed until project start-up due to the short timeframe for the Pilot.
3. Due to time constraints, the Internet retrieval was not tested for the pilot. MORPACE plans to delay the start of the Internet retrieval by at least one week from the start of the phone retrieval, so that any minor retrieval issues can be resolved prior to launching the Internet version.

Pilot findings are presented in this report in order of the 16 draft task elements listed in Section A, as modified by the three exceptions above. Each section contains a brief description of the task element tested, followed by a discussion of Pilot execution successes and difficulties, and the solutions and recommendations for correction.

Additional Pilot Criteria

The findings of the Pilot are additionally assessed throughout against a set of five criteria developed for pilot travel inventories conducted elsewhere. These criteria, as described below, help identify problems and guide modifications for the final MI Travel Counts. Evaluations pertaining to these criteria are integrated within the findings and solutions individually presented for each task.

1. Achieving data consistency
2. Collecting an appropriate level of data detail
3. Minimizing respondent burden
4. Reaching sampling targets
5. Accomplishing completed data information objectives

Each of these criteria have been identified by past experience as having unique components and challenges, inherent with either the mail-out diary and CATI recruit and retrieval instruments designed for travel surveys, or in planned quality control measures for these efforts. Thus, the MI Travel Counts Pilot includes evaluation of these factors. The predetermined challenges of each criterion are as follows:

1. Achieving Data Consistency

A primary goal of the MI Travel Counts Pilot is to use the full benefits of MORPACE's customized CATI system to ensure improved consistency of the data collected. Data consistency is a persistent issue for travel inventories because different respondents tend to approach the task requested of them in different ways. While the conscientious respondent provides detailed information about all activities and stops, including changes in travel modes, other respondents seem to assume that the researcher cannot possibly be expecting that level of detail. How to best encourage consistent reporting of activity and travel information among all respondents, or at least the greatest number of respondents, is the challenge.

To address this issue, extensive effort was allocated to developing a travel diary instrument that was clear and inclusive of all travel information needed. The pilot CATI retrieval instrument carefully followed the diary format.

2. Collecting an Appropriate Level of Data Detail

MI Travel Counts is designed to collect travel information from all members of a household over a 48-hour period. This is an extensive requirement in itself, but, in addition, there is the need to obtain the address information for all locations visited along the way. The question is always whether sufficient information is being collected both for accurately detailing travel and for geocoding all or most origin and destination points.

3. Minimizing Respondent Burden

Confusing questions, long interview length, and worries about confidentiality are taxing to the respondent in travel inventories. Minimizing respondent burden while still obtaining the desired information is an important goal. The major sources of respondent burden tested by the Pilot were:

- Interview length
- Clarity; confusing questions, order, or formats that are frustrating to respondents
- Degree of flexibility provided to respondents in how and when they respond
- Appropriate attention to confidentiality and privacy concerns

4. Reaching Sample Targets

MI Travel Counts is to provide completed interview data for all members of a representative sample of 2,040 households within each defined sampling area, by the variables of interest: household size, number of vehicles, and number of workers. Representative variables of measure in addition to these are geography within sampling area, household income, age of respondents, and trip making. Previous household travel surveys have traditionally underrepresented large households and have also had underreporting of household income.

The Pilot results are a useful basis for predicting success in attaining sample targets, and a valuable reference for adjusting instruments and procedures as needed to meet goals.

5. Accomplishing Completed Data Information Objectives

Missing data is a problem in any data collection research effort. The Pilot results are expected to be the basis for determining missing data tolerances, i.e., what constitutes a completed household interview? Such a process always involves some trade-offs. For MI Travel Counts, data variables considered essential are household size, number of vehicles, employment status of each person, household income, age of persons, and the address (or nearest street intersection). (The complete listing of data items required for a household to be complete is located in the RFP). While researchers would like to have complete data cells for all items, eliminating whole households due to missing or refused information from one member can introduce considerable research bias. In the real world, respondents may legitimately not know the answer or refuse to answer questions. The Pilot is a source for examining the reasonableness, or acceptable circumstances, for missing data. Key missing Pilot data items are as shown in Table 2 (page 13), Table 3 (page 27), and Table 4 (page 28).

Objective Pilot Research Procedures

Finally, pilots of travel inventories are traditionally conducted within the limits of short time periods and intentionally without the benefits of such corrective techniques as sample monitoring or redirection of sampling effort. Also, they are conducted without benefit of such corrective procedures as refusal conversion techniques, which require recontacts over an extended period of several weeks to be effective. The objective of a pilot is to expose those aspects of the data collection process that will require the most attention and the most detailed corrective recommendations and strategies.

C. Task Element Evaluation

1. Public Awareness Plan

Description

The Draft Public Awareness Plan developed by Brogan & Partners and approved by MDOT included as elements: a functional website with information about the project, devising an MDOT-approved project name (MI Travel Counts), legislative and non-legislative MI Travel Counts notification letters approved by MDOT, compilation of agency, local government, and news media mailing lists, initial agency notification letter mailings, press releases finalized by MDOT, preparation of long-lead publications for project kickoff, pending MDOT approval, and investigation into placement of Public Service Announcements written by MDOT.

Pilot Execution Successes or Difficulties

Once approved by MDOT, the Public Awareness Plan, including a fully-functional website, legislative notification and non-legislative notification letters to local planning agencies, and press releases by MDOT, was implemented smoothly. Website feedback is separately reported in element 2. Two very positive brief television news segments aired in the Detroit and Lansing metropolitan areas, which described the project and encouraged those contacted to participate. No negative news publicity was encountered. As a part of the Pilot, there were no citizen or state or local government responses received outside of website hits and calls to the MI Travel Counts 1-800 number.

Solutions/Recommendations

No changes in the Public Awareness Plan are recommended. The Public Awareness Plan should proceed as outlined in the Plan.

2. Toll-Free Information Number

Description

MORPACE International, Inc. has set-up a dedicated toll-free number, 1-800-566-6262, at MORPACE's Phone Center for the duration of the project. This number is published in the pre-notification letter and in the mailing to each recruited household (both in the cover letter and on each diary). The number is staffed during business hours and an answering machine greeting is heard at other times.

Pilot Execution Successes or Difficulties

During the Pilot, no technical or coverage difficulties were experienced with the 1-800 number. Calls made to the 1-800 number at MORPACE were for purposes of verifying the study, to arrange an appointment for the retrieval interview, to request to mailback completed diaries, or to report that they had decided not to participate in the study. A few households called who received diary materials and then decided not to participate. Some respondents, even those completing the project, reported that they felt they should get paid for completing the diaries. No other complaints were received. Few calls were received after the Pilot was completed on February 10, 2004. Respondents were directed to mailback the completed diaries after the pilot "cut" date.

Solutions/Recommendations

As a result of the Pilot, no changes are recommended to the toll-free number protocol.

3. Functional Website

Description

Brogan & Partners, with MDOT assistance and approval, has developed a project website at www.michigan.gov/mitravelcounts. This website was fully operational for the Pilot and consists of six segments: Introduction, Please Participate, Program Benefits, Media FAQs, Contact Us, and Program Privacy.

Pilot Execution Successes or Difficulties

For the month of January, there were 1,230 page views of the MI Travel Counts website (275 for the front page and 955 total for inside pages) with 128 visits. These statistics include MDOT, MORPACE, subconsultants, e-Michigan staff, and others with a reviewing function.

For the month of February, the statistics are for page views 634 (total) with 180 (home page) and 454 (inside pages), for a total of 138 visits. There were no technical problems with the website and all comments received by participants and other observers were very positive as to its presentation and content.

Solutions/Recommendations

No changes to the MI Travel Counts website are recommended after the Pilot. The website is considered by MORPACE to be a significant asset for encouraging participation in the study.

4. Sample Design Technical Document and Procedures

Description

The Sample Design Technical Document calls for equal sampling across the seven sampling areas with proportional sampling according to 2000 PUMA data for three key household variables: household size (1, 2, 3, and 4+), number of vehicles (0, 1, 2, and 3+), and number of workers (0, 1, 2, 3+) within sampling areas.

For the Pilot, the City of Detroit was given special consideration since MORPACE's previous travel inventory experience has shown that lower response rates from urban areas can be a concern. To test this concern, the targeted Pilot completed sample households were increased from 105 (15 per sampling area) to 120 to accommodate a targeted additional 15 completed households within the City of Detroit. The Pilot random-digit-dial (RDD) sampling plan was adjusted to accommodate this test.

Originally, a total of 7,600 RDD records were ordered from Marketing Systems Group's (MSG) GENESYS Sampling System. These 7,600 records (950 per sampling area) passed through GENESYS' ID Plus, an enhanced screening service, to identify and purge non-working and government/business numbers from RDD samples. This screening reduces data collection costs. Of these 950 records per sampling area, the ID Plus system screened to a total of 4,539 records with assigned residential numbers, broken down by sampling area as follows:

Sampling Area 1:	SEMCOG outside the City of Detroit	557	59%
	City of Detroit	512	54%
Sampling Area 2:	Small Cities	593	62%
Sampling Area 3:	Upper Peninsula Rural	586	62%
Sampling Area 4:	Northern Lower Peninsula Rural	517	54%
Sampling Area 5:	Southern Lower Peninsula Rural	658	69%
Sampling Area 6:	TMA's	558	59%
Sampling Area 7:	Small Urban-Modeled Areas	558	59%
		<u>4539</u>	<u>60%</u>

Screening yields varied from 54% of ordered numbers within the City of Detroit and for Northern Lower Peninsula Rural (4) to 69% for Southern Lower Peninsula Rural (5). Acxiom Corporation then appended address information to the sample numbers for 61% of the sample with the highest address matching in Sampling Area 4: Northern Lower Peninsula Rural (69%) and Sampling Area 5: Southern Lower Peninsula Rural (67%) and the lowest address match rate in Sampling Area 3: Upper Peninsula Rural (51%).

Only 1,960 sample household numbers were actually released for the Pilot. In all, 230 households were recruited for the pilot and 126 households completed the program (54.8%).

*Pilot Execution Successes or Difficulties*Response Rates

MI Travel Counts uses a two-stage interviewing process: (1) recruit households from an RDD sample, and (2) retrieve information from all members of the recruited household. The two response rates are determined separately and are called, respectively, the recruit response rate and the participation rate.

Recruit Response Rate

For the Pilot, the CATI system recorded a disposition (or outcome) for each of the 1,960 phone numbers in the pilot sample. Call attempts yielded three types of dispositions: (1) eligible, (2) ineligible, and (3) unknown eligibility. Subcategories for each of these dispositions are shown below in Table 1.

Table 1. Recruit Sample Dispositions: MI Travel Counts Pilot

Sample Category	Frequency	Percent
Eligible	370	19%
Completed Recruit Interviews	230	12%
Refused	131	7%
Terminated Mid-Interview	5	0%
Language Barrier/Deaf	4	0%
Ineligible	410	21%
Geographic Quota reached	22	1%
Disconnected/Changed/New Number	239	12%
Fax Machine/Data Line	95	5%
Wrong/Business Number	54	3%
Unknown	1,180	60%
No Answer/Busy	546	28%
Answering Machine	280	14%
Soft Refusal – Terminated Before Introduction	117	6%
Scheduled for Callback	237	12%
Total Sample	1,960	100%

The sample classified as unknown eligibility is mostly households, or perhaps some small businesses or organizations, that are just not picking up the phone. The exact outcome for this portion of the sample is unknown. However, we assume from our experience with numbers reached that 47.4% of the known sample is eligible ($370 / 780 = 47.4\%$). Thus, overall we assume that 47.4% of the unknown eligibility sample is eligible ($0.474 \times 1180 = 560$). Adding this to the known eligible sample (370), we assume there are 930 eligible numbers ($370 + 560 = 930$). In calculating a recruit response rate, 25% of all assumed eligible households were recruited ($230 / 930 = 24.73\%$).

It should be noted that in regard to Pilot response rate calculations, the Pilot was conducted over a very short time-frame, possibly resulting in inflated eligible/refusal rates since no refusal recalls/conversion attempts were made. Likewise, the unknown eligibility rate may be inflated because of the high percent of scheduled callbacks that could have been converted to completes, given a longer time period for data collection.

In regard to pilot recruit response rates, an alternative “Westat approach” could be applied. This approach includes numbers that were screened out by GENESYS as ineligible numbers. Using this approach, initial eligible numbers for the Pilot recruit would remain the same at 370, while ineligible numbers would increase to 3,471 ($410 + 3,061$). Thus the percent of eligible numbers as a percent of eligible plus ineligible numbers would be 10.7% ($370 / 3,471$). The number of unknown eligible numbers (1,180) assumed then to be eligible would be 126 ($0.107 \times 1180 = 126$), with total eligible equal to 496 ($126 + 370$). Thus, using this approach, the Pilot recruit response rate would be considered to be 46.4% ($230 / 496$).

A third approach to response rates is based on the American Association for Public Opinion Research’s (AAPOR) standard definitions. AAPOR’s Response Rate 3 (RR3) estimates what proportion of cases of

unknown eligibility are actually eligible. As recommended by Peter Stopher, the assumption that 20% of unknown eligibility cases are actually eligible will be used. Using this approach, we assume that 20% of the unknown eligibility sample is eligible ($0.20 \times 1180 = 236$). Adding this to the known eligible sample (370), we assume there are 606 eligible numbers ($370 + 236 = 606$). In calculating a recruit response rate, 38% of all assumed eligible households were recruited ($230 / 606 = 37.95\%$).

Participation Rate

The participation rate for the pilot was 126 households or 54.8%. This is the percent of households where all members completed the retrieval interview ($126 / 230 = 54.8\%$).

Representativeness of Households Completing the Pilot

Overall, 126 households completed the entire study. Table 2 on the next page shows the distribution of the characteristics of these households.

Comparing the characteristics of households that completed the Pilot with (1) sample design (2000 PUMA data for number of persons, number of vehicles, and number of workers in households) and (2) Census 2000 data (1999 data for household income), the results are as follows:

- The proportion of completes within the City of Detroit was significantly below target. Twenty (20) Detroit households were recruited but only six (6) or 30% completed travel information for all members of their household.
- Two-person households were over-represented and four+-person households were under-represented.
- Zero-vehicle households were slightly under-represented and three+-vehicle households were over-represented.
- Zero-worker households were slightly over-represented while 3+-worker households were slightly under-represented.
- Overall, the Pilot was representative by household income with only slight under-representation of the lowest and highest income categories.

CATI generated tallies for the Pilot recruit and completed household samples by data cells and household income (including statewide and sampling area totals) are attached as Appendix A: Pilot CATI Sample Tallies.

Table 2. Characteristics of Completed Households: MI Travel Counts Pilot

Characteristic	Frequency	Percent	Goal as Set by Sample Design/2000 PUMA Data
Sampling Area			
1 SEMCOG outside Detroit	18	14.3%	12.5%
City of Detroit	6	4.8%	12.5%
2 Small Cities	15	11.9%	12.5%
3 Upper Peninsula Rural	19	15.1%	12.5%
4 Northern Lower Peninsula	14	11.1%	12.5%
5 Southern Lower Peninsula	20	15.8%	12.5%
6 TMAs	19	15.1%	12.5%
7 Small Urban-Modeled Areas	15	11.9%	12.5%
Household Size			
1 person	31	25%	26%
2 persons	60	48%	34%
3 persons	17	13%	16%
4+ persons	18	14%	24%
Number of Vehicles			
0 vehicles	4	3%	7%
1 vehicle	38	30%	38%
2 vehicles	52	41%	41%
3+ vehicles	32	25%	14%
Number of Workers			
0 workers	41	33%	25%
1 worker	34	27%	33%
2 workers	46	37%	35%
3+ workers	5	4%	7%
Household Income			
<\$10,000	5	4%	8%
\$10,000 to \$49,999	65	52%	47%
\$50,000 to \$74,999	19	15%	20%
\$75,000 to \$99,999	21	17%	12%
\$100,000+	11	9%	13%
Below \$50,000	1	1%	
\$50,000 or Above	1	1%	
Refused	3	2%	
Total	126	100%	

Solutions/Recommendations

1. Sample screening and address matching: Pilot experience shows that for the most efficient allocation of data collection resources it may be advisable to order:
 - Less sampling RDD numbers for the Southern Lower Peninsula Rural Sampling Area since this area has both a low screen-out percent for non-working/business numbers and a high address matching rate.
 - More sampling RDD numbers for the City of Detroit since it has a high screen-out percent for non-working/business numbers and an average address matching rate.
 - More sampling RDD numbers for the Upper Peninsula Rural Sampling Area since it has an average screen-out percent for non-working/business numbers and a low address matching rate (possibly due to RDF and fire code addresses).

2. The Pilot response rates are adequate to very good. For the National Household Travel Survey (NHTS), the federal Office of Management and Budget required a minimum recruit response rate of 30%, using any of the three calculation approaches described. This goal should be fully attainable for MI Travel Counts with full implementation of refusal conversion techniques and scheduled callbacks over a longer time period. No changes to sampling design or processes are considered necessary to improve response rates.
3. The Pilot participation rate of 55% is well above the 50% expected average rate obtained by other travel inventories conducted within recent years. Again, no changes are recommended. MORPACE anticipates equaling or raising the participation rate by offering an Internet retrieval option during the full project. At a minimum, respondent burden should be reduced as more options are offered.
4. Achieving the representativeness of the sample: The full project will require close, real-time monitoring to achieve Census proportionality by in-area geographic area, household size, number of household vehicles, number of workers, and household income. If left unmonitored, smaller households are more likely to complete the project, while larger households are less likely. Zero vehicle households are less likely to complete the interview, as are lower income households. Corrective actions in the form of a higher number of callbacks to households in difficult to fill data cells, rescheduling of underrepresented recruited households, and increased or targeted sampling frames will most likely be required.

5. **Data Collection Methodology Plan**

Description

The contract proposal and Data Collection Methodology Report outline the full rationale and procedures for MI Travel Counts.

Pilot Execution Successes and Difficulties

All general procedures for MI Travel Counts functioned smoothly with no major Pilot glitches and with only minor difficulties experienced with both instruments and procedures.

Solutions and Recommendations

No recommendations for changes in the Data Collection Methodology Plan are considered necessary as a result of the Pilot.

6. **Pre-Notification Letter**

Description

The purpose of the pre-notification letter is to provide a “heads-up” in regard to the recruitment call from MORPACE and to establish the authenticity and importance of the project from a community perspective.

Pilot Execution Successes and Difficulties

A pre-notification letter was sent to the 2,770 households with an address match on January 22, 2004. The pre-notification letter explained the purpose of the project, the random process for selection of households, and that an interviewer may be calling to recruit the household for participation. Additionally, the pre-notification letter provided the MI Travel Counts website address for information and a toll-free phone number for questions. Gloria Jeff, the MDOT Director, signed the pre-notification letter. The letters were addressed to “Current Resident”, so that the U.S. Postal Service would not forward letters to residents who have moved out of the study area. No incentive was included with the letter. Of the 2,770 letters sent, 398 were returned as undeliverable (14.4%). Reasons for non-delivery typically include insufficient address information, vacant residence, and no such street or number.

No complaints or specific questions were received in regard to the pre-notification letter. The pre-notification letter significantly increased the participation of households in the project as over 90% of recruited respondents were from those households who received the letter.

Solutions/Recommendations

The pre-notification letter mailing process went smoothly and significantly increased participation in the project. No changes to the process are recommended. Only minor change recommendations have been made and approved by MDOT in regard to wording of the pre-notification letter to simplify language. These include removing the phrase "directly correlates". The MDOT project director's number was also changed to reflect a new system whereby callers will hear a recorded message about the legitimacy and purpose of MI Travel Counts and be encouraged to leave a message to receive a callback if they have further questions. The MI Travel Counts logo has been moved to the signature line so as not to diminish the importance of the official Michigan Department of Transportation masthead logo at the top. A copy of the MDOT approved revised pre-notification letter is provided as Appendix B.

7. Recruit Instrument and Computer Assisted Telephone Interview (CATI) recruit script and system

Description

Each household received up to four recruit attempts. Telephone calls were made to these numbers by MORPACE interviewers between the hours of 6:00 pm and 9:00 pm Eastern Standard Time between January 26th and January 28th of 2004. The draft recruit interview script was used. MORPACE interviewers identified themselves and asked to speak with a household member at least 18 years of age. The interviewer then briefly introduced the MI Travel Counts study, emphasized its importance and the need to obtain travel data for all household members, and assured the respondent that all information is confidential and for research purposes only. In the recruit interview, information about the household size and membership, the number of vehicles available to the household, the number of workers, and the household's income was collected along with other information. The interviewer confirmed or collected the household's street address and other geographic information needed to assign the household to a sampling area and to geocode home address, including city, county, and township where applicable. The household's agreement to participate in the study was confirmed and the household was then assigned a 48-hour travel period: February 2nd/February 3rd, February 3rd/February 4th, or February 4th/February 5th. The interviewer explained that travel diaries and instructions would be mailed to the household by priority mail and that MORPACE would call back within a few days after their travel period to retrieve the information for each household member by phone. Finally the household was asked if they would have any overnight visitors during the assigned travel period, and if so, relevant information was collected for these visitors.

Pilot Execution Successes and Difficulties

All interviewing was completed at MORPACE's Ryan Telephone Center, which is in Sterling Heights, Michigan. The average recruit interview took 9.4 minutes. The interviewing went smoothly and when interviewers were debriefed the only concern they expressed was whether all respondents understood the term "transit pass". Both MDOT and MORPACE project representatives monitored the recruit interviewing on site and MORPACE continued to monitor remotely.

MDOT monitors noted the need to add the word "NEAREST" to the interviewer note for obtaining home address cross streets. A respondent on the second interviewing night was unsure as to whether to include their 15-year old daughter as a worker since she was employed a few hours per week at a nominal job.

During the post-processing of data, difficulties with assigning a few households to the correct sampling area were discovered, based on their varying responses when asked first "What is your city?", then "Are you inside or outside this city?", followed by (IF OUTSIDE) "What is your township?".

During the post Pilot meeting with MDOT on February 26, 2004 it was decided that the word "currently" should be added to the questions: "Are you **currently** employed?" and "Including yourself, how many of the people, over 15 years of age, living in your household are **currently** employed?" As requested by MDOT, MORPACE will change the phrase "over 15 years of age" to "16 years of age or older" for the full survey.

Finally, MORPACE recommends asking for age outright instead of having the interviewer read age categories to save interviewing time. Ages would be post-processed to categories.

Solutions/Recommendations

The Pilot interviewing length of just under 10 minutes is considered somewhat long but acceptable, since the length of phone recruits for travel inventories on average is six to ten minutes.

CHANGES MADE AFTER DEBRIEFING THE INTERVIEWERS AND MONITORING THE FIRST NIGHT. THE FOLLOWING CHANGES TO THE RECRUIT INSTRUMENT WERE MADE ON JANUARY 27, 2004 – AFTER THE FIRST NIGHT OF RECRUITING:

INTRO

Moved the age question to the end of the first paragraph for efficiency:

Hello, my name is <INSERT INTERVIEWER'S FIRST NAME> calling on behalf of the Michigan Department of Transportation. MDOT is conducting a transportation study to better understand the daily travel characteristics of Michigan residents. **Are you a member of this household and at least 18 years old?**

(CONTINUE WITH HOUSEHOLD MEMBER AT LEAST 18 YEARS OF AGE)

This is an official MDOT study and the information collected is confidential and secure. This is not a sales call and no sales calls will result from this interview. For quality control purposes, this call may be monitored.

TPASS_1

TPASS_#

Added "bus or":

TPASS_1.

Do you have a **bus or** transit pass?

TPASS_#.

Does <INSERT NAME_#> have a **bus or** transit pass?

PTYPE_1

PTYPE_#

Added "bus or":

PTYPE_1.

What **bus or** transit pass do you have? Any others?

PTYPE_#.

What **bus or** transit pass does <INSERT NAME_#> have? Any others?

MAILXSTS

Added "nearest" to note:

(RECORD TWO **NEAREST** CROSS STREETS)

HOMEXSTS

Added "nearest" to note:

(RECORD TWO **NEAREST** CROSS STREETS)

CHANGED ON JANUARY 28, 2004 – AFTER THE SECOND NIGHT OF RECRUITING:

WRKRS2

Added text to the question:

Including yourself, how many of the people, **over 15 years of age**, living in your household are employed?

CHANGES RECOMMENDED AS A RESULT OF THE PILOT: (See Appendix C for a full listing of Instrument Changes)

Delete AREA_CIT and AREA_TWP

Create new variable – AREA_CTW

Combining the above two questions into one new question should eliminate potential confusion for the respondent when reporting their city or township for sampling area identification purposes. Note that the pre-logic for AREA_CIT will now be used for AREA_CTW. Also, as an interviewer assist, the words “city” and “township” will be capitalized if the name is used for both a city and township (e.g., Buchanan). Spelling errors have been corrected – Filmore is now Fillmore and Peninsula is now Peninsula. Finally, because the list is now quite lengthy, the CATI will not list each name. A separate answer list for this question will be provided in the Interviewer Guidebook.

AREA_LIM

As a result of combining the city and township questions, the pre-logic will be updated for the AREA_LIM question.

(ASK IF AREA_CTW=2, 3, 5, 6, 7, 9, 11, 13, 17, 18, 20, 22, 23, 26, 27, 29, 33, 34, 40, 41, 44, 45, 46, 47, 50, 52, 53, 54, 55, 56, 58, 62, 66, 67, 68, 69, 70, 73, 74, 76, 78, 80, 81, 86, 90, 93, 95, 97, 98, 100, 101, 103, 104, 105, 108, 109, 110, 113, OR 115)

AREA_TM

As a result of other changes, the pre-logic will be updated for the AREA_TM question.

AREA_CIT>997 will be changed to AREA_CTW>997

AREA_TWP>997 will be deleted

(ASK IF AREA_ST=2 OR AREA_CTY>995 OR AREA_CTW>997 OR AREA_LIM>997)

WRKRS1

To avoid respondent confusion, the word “currently” should be added to the question.

Are you **currently** employed?

WRKRS2

Again, to avoid respondent confusion, the word “currently” should be added to the question.

Including yourself, how many of the people, over 15 years of age, living in your household are **currently** employed?

As requested, changing text in the question:

Including yourself, how many of the people, **16 years of age or older**, living in your household are **currently** employed?

New variable – SAGE_1, SAGE_#

When asked “What is your age?”, most respondents respond with a specific answer, such as 52 years old. Properly categorizing the respondent’s answer to a category can slow down the interview. Also, if more than one household member has the same name or initials, MORPACE routinely adds age to the diary label, to avoid confusion (e.g., Bob (52 years old) and Bob (12 years old)). Therefore, MORPACE recommends recording the specific age and post-coding the age to the age range categories.

SAGE_1.

What is your age?

SAGE_#.

What is <INSERT NAME_#>’s age?

(RECORD AGE)

____ (PROGRAMMER: Allow 0 to 115.)

998 Don't Know

999 Refused

AGE_1**AGE_#**

If a respondent doesn't know a household member's exact age or is unwilling to provide the exact age, the age range categories will be used. Therefore, the pre-logic for these questions will be updated.
(ASK IF SAGE_#=998 OR 999)

Also, the text of the question will be changed as follows:

AGE_1.

Which of the following categories best describes your age?

AGE_#.

Which of the following categories best describes <INSERT NAME_#>'s age?

Finally, the interviewer note ((DO NOT READ LIST. PROMPT, IF NEEDED.)) will be deleted.

LDRV_#

Because of the age changes, the pre-logic for this question needs to be updated.

(ASK IF (SAGE_#>15 AND SAGE_#<116) OR (AGE_#>2 AND AGE_#<12) OR AGE18_# <>2)

EDU_#

Because of the age changes, the pre-logic for this question needs to be updated.

(ASK IF (SAGE_#>17 AND SAGE_#<116) OR (AGE_#>3 AND AGE_#<12) OR AGE18_# <>2)

WRKR_#

Because of the age changes, the pre-logic for this question needs to be updated.

(ASK IF (SAGE_#>15 AND SAGE_#<116) OR (AGE_#>2 AND AGE_#<12) OR AGE18_# <>2)

New variable –SVAGE_#

For the same reasons cited for SAGE, MORPACE recommends recording the specific age of visitors and post-coding the age to the age range categories.

SVAGE_#.

What is <INSERT NAME_#>'s age?

(RECORD AGE)

____ (PROGRAMMER: Allow 0 to 115.)

998 Don't Know

999 Refused

VAGE_#

If a respondent doesn't know a visitor's exact age or is unwilling to provide the exact age, the age range categories will be used. Therefore, the pre-logic for these questions will be updated.

(ASK IF SVAGE_#=998 OR 999)

Also, the text of the question will be changed as follows:

Which of the following categories best describes <INSERT NAME_#>'s age?

Finally, the interviewer note ((DO NOT READ LIST. PROMPT, IF NEEDED.)) will be deleted.

VWRKR_#

Because of the age changes, the pre-logic for this question needs to be updated.

(ASK IF (SVAGE_#>15 AND SVAGE_#<116) OR (VAGE_#>2 AND VAGE_#<12) OR VAGE18_# <>2)

Sampling Area Assignment

Due to combining and changing the questions that determine which sampling area the household is located in, the programmer notes for assigning each household to a sampling area need to be updated.

As shown in section 15 of this report, persons 65 years and older are over represented in the Pilot. Therefore, monitoring by age within sampling area using 2000 Census based percentages will be important. When percentages in the sample reach Census proportions, the following question will be added to the beginning of the recruit interview after the question “Are you 18 years old or older?”: “Is anyone in your household under age 65?” If not, the household will be terminated. The interviewer will state: “Thank you for your willingness to participate but we already have completed sufficient interviews with persons in your age category. May we call you back if we find we need your travel information for MI Travel Counts?”

Additional detailing of these changes proposed for the recruit instrument is provided as Appendix C.

8. Diary Cover Letter

Description

MORPACE staff prepared a package of materials for each recruited household. The package was sent via U.S. Priority Mail and consisted of the following items:

- Personalized diary cover letter
- Personalized diary for each household member and any visitors, with example included
- Person Information Sheet for each household member including school and work questions and address information, with a section for recording long distance trips over 100 miles taken within the past three months
- Business reply envelope (postage-paid)
- Official Department of Transportation Michigan Map

Prior to the Pilot mailing, each address was checked for accuracy and completeness, using the U.S. Postal Service’s website. One package was returned with a handwritten note on the envelope: “Return to Sender – Don’t Want”. This six-person Detroit household opened the package and removed the State of Michigan map before returning the mailing.

Pilot Execution Successes or Difficulties

During the Pilot, no households needed to be recontacted for additional information or clarification of their mailing address. The diary cover letter was signed by Gloria Jeff, MDOT Director and contained the website address, the MI Travel Counts 1-800 number, and the number for the MDOT project director. No comments were received regarding the content or format of the diary cover letter.

Solutions/Recommendations

In the diary cover letter, the word “statistical” has been taken out and the rest of the sentence has been modified as follows: “The information you provide will only be used for the statistical purposes of this study. It will be kept **confidential** and **secure**.” The MDOT project director’s phone number has been revised. A copy of the revised diary cover letter is provided as Appendix D.

9. Diary

Description

Prior to the Pilot, MDOT, MORPACE, PB, Peter Stopher, and Richard Nellett devoted extensive time to the design of the MI Travel Counts place-based activity diary. This diary is used by respondents to record all of the required travel information for their assigned 48-hour travel period. Extensive effort pre-Pilot was devoted to making the format, flow, and content of the diary clear and flawless, with reduced respondent burden.

Pilot Execution Successes and Difficulties

No comments, calls, or complaints were received in regard to the diary instrument with the exception that in-house MORPACE staff noted that the repeating of “Start Here” titles on the diary start page was confusing. A review of the 50 diaries received by mail strongly indicates that respondents fully understood the instructions, content, format, and flow. No respondents recorded as many locations (trips)

as were allowed for in the 48-hour diary format. Respondents completing diaries by mail did not have to be called back for missing information. In regard to mode choice within the diary, Parsons Brinckerhoff has clarified that modeling requirements dictate that mopeds be grouped with motorcycles rather than bicycles.

Solutions/Recommendations

The following changes in the diary are recommended by MORPACE as a result of the Pilot:

Activity Choices

On page 2 of the diary, the work category will have an explanation added:

- 3 Work (employment and job-related activities)

Start Page

The “Start Recording Here” note will be deleted.

The “Start Here” in the black box will be changed to “Start **Recording** Here”.

Type of Transportation

As per modeling requirement clarifications from PB, a global change will be made: Moped will be moved from the “Bicycle/Moped” category to the “Motorcycle” category.

- 2 Motorcycle/**Moped**

- 3 **Bicycle**

Global change: “If you used a car/van/truck or motorcycle for this trip ...” will be changed to “If you used a car/van/truck or motorcycle/**moped** for this trip ...”

Question 3 Font

The font used for “\$ __ __ . __ __ ” does not match. The font will be corrected for the final printing.

Other minor changes were made in the bulleted instructions on page 1 of the diary.

10. Person Information Sheet

Description

The purpose of the Person Information Sheet is to let each member of the household know what personal information is required of them in order for their retrieval interview to be complete. The information includes school and work status and addresses as appropriate, questions about work flexibility and industry, and a section on long distance trips taken over the previous three-month period. The Person Information Sheet provides all the allowable categories of response to each question, so the respondent is prepared to respond appropriately when an interviewer calls to retrieve the data. Additionally, the Person Information Sheet is to be returned with each household member’s mailed diary.

Pilot Execution Successes and Difficulties

No complaints, questions, or comments were received in regard to the Person Information Sheet. Evidence from mailed in person information sheets shows that respondents understood that this sheet must be returned completed for every member of the household along with each member’s completed diary. Respondents fully understood the instructions, content, format, and flow.

Solutions/Recommendations

Work Schedule

It was decided at the February 26th project meeting that the first answer category should be changed to the following:

“I have no flexibility in my work schedule.”

In line with PB modeling requirement recommendations, the following change will be made:

Travel Codes

Moped will be moved from the “Bicycle/Moped” category to the “Motorcycle” category.

- 2 **Motorcycle/Moped**
- 3 **Bicycle**

School Status

Changed to: (Are you/Is NAME) currently attending **any level of school**?

Industry

For clarity, changing the question to the following:

What is (your/NAME’s) employer’s industry?

(See Appendix C for a full listing of changes in the Person Information Sheet)

11. Reminder Script*Description*

Each recruited household is called the day before their assigned travel day. The household is reminded of the project and its importance and asked to record all locations visited. If an answering machine is reached, a reminder message is left for the household.

Pilot Execution Successes and Difficulties

Reminder calls were made on January 31st, February 2nd, and February 3rd. (Please note that the reminder calls for the travel period of February 2nd/February 3rd were made on Saturday, January 31st instead of Sunday, February 1st because of “Superbowl Sunday”.) The average reminder call length was 1.1 minute. No complaints, comments, or calls were received in regard to reminder calls.

Solutions/Recommendations

No changes are recommended to the reminder call script.

12. Data Retrieval Instrument and CATI retrieval script and system*Description*

Calls were made to the 230 recruited households beginning on the day after the travel period. The interviewer asked to speak to the contact person for the household and determined if all household members had completed their diaries or were able to provide the information from memory. The interviewer first asked a few questions about school and work, before recording the travel information for the 48-hour period. The contact person was also asked to confirm the number of overnight visitors indicated in the recruit interview. Overnight guests were added and/or removed as necessary. After completing the interview with the first person, the interviewer asked for the second person, and so on, until all household members were interviewed. Proxy interviews were accepted for children less than 16 years of age, and for those household members for whom callbacks could not be arranged.

If the time was inconvenient, a different time was scheduled to retrieve the information. If the time was inconvenient for some of the household members, information was retrieved from those available at the time and a callback was scheduled for those currently unavailable.

Pilot Execution Successes and Difficulties

Pilot retrieval interviews took place between February 4th and February 10th of 2004. The average length of the retrieval interview was 13.7 minutes per person. (Therefore, a household with three members took an average of 41.1 minutes to complete.)

Throughout the Pilot, supervisors monitored the interviews via MORPACE’s customized CATI monitoring system. This monitoring system was also available to MORPACE project staff, PB, and MDOT. MDOT representatives, MORPACE, PB, and Richard Nellett monitored pilot interviews on site and remotely and

watched CATI pilot questionnaires on-screen as they were being completed, using a modem and standard software.

During the Pilot, interviewers were strongly encouraged to point out problems with questions and asked to identify awkward or confusing wording. The MORPACE project director conducted a debriefing session with the interviewers. Interviewers pointed out that the times for trips that a previous respondent reported taking with another household member did not come up with the other trip information provided for the accompanying member's retrieval interview. This problem has been corrected in the revised retrieval CATI system.

Solutions/Recommendations

The length of the retrieval interview per person and per household is at the outside limits of average lengths for household travel inventories, but there were less than five mid-interview household terminations. Offering mailback and Internet options for data retrieval are essential to reducing respondent burden, especially for 3+ person households.

CHANGED ON FEBRUARY 5, 2004 – AFTER THE FIRST NIGHT OF RECRUITING. CHANGES MADE AFTER DEBRIEFING THE INTERVIEWERS AND MONITORING THE FIRST NIGHT.

DDONE_#

Added text to the answers for clarity:

- 01 Yes - **NO MORE TRAVEL**
- 02 No - **CONTINUE RECORDING TRAVEL**

AHOUR_#

Deleted the "at this location" at the end of the question:

What time did (you/NAME) ARRIVE?

Additional Cities

Added the following cities (to the CATI and to the interviewer guidebooks):

1012 Hell **

1013 Croton **

**Do NOT use for MAILCITY!! Not acceptable for mailing!!

1012 should be between 426 (Hazel Park) and 427 (Hemlock)

1013 should be between 228 (Croswell) and 229 (Crystal)

CHANGES RECOMMENDED AS A RESULT OF THE PILOT. (See Appendix C for detailed list of Instrument Changes).

S_STATUS

Adding text to the question and an interviewer note:

(Are you/ls NAME) currently attending **any level of school?**

(INTERVIEWER NOTE: From preschool/nursery school to college.)

W1_FLEX

W2_FLEX

To match the updated person information sheet, the first answer category should be changed to the following:

- 1 "I have no flexibility in **my work schedule.**"

W1_IND

W2_IND

For clarity, changing the question to the following:

What is (your/NAME's) employer's industry?

Also adding the following interviewer note:

(IF NEEDED: By industry, we mean the employer's principal business or activity.)

VIS_INT

The pre-logic should be updated, so that only those visitors of driving age are asked the question.
(ASK IF VISITOR AND ((SVAGE_#>15 AND SVAGE_#<116) OR (VAGE_#>2 AND VAGE_#<12) OR (VAGE18_#<>2))

TRS_TYPE_#

Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.

002 2 Motorcycle/Moped

003 3 Bicycle

New variable – DAR_#

(ASK IF TRS_TYPE_#=7)

DAR_#.

Which DIAL-A-RIDE provider did (you/NAME) ride?

(RECORD NUMBER FOR BUS PROVIDER FROM TRANSIT LIST)

(RECORD 996 FOR OTHER SPECIFY)

(DO NOT READ LIST. IF NEEDED, PROMPT WITH CATEGORIES.)

996 Other (Specify _____)

998 Don't Know

999 Refused

BUS_#

Change pre-logic:

(ASK IF TRS_TYPE_#=9)

Add "bus" to the question:

Which **BUS** provider did (you/NAME) ride?

PAY1_#

Change pre-logic:

(ASK IF TRS_TYPE_#=6)

Change "this trip" to "the taxi or shuttle":

How much, in total, did (you/NAME) pay for **the TAXI or SHUTTLE?**

Rename PAY1_#, PAY2A_#, PAY2B_#

Use PAY6_#, PAY6A_#, PAY6B_#

PAY6A_# pre-logic will be: (ASK IF PAY6_#=2)

PAY6B_# pre-logic will be: (ASK IF PAY6_#=2)

PAY6A_# and PAY6B_#

Change "transportation" to "taxi/shuttle":

(RECORD **TAXI/SHUTTLE** COST - DOLLARS)

(RECORD **TAXI/SHUTTLE** COST - CENTS)

Create PAY7_#, PAY7A_#, PAY7B_#

Create PAY8_#, PAY8A_#, PAY8B_#

Create PAY9_#, PAY9A_#, PAY9B_#

Base text on 6 series, but change as follows:

PAY7_#

How much, in total, did (you/NAME) pay for **the DIAL-A-RIDE service?**

PAY7A_#

(RECORD **DIAL-A-RIDE** COST - DOLLARS)

PAY7B_#
(RECORD **DIAL-A-RIDE** COST - CENTS)

PAY8_#
How much, in total, did (you/NAME) pay for **the TRAIN**?
PAY8A_#
(RECORD **TRAIN** COST - DOLLARS)

PAY8B_#
(RECORD **TRAIN** COST - CENTS)

PAY9_#
How much, in total, did (you/NAME) pay for **the BUS, (or did you use your transit pass)?**
PAY9A_#
(RECORD USED TRANSIT PASS)
(RECORD **BUS** COST - DOLLARS)
PAY9B_#
(RECORD **BUS** COST - CENTS)

PAY6A_#
PAY7A_#
PAY8A_#
PAY9A_#
(PROGRAMMER: Allow 0 to 9000.)

PK2A_#
(PROGRAMMER: Allow 0 to 9000.)

ASTOP_#
Deleting this question, per discussions at the project meeting on February 26th.

FCTY_#
At MDOT's request, adding an additional interviewer note:
(INTERVIEWER NOTE: For international trips, enter the name of the country in this field.
If trip to Canada, please probe for City and Province (Toronto, Ontario, Canada).
If respondent provides a place, like Disney World, and is unable to provide city when probed, enter the place provided in this field.)

TRTYPE_#
Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.
002 **Motorcycle/Moped**
003 **Bicycle**

FMODE_#
Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.
002 **Motorcycle/Moped**
003 **Bicycle**

The CATI retrieval script was revised so that times for trips that a previous respondent reported taking with another household member come up in the accompanying member's retrieval interview.

13. Interviewer Training Manual

Description

The Interviewer Training Manual consisted of a loose-leaf large notebook that contains MORPACE's standard interviewer guidebook, specific project information taken from the MI Travel Counts website, and

a copy of all materials including the pre-notification letter and envelope, recruit instrument, priority mailing envelope example, diary cover letter, diary, person information sheet, the Michigan map used as an incentive, reminder script, and retrieval instrument. In addition, all project forms and city/township lists were included.

Pilot Execution Successes and Difficulties

Interviewer training consisted of two oral briefings (January 26, 2004 for the recruit interview and February 4, 2004 for the retrieval interview). Topics covered included the project background, expectations, possible problems, and questions. MDOT representatives were present at both interviewer-training sessions. The MI Travel Counts Interviewer Training Manual guided the sessions. Interviewers went over each CATI instrument with the phone room supervisor and project director. Practice interviews were conducted using CATI in test mode.

Solutions/Recommendations

All changes made to project instruments and materials will be made to and updated in the MI Travel Counts Interviewer Training Manual. A handout will be added to the Interviewer Guidebook with additional information on the activity codes.

14. Data Coding Structure

Description

Household, person, trip, and long distance files were created from the raw CATI output and variable codelists were developed as a part of the Data Coding and Quality Control Manual. (Visitor person and trip files were not created for the Pilot, as no households that completed the retrieval had an overnight visitor.)

Pilot Execution Successes and Difficulties

Data results were reviewed and edited, according to procedures established in the MI Travel Counts Data Coding and Quality Control Manual. Post Pilot, separate variable code lists were constructed for household, person, trip, long distance, visitor person, and visitor trip files. These code lists include: column numbers, variable type, justification, format, variable name, response category, and response category description.

Solutions/Recommendations

As a result of MDOT review at the February 26, 2004 meeting, minor changes were made to the code lists including expansion of column width to accommodate TAZ numbers and adding fields for the originally reported location address. Complete revised variable code lists are provided in Excel file format as Appendix E to this Pilot Report.

15. Data Coding and Quality Control Manual and Procedures

Description

As part of the Data Coding and Quality Control Manual, MORPACE Post-Processing Data Checks have been developed. The document is attached as Appendix F. This list includes MORPACE benchmarks that are used to judge data quality. Finally, a List of Post-Processing Audit Checks by PB is provided as Appendix G.

Pilot Execution Successes and Difficulties

Before the first night of pilot interviewing, the CATI instruments were checked thoroughly by MORPACE researchers and programmers. Then the raw output from the CATI was thoroughly checked by MORPACE staff after the pilot. Logic and skip patterns were confirmed and answer ranges were verified.

Data processing prepares SAS (a data analysis system) data files according to specifications provided by the research department. The research department uses SAS to run the post-processing data checks (MORPACE Post-Processing Data Checks), ensuring that the information provided to PB and MDOT is

complete and accurate. PB audit checks of MORPACE data files were accomplished using the specifications as a part of the Pilot.

As presented in the Introduction to this Pilot Report, among the five criteria established to assess the results of the MI Travel Counts Pilot are the three post-processing data quality criteria of:

1. Achieving Data Consistency
2. Collecting an Appropriate Level of Data Detail
3. Accomplishing Completed Data Information Objectives

The level of detail programmed into the CATI resulted in the collection of consistent data. However, since the times collected in the interview and diary were centered on the travel information, as opposed to the location information, MORPACE was required to recollect times, even if members of the same household were traveling together. The CATI system allowed respondents to report location information only once, which helped achieve a high level of data consistency.

As shown in Table 2 on page 13, there were no missing data for households that completed the retrieval interviews for the critical variables; sampling area, household size, number of vehicles, and number of workers (see Appendix H for frequencies of summary variables). Two percent (2%) refused to reveal household income and 2% did not provide income category information other than below or above \$50,000. All completed households provided full home address information.

Additionally, Table 3 on page 27 shows that missing data was not a problem for person-level data. Table 4 on page 28 shows the same result for trip-level data.

As stated, missing person data is minimal and Pilot distributions for persons on key characteristics are considered proportional to expected Census distributions, with the exception that within the Pilot sample those 65 years or older are overrepresented. This often happens in a Pilot with a short interviewing period because older persons are both more likely to be home and more likely to cooperate.

The percent of proxy interviews is considered at least acceptable by Travel Survey Standards being established internationally. These standards, as presented at the 2004 Transportation Research Board's Travel Survey Methods meeting, regard 10% or less proxied aged 18+ respondents as "excellent" and 20% or less proxied 18+ aged respondents as "good". It should be noted that 96% of those who proxied in the Pilot for a respondent 18 years or older reported that the respondent completed the diary. Of adults reporting both by self or proxy, 48 of 235 respondents 18 years or older (20.4%), stated that they were not using their diary when reporting their locations or travel.

In the main MI Travel Counts program, "other specify" and "other" responses will be post-coded into the specified question response categories. New coding categories will be added only with the approval of MDOT.

Table 3. Characteristics of Completed Persons: MI Travel Counts Pilot

Characteristic	Frequency	Percent
Gender		
Male	134	47.3%
Female	149	52.7%
Age		
Under 5	10	3.5%
5 to 15	34	12.0%
16 to 17	4	1.4%
18 to 24	10	3.5%
25 to 34	19	6.7%
35 to 44	45	15.9%
45 to 54	44	15.5%
55 to 64	52	18.4%
65 to 74	33	11.7%
75 to 84	27	9.5%
85+	3	1.1%
Don't Know/Refused	2	0.7%
Transit Pass		
Yes	7	2.5%
No	276	97.5%
Work Status		
Full-Time Worker	107	37.8%
Part-Time Worker	35	12.4%
Unpaid Volunteer/Worker	9	3.2%
Not Looking for Work	82	29.0%
Looking for Work	6	2.1%
Not Applicable (Too Young)	44	15.5%
School Status		
Not Currently a Student	230	81.3%
Pre-School/Nursery School	3	1.1%
K-12	40	14.1%
Vocational/Technical	1	0.4%
Full-Time College	6	2.1%
Part-Time College	3	1.1%
Proxy Status for Age 18+		
Respondent	135	57.4%
Proxy	50	21.3%
Mailed Diary	50	21.3%
Proxy 18+ Diary Completed		
Yes	48	96.0%
No	2	4.0%

Table 4. Characteristics of Completed Trips: MI Travel Counts Pilot

Characteristic	Frequency	Percent
Trip Status of Persons		
No Trip Persons	25	8.8%
Number of Travelers	258	91.2%
Number of Trips Reported	1,961	
Average Number of Trips Per Traveler	7.6	
Transportation Mode		
Car, van, Truck	1,786	91.1%
Motorcycle	1	0.1%
Walk	66	3.4%
School Bus	94	4.8%
Taxi/Shuttle	2	0.1%
Dial-A-Ride	4	0.2%
Public Bus	4	0.2%
Private Bus	4	0.2%
Driver Status		
Driver	1,381	77.8%
Passenger	397	22.2%
Drive Alone	1,036	57.9%
Activity at Destination		
Home – Paid Work	10	0.5%
Home – Other	650	33.1%
Work	329	16.8%
Attend School	117	6.0%
Eat Out	76	3.9%
Personal Business	197	10.0%
Everyday Shopping	184	9.4%
Major Shopping	43	2.2%
Religious/Community	33	1.7%
Social	60	3.1%
Recreation – Participate	43	2.2%
Recreation – Watch	14	0.7%
Accompany Another Person	16	0.8%
Pick Up/Drop Off Passenger	181	9.2%
Turn Around	9	0.5%

Mode and Trip Activity at Destinations distributions are reasonable compared with other similar travel studies. The number of zero-trip households is reasonable although some of the reasons for not traveling may be suspect. Primary reasons given were bad weather on the assigned travel days (snow), elderly persons who do not travel much, lack of a car for a person not working, and “didn’t have anywhere to go”.

Trip rates per traveler are somewhat lower than expected. This is probably attributable to overrepresentation in the Pilot sample of 1 and 2 person households and overrepresentation of elderly households. Trips per traveler reported declined on Day 2. Since snow was reported in many areas of Michigan on Day 2, weather may have contributed to this decline.

Appendix H_1 through H_4 provides the summary counts and frequencies for household, person, trips, and long distance trip study questions.

Solutions/Recommendations

As a result of the Pilot, the MORPACE Post-Processing Data Checks is attached as Appendix F. For the pilot, the following issues were faced:

SNAME (Person File)

SNAME was originally omitted from the data structure. This was an oversight by the research department. The variable was added and the data structure was updated accordingly prior to data delivery.

W1NAME and W1TYPE (Person File)

Originally, there were 11 cases missing these variables. These were the 11 cases that reported working only at home or having no fixed workplace (W1LOC=2 OR 3). They were asked W1NAME and W1TYPE, but the data processing department had not included the information in the original data file. The problem was identified and corrected before the pilot data was delivered.

NO TRAVEL PERSONS (Trip File)

For the 25 persons (TRIPNUM=0) that did not travel during the 48-hour travel period, the ORIGIN to ACT4 variables were originally blank in the data file. These variables were updated in the data file so that MDOT can see at what location the respondent spent the travel period.

VHNUM (Trip File)

There were 25 cases missing originally. These were cases where the household is a one-member household. The cases were correctly post-coded as "0" prior to data delivery.

DTIME and ATIME (Trip File)

The values for these variables are to be delivered in military time. MORPACE delivered the pilot data in a combination of military time and am/pm time. The research department did not check for or realize the mistake prior to data delivery, which was an oversight. A check has been added to the post-processing data checks to ensure that this mistake will not happen in the future.

Attached as Appendix G is PB's List of Post-Processing Data Checks.

MORPACE's Pilot frequency results (Appendix H) and post processing data checks show that data is consistent, missing data is minimal, and an appropriate level of data detail has been collected. To accomplish completed data information objectives and reach sampling targets, detailed sampling in-area monitoring will be necessary to assure proportional geographic representation and filling of sampling data cells. This monitoring will also be required to assure sampling representation by household size and age of persons and to determine whether decline rates in reported Day 2 trips are acceptable. Agreement with these goals is also expected to require the implementation of the following alternative strategies:

- Increasing callbacks to difficult to reach data cell households for both the recruit and the retrieval (including day time retrieval interviewing).
- Increasing sample replicates and/or ordering targeted sampling frames (such as supplemental income targeted RDD samples within sampling areas).
- Rescheduling recruited households who fail to complete the retrieval for all household members on their assigned travel days.
- Developing and implementing special techniques to assure acceptable Day 2 trip rates. Such techniques might include an interviewer script when 3 a.m. at the end of the first travel day is reached to the effect that "it is very important to the results of this study that you report as much detail about all of your locations and travel for this next 24 hours as you did for the last 24 hours."

As shown in Table 3 of this report (page 27), persons 65 years and older are over represented in the Pilot. Therefore, monitoring by age within sampling area using 2000 Census based percentages will be important. When percentages in the sample reach Census proportions, the following question will be added to the beginning of the recruit interview after the question "Are you 18 years old or older?": "Is anyone in your household under age 65?" If not, the household will be terminated. The interviewer will state: "Thank you for your willingness to participate but we already have completed sufficient interviews

with persons in your age category. May we call you back if we find we need your travel information for MI Travel Counts?”

Finally, as a part of quality control procedures, Parsons Brinckerhoff (PB) conducted audit checks of Pilot data as specified in the Data Coding and Quality Control Manual. PB’s report of findings is attached as Appendix I. Findings were in three categories: (a) data inconsistencies, (b) review of non-geocodables, and (c) questionable trips due to time and speed checks.

- **Data Inconsistencies**

Three minor data inconsistencies were found:

1. **(See Table 2-1: Error in Departure/Arrival Time of PB Report in Appendix I)**

Solution: A correction in this record has been made to show the ADAY (Arrival Day as “3”). In the datafile Day 1 will start at 3:00a.m. and go until 12:00a.m. on Day 1; Day 2 will start at 12:01a.m. and go to 12:00a.m. on Day 2; Day 3 will start at 12:01a.m. and go until 2:59a.m. on Day 3. In this way departure and arrival times can be read without confusions over the 48-hour period.

2. **(See first paragraph of page 8 of PB Report in Appendix I) Two records were found with worker status “not working” but reporting work trips.**

Solution: It has been agreed with PB that while “paid work at home” will not be allowed, work trips will be allowed for those not reporting “full or part time work”. These two cases were elderly persons who differentiated between trips to church for religious purposes and trips to church for “work”

3. **(See Table 3-1 Review of households with no travel) One respondent indicated that he/she did not travel because he/she went to a second job. This record should be reviewed.**

Solution: MORPACE has reviewed this file and this was a 1-person household, older female, in Upper Peninsula Rural, whose first job is self-employed farmer (location at home) and whose second job is self-employed accountant (location at home). MORPACE recommends this record be kept.

- **Review of Non-Geocodables**

(See Table 5-1: Review of Non-Geocodables in PB Report in Appendix I)

Table 5: MORPACE Recommendations Regarding Non-Geocodables

Household	Locations	Comments/Changes
13	Krogers – Ann Arbor	More than One in Ann Arbor - Accept
36	BP and Perrysburg	Assign to External Cities - Accept
43	Residence	Not Geocoded - Accept
60	Bob’s Store, Escanaba	Have Address, Not Geocodable - Accept
84	Mill Creek Village Residence	Have Address, Not Geocodable - Accept
98	While Consolidated is Electrolux in Greenville	Geocoded - Accept
204	Bus Stop	Geocoded Intersection - Accept
257	Louisiana Pacific and Restaurant	Have Louisiana Pacific Address, Not Geocodable - Accept
260	Daughter’s Workplace and Mother-in-Law’s Residence	DELETE FROM DATAFILE
204	Bus Stop and Neighbor’s	Geocoded Bus Stop to Intersection - Accept
285	MSU Federal Credit Union	MDOT supplied address, however address/intersections not geocodable - Accept

Table 5: MORPACE Recommendations Regarding Non-Geocodables (Continued)

300	Friend's Home and Mother-in-Law's Residence	DELETE FROM DATAFILE
348	Residence and Town & Country	Town & Country Assign to External City - Accept
369	PJ Family Restaurant	Have Address, Not Geocodable - Accept
378	Tom Koch	Non-Geocodable - Accept
425	/fish Factory, Gas Station, Residence, Krogers, Tylers Terrace	Geocoded Fish Factory and Assign Others to External City - Accept
477	Kewadin Casino and Knights of Columbus	Geocoded Kewadin Casino - Accept
493	The Little Store	Geocoded - Accept
516	Friend's Home	5-person HH with 43 trips - Accept
542	Sister Lake School	Geocoded - Accept
545	Out of Country	Assign to External - Accept
385	Grand Haven/Rollerhaven Skate & Fun Center	This address was corrected by MDOT to Flint and geocoded - Accept

Solution: Delete Households 260 and 300 due to non-geocodables.

- **Review of Questionable Trips Due to Time and Speed Checks**
(See Table 5-7: Review of Questionable Records Based on Quality Checks in PB Report in Appendix I)

Table 6: MORPACE Recommendations Regarding PB Quality Checks

Household	Person	Trip	Changes/Comments
1	1	6	Time Corrected to 20 Minutes – Accept
23	1	1	Time Corrected to 10 Minutes - Accept
24	1	1	NOT CORRECTED – DELETE FROM DATAFILE
43	3	7	Mode was School Bus - Accept
98	3	2	Mode was Private Bus, Corrected to 45 Minutes - Accept
100	----	-----	NOT CORRECTED – DELETE FROM DATAFILE
110	----	-----	NOT CORRECTED – DELETE FROM DATAFILE
124	2	3	Time Corrected to 35 Minutes - Accept
153	1	1	Time Corrected to 10 Minutes - Accept
153	2	10	Time Corrected to 5 Minutes - Accept
160	1	3	NOT CORRECTED – DELETE FROM DATAFILE
163	4	8	Time Corrected to 10 Minutes - Accept
175	1	1	Time Corrected to 115 Minutes - Accept
175	3	2	Mode was School Bus; Time Corrected to 38 Minutes - Accept
191	1	2	Time Corrected to 15 Minutes - Accept
200	2	4	Time Corrected to 30 Minutes - Accept
274	----	-----	NOT CORRECTED – DELETE FROM DATAFILE
335	2	6	Time Corrected to 20 Minutes - Accept
348	1	1	Time Corrected to 15 Minutes - Accept
385	----	-----	Once address corrected to Flint, times are O.K. - Accept
386	4	5	Time corrected to 15 Minutes - Accept
390	----	-----	NOT CORRECTED – DELETE FROM DATAFILE

Table 6: MORPACE Recommendations Regarding PB Quality Checks (Continued)

417	1	5	NOT CORRECTED – DELETE FROM DATAFILE
445	1	11	Took Car/Truck on Snowmobile Trail - Accept
468	1	10	Time Corrected to 5 Minutes - Accept
481	1	4	Time Corrected to 15 Minutes
491	1	3	NOT CORRECTED – DELETE FROM DATAFILE
492	----	-----	NOT CORRECTED – DELETE FROM DATAFILE
534	1	3	Time Corrected to 5 Minutes
564	2	4	Traffic Congestion – from Clarkston to doctor's in Waterford - Accept

Times were corrected through recalls and by comparing trip time to a similar trip taken between the same points during the travel period.

Based on PB findings, MORPACE-PB recommend that 11 households (8.7%), as shown in Table 5 and Table 6, be deleted from the final Pilot dataset (9 due to time and distance problems that could not be corrected and 2 based on missing more than one geocode for a location).

MORPACE recommends keeping PB's zip code file checks in regard to Table 5-2 as these may provide further information that can assist geocoding, when a city names are wrong.

To minimize time and distance problems for MI Travel Counts, MORPACE_PB have recommended to following changes:

1. Due to the number of short trips identified by PB's time and distance trips criteria for speed checks have been modified as follows:

Trips less than 2 miles in length and also 30 minutes in time will be considered acceptable due to short distance and time. Trips that are flagged will have 10 minutes added and subtracted from the trip length and new speed computed. If the new speed is still not within the speed parameters, the record will be flagged and reviewed.

2. Adding a programmed question to the CATI to confirm with the respondent that the trip took over one hour to complete, when this is recorded. (**HOUR_CHK**)
3. Increased emphasis on phone room supervisor and interviewer training in regard to time recording.
4. Adding these questions at the end of the daily travel collection:

(AFTER DAY 2 TRAVEL IS COMPLETE, IF HOUR_CHK=01, ASK:)

LONGTRIP Did any of the trips you've reported take significantly longer than usual?

- 01 Yes
- 02 No (GO TO LD_INT)
- 08 Don't Know (Go to LD_INT)
- 09 Refused (Go to LD_INT)

(IF LONGTRIP=01, ASK:)

REAS_LT Was this due to: (READ LIST)

01 Weather (rain or snow)

02 Construction

03 An accident

04 Traffic congestion

96 Other

99 Don't Know

100 Refused

16. Geocoding Procedures Manual*Description*

All locations (home, school, work, and trip locations) are put through an extensive geocoding process according to the MI Travel Counts Geocoding Procedures Manual, which details the steps of geocoding. Specifically the process described as the “Geocoding Hierarchy” developed by the MDOT Geocoding Team and documented in the manual is being used for both the MI Travel Counts Pilot and program.

Initial Pilot Execution Successes and Difficulties

MORPACE used the address dictionary and files associated with the Michigan Geographic Framework (Version 3). MapInfo will be the software engine, but all addresses were geocoded first to Framework v3 with MapMarker Plus GDT files as a back-up. All geocoding was performed interactively, first to street address and then to street intersection.

The MI Travel Counts Pilot geocoding results are the best predictor of geocoding rates for the full data collection effort. The Pilot geocoded results (See Table 7 and Pilot Report Appendix J) are calculated separately for home, work, school, trip, and start-trip locations (if the person started their travel at a location other than home). It should be noted that the trip file does not include home, work, and school locations that will later be integrated back in the complete origin and destination trip file, thereby increasing trip file geocoding rate. For the Pilot, using Framework with MapMarker Plus files as a back-up, MORPACE was able obtain the rates as shown in Table 7.

Table 7. Geocoding Results - MI Travel Counts Pilot

<i>Type of Geocoding</i>	<i>Frequency</i>	<i>Percent</i>
Home Location		
MGF Street Level	83	66.0%
MapMarker Street Level	40	32.0%
MGF Intersection	0	0.0%
MapMarker Intersection	3	2.0%
TAZ	126	100.0%
Non-Geocodable	0	0%
<i>Total</i>	<i>126</i>	<i>100.0%</i>
Primary Work Locations		
MGF Street Level	65	50.0%
MapMarker Street Level	51	39.0%
MGF Intersection	8	6.0%
MapMarker Intersection	4	3.0%
TAZ	128	98.0%
Non-Geocodable	2	2.0%

Table 7: Geocoding Results: MI Travel Counts Pilot
(Continued)

Ohio	0	0.0%
Illinois	0	0.0%
Wisconsin	1	0.0%
Indiana	0	0.0%
Canada	0	0.0%
Other	0	0.0%
Total	131	100.0%
Secondary Work Locations		
MGF Street Level	8	62.0%
MapMarker Street Level	4	31.0%
MGF Intersection	0	0.0%
MapMarker Intersection	0	0.0%
TAZ	12	92.0%
Non-Geocodable	1	8.0%
Ohio	0	0.0%
Illinois	0	0.0%
Wisconsin	0	0.0%
Indiana	0	0.0%
Canada	0	0.0%
Other	0	0.0%
Total	13	100.0%
School Locations		
MGF Street Level	31	58.0%
MapMarker Street Level	21	40.0%
MGF Intersection	0	0.0%
MapMarker Intersection	1	2.0%
TAZ	53	100.0%
Non-Geocodable	0	0.0%
Total	53	100.0%
Start Locations (Not Home)		
MGF Street Level	2	33.0%
MapMarker Street Level	3	50.0%
MGF Intersection	0	0.0%
MapMarker Intersection	0	0.0%
TAZ	5	83.0%
Non-Geocodable	1	17.0%
Ohio	0	0.0%
Illinois	0	0.0%
Wisconsin	0	0.0%
Indiana	0	0.0%
Canada	0	0.0%
Other	0	0.0%
Total	6	100.0%
Trip		
MGF Street Level	325	49.0%
MapMarker Street Level	235	35.0%
MGF Intersection	44	7.0%
MapMarker Intersection	22	3.0%
TAZ	626	96.0%
Non-Geocodable	26	4.0%

Ohio	12	2.0%
Illinois	0	0.0%
Wisconsin	1	0.0%
Indiana	0	0.0%
Canada	0	0.0%
Other	0	0.0%
<i>Total</i>	<i>665</i>	<i>100.0%</i>

The three home locations that could only be geocoded to street intersection were all in the Upper Peninsula and all were without specific street numbers. 100% of home addresses were geocoded to Traffic Analysis Zones (TAZs).

One of the primary work non-geocodables has a verifiable address, but neither system could geocode to the street address or intersection level. For the other non-geocodable, no address for the business name given can be found in Greenville, MI. One other primary work location is in Wisconsin.

For trips, (13) were located outside Michigan (Ohio and Wisconsin), while 4% (26) were non-geocodable. Of the non-geocodables, 4 of 26 (96%) are verifiable addresses that could not be geocoded to an x,y coordinate using either system..

Solutions/Recommendations

Once MORPACE overcame technical difficulties with fully integrating Framework v3 with MapMarker Plus files so that each could be used interactively geocoding to Framework first, then MapMarker the geocoding proceeded as planned. Pilot geocoding rates exceeded guidelines as specified in the Geocoding Procedures Manual, which are for x,y coordinates to the street or intersection level:

- 99% or better for home
- 95% or better for school and work locations
- 90% or better for trip locations
- 95% or better geocoded to TAZ

Geocoding results code show which system (Framework or MapMarker) assigned the coordinates. As a result of the Pilot MapMarker offset was reset to 25 feet and the geocoding was performed again. No recommendations outside those specified in the Geocoding Procedures Manual are made as a result of the Pilot, since goals were met.

D. Subconsultant Reviews

Richard Nellett, RLN Transportation Planning

My review of the MDOT MI Travel Counts Revised Pilot Report found that MORPACE has done a very good job of responding to MDOT's February 25, 2004 comments on the Draft Pilot Report. Specifically the format was revised addressing each instrument separately as requested by first providing a general statement of fact (what was done), identifying what worked and what didn't, and providing recommended changes where warranted. The addition of the documentation in the Appendices has further strengthened the initial pilot report documentation.

It is noted that the most significant issues identified in the February 25th meeting related to geocoding based on the framework network.

Regarding the pilot recruitment and retrieval process, I was very impressed in how well it went and with the professionalism of the MORPACE survey staff. This was obviously the result of a well thought out game plan and survey instrument. Regarding the Pilot Report, overall this report is the most thorough documentation of any activity that I have been involved with in my professional career. Both MDOT's

Planning staff and MORPACE should be congratulated for this superior product. I look forward to a successful completion of the full survey.

Peter Stopher, Ph.D., PlanTrans

At this time, I have reviewed the body of the report in detail, but have only reviewed selected appendices. On the calculation of response rates – the first method used is essentially the CASRO method, which results in an exaggeratedly low response rate. It is not a recommended method. The second method, used by Westat errs in the opposite direction, being too generous. The method being recommended in the NCHRP report is the AAPOR (RR3) method with the eligibility rate for the unknown eligibility units being assumed at a figure around 20 percent, unless there is good local evidence to provide an alternative figure. This would produce a result that is more or less midway between the two methods used in the report. I recommend adopting this method.

The results reported in items 1- 4 on pages 8-9 of the report are not unexpected, especially with a 48-hour diary. These indicate an expected result from a pilot of this nature.

On page 17, there are comments about the age question. From past experience, I would advocate asking not for age but for year of birth, which people are so used to providing for so many forms that it is often given without thinking further about it.

The results in Table 3 show the usual biasing towards females in the responses, which is typical of all travel surveys. As noted in the text and shown in Table 4, the trip rate is lower than might be expected, although the non-mobility (no trip persons) rate is in a very acceptable range. This suggests that people are not reporting all trips. I had hoped that Appendix H contained a breakdown of the numbers of trips collected on each of the two days, so as to see the drop off in trip reporting. However, I was unable to find it. I would like to know what the average trip rate is on each of day 1 and day 2. Also, as I expected, there is a bias in the day of week data by using the three pairs of Monday/Tuesday, Tuesday/Wednesday, and Wednesday/Thursday, with over-representation of travel for Tuesday and Wednesday. It would also be useful to examine trip rates by day of week, and separately for day 1 and day 2. Because of the expected drop off in reporting on the second day, the rate for Thursday would be expected to be significantly under-estimated. *(Note: The sample size for the Pilot was insufficient to show statistically significant differences in average trip rates by day of the week or between sampling areas. Comparison of trip rates by day of the week and by sampling area will be shown as a part of Interim Reports.)*

Although the modeling will be undertaken on trip tours, it would be useful at this point to see a breakdown of trip rates by conventional trip purposes, such as home-based work, home-based school, home-based shop, home-based other, other-work and other-other. This would allow us to determine the extent to which any trip purpose is apparently under- or over-reported. *(Note: Comparisons in average trip rates by aggregated conventional trip purposes will not be shown as a part of Interim Reports as extensive modeling analysis is required to construct these rates.)*

Apart from this, from my viewpoint, this appears to have been a successful pilot that promises well for the full survey. The few changes that have been made are useful and show the value of the pilot survey process. I feel that MORPACE is to be congratulated on a very good pilot survey, that has helped to refine the final procedures in important ways, and that paves the way for a high quality survey.

March 17, 2004

“While I have not seen the issue before with the over-representation of the elderly in the pilot, I have also not seen pilots that are as short in duration of recruitment as this one was. I found Laurie’s explanation to be perfectly plausible and sensible. I also see no problem with the fix that she has suggested, in the event that it turned out that the over-representation was not just a pilot survey characteristic, but was endemic to the survey. However, this is just one of a number of things that will need to be watched as the main survey progresses, and possible action taken to focus the later stages of data collection on under-represented segments of the sample.

Comments from Parsons-Brinckerhoff are included as Appendix I

MI Travel Counts

Pretest Data Report

April 13, 2004

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1.0 EXECUTIVE SUMMARY

Parsons Brinckerhoff (PB) received the household file on February 20, 2004 with 126 records. On February 23, 2004, PB received the person file with 283 records. The trip and long distance files were received on February 24, 2003 with 1,987 and 228 records, respectively. On March 26, 2004, PB received new household, person, and trip datasets with updated geocoded information. There were no problems found with the household file or the person file. With the newest datasets, there was one (1) record in the trip file that had a problem with the time of arrival and/or the time of departure. It was found that this trip concluded on the third day of the survey and could not be entered into the system as such. MORPACE and PB recommend that the day/time conventions be changed to reflect the following: Day 1 from 3 am to 12 am; Day 2 from 12 am to 12 am; and Day 3 from 12 am to 3 am.

Of the 1,987 trip records submitted, 25 of those records/persons recorded no trips from 18 different households. Eight households reported no trips, approximately 6.3 percent. There was one household/person where a trip was not made and the reason was ambiguous. It is recommended that this one household be re-contacted or the interviewer questioned regarding this household.

PB will be reviewing the sample set to ensure that targets are being reached for each of the regions, household size, and auto ownership. Given the small sample set that was taken for the pretest, no recommendations are being made at this time. The cell targets and drop-off rates will continue to be monitored and recommendations made in future reports, if need be.

PB reviewed 103 records that did not have geocoding. Upon review, it was found that 28 records could possibly be geocoded given the respondent information and should be further reviewed by MORPACE. There were 55 records from 11 households were found to be ungeocodable. It was found that 20 records were to other states outside of Michigan and should be geocoded to the city center, if possible.

Based on the geocoding, it was found that 12 trip ends had possible incorrect City/Township assignment. Also based on the geocoding, it was found that 266 trip ends had possible incorrect TAZ assignment.

PB reviewed time/distance for dataset quality. There were 1,987 records in the trip file, 190 records were disregarded/removed due to non-geocoding, non-trip making, same-point geocoding, or a non-vehicular trips (bicycle/moped, walk, train, or other). Of the original 1,987 trips, 190 were removed, leaving 1,797 trips, which is approximately 90%. Two of the trips were made outside Michigan, in the state of Ohio (QNO 36, Person 1, Trip 5 & 6).

The following number of records were flagged for the following reasons:

- Same City/Township with trip over 60/90 minutes: 20 records
- Travel time difference over 60 minutes: 36 records (19 records from same city/township)
- Average Travel Speed above or below threshold: 248 records (some duplicate records from above)

Through further review, it was found that there were 52 trips that are questionable represented by 30 households. MORPACE will need to review some these records for geocoding and make a recommendation for inclusion in the dataset. Some of these records are school trips during peak drop-off/pick-up times and should also be considered for inclusion.

2.0 REVIEW OF LOGIC CHECKS

Parsons Brinckerhoff (PB) received the household file on February 20, 2004 with 126 records. On February 23, 2004, PB received the person file with 283 records. The trip and long distance files were received on February 24, 2003 with 1,987 and 228 records, respectively.

2.1 Listing of Problems Found by Dataset

Below is a summary of each type of dataset and a summary and any problems found in the dataset.

2.1.1 Household

PB received 126 records for the household file. Three checks were performed on the data file:

1. Number of workers in the household were less than number of persons in household
2. Number of subsidized vehicles in the household were less than the number of total vehicles in the household
3. Day of the week correctly corresponded to the day

All fields were filled in except for the zone column and **there were no problems found in the dataset.**

2.1.2 Person

PB received 283 records for the person file. All person records corresponded to a record in the home file. Fifteen checks were performed on person file:

1. Person number in home file is less than or equal to number of persons in household
2. Check for proxy for persons under 16 years of age
3. Check person number proxy is less than or equal to number of persons in household
4. Check persons under 16 years of age are licensed drivers
5. Check if person has transit pass, that corresponding transit type is listed
6. Check respondents 18 years of age or older are not code 0 for education level, check that respondents 16 years of age or younger are code 0 for education level
7. If currently a student, check for school name through school zone
8. Check that respondents under 16 years of age are code 5 in working status
9. Check that respondents that are not working are asking the not working status question
10. Check that worker questions are only asked if working status is code 1 or code 2
11. Check that only respondents who indicated "other" industry have an answer for other industry
12. Check that only respondents who have a fixed workplace have answers for work address through work zone.
13. Check that secondary job questions are only asked if respondent has more than one job.
14. Check that respondents who completed the diary are not code 3 for using the completed diary, other respondents should be code 3 for using completed diary
15. Check that no information is missing for the following: Gender, Age, Age Range, Relationship, Licensed Driver, Transit Pass, Education Level, School Type, Working Status, Proxy, Diary Completed, Long Distance Trip

There were no problems found with the dataset.

2.1.3 Trip

PB received 1,987 records within the trip pretest file. All trip files related to the home file and person file. The following checks were performed on these records:

1. Check that person number is less than or equal to number of persons in household
2. Check that number of household persons in vehicle are not greater than number of persons in household
3. Check that only respondents who indicated "other" for type of origin, destination, type of transportation, bus provider have an answer in the other category
4. Check that bus provider is not missed if trip involved dial-a-ride or public bus
5. Check for pay for trip if transportation mode is 6,7,8, or 9
6. Check for amount paid if paid for trip
7. If Type of Transportation used is 1,2,3, then check to make sure if driver or passenger and number of people in vehicle and that number of household members is not greater than number of persons in household
8. Check that respondent is not listed as a household member in the vehicle
9. If type of transportation used is 1,2,3, then check for household vehicle used in trip and pay for parking
10. Check to see if paid for parking that amount paid, parking rate are valid
11. If parking rate is other, check for other parking rate
12. Check that all cases (except those respondents that did not travel) are not missing arrival time or destination time
13. Check that arrival time is after departure time
14. Check if household vehicle was used in the trip, that there are number of vehicles in household greater than zero
15. Check for absent cross-streets

There was 1 record found with an error in time of departure and/or time or arrival, this is:

TABLE 2-1: ERROR IN DEPARTURE/ARRIVAL TIME

RECTYP	QNO	PERNUM	TRIPNUM	DTIME	DDAY	ATIME	ADAY
3	175	1	4	2340	2	259	2

MORPACE has indicated that the arrival time of this trip occurred on the third day of the survey and the CATI system would not allow a third day as an entry. MORPACE has suggested the following day/time conventions, such that travel time calculation would not be confusing or negative:

- Day 1 – 3 am to 12 am
- Day 2 – 12 am to 12 am
- Day 3 – 12 am to 3 am

PB concurs with this convention and it is consistent with other travel surveys taken throughout the United States.

2.1.4 Long Distance

PB received 228 records for the long distance pretest file. All records matched up with the home file and person file. The following checks were made on the data:

1. Check for respondents that indicated "other" for Transportation to Reach Location, Type of Transportation Used has a value in the corresponding other field
2. If public bus was used for Transportation to Reach Location, or Type of Transportation Used, check bus provider for corresponding bus field

3. Check that the number of times the trip was taken in the last three months is less than the number of times the trip has been taken in the last 12 months

There were no errors found in this file.

2.1.5 Visitor

There was not a visitor file submitted for the pretest.

2.2 Recommendations

MORPACE has suggested that the day/time conventions be changed in the CATI system such that travel time calculation would not be confusing or negative, this change would be:

Day 1 – 3 am to 12 am

Day 2 – 12 am to 12 am

Day 3 – 12 am to 3 am

PB concurs with this convention.

3.0 REVIEW OF ZERO TRIP HOUSEHOLDS

PB received 1,987 pretest data records from MORPACE for the trip file. This section of the report reviews those records that recorded zero trips.

3.1 Summary of Zero Trip Households / Persons

Of the 1,987 records submitted, 25 of those records/persons recorded no trips from 18 different households. Eight households reported no trips. Five of those households were one person households, two households were two person households, and the other household was a three person household. Out of the 126 households interviewed for the pretest, eight of those had no trips, which is approximately 6.3 percent. The table below summarizes the variety of reasons why no trips were made:

TABLE 3-1: ZERO TRIP HOUSEHOLDS / PERSONS

QNO	Person Number	Number of People in HH	Reason
1	2	4	HE'S A STAY AT HOME DAD, HE'S NOT WORKING AND DOES NOT GO TO SCHOOL.
31	1	1	I HAD NO WHERE TO GO MY KIDS DO MY SHOPPING AND IT WAS TOO COLD TO GO OUT
45	1	2	THEY ARE BOTH ELDERLY AND ONLY GO OUT WHEN NECESSARY WHICH AMOUNTS TO ABOUT TWO TO THREE TIMES PER MONTH.
45	2	2	THEY ARE BOTH ELDERLY AND ONLY TRAVEL OUTSIDE OF THE HOME WHEN NECESSARY WHICH AMOUNTS TO ABOUT 2 - 3 TIMES PER MONTH
50	2	2	I'M A HOMEMAKER
110	2	4	SICK/ILL
127	1	2	I STAYED HOME DOING HOUSEHOLD CHORES
189	1	1	GO TO SECOND JOB
247	1	2	HAD NO PLACE TO GO I AM 81 YEARS OLD
247	2	2	OLDEN IS 82 YEARS OLD AND GOES OUT MOSTLY SATS. TO CHURCH
274	1	2	DID NOT DRIVING
292	1	7	2 DAYS OFF WORK AND THERE WAS A LOT OF SNOW -- STAYED HOME
381	1	1	HAD A LOT OF SNOW
384	1	2	BECAUSE WE HAD A LOT OF SNOW
427	2	4	LACK OF CAR
427	3	4	LACK OF A CAR FOR MOTHER
427	4	4	LACK OF CAR FOR MOTHER
496	1	3	I JUST HAD NO WHERE TO GO
496	3	3	CAUSE I (WILLIAM) WATCHED HIM.
522	1	1	ROADS WERE BAD DID NOT WANT TO DRIVE
535	1	1	SICK/ILL
545	1	3	SICK/ILL
545	2	3	WORK
545	3	3	MOTHER WAS HOME SICK SO HE WAS HOME WITH HER
595	3	3	CONFINED TO A WHEELCHAIR DID NOT GO ANYWHERE

3.2 Recommendations

Record number 189, person number 1 should be further investigated to determine why a trip was not made. The reason of "Go to second job" is not consistent with staying home for a two-day period. It is recommended that MORPACE either call back the respondent or ask the interviewer if they recall this particular person.

4.0 REVIEW OF SAMPLING DATA

This section of the report will review some statistics about the data, including the regional numbers and other cross-classification information concerning the data. Given that this is the pretest data and the amount that was collected was small during the short timeframe, it is difficult to compare the data to the target percentages.

4.1 Summary

The following tables summarize the pretest data by region, household size, auto ownership, number of workers, and some other variables. These tables are compiled to ensure that household size, auto ownership, number of workers, and other variables are varying by region.

TABLE 4-1: HOUSEHOLD SIZE BY REGION

Region	Household Size				Total
	1 Person	2 Persons	3 Persons	4+ Persons	
1A. SEMCOG outside Detroit	4	11	3	0	18
1B. Detroit	0	4	2	0	6
2. Small Cities	6	5	3	1	15
3. Upper Peninsula Rural	5	12	1	1	19
4. Northern Lower Peninsula	4	5	2	3	14
5. Southern Lower Peninsula	1	7	3	9	20
6. TMAs	8	9	0	2	19
7. Small Urban-Modeled Area	3	7	3	2	15
Total	31	60	17	18	126

TABLE 4-2: NUMBER OF HOUSEHOLDS BY AUTO OWNERSHIP BY REGION

Region	Number of Automobiles						Total
	0	1	2	3	4	5	
1A. SEMCOG outside Detroit		6	7	5			18
1B. Detroit			5		1		6
2. Small Cities	2	6	6	1			15
3. Upper Peninsula Rural	1	5	7	5	1		19
4. Northern Lower Peninsula		3	6	2	2	1	14
5. Southern Lower Peninsula		6	5	4	4		20
6. TMAs	1	7	8	2	1		19
7. Small Urban-Modeled Area		5	8	2			15
Total	4	38	52	21	9	2	126

TABLE 4-3: NUMBER OF HOUSEHOLDS BY NUMBER OF WORKERS BY REGION

Region	Number of Workers				Total
	0	1	2	3+	
1A. SEMCOG outside Detroit	4	5	8	1	18
1B. Detroit	1	0	5	0	6
2. Small Cities	8	3	4	0	15
3. Upper Peninsula Rural	7	8	4	0	19
4. Northern Lower Peninsula	2	6	5	1	14
5. Southern Lower Peninsula	4	2	11	3	20
6. TMAs	8	5	6	0	19
7. Small Urban-Modeled Area	7	5	3	0	15
Total	41	34	46	5	126

TABLE 4-4: TYPE OF WORKER BY AGE

Age Range	Type of Worker				Total
	Full-Time	Part-Time	Not Working	Other	
Under 18	0	0	4	44	48
18-44	48	13	10	3	74
45-54	29	10	5	0	44
55-64	22	7	20	3	52
65 and older	6	5	49	3	63
Other	2	0	0	0	2
Total	107	35	88	53	283

TABLE 4-5: TYPE OF WORKER BY REGION

Region	Number of Workers				Total
	Full Time	Part-Time	Not Working	Other	
1A. SEMCOG outside Detroit	7	3	2	2	14
1B. Detroit	18	6	9	2	35
2. Small Cities	9	2	12	6	29
3. Upper Peninsula Rural	14	2	15	5	36
4. Northern Lower Peninsula	13	6	8	6	33
5. Southern Lower Peninsula	26	8	15	19	68
6. TMAs	13	4	12	5	34
7. Small Urban-Modeled Area	7	4	15	8	34
Total	107	35	88	53	283

TABLE 4-5: HOUSEHOLD SIZE VERSUS WORKER STATUS

Household Size	Number of Workers				Total
	Full Time	Part-Time	Not Working	Other	
1 Person	8	4	16	0	31
2 Persons	50	18	49	0	120
3 Persons	23	4	13	11	51
4+ Persons	26	9	10	33	81
Total	107	35	88	44	283

TABLE 4-6: AVERAGE NUMBER OF TRIPS PER DAY BY REGION

Region	Day 1	Day 2	Average
1A. SEMCOG outside Detroit	2.8	2.9	2.9
1B. Detroit	3.2	2.7	2.9
2. Small Cities	4.9	3.8	4.3
3. Upper Peninsula Rural	2.4	2.7	2.6
4. Northern Lower Peninsula	4.4	3.6	4.0
5. Southern Lower Peninsula	3.5	2.8	3.7
6. TMAs	3.3	2.9	3.1
7. Small Urban-Modeled Area	4.2	3.5	3.9
Total	3.6	3.3	3.5

TABLE 4-7: WORK TRIPS

Type of Worker	Did make a work trip	Did not make a work trip	Total
Full – Time	98	9	107
Part –Time	23	12	35
Unpaid Volunteer or Worker	0	9	9
Not Working	2	86	88
Other	0	44	44
Total	123	160	283

There were 2 records which showed a worker status of not working in the person file and had work trips associated with the trip file. The first record was for QNO 421, Person 1, this person made 6 trips in two days that either had the primary activity at the origin or destination as work. The second record was for QNO 525, Person 1, this person made 2 trips in one day that either had the primary activity at the origin or destination as working.

4.2 Recommendations

Given the small sample set that was taken for the pretest, no recommendations are being made at this time. The cell targets and drop-off rates will continue to be monitored and recommendations made in future reports, if need be. It is recommended that the CATI system be updated so that if a person states that they are not working, then they can not make a work trip as the activity for the origin or destination.

5.0 REVIEW OF GEOCODING RESULTS

On March 26, 2004, PB received the pretest (pilot) data which was geocoded to the Michigan Geographic Framework version 3.0 file. This section of the report reviews the geocoding and the time/distance checks.

5.1 Summary of Geocoding Checks

Two different types of reviews were conducted based on the geocoding. The first review is of the geocoding points itself, comparing the address to the points. The second review uses the geocoding to determine if the length of trip recorded by the respondent is reasonable given the geocoding information and roadway mapping information.

5.1.1 Review of Geocoding

There are several geocoding checks that have been done to check placement and data quality. These checks include:

- Review of Zip Code based on Assigned Geocoding
- Review of City/Township name based on Assigned Geocoding
- Review of TAZ based on Assigned Geocoding

The role of these checks is to raise flags in the data compared to the geocoding. MORPACE will have to review the records to determine if the geocoding is incorrect or the data is incorrect.

Review of Non-Geocodables

PB reviewed 103 records that did not have geocoding. Upon review, it was found that 28 records could possibly be geocoded given the respondent information and should be further reviewed by MORPACE. There were 55 records from 11 households were found to be ungeocodable. It was found that 20 records were to other states outside of Michigan and should be geocoded to the city center, if possible. Table 5-1 summarizes those records.

Review of City/Township Name

There were 3948 trips ends that were checked for City/Township name against the geocoded locations. There were 12 trips ends that were found to have incorrect city/township names based on geocoded locations. Table 5-2 summarizes the 12 trip ends.

Review of TAZ Assignment

There were 3948 trips ends that were checked for TAZ assignment within TransCAD. Of the 3948 trips ends, 266 trip ends contained errors in TAZ assignment or were on a boundary. Table 5-3 summarizes those records.

TABLE 5-1: REVIEW OF NON-GEOCODABLES

QNO	Person #	Trip #	Location	Changes / Comments
13	2	3-4	KROGERS	Non-geocodable
36	1	4-5	PERRYBURGS	Assign to External City
36	1	5-6	VAN WERT	
36	1	6-7	CIRCLE VILLE	
36	1	7-8	B P	
36	1	8-9	WENDYS	
36	1	9	CARRIES	
43	2	12-13	RESIDENCE	Non-geocodable
60	1	1-2	BOBS STORE	name is "Bob's Family Store" on E. 4619 M-35, Escanaba MI 49826
84	1	3-4	MILL CREEK VILLAGE	Non-geocodable
98	2	4-5,10-11	WHITE CONSOLIDATED	Electrolux in Greenville, Michigan
204	1	1-2,7-8	NEIGHBORS HOME	Non-geocodable
204	3	1-2,5-6	NEIGHBORS HOME	Non-geocodable
204	3	2-3, 6-7	BUS STOP	Assign to S Baldwin Road and Seymour Lake Road intersection on the border of Brandon and Oxford Townships, coordinates around -83.334004, 42.817012
257	2	1-6	LOUISIANA PACIFIC	Non-geocodable
257	2	2-3	RESTAURANT	Non-geocodable
260	1	4-5	MOTHER IN LAWS	Non-geocodable
260	1	5-6	DAUGHTERS WORK PLACE	
260	2	4-5	MOTHER IN LAWS	
260	2	5-6	DAUGHTERS WORKPLACE	
285	2	7-8	MSU CREDIT UNION	all information correct – should be geocodable
300	1	1-3	FRIENDS HOME	Non-geocodable
300	1	3-4	MOTHER IN LAWS	
348	1	7-8	TOWN & COUNTRY	Assign to External City
348	1	11-12	RESIDENTIAL HOME	Non-geocodable
369	1	1-2	PJ FAMILY RESTAURANT	Non-geocodable
378	2	5-6	TOM KOCH	Non-geocodable
425	1	1-2	GAS STATION	Assign to External City
425	1	2-3	HAMILTON OHIO RESIDENCE	Assign to External City
425	1	3-4,7-8	FISH FACTORY	411 W. Kemper Rd, Zip: 45246
425	1	4-5	KROGERS	150 Tri County Pkwy, Cincinnati, OH 45246
425	1	5-6,8	TYLERS TERRACE	Assign to External City
477	1	1-2	KEWADIN CASINO	address should be 1533 D East Hwy 2
477	2	1-2	KEWADIN CASINO	
477	2	6-7	KNIGHTS OF COLUMBUS HALL	Non-geocodable
493	2	1-2	THE LITTLE STORE	6020 Fort Rd, Saginaw, MI 48601
516	5	1-2,6-7	FRIENDS HOME	Non-geocodable
516	4	1-2, 7-8	FRIENDS HOME	
516	1	1-2,9-10	FRIENDS HOME	
542	3	1-4	SISTER LAKE ELEMENTARY SCHOOL	Actual location: 68079 M-152, Benton Harbor, MI 49022

TABLE 5-2: REVIEW OF CITY/TOWNSHIP ASSIGNMENT BASED ON GEOCODING

QNO	Person #	Trip #	Location	Assigned City	Assigned Zip	Proposed City
385	2	1	CONTRACTORS CONNECTION	SHELBY TOWNSHIP	48317	UTICA
385	2	2	CONTRACTORS CONNECTION	SHELBY TOWNSHIP	48317	UTICA
385	2	5	CONTRACTORS CONNECTION	SHELBY TOWNSHIP	48317	UTICA
385	2	6	CONTRACTORS CONNECTION	SHELBY TOWNSHIP	48317	UTICA
477	1	4	KEWADIN CASINO	CHRISTMAS	49862	MUNISING
477	1	5	KEWADIN CASINO	CHRISTMAS	49862	MUNISING
477	2	4	KEWADIN CASINO	CHRISTMAS	49862	MUNISING
477	2	5	KEWADIN CASINO	CHRISTMAS	49862	MUNISING
482	1	2	GREAT INDOORS	SHELBY TOWNSHIP	48315	UTICA
482	1	3	GREAT INDOORS	SHELBY TOWNSHIP	48315	UTICA
482	2	2	GREAT INDOORS	SHELBY TOWNSHIP	48315	UTICA
482	2	3	GREAT INDOORS	SHELBY TOWNSHIP	48315	UTICA

TABLE 5-3: REVIEW OF TAZ ASSIGNMENT

QNO	Person #	Trip #'s	Assigned TAZ	Possible TAZ
1	1	2-3,5-8	11285	11286
27	1	2-3	12111	12110
43	2	14-15	130193	130191
44	2	2-3, 7-8	130021	130022
44	3	11-12	12024	12025
125	1	1-2	50141	50142
125	1	3-4,8-9	50146	50147
146	2	3-4	10278	10279
173	1	5-6	11251	11250
204	1	3-6	88888888	11578
205	2	5-6	12193	12189
242	1	6-7	10651	10650
250	3	6-7	12020	12021, 12018
250	5	5-6	12020	12021
265	1	2-3	40135	40134
279	1	21-22	150214	150362
285	2	9-10	20542	20528
292	5	1-4	11971	11973
304	2	4-5	12177	12171
306	1	1,3-4,6-10	10014	10012
306	2	1-10	10014	10012
335	2	3-4	10698	10699
335	1	7-8	10698	10699
351	3	4-5	10729	10726
351	2	2-5	10729	10726
380	1	3-4	80143	80142
386	1	2-3, 8-9	20528	20527
390	1	1-2	150216	150364
390	1	5-6	150469	150467
402	1	2-5	110036	110029
410	1	2-3	20341	20756
481	3	1-6	10001	10006
481	1	1-3,5-13	10001	10006
481	2	1-2	10001	10006
483	1	15-16	180759	180757
492	1	1,5-6,9	40109	40108
493	1	3-4	180784	180793
493	1	2-5	180820	180819, 180818, 180817
525	1	1-2	70029	70027
525	2	1-2	70161	70165
525	1	3-8	70161	70165
542	2	6-7	12074	12075
564	1-2	4-5	11588	11587
595	1	1-7,9-10	10673	10674
595	2	1-4	10673	10674

5.1.2 Review of Length of Trip

MORPACE submitted files with geocoding information for the trip file which was based off of the MGF version 3 and the Mapmarker software. PB received 1,987 records in the trip file, the following records were disregarded/removed due to the following reasons (in this order):

- 25 records did not make a trip
- 87 records had either the origin or destination not geocoded
- 17 records had the origin and destination geocoded as the same point
- 61 records were removed due to type of trip (bicycle/moped, walk, train, or other)

Of the original 1,987 trips, 190 were removed, leaving 1,797 trips, which is approximately 90%. Two of the trips were made outside Michigan, in the state of Ohio (QNO 36, Person 1, Trip 5 & 6).

There are four (4) checks that are done with respect to travel time and distance.

- The first check determines if a trip is in the same city/township and flags the trip if it is over 90 minutes in the city of Detroit or 60 minutes in other areas.
- The second check compares the time of trip from TransCAD and compares that to the respondent travel time, the trip is flagged if that difference is greater than 60 minutes.
- The third check compares the TransCAD distance to a shortest line distance and a right-angle distance between the two trip ends. If the TransCAD distance is less than the shortest line distance, then the record is flagged. If the TransCAD distance is greater than 125% of the right-angle distance, then the record is flagged.
- The fourth check determines the shortest travel distance from TransCAD and calculates an average speed from the respondent time. If that average speed is less than 5 miles per hour (mph), then the trip is flagged. The trip is flagged if the average speed is over 80 mph for trips over 30 miles, otherwise it is flagged if the speed is over 65 mph.

Same City/Township Check

Trip time within the same city is the first check on the data. This check flags a trip if the travel time is greater than 60 minutes within the same city/township. Trips within the city of Detroit are flagged if the trip is over 90 minutes in time. There are 20 records that were flagged with this check. The table below summarizes those trips which were flagged.

TABLE 5-4: RECORDS FLAGGED FOR TRAVEL IN SAME CITY/TOWNSHIP

QNO	Person #	Trip #	Origin / Destination City	Dep. Time	Dep. Day	Arr. Time	Arr. Day	Travel Time (min)
1	1	6	MARQUETTE	1640	1	1800	1	80
23	1	1	ESCANABA	850	1	1142	1	172
153	1	1	FLINT	535	1	945	1	250
153	2	10	FLINT	1701	2	2104	2	243
163	4	8	MIDLAND	950	2	1515	2	325
175	3	2	BEAVERTON	1502	1	1830	1	208
191	1	2	YPSILANTI	1550	1	1705	1	75
274	2	4	RIVES JUNCTION	1130	1	1300	1	90
335	2	6	HOUGHTON	800	2	905	2	65
348	1	1	BESSEMER	1115	1	1300	1	105
380	3	4	VICKSBURG	1540	2	1645	2	65
390	1	2	MUSKEGON	815	1	920	1	65
390	1	3	MUSKEGON	1155	1	1315	1	80
390	1	8	MUSKEGON	1340	2	1850	2	310
390	2	2	MUSKEGON	1155	1	1350	1	115
417	1	5	SANDUSKY	1527	1	930	2	1083
445	1	10	WAKEFIELD	1710	2	1830	2	80
445	1	11	WAKEFIELD	2100	2	2230	2	90
468	1	10	DAVISON	1315	2	1620	2	185
481	1	4	LINCOLN	1345	1	1630	1	165

Record number with QNO 191, person number 1, trip number 2, had a travel time of 75 minutes (highlighted above). This trip started at 3:50 PM and ended at 5:05 PM, which is during the PM peak hour for southeastern Michigan. This trip is approximately 6.6 miles in length, with an average speed of 5.3 miles per hour. It is recommended that this trip be kept in the dataset. All others should be investigated further.

Travel Time Check

Travel time for each trip is calculated within TransCAD using a network provided by the Michigan Department of Transportation. A trip is flagged if the TransCAD travel time is more than 60 minutes different than the respondent travel time. There were 36 records that were found to have a difference of more than 60 minutes, 19 of those records are listed in the above table.

TABLE 5-5: RECORDS FLAGGED FOR DIFFERENCE IN TRAVEL TIME

QNO	Person #	Trip #	Origin City	Destination City	Respondent Time (min)	TransCAD Time (min)
1	1	6	MARQUETTE	MARQUETTE	80	13
23	1	1	ESCANABA	ESCANABA	172	1
153	1	1	FLINT	FLINT	250	3
153	2	10	FLINT	FLINT	243	1
163	4	8	MIDLAND	MIDLAND	325	1
175	3	2	BEAVERTON	BEAVERTON	208	20
191	1	2	YPSILANTI	YPSILANTI	75	9
274	2	4	RIVES JUNCTION	RIVES JUNCTION	90	1
335	2	6	HOUGHTON	HOUGHTON	65	2
348	1	1	BESSEMER	BESSEMER	105	1
380	3	4	VICKSBURG	VICKSBURG	65	1
390	1	2	MUSKEGON	MUSKEGON	65	3
390	1	3	MUSKEGON	MUSKEGON	80	8
390	1	8	MUSKEGON	MUSKEGON	310	1
390	2	2	MUSKEGON	MUSKEGON	115	8
417	1	5	SANDUSKY	SANDUSKY	1083	0
445	1	11	WAKEFIELD	WAKEFIELD	90	22
468	1	10	DAVISON	DAVISON	185	1
481	1	4	LINCOLN	LINCOLN	165	1
24	1	1	LACHINE	STANDISH	25	91
98	3	2	ALMA	RIVERDALE	765	15
100	1	2	JENISON	COVERT	150	51
100	1	6	JENISON	COVERT	150	51
110	1	4	MANISTIQUE	CADILLAC	105	235
124	2	3	ALLEGAN	KALAMAZOO	95	22
175	1	1	BEAVERTON	FLINT	835	98
300	2	3	ITHACA	BRECKENRIDGE	105	27
385	1	4	FLINT	GRAND HAVEN	15	139
385	1	5	GRAND HAVEN	FLINT	15	139
385	3	3	FLINT	GRAND HAVEN	10	139
385	3	4	GRAND HAVEN	FLINT	15	139
386	4	5	GRAND LEDGE	LANSING	735	16
390	1	6	SPRING LAKE	MUSKEGON	200	10
492	2	7	FLINT	BURTON	145	11
534	1	3	DETROIT	HAMTRAMCK	180	10
564	2	4	CLARKSTON	WATERFORD	90	5

QNO 385, persons 1 and 3 (highlighted in orange above) have either an origin or destination in Grand Haven, Michigan. This record should be further investigated to determine if the location of the trip is around Flint, Michigan. All other records should be investigated further.

Distance

There were no records that had a TransCAD distance below the shortest-line distance between the two end points. There were 308 records that had the TransCAD distance greater than 125% of the right-angle distance between the two end points. There were 236 records that had a TransCAD distance less than 5 miles in length with a RAD distance less than 5 miles in length, these records were considered acceptable (given the size of the MDOT network). The remaining 72 were reviewed and found that the trips had to either go around a lake or was connected to the network such that the shortest path was not within the criteria. Therefore, there were no records found that were flagged that should be investigated further.

Average Speed

The next check determines if the average speed is within 5 miles per hour (mph) and 65 mph (80 mph for long trips). If the average speed is above or below that threshold, the records are flagged. There were a total of 248 records flagged for speeds that did not meet these criteria. There were 198 records flagged due to average speed being below 5 mph (80%), with 50 being flagged for speeds above 65 mph on short trips and 80 mph on long trips (20%). Of the 248 records, 122 had a travel distance of less than or equal to 2 miles and a travel time of less than or equal to 30 minutes, these records are considered acceptable. There were 38 records that were found to be acceptable after 10 minutes was either subtracted or added onto the trip time thereby making the speed acceptable. The remaining 88 records were reviewed for further investigation. There were 18 records that were found to be acceptable after it was found that the TransCAD distance was incorrect, these records are highlighted in yellow. The table below summarizes those 84 records that were reviewed further. The records that are highlighted in gray should have their geocoding reviewed further by MORPACE.

There are some trips that involved a trip either made to or from a school, during peak drop-off or pick-up times, these records are recommended to be acceptable trips and are shown in yellow.

TABLE 5-6: QUESTIONABLE RECORDS BASED ON AVERAGE SPEED

QNO	PERNUM	TRIPNUM	Travel Time (min)	TransCAD Time (min)	Transcad Distance (miles)	Speed (mph)	Investigation
23	1	1	172	1.42	0.84	0.3	Travel Time is too long for trip
24	1	1	25	90.58	80.92	194.2	Travel Time is too long for trip
43	3	7	50	5.23	2.67	3.2	This trip was to/from a high school, may have occurred during peak school times
44	1	2	3	4.94	3.38	67.6	Distance too long in TransCAD – acceptable
44	3	2	3	4.94	3.38	67.6	Distance too long in TransCAD – acceptable
98	3	2	765	15.10	11.39	0.9	Trip is too long for the length of trip
100	2	2	30	50.79	53.52	107.0	Trip time too short for length of trip
100	2	6	30	50.79	53.52	107.0	
110	1	1	30	1.71	1.02	2.0	Trip Time too long for length of trip, may want to investigate location of Schoolcraft County Road Commission office
110	1	2	30	1.71	1.02	2.0	
110	1	3	60	1.71	1.02	1.0	
110	1	4	105	235.42	220.65	126.1	Check location of Schoolcraft County Road Commission – trip time too short
153	1	1	250	2.55	1.67	0.4	Travel time is too long for the length of the trip
153	2	10	243	0.63	0.40	0.1	
160	1	3	42	0.50	0.21	0.3	This trip was to a high school most likely during school left-out – trip time is too long
160	2	2	3	6.20	4.59	91.8	TransCAD distance incorrect – record acceptable
163	4	8	325	1.37	0.76	0.1	Trip Time too long for length of trip
175	3	2	208	19.50	13.61	3.9	Trip time too long for length of trip
200	2	4	44	1.32	0.84	1.1	Trip time too long for length of trip
250	1	5	5	15.90	11.47	137.6	TransCAD distance incorrect – records acceptable
250	1	6	5	15.90	11.47	137.6	
250	1	7	5	15.90	11.47	137.6	
250	3	6	5	18.41	12.53	150.4	
250	3	7	10	18.41	12.53	75.2	
250	3	8	25	35.82	27.12	65.1	
250	3	9	15	17.89	17.66	70.6	

TABLE 5-6: QUESTIONABLE RECORDS BASED ON AVERAGE SPEED (continued)

QNO	PERNUM	TRIPNUM	Travel Time (min)	TransCAD Time (min)	Transcad Distance (miles)	Speed (mph)	Investigation
250	3	12	20	38.16	28.54	85.6	TransCAD distance incorrect – records acceptable
250	4	7	10	46.68	35.21	211.3	
250	4	8	10	46.53	35.21	211.3	
250	5	5	5	18.34	12.50	150.0	
250	5	8	15	46.53	35.21	140.8	
274	2	2	60	1.03	0.44	0.4	Trip time is too long for the length of trip
274	2	3	30	1.58	0.91	1.8	
274	2	4	90	0.55	0.48	0.3	
274	2	8	30	0.55	0.48	1.0	
274	2	9	30	0.55	0.48	1.0	
274	2	10	60	0.55	0.48	0.5	
335	2	6	65	1.52	0.77	0.7	Trip time too long for length of trip
348	1	1	105	0.93	0.39	0.2	Trip time too long for length of trip
385	1	4	15	139.38	138.20	552.8	All trips are between Grand Haven or Saginaw and Flint – approximately 40 to 150 miles apart – trip times are too short – These addresses need to be investigated further, they are probably all in Flint
385	1	5	15	139.03	138.07	552.3	
385	2	3	10	38.13	38.04	228.2	
385	3	3	10	139.38	138.20	829.2	
385	3	4	15	139.03	138.07	552.3	
386	4	5	735	16.26	11.43	0.9	Trip time is too long for a trip between Lansing and Grand Ledge, Michigan
390	1	2	65	3.09	1.75	1.6	Trip times are all too long for trips within Muskegon or to nearby Spring Lake
390	1	3	80	7.71	5.39	4.0	
390	1	6	200	9.51	9.01	2.7	
390	1	8	310	0.99	0.71	0.1	
390	2	2	115	7.71	5.39	2.8	
417	1	5	1083	0.30	0.12	0.0	Trip time is too long for this trip
468	1	7	5	6.93	6.12	73.4	KMART has the wrong address – recheck geocoding
468	1	10	185	0.99	0.75	0.2	Trip time is too long for length of trip

TABLE 5-6: QUESTIONABLE RECORDS BASED ON AVERAGE SPEED (continued)

QNO	PERNUM	TRIPNUM	Travel Time (min)	TransCAD Time (min)	Transcad Distance (miles)	Speed (mph)	Investigation
481	1	4	165	0.64	0.36	0.1	Trip time too long for length of trip – within same town
491	1	3	40	1.52	0.90	1.4	Trip time is too long for length of trip
492	2	7	145	10.54	6.58	2.7	Trip time too long for length of trip
564	2	4	90	5.49	4.22	2.8	Trip time a little too long for length of trip

5.2 Recommendations

The records that are shown in the table below should be reviewed by MORPACE further and determined whether to put those households into a questionable household list.

TABLE 5-7: QUESTIONABLE RECORDS BASED ON QUALITY CHECKS

QNO	Person #	Trip #	Origin City	Destination City	Travel Time (min)	Same City	Checks Travel Time	Speed
1	1	6	MARQUETTE	MARQUETTE	80	X	X	
23	1	1	ESCANABA	ESCANABA	172	X	X	X
24	1	1	LACHINE	STANDISH	25		X	X
43	3	7	SAINT JOSEPH	SAINT JOSEPH	50			X
98	3	2	ALMA	RIVERDALE	765		X	X
100	1	2	JENISON	COVERT	150		X	
100	1	6	JENISON	COVERT	150		X	
100	2	2	JENISON	COVERT	30			X
100	2	6	JENISON	COVERT	30			X
110	1	1	MANISTIQUE	MANISTIQUE	30			X
110	1	2	MANISTIQUE	MANISTIQUE	30			X
110	1	3	MANISTIQUE	MANISTIQUE	60			X
110	1	4	MANISTIQUE	CADILLAC	105		X	X
124	2	3	ALLEGAN	KALAMAZOO	95		X	
153	1	1	FLINT	FLINT	250	X	X	X
153	2	10	FLINT	FLINT	243	X	X	X
160	1	3	CHESANING	CHESANING	42			X
163	4	8	MIDLAND	MIDLAND	325	X	X	X
175	1	1	BEAVERTON	FLINT	835		X	
175	3	2	BEAVERTON	BEAVERTON	208	X	X	X
191	1	2	YPSILANTI	YPSILANTI	75	X	X	
200	2	4	BOYNE CITY	BOYNE CITY	44			X
274	2	10	RIVES JUNCTION	RIVES JUNCTION	60			X
274	2	2	RIVES JUNCTION	RIVES JUNCTION	60			X
274	2	3	RIVES JUNCTION	RIVES JUNCTION	30			X
274	2	4	RIVES JUNCTION	RIVES JUNCTION	90	X	X	X
274	2	8	RIVES JUNCTION	RIVES JUNCTION	30			X
274	2	9	RIVES JUNCTION	RIVES JUNCTION	30			X
300	2	3	ITHACA	BRECKENRIDGE	105		X	
335	2	6	HOUGHTON	HOUGHTON	65	X	X	X
348	1	1	BESSEMER	BESSEMER	105	X	X	X
380	3	4	VICKSBURG	VICKSBURG	65	X	X	X
385	1	4	FLINT	GRAND HAVEN	15		X	X
385	1	5	GRAND HAVEN	FLINT	15		X	X
385	2	3	SAGINAW	FLINT	10			X
385	3	3	FLINT	GRAND HAVEN	10		X	X
385	3	4	GRAND HAVEN	FLINT	15		X	X
386	4	5	GRAND LEDGE	LANSING	735		X	X

TABLE 5-7: QUESTIONABLE RECORDS BASED ON QUALITY CHECKS (continued)

QNO	Person #	Trip #	Origin City	Destination City	Travel Time (min)	Checks		
						Same City	Travel Time	Speed
390	1	2	MUSKEGON	MUSKEGON	65	X	X	X
390	1	3	MUSKEGON	MUSKEGON	80	X	X	X
390	1	6	SPRING LAKE	MUSKEGON	200		X	X
390	1	8	MUSKEGON	MUSKEGON	310	X	X	X
390	2	2	MUSKEGON	MUSKEGON	115	X	X	X
417	1	5	SANDUSKY	SANDUSKY	1083	X	X	X
445	1	10	WAKEFIELD	WAKEFIELD	80	X		
445	1	11	WAKEFIELD	WAKEFIELD	90	X	X	
468	1	10	DAVISON	DAVISON	185	X	X	X
481	1	4	LINCOLN	LINCOLN	165	X	X	X
491	1	3	ADRIAN	ADRIAN	40			X
492	2	7	FLINT	BURTON	145		X	X
534	1	3	DETROIT	HAMTRAMCK	180		X	
564	2	4	CLARKSTON	WATERFORD	90		X	X

In the above table, there are 52 trips represented by 30 households. MORPACE will need to review some these records for geocoding (highlighted in gray) and make a recommendation for inclusion in the dataset. Some of these records are school trips during peak drop-off/pick-up times and should be considered for inclusion, these records are highlighted in yellow.

Michigan Department of Transportation
 "MI Travel Counts" - Total
 Recruit Interview - (m030504)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	230	46	93	40	51

Household Income

Less than \$10,000	11	4	1	4	2
\$10,000 to \$20,000	34	21	8	-	5
\$20,000 to \$30,000	30	8	13	5	4
\$30,000 to \$40,000	26	4	15	3	4
\$40,000 to \$50,000	17	3	5	5	4
\$50,000 to \$60,000	21	2	11	3	5
\$60,000 to \$75,000	21	-	6	6	9
\$75,000 to \$100,000	30	1	19	2	8
\$100,000 to \$125,000	14	-	5	6	3
\$125,000 or more	7	1	2	3	1
Unknown income	12	1	5	3	3
Income below \$50,000	2	-	1	-	1
Income \$50,000 or above	5	1	2	-	2

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	30	4	26
1	16	1	15
2	-	-	-
3+	-	-	-
Total	46	5	41

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	29	1	10	18
1	21	-	5	16
2	43	-	2	41
3+	-	-	-	-
Total	93	1	17	75

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	4	1	-	3	-
1	11	-	4	4	3
2	18	-	1	9	8
3+	7	-	-	1	6
Total	40	1	5	17	17

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	1	1	-	-	-
1	17	1	2	12	2
2	24	-	2	12	10
3+	9	-	-	1	8
Total	51	2	4	25	20

Michigan Department of Transportation
 "MI Travel Counts" - Region 1A
 Recruit Interview - (m030504)

	<u>Total</u>	Household Size			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	31	4	13	9	5

Household Income

Less than \$10,000	-	-	-	-	-
\$10,000 to \$20,000	3	2	-	-	1
\$20,000 to \$30,000	1	1	-	-	-
\$30,000 to \$40,000	1	-	1	-	-
\$40,000 to \$50,000	3	1	1	1	-
\$50,000 to \$60,000	2	-	1	1	-
\$60,000 to \$75,000	2	-	-	1	1
\$75,000 to \$100,000	9	-	7	-	2
\$100,000 to \$125,000	3	-	1	2	-
\$125,000 or more	2	-	-	2	-
Unknown income	5	-	2	2	1
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	-	-	-	-	-

HHSIZE=1

	<u>Total</u>	Autos	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	2	-	2
1	2	-	2
2	-	-	-
3+	-	-	-
Total	4	-	4

HHSIZE=2

	<u>Total</u>	Autos		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	2	-	1	1
1	2	-	-	2
2	9	-	1	8
3+	-	-	-	-
Total	13	-	2	11

HHSIZE=3

	<u>Total</u>	Autos			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	4	-	-	2	2
2	3	-	-	3	-
3+	2	-	-	-	2
Total	9	-	-	5	4

HHSIZE=4+

	<u>Total</u>	Autos			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	-	1	-
2	3	-	1	2	-
3+	1	-	-	-	1
Total	5	-	1	3	1

Michigan Department of Transportation
 "MI Travel Counts" - Region 1B
 Recruit Interview - (m030504)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	20	2	7	5	6
<u>Household Income</u>					
Less than \$10,000	3	1	-	2	-
\$10,000 to \$20,000	3	-	1	-	2
\$20,000 to \$30,000	2	-	-	-	2
\$30,000 to \$40,000	3	-	2	-	1
\$40,000 to \$50,000	1	-	-	1	-
\$50,000 to \$60,000	3	1	1	1	-
\$60,000 to \$75,000	-	-	-	-	-
\$75,000 to \$100,000	1	-	1	-	-
\$100,000 to \$125,000	-	-	-	-	-
\$125,000 or more	2	-	1	1	-
Unknown income	1	-	-	-	1
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	1	-	1	-	-

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>HHSIZE=1</u>			
<u>Workers</u>			
0	1	1	-
1	1	-	1
2	-	-	-
3+	-	-	-
Total	2	1	1

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>HHSIZE=2</u>				
<u>Workers</u>				
0	2	1	-	1
1	1	-	1	-
2	4	-	-	4
3+	-	-	-	-
Total	7	1	1	5

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>HHSIZE=3</u>					
<u>Workers</u>					
0	1	1	-	-	-
1	1	-	1	-	-
2	3	-	-	2	1
3+	-	-	-	-	-
Total	5	1	1	2	1

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>HHSIZE=4+</u>					
<u>Workers</u>					
0	-	-	-	-	-
1	5	1	1	3	-
2	1	-	1	-	-
3+	-	-	-	-	-
Total	6	1	2	3	-

Michigan Department of Transportation
 "MI Travel Counts" - Region 2
 Recruit Interview - (m030504)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	26	9	9	5	3

Household Income

Less than \$10,000	3	1	1	1	-
\$10,000 to \$20,000	6	6	-	-	-
\$20,000 to \$30,000	5	2	1	2	-
\$30,000 to \$40,000	1	-	1	-	-
\$40,000 to \$50,000	3	-	3	-	-
\$50,000 to \$60,000	1	-	1	-	-
\$60,000 to \$75,000	3	-	1	1	1
\$75,000 to \$100,000	1	-	-	-	1
\$100,000 to \$125,000	1	-	-	1	-
\$125,000 or more	-	-	-	-	-
Unknown income	2	-	1	-	1
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	-	-	-	-	-

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	8	2	6
1	1	-	1
2	-	-	-
3+	-	-	-
Total	9	2	7

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	3	-	1	2
1	2	-	1	1
2	4	-	-	4
3+	-	-	-	-
Total	9	-	2	7

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	1	-	-	1	-
1	1	-	-	1	-
2	2	-	1	1	-
3+	1	-	-	-	1
Total	5	-	1	3	1

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	2	-	-	2	-
2	1	-	-	1	-
3+	-	-	-	-	-
Total	3	-	-	3	-

Michigan Department of Transportation
 "MI Travel Counts" - Region 3
 Recruit Interview - (m030504)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	31	6	17	4	4

<u>Household Income</u>					
Less than \$10,000	1	-	-	-	1
\$10,000 to \$20,000	7	3	3	-	1
\$20,000 to \$30,000	8	1	6	1	-
\$30,000 to \$40,000	2	1	1	-	-
\$40,000 to \$50,000	1	-	1	-	-
\$50,000 to \$60,000	4	1	3	-	-
\$60,000 to \$75,000	2	-	2	-	-
\$75,000 to \$100,000	3	-	1	1	1
\$100,000 to \$125,000	2	-	-	1	1
\$125,000 or more	-	-	-	-	-
Unknown income	1	-	-	1	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	-	-	-	-	-

	<u>HHSIZE=1</u>		
	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	3	-	3
1	3	-	3
2	-	-	-
3+	-	-	-
Total	6	-	6

	<u>HHSIZE=2</u>			
	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	5	-	1	4
1	5	-	1	4
2	7	-	-	7
3+	-	-	-	-
Total	17	-	2	15

	<u>HHSIZE=3</u>				
	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	-	1	-
2	3	-	-	1	2
3+	-	-	-	-	-
Total	4	-	-	2	2

	<u>HHSIZE=4+</u>				
	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	1	1	-	-	-
1	-	-	-	-	-
2	3	-	-	1	2
3+	-	-	-	-	-
Total	4	1	-	1	2

Michigan Department of Transportation
 "MI Travel Counts" - Region 4
 Recruit Interview - (m030504)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	29	8	9	3	9

Household Income

Less than \$10,000	1	1	-	-	-
\$10,000 to \$20,000	7	4	2	-	1
\$20,000 to \$30,000	3	2	-	1	-
\$30,000 to \$40,000	5	1	2	1	1
\$40,000 to \$50,000	2	-	-	1	1
\$50,000 to \$60,000	5	-	3	-	2
\$60,000 to \$75,000	1	-	-	-	1
\$75,000 to \$100,000	3	-	1	-	2
\$100,000 to \$125,000	1	-	-	-	1
\$125,000 or more	-	-	-	-	-
Unknown income	1	-	1	-	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	-	-	-	-	-

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	5	-	5
1	3	-	3
2	-	-	-
3+	-	-	-
Total	8	-	8

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	3	-	-	3
1	1	-	1	-
2	5	-	-	5
3+	-	-	-	-
Total	9	-	1	8

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	1	-	-	1	-
1	1	-	-	-	1
2	1	-	-	1	-
3+	-	-	-	-	-
Total	3	-	-	2	1

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	1	-	-
2	4	-	-	1	3
3+	4	-	-	-	4
Total	9	-	1	1	7

Michigan Department of Transportation
 "MI Travel Counts" - Region 5
 Recruit Interview - (m030504)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	33	3	12	5	13

Household Income

Less than \$10,000	1	-	-	-	1
\$10,000 to \$20,000	1	1	-	-	-
\$20,000 to \$30,000	2	-	1	-	1
\$30,000 to \$40,000	8	-	6	-	2
\$40,000 to \$50,000	5	1	-	2	2
\$50,000 to \$60,000	4	-	1	1	2
\$60,000 to \$75,000	4	-	1	1	2
\$75,000 to \$100,000	2	-	1	-	1
\$100,000 to \$125,000	1	-	-	1	-
\$125,000 or more	2	-	1	-	1
Unknown income	1	-	1	-	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	2	1	-	-	1

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	1	-	1
1	2	-	2
2	-	-	-
3+	-	-	-
Total	3	-	3

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	4	-	4	-
1	3	-	-	3
2	5	-	1	4
3+	-	-	-	-
Total	12	-	5	7

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	1	-	-
2	2	-	-	-	2
3+	2	-	-	-	2
Total	5	-	1	-	4

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	3	-	-	2	1
2	7	-	-	3	4
3+	3	-	-	1	2
Total	13	-	-	6	7

Michigan Department of Transportation
 "MI Travel Counts" - Region 6
 Recruit Interview - (m030504)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	29	9	14	1	5

Household Income

Less than \$10,000	1	1	-	-	-
\$10,000 to \$20,000	5	4	1	-	-
\$20,000 to \$30,000	5	2	2	-	1
\$30,000 to \$40,000	1	1	-	-	-
\$40,000 to \$50,000	1	-	-	-	1
\$50,000 to \$60,000	1	-	-	-	1
\$60,000 to \$75,000	4	-	2	-	2
\$75,000 to \$100,000	6	1	5	-	-
\$100,000 to \$125,000	4	-	3	1	-
\$125,000 or more	-	-	-	-	-
Unknown income	-	-	-	-	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	1	-	1	-	-

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	7	-	7
1	2	1	1
2	-	-	-
3+	-	-	-
Total	9	1	8

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	4	-	2	2
1	4	-	-	4
2	6	-	-	6
3+	-	-	-	-
Total	14	-	2	12

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	-	-	-	-	-
2	-	-	-	-	-
3+	1	-	-	-	1
Total	1	-	-	-	1

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	-	1	-
2	3	-	-	2	1
3+	1	-	-	-	1
Total	5	-	-	3	2

Michigan Department of Transportation
 "MI Travel Counts" - Region 7
 Recruit Interview - (m030504)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	30	5	11	8	6

Household Income

Less than \$10,000	1	-	-	1	-
\$10,000 to \$20,000	2	1	1	-	-
\$20,000 to \$30,000	4	-	3	1	-
\$30,000 to \$40,000	5	1	2	2	-
\$40,000 to \$50,000	1	1	-	-	-
\$50,000 to \$60,000	1	-	1	-	-
\$60,000 to \$75,000	5	-	-	3	2
\$75,000 to \$100,000	4	-	2	1	1
\$100,000 to \$125,000	2	-	1	-	1
\$125,000 or more	1	1	-	-	-
Unknown income	1	1	-	-	-
Income below \$50,000	2	-	1	-	1
Income \$50,000 or above	1	-	-	-	1

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	3	1	2
1	2	-	2
2	-	-	-
3+	-	-	-
Total	5	1	4

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	6	-	1	5
1	3	-	1	2
2	2	-	-	2
3+	-	-	-	-
Total	11	-	2	9

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	1	-	-	1	-
1	2	-	2	-	-
2	4	-	-	1	3
3+	1	-	-	1	-
Total	8	-	2	3	3

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	4	-	-	3	1
2	2	-	-	2	-
3+	-	-	-	-	-
Total	6	-	-	5	1

Michigan Department of Transportation
 "MI Travel Counts" - Total
 Retrieval Interview - (m030505)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	126	31	60	17	18

Household Income

Less than \$10,000	5	2	-	1	2
\$10,000 to \$20,000	16	13	2	-	1
\$20,000 to \$30,000	22	7	10	3	2
\$30,000 to \$40,000	19	4	12	3	-
\$40,000 to \$50,000	8	2	3	1	2
\$50,000 to \$60,000	11	1	7	2	1
\$60,000 to \$75,000	8	-	4	1	3
\$75,000 to \$100,000	21	1	16	-	4
\$100,000 to \$125,000	7	-	2	3	2
\$125,000 or more	4	1	-	2	1
Unknown income	3	-	2	1	-
Income below \$50,000	1	-	1	-	-
Income \$50,000 or above	1	-	1	-	-

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	19	2	17
1	12	1	11
2	-	-	-
3+	-	-	-
Total	31	3	28

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	19	-	7	12
1	14	-	3	11
2	27	-	2	25
3+	-	-	-	-
Total	60	-	12	48

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	2	-	-	2	-
1	5	-	2	1	2
2	8	-	1	4	3
3+	2	-	-	-	2
Total	17	-	3	7	7

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	1	1	-	-	-
1	3	-	1	2	-
2	11	-	-	5	6
3+	3	-	-	-	3
Total	18	1	1	7	9

Michigan Department of Transportation
 "MI Travel Counts" - Region 1A
 Retrieval Interview - (m030505)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	18	4	11	3	-

<u>Household Income</u>					
Less than \$10,000	-	-	-	-	-
\$10,000 to \$20,000	2	2	-	-	-
\$20,000 to \$30,000	1	1	-	-	-
\$30,000 to \$40,000	1	-	1	-	-
\$40,000 to \$50,000	2	1	1	-	-
\$50,000 to \$60,000	1	-	1	-	-
\$60,000 to \$75,000	-	-	-	-	-
\$75,000 to \$100,000	6	-	6	-	-
\$100,000 to \$125,000	2	-	1	1	-
\$125,000 or more	1	-	-	1	-
Unknown income	2	-	1	1	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	-	-	-	-	-

	<u>HHSIZE=1</u>		
	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	2	-	2
1	2	-	2
2	-	-	-
3+	-	-	-
Total	4	-	4

	<u>HHSIZE=2</u>			
	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	2	-	1	1
1	2	-	-	2
2	7	-	1	6
3+	-	-	-	-
Total	11	-	2	9

	<u>HHSIZE=3</u>				
	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	-	-	1
2	1	-	-	1	-
3+	1	-	-	-	1
Total	3	-	-	1	2

	<u>HHSIZE=4+</u>				
	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	-	-	-	-	-
2	-	-	-	-	-
3+	-	-	-	-	-
Total	-	-	-	-	-

Michigan Department of Transportation
 "MI Travel Counts" - Region 1B
 Retrieval Interview - (m030505)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	6	-	4	2	-

<u>Household Income</u>					
Less than \$10,000	-	-	-	-	-
\$10,000 to \$20,000	-	-	-	-	-
\$20,000 to \$30,000	-	-	-	-	-
\$30,000 to \$40,000	2	-	2	-	-
\$40,000 to \$50,000	-	-	-	-	-
\$50,000 to \$60,000	2	-	1	1	-
\$60,000 to \$75,000	-	-	-	-	-
\$75,000 to \$100,000	1	-	1	-	-
\$100,000 to \$125,000	-	-	-	-	-
\$125,000 or more	1	-	-	1	-
Unknown income	-	-	-	-	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	-	-	-	-	-

	<u>HHSIZE=1</u>		
	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	-	-	-
1	-	-	-
2	-	-	-
3+	-	-	-
Total	-	-	-

	<u>HHSIZE=2</u>			
	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	1	-	-	1
1	-	-	-	-
2	3	-	-	3
3+	-	-	-	-
Total	4	-	-	4

	<u>HHSIZE=3</u>				
	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	-	-	-	-	-
2	2	-	-	1	1
3+	-	-	-	-	-
Total	2	-	-	1	1

	<u>HHSIZE=4+</u>				
	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	-	-	-	-	-
2	-	-	-	-	-
3+	-	-	-	-	-
Total	-	-	-	-	-

Michigan Department of Transportation
 "MI Travel Counts" - Region 2
 Retrieval Interview - (m030505)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	15	6	5	3	1
<u>Household Income</u>					
Less than \$10,000	2	1	-	1	-
\$10,000 to \$20,000	3	3	-	-	-
\$20,000 to \$30,000	4	2	-	2	-
\$30,000 to \$40,000	1	-	1	-	-
\$40,000 to \$50,000	2	-	2	-	-
\$50,000 to \$60,000	1	-	1	-	-
\$60,000 to \$75,000	1	-	1	-	-
\$75,000 to \$100,000	1	-	-	-	1
\$100,000 to \$125,000	-	-	-	-	-
\$125,000 or more	-	-	-	-	-
Unknown income	-	-	-	-	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	-	-	-	-	-

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>HHSIZE=1</u>			
<u>Workers</u>			
0	6	2	4
1	-	-	-
2	-	-	-
3+	-	-	-
Total	6	2	4

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>HHSIZE=2</u>				
<u>Workers</u>				
0	1	-	-	1
1	1	-	1	-
2	3	-	-	3
3+	-	-	-	-
Total	5	-	1	4

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>HHSIZE=3</u>					
<u>Workers</u>					
0	1	-	-	1	-
1	1	-	-	1	-
2	1	-	1	-	-
3+	-	-	-	-	-
Total	3	-	1	2	-

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>HHSIZE=4+</u>					
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	-	1	-
2	-	-	-	-	-
3+	-	-	-	-	-
Total	1	-	-	1	-

Michigan Department of Transportation
 "MI Travel Counts" - Region 3
 Retrieval Interview - (m030505)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	19	5	12	1	1

Household Income

Less than \$10,000	1	-	-	-	1
\$10,000 to \$20,000	4	2	2	-	-
\$20,000 to \$30,000	6	1	5	-	-
\$30,000 to \$40,000	2	1	1	-	-
\$40,000 to \$50,000	-	-	-	-	-
\$50,000 to \$60,000	3	1	2	-	-
\$60,000 to \$75,000	1	-	1	-	-
\$75,000 to \$100,000	1	-	1	-	-
\$100,000 to \$125,000	1	-	-	1	-
\$125,000 or more	-	-	-	-	-
Unknown income	-	-	-	-	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	-	-	-	-	-

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	2	-	2
1	3	-	3
2	-	-	-
3+	-	-	-
Total	5	-	5

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	4	-	1	3
1	5	-	1	4
2	3	-	-	3
3+	-	-	-	-
Total	12	-	2	10

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	-	-	-	-	-
2	1	-	-	-	1
3+	-	-	-	-	-
Total	1	-	-	-	1

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	1	1	-	-	-
1	-	-	-	-	-
2	-	-	-	-	-
3+	-	-	-	-	-
Total	1	1	-	-	-

Michigan Department of Transportation
 "MI Travel Counts" - Region 4
 Retrieval Interview - (m030505)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	14	4	5	2	3

Household Income

Less than \$10,000	1	1	-	-	-
\$10,000 to \$20,000	2	1	-	-	1
\$20,000 to \$30,000	2	1	-	1	-
\$30,000 to \$40,000	4	1	2	1	-
\$40,000 to \$50,000	-	-	-	-	-
\$50,000 to \$60,000	2	-	2	-	-
\$60,000 to \$75,000	-	-	-	-	-
\$75,000 to \$100,000	2	-	1	-	1
\$100,000 to \$125,000	1	-	-	-	1
\$125,000 or more	-	-	-	-	-
Unknown income	-	-	-	-	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	-	-	-	-	-

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	1	-	1
1	3	-	3
2	-	-	-
3+	-	-	-
Total	4	-	4

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	1	-	-	1
1	1	-	1	-
2	3	-	-	3
3+	-	-	-	-
Total	5	-	1	4

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	-	-	1
2	1	-	-	1	-
3+	-	-	-	-	-
Total	2	-	-	1	1

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	1	-	-
2	1	-	-	-	1
3+	1	-	-	-	1
Total	3	-	1	-	2

Michigan Department of Transportation
 "MI Travel Counts" - Region 5
 Retrieval Interview - (m030505)

	<u>Total</u>	Household Size			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	20	1	7	3	9

Household Income

Less than \$10,000	1	-	-	-	1
\$10,000 to \$20,000	1	1	-	-	-
\$20,000 to \$30,000	2	-	1	-	1
\$30,000 to \$40,000	3	-	3	-	-
\$40,000 to \$50,000	3	-	-	1	2
\$50,000 to \$60,000	2	-	-	1	1
\$60,000 to \$75,000	3	-	1	-	2
\$75,000 to \$100,000	2	-	1	-	1
\$100,000 to \$125,000	1	-	-	1	-
\$125,000 or more	1	-	-	-	1
Unknown income	1	-	1	-	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	-	-	-	-	-

HHSIZE=1

	<u>Total</u>	Autos	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	1	-	1
1	-	-	-
2	-	-	-
3+	-	-	-
Total	1	-	1

HHSIZE=2

	<u>Total</u>	Autos		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	3	-	3	-
1	1	-	-	1
2	3	-	1	2
3+	-	-	-	-
Total	7	-	4	3

HHSIZE=3

	<u>Total</u>	Autos			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	1	-	-
2	1	-	-	-	1
3+	1	-	-	-	1
Total	3	-	1	-	2

HHSIZE=4+

	<u>Total</u>	Autos			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	-	-	-	-	-
2	7	-	-	3	4
3+	2	-	-	-	2
Total	9	-	-	3	6

Michigan Department of Transportation
 "MI Travel Counts" - Region 6
 Retrieval Interview - (m030505)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	19	8	9	-	2

Household Income

Less than \$10,000	-	-	-	-	-
\$10,000 to \$20,000	4	4	-	-	-
\$20,000 to \$30,000	4	2	1	-	1
\$30,000 to \$40,000	1	1	-	-	-
\$40,000 to \$50,000	-	-	-	-	-
\$50,000 to \$60,000	-	-	-	-	-
\$60,000 to \$75,000	2	-	1	-	1
\$75,000 to \$100,000	6	1	5	-	-
\$100,000 to \$125,000	1	-	1	-	-
\$125,000 or more	-	-	-	-	-
Unknown income	-	-	-	-	-
Income below \$50,000	-	-	-	-	-
Income \$50,000 or above	1	-	1	-	-

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	6	-	6
1	2	1	1
2	-	-	-
3+	-	-	-
Total	8	1	7

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	2	-	1	1
1	3	-	-	3
2	4	-	-	4
3+	-	-	-	-
Total	9	-	1	8

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	-	-	-	-	-
2	-	-	-	-	-
3+	-	-	-	-	-
Total	-	-	-	-	-

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	-	-	-	-	-
2	2	-	-	1	1
3+	-	-	-	-	-
Total	2	-	-	1	1

Michigan Department of Transportation
 "MI Travel Counts" - Region 7
 Retrieval Interview - (m030505)

	<u>Total</u>	<u>Household Size</u>			
		<u>1</u>	<u>2</u>	<u>3</u>	<u>4+</u>
Total Sample	15	3	7	3	2

Household Income

Less than \$10,000	-	-	-	-	-
\$10,000 to \$20,000	-	-	-	-	-
\$20,000 to \$30,000	3	-	3	-	-
\$30,000 to \$40,000	5	1	2	2	-
\$40,000 to \$50,000	1	1	-	-	-
\$50,000 to \$60,000	-	-	-	-	-
\$60,000 to \$75,000	1	-	-	1	-
\$75,000 to \$100,000	2	-	1	-	1
\$100,000 to \$125,000	1	-	-	-	1
\$125,000 or more	1	1	-	-	-
Unknown income	-	-	-	-	-
Income below \$50,000	1	-	1	-	-
Income \$50,000 or above	-	-	-	-	-

HHSIZE=1

	<u>Total</u>	<u>Autos</u>	
		<u>0</u>	<u>1+</u>
<u>Workers</u>			
0	1	-	1
1	2	-	2
2	-	-	-
3+	-	-	-
Total	3	-	3

HHSIZE=2

	<u>Total</u>	<u>Autos</u>		
		<u>0</u>	<u>1</u>	<u>2+</u>
<u>Workers</u>				
0	5	-	1	4
1	1	-	-	1
2	1	-	-	1
3+	-	-	-	-
Total	7	-	1	6

HHSIZE=3

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	1	-	-	1	-
1	1	-	1	-	-
2	1	-	-	1	-
3+	-	-	-	-	-
Total	3	-	1	2	-

HHSIZE=4+

	<u>Total</u>	<u>Autos</u>			
		<u>0</u>	<u>1</u>	<u>2</u>	<u>3+</u>
<u>Workers</u>					
0	-	-	-	-	-
1	1	-	-	1	-
2	1	-	-	1	-
3+	-	-	-	-	-
Total	2	-	-	2	-

Appendix B



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

GLORIA J. JEFF
DIRECTOR

Dear Michigan Resident:

The Michigan Department of Transportation (MDOT) is conducting **MI Travel Counts**, a transportation study to better understand the daily travel characteristics of Michigan residents. Michigan's transportation community will use the results of your participation to evaluate and develop a 21st century transportation system that improves and increases mobility for every Michigan citizen and community. The data gathered is used for transportation planning and setting priorities for future transportation investments.

Your household has been randomly selected to represent approximately 700 Michigan households. A trained interviewer from MORPACE International, a Michigan-based research firm with over 50 years of experience, will be calling within the next week to ask some statistical questions regarding your household. The call should take about five minutes. All information is confidential and your participation is voluntary, yet vital. We understand your time is valuable and we will make every effort to make your participation in **MI Travel Counts** as convenient as possible.

If you have any questions about **MI Travel Counts**, please contact MORPACE International at 1-800-566-6262, or call MDOT at 517-241-1301. Information is also available at www.michigan.gov/mitravelcounts. Thank you in advance for helping to move Michigan forward.

Sincerely,

A handwritten signature in cursive script that reads "Gloria J. Jeff".

Gloria J. Jeff
Director
Michigan Department of Transportation



RECRUIT CHANGES

CHANGED ON JANUARY 27, 2004 – AFTER THE FIRST NIGHT OF RECRUITING. CHANGES MADE AFTER DEBRIEFING THE INTERVIEWERS AND MONITORING THE FIRST NIGHT.

INTRO

Moved the age question to the end of the first paragraph for efficiency:

Hello, my name is <INSERT INTERVIEWER'S FIRST NAME> calling on behalf of the Michigan Department of Transportation. MDOT is conducting a transportation study to better understand the daily travel characteristics of Michigan residents. **Are you a member of this household and at least 18 years old?**

(CONTINUE WITH HOUSEHOLD MEMBER AT LEAST 18 YEARS OF AGE)

This is an official MDOT study and the information collected is confidential and secure. This is not a sales call and no sales calls will result from this interview. For quality control purposes, this call may be monitored.

TPASS_1

TPASS_#

Added "bus or":

TPASS_1.

Do you have a **bus or** transit pass?

TPASS_#.

Does <INSERT NAME_#> have a **bus or** transit pass?

PTYPE_1

PTYPE_#

Added "bus or":

PTYPE_1.

What **bus or** transit pass do you have? Any others?

PTYPE_#.

What **bus or** transit pass does <INSERT NAME_#> have? Any others?

MAILXSTS

Added "nearest" to note:

(RECORD TWO **NEAREST** CROSS STREETS)

HOMEXSTS

Added "nearest" to note:

(RECORD TWO **NEAREST** CROSS STREETS)

CHANGED ON JANUARY 28, 2004 – AFTER THE SECOND NIGHT OF RECRUITING.

WRKRS2

Added text to the question:

Including yourself, how many of the people, **over 15 years of age**, living in your household are employed?

CHANGES RECOMMENDED AS A RESULT OF THE PILOT.

Delete AREA_CIT and AREA_TWP

Create new variable – AREA_CTW

Combining the above two questions into one new question should eliminate potential confusion for the respondent. Note that the pre-logic for AREA_CIT will now be used for AREA_CTW. Also, as an interviewer assist, the words “city” and “township” will be capitalized if the name is used for both a city and township (e.g., Buchanan). Spelling errors have been corrected – Filmore is now Fillmore and Penisula is now Peninsula. An interviewer note to clarify the question has also been added. Finally, because the list is now quite lengthy, the CATI will not list each name. A separate answer list for this question will be provided in the Interviewer Guidebook.

(ASK IF AREA_CTY=3 (ALLEGAN) OR 4 (ALPENA) OR 8 (BARRY) OR 11 (BERRIEN) OR 12 (BRANCH) OR 13 (CALHOUN) OR 14 (CASS) OR 16 (CHEBOYGAN) OR 17 (CHIPPEWA) OR 21 (DELTA) OR 22 (DICKINSON) OR 24 (EMMET) OR 27 (GOGEBIC) OR 28 (GRAND TRAVERSE) OR 29 (GRATIOT) OR 30 (HILLSDALE) OR 31 (HOUGHTON) OR 34 (IONIA) OR 37 (ISABELLA) OR 44 (LAPEER) OR 46 (LENAWEE) OR 51 (MANISTEE) OR 52 (MARQUETTE) OR 53 (MASON) OR 54 (MECOSTA) OR 55 (MENOMINEE) OR 59 (MONTCALM) OR 61 (MUSKEGON) OR 70 (OTTAWA) OR 75 (SAINT JOSEPH) OR 78 (SHIAWASSEE) OR 80 (VAN BUREN) OR 82 (WAYNE) OR 83 (WEXFORD).)

AREA_CTW.

What CITY or TOWNSHIP do you live in?

(IF NEEDED: “We need to know where the physical location of your residence is.”)

(RECORD NUMBER FOR APPROPRIATE CITY OR TOWNSHIP FROM CITY/TOWNSHIP LIST)

(RECORD 996 FOR “OTHER”)

- 001 Acme Township
- 002 Adrian (City)
- 003 Albion (City)
- 004 Allendale Township
- 005 Alma (City)
- 006 Alpena (City)
- 007 Battle Creek (City)

Appendix C

008 Bedford Township
009 Belding (City)
010 Benton Township
011 Benton Harbor (City)
012 Bertrand Township
013 Big Rapids (City)
014 Blair Township
015 Blendon Township
016 Blue Lake Township
017 Bridgeman (City)
018 Buchanan (CITY)
019 Buchanan TOWNSHIP
020 Cadillac (City)
021 Cedar Creek Township
022 Cheboygan (City)
023 Coldwater (City)
024 Crockery Township
025 Dalton Township
026 Detroit (City)
027 Dowagiac (City)
028 East Bay Township
029 Edwardsburg (City)
030 Egelston Township
031 Elmwood Township
032 Emmett Township
033 Escanaba (City)
034 Ferrysburg (City)
035 Fillmore Township
036 Fruitland Township
037 Fruitport Township
038 Garfield Township
039 Georgetown Township
040 Gladstone (City)
041 Grand Haven (CITY)
042 Grand Haven TOWNSHIP
043 Green Lake Township
044 Greenville (City)
045 Hastings(City)
046 Hillsdale (City)
047 Holland (CITY)
048 Holland TOWNSHIP
049 Holton Township
050 Houghton (City)
051 Howard Township
052 Hudsonville (City)
053 Ionia (City)

- 054 Iron Mountain (City)
- 055 Ironwood (City)
- 056 Ishpeming (City)
- 057 Jamestown Township
- 058 Kingsford (City)
- 059 Lake Township
- 060 Laketon Township
- 061 Laketown Township
- 062 Lapeer (City)
- 063 Leroy Township
- 064 Lincoln Township
- 065 Long Lake Township
- 066 Ludington (City)
- 067 Manistee (City)
- 068 Marquette (City)
- 069 Marshall (City)
- 070 Menominee (City)
- 071 Milton Township
- 072 Montague Township
- 073 Mount Pleasant (City)
- 074 Muskegon (CITY)
- 075 Muskegon TOWNSHIP
- 076 Muskegon Heights (City)
- 077 Newton Township
- 078 Niles (CITY)
- 079 Niles TOWNSHIP
- 080 North Muskegon (City)
- 081 Norton Shores (CITY)
- 082 Norton Shores TOWNSHIP
- 083 Olive Township
- 084 Ontwa Township
- 085 Overisel Township
- 086 Owosso (City)
- 087 Park Township
- 088 Peninsula Township
- 089 Pennfield Township
- 090 Petoskey (City)
- 091 Port Sheldon Township
- 092 Robinson Township
- 093 Roosevelt Park (City)
- 094 Royalton Township
- 095 Saint Joseph (CITY)
- 096 Saint Joseph TOWNSHIP
- 097 Sault Sainte Marie (City)
- 098 Shoreham (City)
- 099 Sodus Township

- 100 South Haven (City)
- 101 Spring Lake (CITY)
- 102 Spring Lake TOWNSHIP
- 103 Springfield (City)
- 104 Stevensville (City)
- 105 Sturgis (City)
- 106 Sullivan Township
- 107 Tallmadge Township
- 108 Tecumseh (City)
- 109 Three Rivers (City)
- 110 Traverse City (City)
- 111 White River Township
- 112 White Water Township
- 113 Whitehall (CITY)
- 114 Whitehall TOWNSHIP
- 115 Zeeland (CITY)
- 116 Zeeland TOWNSHIP
- 996 Other (Specify _____)
- 998 Don't Know (GO TO AREA_TM)
- 999 Refused (GO TO AREA_TM)

AREA_LIM

As a result of combining the city and township questions, the pre-logic will be updated for the AREA_LIM question.

(ASK IF AREA_CTW=2, 3, 5, 6, 7, 9, 11, 13, 17, 18, 20, 22, 23, 26, 27, 29, 33, 34, 40, 41, 44, 45, 46, 47, 50, 52, 53, 54, 55, 56, 58, 62, 66, 67, 68, 69, 70, 73, 74, 76, 78, 80, 81, 86, 90, 93, 95, 97, 98, 100, 101, 103, 104, 105, 108, 109, 110, 113, OR 115)

The following interviewer note will be added:

(IF NEEDED: "Is your residence located inside or outside of the legal boundaries of the city?")

AREA_TM

As a result of other changes, the pre-logic will be updated for the AREA_TM question.

AREA_CIT>997 will be changed to AREA_CTW>997

AREA_TWP>997 will be deleted.

(ASK IF AREA_ST=2 OR AREA_CTY>995 OR AREA_CTW>997 OR AREA_LIM>997)

WRKRS1

To avoid respondent confusion, the word "currently" should be added to the question.

Are you **currently** employed?

WRKRS2

Again, to avoid respondent confusion, the word “currently” should be added to the question.

Including yourself, how many of the people, over 15 years of age, living in your household are **currently** employed?

As requested, changing text in the question:

Including yourself, how many of the people, **16 years of age or older**, living in your household are employed?

New variable – SAGE_1, SAGE_#

When asked “What is your age?”, most respondents respond with a specific answer, such as 52 years old. Properly categorizing the respondent’s answer to a category can slow down the interview. Also, if more than one household member has the same name or initials, MORPACE routinely adds age to the diary label, to avoid confusion (e.g., Bob (52 years old) and Bob (12 years old)). Therefore, MORPACE recommends recording the specific age and post-coding the age to the age range categories.

SAGE_1.

What is your age?

SAGE_#.

What is <INSERT NAME_#>’s age?

(RECORD AGE)

— — — (PROGRAMMER: Allow 18 to 115 for SAGE_1.)
(PROGRAMMER: Allow 0 to 115 for SAGE_2:15.)

998 Don’t Know

999 Refused

AGE_1

AGE_#

If a respondent doesn’t know a household member’s exact age or is unwilling to provide the exact age, the age range categories will be used. Therefore, the pre-logic for these questions will be updated.

(ASK IF SAGE_#=998 OR 999)

Also, the text of the question will be changed as follows:

AGE_1.

Which of the following categories best describes your age?

AGE_#.

Which of the following categories best describes <INSERT NAME_#>’s age?

Finally, the interviewer note ((DO NOT READ LIST. PROMPT, IF NEEDED.)) will be deleted.

LDRV_#

Because of the age changes, the pre-logic for this question needs to be updated.

(ASK IF (SAGE_#>15 AND SAGE_#<116) OR (AGE_#>2 AND AGE_#<12) OR AGE18_# <>2)

Create new variables

New variables will ask for the cost of the transit pass and the rate:

(ASK IF PTYPE_#<998 - FIRST MENTION)

PCOST1_1.

How much do you pay for the transit pass?

PCOST1_#.

How much does <INSERT NAME_#> pay for the transit pass?

<INSERT TEXT FROM PTYPE FIRST MENTION ANSWER>

(DO NOT READ LIST)

- 01 NOTHING
- 02 Amount (to be recorded in next question)
- 98 Don't Know
- 99 Refused

(ASK IF PCOST1_#=2)

COST1A_#.

(RECORD TRANSIT PASS COST - DOLLARS)

____ (PROGRAMMER: Allow 0 to 9000.)

(ASK IF PCOST1_#=2)

COST1B_#.

(RECORD TRANSIT PASS COST - CENTS)

____ (PROGRAMMER: Allow 0 to 99.)

(ASK IF PCOST1_#=2)

COST1C_#.

Is this rate...?

(READ LIST)

- 001 Weekly
- 002 Monthly
- 003 Annually
- 996 Other (Specify _____)
- 998 Don't Know
- 999 Refused

(ASK IF PTYPE_#<998 - SECOND MENTION)

PCOST2_1.

How much do you pay for the transit pass?

PCOST2_#.

How much does <INSERT NAME_#> pay for the transit pass?

<INSERT TEXT FROM PTYPE SECOND MENTION ANSWER>

(DO NOT READ LIST)

- 01 NOTHING
- 02 Amount (to be recorded in next question)
- 98 Don't Know
- 99 Refused

(ASK IF PCOST2_#=2)

COST2A_#.

(RECORD TRANSIT PASS COST - DOLLARS)

____ (PROGRAMMER: Allow 0 to 9000.)

(ASK IF PCOST2_#=2)

COST2B_#.

(RECORD TRANSIT PASS COST - CENTS)

____ (PROGRAMMER: Allow 0 to 99.)

(ASK IF PCOST2_#=2)

COST2C_#.

Is this rate...?

(READ LIST)

- 001 Weekly
- 002 Monthly
- 003 Annually
- 996 Other (Specify _____)
- 998 Don't Know
- 999 Refused

(ASK IF PTYPE_#<998 - THIRD MENTION)

PCOST3_1.

How much do you pay for the transit pass?

PCOST3_#.

How much does <INSERT NAME_#> pay for the transit pass?

<INSERT TEXT FROM PTYPE THIRD MENTION ANSWER>

(DO NOT READ LIST)

- 01 NOTHING
- 02 Amount (to be recorded in next question)
- 98 Don't Know
- 99 Refused

(ASK IF PCOST3_#=2)

COST3A_#.

(RECORD TRANSIT PASS COST - DOLLARS)

____ (PROGRAMMER: Allow 0 to 9000.)

(ASK IF PCOST3_#=2)

COST3B_#.

(RECORD TRANSIT PASS COST - CENTS)

____ (PROGRAMMER: Allow 0 to 99.)

(ASK IF PCOST3_#=2)

COST3C_#.

Is this rate...?

(READ LIST)

- 001 Weekly
- 002 Monthly
- 003 Annually
- 996 Other (Specify _____)
- 998 Don't Know
- 999 Refused

WRKR_1

WRKR_#

Answer 03 will be changed to the following:

- 03 Unpaid **worker** or **volunteer**

EDU_#

Because of the age changes, the pre-logic for this question needs to be updated.

(ASK IF (SAGE_#>17 AND SAGE_#<116) OR (AGE_#>3 AND AGE_#<12) OR AGE18_# <>2)

WRKR_#

Because of the age changes, the pre-logic for this question needs to be updated.

(ASK IF (SAGE_#>15 AND SAGE_#<116) OR (AGE_#>2 AND AGE_#<12) OR AGE18_# <>2)

New variable –SVAGE_#

For the same reasons cited for SAGE, MORPACE recommends recording the specific age of visitors and post-coding the age to the age range categories.

SVAGE_#.

What is <INSERT NAME_#>'s age?

(RECORD AGE)

____ (PROGRAMMER: Allow 0 to 115.)

998 Don't Know

999 Refused

VAGE_#

If a respondent doesn't know a visitor's exact age or is unwilling to provide the exact age, the age range categories will be used. Therefore, the pre-logic for these questions will be updated.

(ASK IF SVAGE_#=998 OR 999)

Also, the text of the question will be changed as follows:

VAGE_#.

Which of the following categories best describes <INSERT NAME_#>'s age?

Finally, the interviewer note ((DO NOT READ LIST. PROMPT, IF NEEDED.)) will be deleted.

VWRKR_#

Because of the age changes, the pre-logic for this question needs to be updated.

(ASK IF (SVAGE_#>15 AND SVAGE_#<116) OR (VAGE_#>2 AND VAGE_#<12) OR VAGE18_# <>2)

Also, answer 03 will be changed to the following:

03 Unpaid **worker** or **volunteer**

VIND_#

For clarity, changing the question to the following:

What is <INSERT VNAME_#>'s employer's industry?

Also adding the following interviewer note:

(IF NEEDED: By industry, we mean the employer's principal business or activity.)

Region Assignment

Due to combining and changing the questions that determine which region the household is located in, the programmer notes for assigning each household to a region need to be updated.

REGION=1A (SEMCOG):

AREA_CTY=47 (LIVINGSTON)

AREA_CTY=50 (MACOMB)

AREA_CTY=58 (MONROE)

AREA_CTY=63 (OAKLAND)

AREA_CTY=74 (SAINT CLAIR)

AREA_CTY=81 (WASHTENAW)

AREA_CTY=82 (WAYNE) AND AREA_CTW=996 (OTHER)

AREA_CTW=26 (DETROIT) AND AREA_LIM=2 (OUTSIDE)

REGION=1B (DETROIT):

AREA_CTW=26 (DETROIT) AND AREA_LIM=1 (INSIDE)

REGION=2 (SMALL CITIES):

AREA_CTW=2 (ADRIAN) AND AREA_LIM=1 (INSIDE)

AREA_CTW=3 (ALBION) AND AREA_LIM=1 (INSIDE)

AREA_CTW=5 (ALMA) AND AREA_LIM=1 (INSIDE)

AREA_CTW=6 (ALPENA) AND AREA_LIM=1 (INSIDE)

AREA_CTW=9 (BELDING) AND AREA_LIM=1 (INSIDE)

AREA_CTW=13 (BIG RAPIDS) AND AREA_LIM=1 (INSIDE)

AREA_CTW=20 (CADILLAC) AND AREA_LIM=1 (INSIDE)

AREA_CTW=22 (CHEBOYGAN) AND AREA_LIM=1 (INSIDE)

AREA_CTW=23 (COLDWATER) AND AREA_LIM=1 (INSIDE)

AREA_CTW=27 (DOWAGIAC) AND AREA_LIM=1 (INSIDE)

AREA_CTW=33 (ESCANABA) AND AREA_LIM=1 (INSIDE)

AREA_CTW=40 (GLADSTONE) AND AREA_LIM=1 (INSIDE)

AREA_CTW=44 (GREENVILLE) AND AREA_LIM=1 (INSIDE)

AREA_CTW=45 (HASTINGS) AND AREA_LIM=1 (INSIDE)

AREA_CTW=46 (HILLSDALE) AND AREA_LIM=1 (INSIDE)

AREA_CTW=50 (HOUGHTON) AND AREA_LIM=1 (INSIDE)

AREA_CTW=53 (IONIA) AND AREA_LIM=1 (INSIDE)

AREA_CTW=54 (IRON MOUNTAIN) AND AREA_LIM=1 (INSIDE)
AREA_CTW=55 (IRONWOOD) AND AREA_LIM=1 (INSIDE)
AREA_CTW=56 (ISHPEMING) AND AREA_LIM=1 (INSIDE)
AREA_CTW=58 (KINGSFORD) AND AREA_LIM=1 (INSIDE)
AREA_CTW=62 (LAPEER) AND AREA_LIM=1 (INSIDE)
AREA_CTW=66 (LUDINGTON) AND AREA_LIM=1 (INSIDE)
AREA_CTW=67 (MANISTEE) AND AREA_LIM=1 (INSIDE)
AREA_CTW=68 (MARQUETTE) AND AREA_LIM=1 (INSIDE)
AREA_CTW=69 (MARSHALL) AND AREA_LIM=1 (INSIDE)
AREA_CTW=70 (MENOMINEE) AND AREA_LIM=1 (INSIDE)
AREA_CTW=73 (MOUNT PLEASANT) AND AREA_LIM=1 (INSIDE)
AREA_CTW=86 (OWOSSO) AND AREA_LIM=1 (INSIDE)
AREA_CTW=90 (PETOSKEY) AND AREA_LIM=1 (INSIDE)
AREA_CTW=97 (SAULT SAINTE MARIE) AND AREA_LIM=1 (INSIDE)
AREA_CTW=100 (SOUTH HAVEN) AND AREA_LIM=1 (INSIDE)
AREA_CTW=105 (STURGIS) AND AREA_LIM=1 (INSIDE)
AREA_CTW=108 (TECUMSEH) AND AREA_LIM=1 (INSIDE)
AREA_CTW=109 (THREE RIVERS) AND AREA_LIM=1 (INSIDE)

REGION=3 (UPPER PENINSULA RURAL):

AREA_CTY=2 (ALGER)
AREA_CTY=7 (BARAGA)
AREA_CTY=36 (IRON)
AREA_CTY=42 (KEWEENAW)
AREA_CTY=48 (LUCE)
AREA_CTY=49 (MACKINAC)
AREA_CTY=66 (ONTONAGON)
AREA_CTY=77 (SCHOOLCRAFT)
AREA_CTW=33 (ESCANABA) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=40 (GLADSTONE) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=50 (HOUGHTON) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=54 (IRON MOUNTAIN) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=55 (IRONWOOD) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=56 (ISHPEMING) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=58 (KINGSFORD) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=68 (MARQUETTE) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=70 (MENOMINEE) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=97 (SAULT SAINTE MARIE) AND AREA_LIM=2 (OUTSIDE)
AREA_CTY=17 (CHIPPEWA) AND AREA_CTW=996 (OTHER)
AREA_CTY=21 (DELTA) AND AREA_CTW=996 (OTHER)
AREA_CTY=22 (DICKINSON) AND AREA_CTW=996 (OTHER)
AREA_CTY=27 (GOGEVIC) AND AREA_CTW=996 (OTHER)
AREA_CTY=31 (HOUGHTON) AND AREA_CTW=996 (OTHER)
AREA_CTY=52 (MARQUETTE) AND AREA_CTW=996 (OTHER)
AREA_CTY=55 (MENOMINEE) AND AREA_CTW=996 (OTHER)

REGION=4 (NORTHERN LOWER PENINSULA):

AREA_CTY=1 (ALCONA)
AREA_CTY=5 (ANTRIM)
AREA_CTY=6 (ARENAC)
AREA_CTY=10 (BENZIE)
AREA_CTY=15 (CHARLEVOIX)
AREA_CTY=18 (CLARE)
AREA_CTY=20 (CRAWFORD)
AREA_CTY=26 (GLADWIN)
AREA_CTY=35 (IOSCO)
AREA_CTY=40 (KALKASKA)
AREA_CTY=43 (LAKE)
AREA_CTY=45 (LEELANAU)
AREA_CTY=57 (MISSAUKEE)
AREA_CTY=60 (MONTMORENCY)
AREA_CTY=65 (OGEMAW)
AREA_CTY=67 (OSCEOLA)
AREA_CTY=68 (OSCODA)
AREA_CTY=69 (OTSEGO)
AREA_CTY=71 (PRESQUE ISLE)
AREA_CTY=72 (ROSCOMMON)
AREA_CTW=6 (ALPENA) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=20 (CADILLAC) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=22 (CHEBOYGAN) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=66 (LUDINGTON) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=67 (MANISTEE) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=90 (PETOSKEY) AND AREA_LIM=2 (OUTSIDE)
AREA_CTY=4 (ALPENA) AND AREA_CTW=996 (OTHER)
AREA_CTY=16 (CHEYBOYGAN) AND AREA_CTW=996 (OTHER)
AREA_CTY=24 (EMMET) AND AREA_CTW=996 (OTHER)
AREA_CTY=51 (MANISTEE) AND AREA_CTW=996 (OTHER)
AREA_CTY=53 (MASON) AND AREA_CTW=996 (OTHER)
AREA_CTY=83 (WEXFORD) AND AREA_CTW=996 (OTHER)
AREA_CTY=28 (GRAND TRAVERSE) AND AREA_CTW=996 (OTHER)

REGION=5 (SOUTHERN LOWER PENINSULA):

AREA_CTY=32 (HURON)
AREA_CTY=62 (NEWAYGO)
AREA_CTY=64 (OCEANA)
AREA_CTY=76 (SANILAC)
AREA_CTY=79 (TUSCOLA)
AREA_CTW=2 (ADRIAN) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=5 (ALMA) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=9 (BELDING) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=13 (BIG RAPIDS) AND AREA_LIM=2 (OUTSIDE)

AREA_CTW=23 (COLDWATER) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=34 (FERRYSBURG) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=41 (GRAND HAVEN) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=44 (GREENVILLE) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=45 (HASTINGS) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=46 (HILLSDALE) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=53 (IONIA) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=62 (LAPEER) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=73 (MOUNT PLEASANT) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=86 (OWOSSO) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=100 (SOUTH HAVEN) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=105 (STURGIS) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=108 (TECUMSEH) AND AREA_LIM=2 (OUTSIDE)
AREA_CTW=109 (THREE RIVERS) AND AREA_LIM=2 (OUTSIDE)
AREA_CTY=8 (BARRY) AND AREA_CTW=996 (OTHER)
AREA_CTY=12 (BRANCH) AND AREA_CTW=996 (OTHER)
AREA_CTY=29 (GRATIOT) AND AREA_CTW=996 (OTHER)
AREA_CTY=30 (HILLSDALE) AND AREA_CTW=996 (OTHER)
AREA_CTY=34 (IONIA) AND AREA_CTW=996 (OTHER)
AREA_CTY=37 (ISABELLA) AND AREA_CTW=996 (OTHER)
AREA_CTY=44 (LAPEER) AND AREA_CTW=996 (OTHER)
AREA_CTY=46 (LENAWEE) AND AREA_CTW=996 (OTHER)
AREA_CTY=54 (MECOSTA) AND AREA_CTW=996 (OTHER)
AREA_CTY=59 (MONTCALM) AND AREA_CTW=996 (OTHER)
AREA_CTY=75 (SAINT JOSEPH) AND AREA_CTW=996 (OTHER)
AREA_CTY=78 (SHIAWASSEE) AND AREA_CTW=996 (OTHER)
AREA_CTY=80 (VAN BUREN) AND AREA_CTW=996 (OTHER)
AREA_CTY=3 (ALLEGAN) AND AREA_CTW=996 (OTHER)
AREA_CTY=11 (BERRIEN) AND AREA_CTW=996 (OTHER)
AREA_CTY=13 (CALHOUN) AND AREA_CTW=996 (OTHER)
AREA_CTY=14 (CASS) AND AREA_CTW=996 (OTHER)
AREA_CTY=61 (MUSKEGON) AND AREA_CTW=996 (OTHER)
AREA_CTY=70 (OTTAWA) AND AREA_CTW=996 (OTHER)

REGION=6 (TMAs):

AREA_CTY=19 (CLINTON)
AREA_CTY=23 (EATON)
AREA_CTY=25 (GENESEE)
AREA_CTY=33 (INGHAM)
AREA_CTY=41 (KENT)
AREA_CTW=52 (HUDSONVILLE) AND AREA_LIM=1 (INSIDE)
AREA_CTW=4 (ALLENDALE)
AREA_CTW=39 (GEORGETOWN)
AREA_CTW=57 (JAMESTOWN)
AREA_CTW=107 (TALLMADGE)

REGION=7 (SMALL URBAN MODELED AREAS):

AREA_CTY=9 (BAY)
AREA_CTY=38 (JACKSON)
AREA_CTY=39 (KALAMAZOO)
AREA_CTY=56 (MIDLAND)
AREA_CTY=73 (SAGINAW)
AREA_CTW=7 (BATTLE CREEK) AND AREA_LIM=1 (INSIDE)
AREA_CTW=11 (BENTON HARBOR) AND AREA_LIM=1 (INSIDE)
AREA_CTW=17 (BRIDGEMAN) AND AREA_LIM=1 (INSIDE)
AREA_CTW=18 (BUCHANAN) AND AREA_LIM=1 (INSIDE)
AREA_CTW=29 (EDWARDSBURG) AND AREA_LIM=1 (INSIDE)
AREA_CTW=34 (FERRYSBURG) AND AREA_LIM=1 (INSIDE)
AREA_CTW=41 (GRAND HAVEN) AND AREA_LIM=1 (INSIDE)
AREA_CTW=47 (HOLLAND) AND AREA_LIM=1 (INSIDE)
AREA_CTW=74 (MUSKEGON) AND AREA_LIM=1 (INSIDE)
AREA_CTW=76 (MUSKEGON HEIGHTS) AND AREA_LIM=1 (INSIDE)
AREA_CTW=78 (NILES) AND AREA_LIM=1 (INSIDE)
AREA_CTW=80 (NORTH MUSKEGON) AND AREA_LIM=1 (INSIDE)
AREA_CTW=81 (NORTON SHORES) AND AREA_LIM=1 (INSIDE)
AREA_CTW=93 (ROOSEVELT PARK) AND AREA_LIM=1 (INSIDE)
AREA_CTW=95 (SAINT JOSEPH) AND AREA_LIM=1 (INSIDE)
AREA_CTW=98 (SHOREHAM) AND AREA_LIM=1 (INSIDE)
AREA_CTW=101 (SPRING LAKE) AND AREA_LIM=1 (INSIDE)
AREA_CTW=103 (SPRINGFIELD) AND AREA_LIM=1 (INSIDE)
AREA_CTW=104 (STEVENSVILLE) AND AREA_LIM=1 (INSIDE)
AREA_CTW=110 (TRAVERSE CITY) AND AREA_LIM=1 (INSIDE)
AREA_CTW=113 (WHITEHALL) AND AREA_LIM=1 (INSIDE)
AREA_CTW=115 (ZEELAND) AND AREA_LIM=1 (INSIDE)
AREA_CTW=1 (ACME)
AREA_CTW=8 (BEDFORD)
AREA_CTW=10 (BENTON)
AREA_CTW=12 (BERTRAND)
AREA_CTW=14 (BLAIR)
AREA_CTW=15 (BLENDON)
AREA_CTW=16 (BLUE LAKE)
AREA_CTW=19 (BUCHANAN)
AREA_CTW=21 (CEDAR CREEK)
AREA_CTW=24 (CROCKERY)
AREA_CTW=25 (DALTON)
AREA_CTW=28 (EAST BAY)
AREA_CTW=30 (EGELSTON)
AREA_CTW=31 (ELMWOOD)
AREA_CTW=32 (EMMETT)
AREA_CTW=35 (FILLMORE)
AREA_CTW=36 (FRUITLAND)
AREA_CTW=37 (FRUITPORT)

AREA_CTW=38 (GARFIELD)
AREA_CTW=42 (GRAND HAVEN)
AREA_CTW=43 (GREEN LAKE)
AREA_CTW=48 (HOLLAND)
AREA_CTW=49 (HOLTON)
AREA_CTW=51 (HOWARD)
AREA_CTW=59 (LAKE)
AREA_CTW=60 (LAKETON)
AREA_CTW=61 (LAKETOWN)
AREA_CTW=63 (LEROY)
AREA_CTW=64 (LINCOLN)
AREA_CTW=65 (LONG LAKE)
AREA_CTW=71 (MILTON)
AREA_CTW=72 (MONTAGUE)
AREA_CTW=75 (MUSKEGON)
AREA_CTW=77 (NEWTON)
AREA_CTW=79 (NILES)
AREA_CTW=82 (NORTON SHORES)
AREA_CTW=83 (OLIVE)
AREA_CTW=84 (ONTWA)
AREA_CTW=85 (OVERISEL)
AREA_CTW=87 (PARK)
AREA_CTW=88 (PENINSULA)
AREA_CTW=89 (PENNFIELD)
AREA_CTW=91 (PORT SHELDON)
AREA_CTW=92 (ROBINSON)
AREA_CTW=94 (ROYALTON)
AREA_CTW=96 (SAINT JOSEPH)
AREA_CTW=99 (SODUS)
AREA_CTW=102 (SPRING LAKE)
AREA_CTW=106 (SULLIVAN)
AREA_CTW=111 (WHITE RIVER)
AREA_CTW=112 (WHITE WATER)
AREA_CTW=114 (WHITEHALL)
AREA_CTW=116 (ZEELAND)

***CHANGED ON MARCH 23, 2004 – AFTER THE FIRST NIGHT OF RECRUITING.
CHANGES MADE AFTER DEBRIEFING THE INTERVIEWERS AND
MONITORING THE FIRST NIGHT.***

Due to the new caller ID requirements text was added to the first sentence of the recruit

INTRO

Hello, my name is <INSERT INTERVIEWERS FIRST NAME> **from MORPACE** calling on behalf of the Michigan Department of Transportation.

Add pre-logic:

(ASK IF (SAGE_#>5))

TPASS_1. Do you have a bus or transit pass?
TPASS_#. Does <INSERT NAME_#> have a bus or transit pass?

- 01 Yes
- 02 No

- 98 Don't Know
- 99 Refused

CHANGED ON MARCH 24, 2004 – After reviewing the CATI it was determined the following check needs to be added to confirm the Township

(ASK if:

log pre (area_lim<>2) skip
log pre ((area_lim=2) and (area_ctw<>3 and area_ctw<>7 and area_ctw<>11 and \ area_ctw<>17:18 and area_ctw<>27 and area_ctw<>29 and area_ctw<>47 and \ area_ctw<>52 and area_ctw<>69 and area_ctw<>74 and area_ctw<>76 and \ area_ctw<>78 and area_ctw<>80 and area_ctw<>81 and area_ctw<>93 and \ area_ctw<>95 and area_ctw<>101 and area_ctw<>103:104 and area_ctw<>110 and \ area_ctw<>113 and area_ctw<>115)) skip

ERROR IF:

log post (area_twn<>1 and area_twn<>4 and area_twn<>8 and \ area_twn<>10 and area_twn<>12 and area_twn<>14:16 and area_twn<>19 and \ area_twn<>21 and area_twn<>24:25 and area_twn<>28 and area_twn<>30:32 and \ area_twn<>35:39 and area_twn<>42:43 and area_twn<>48:49 and area_twn<>51 and \ area_twn<>57 and area_twn<>59:61 and area_twn<>63:65 and area_twn<>71:72 and \ area_twn<>75 and area_twn<>77 and area_twn<>79 and area_twn<>82:85 and \ area_twn<>87:89 and area_twn<>91:92 and area_twn<>94 and area_twn<>96 and \ area_twn<>99 and area_twn<>102 and area_twn<>106:107 and \ area_twn<>111:112 and area_twn<>114 and area_twn<>116 and area_twn<>996:999))

AREA_TWN What TOWNSHIP do you live in?

INTERVIEWER NOTE: EDIT NUMBER – MUST BE A TOWNSHIP – USE “F1” FOR DON’T KNOW

(If NEEDED: “We need to know where the physical location of your residence is.”

(RECORD NUMBER FROM APPROPRIATE CITY/TOWNSHIP LIST)

(RECORD 996 FOR “OTHER”)

- 998 Don't Know (GO TO AREA_TM)
- 999 Refused (GO TO AREA_TM)

Transit Providers

CHANGED ON MARCH 23, 2004 – AFTER THE FIRST NIGHT OF RECRUITING. CHANGES MADE AFTER DEBRIEFING THE INTERVIEWERS AND MONITORING THE FIRST NIGHT

The following provider has been added to the list:

- 79 Oceana Seniors Bus Transport**

ANSWERING MACHINE MESSAGE CHANGES

CHANGED ON MARCH 23, 2004 – AFTER THE FIRST NIGHT OF RECRUITING. CHANGES MADE AFTER DEBRIEFING THE INTERVIEWERS AND MONITORING THE FIRST NIGHT.

Due to the new caller ID requirements text was added to the first sentence.
"Hello, **this is MORPACE calling about MDOT's "MI Travel Counts" study.**

REMINDER CALL CHANGES

No changes are recommended to the reminder call script.

PERSON INFORMATION SHEET CHANGES

Work Information

To be consistent, the word “currently” will be added to the heading:
Not **currently** employed – Skip this section

Industry

The question will be reworded as follows:
What is your employer’s industry?

Work Schedule

It was decided at the February 26th project meeting that the first answer category should be changed to the following:
“I have no flexibility in my work schedule.”

Travel Codes

Moped will be moved from the “Bicycle/Moped” category to the “Motorcycle” category.
2 Motorcycle/Moped
3 **Bicycle**

DIARY CHANGES

Instructions

On page 1 of the diary, the last bullet will be moved to become the first bullet. The text will also be changed to the following:

Use this diary on your assigned travel days, shown on the cover. Begin at 3:00 AM on your first travel day and continue for 48 hours, ending at 3:00 AM.

On page 1 of the diary, Bullet 2 will be changed to the following:
Fill out one page for EACH location you go to. If uncertain whether **to** include a location at which you stop, include it.

On page 1 of the diary, the first sentence of Bullet 6 will be changed to the following:
Record **your primary activity (what you did)** at each location.

On page 1 of the diary, Bullet 8 will be changed to the following:
If you park your car and walk MORE than five minutes to your destination, record your type of transportation as car first, then walk. **If you walk more than five minutes from a bus to your destination, record your transportation as bus first, then walk.**

On page 1 of the diary, Bullet 9 will be changed to the following:
If your work involves frequent travel - truck driver, sales person, taxi driver, etc. - **record** where and when you **start** work and where and when you **end** work. **If you make non-work related stops between work stops, record those locations. Do not report your frequent work-related stops.**

Activity Choices

On page 2 of the diary, the work category will have an explanation added:

3 WORK (**employment and job-related activities**)

On page 2 of the diary, the major shopping category will have two examples added:

10 MAJOR SHOPPING (appliances, cars, **home furnishings, clothes,** etc.)

On page 2 of the diary, the recreation – participate category will have two examples added:

13 RECREATION – PARTICIPATE (sports, exercise, **park, museum,** etc.)

Example of Travel Day

On page 2 of the diary, the “s” will be changed to uppercase in Location 6 for consistency:

Grocery Store

Example Start Page

Capitalizing “am”:

Where were you at 3:00 **AM**?

Start Page

The “Start Recording Here” note will be deleted.

The “Start Here” in the black box will be changed to “Start **Recording** Here”.

Capitalizing “am”:

Where were you at 3:00 **AM**?

Type of Transportation

Global change: Moped will be moved from the “Bicycle/Moped” category to the “Motorcycle” category.

2 Motorcycle/**Moped**

3 **Bicycle**

Global change: “If you used a car/van/truck or motorcycle for this trip ...” will be changed to “If you used a car/van/truck or motorcycle/**moped** for this trip ...”

Question 3 Font

The font used for “\$__ __. __ __” does not match. The font will be corrected for the final printing.

RETRIEVAL CHANGES

CHANGED ON FEBRUARY 5, 2004 – AFTER THE FIRST NIGHT OF RECRUITING. CHANGES MADE AFTER DEBRIEFING THE INTERVIEWERS AND MONITORING THE FIRST NIGHT.

DDONE_#

Added text to the answers for clarity:

- 01 Yes - **NO MORE TRAVEL**
- 02 No - **CONTINUE RECORDING TRAVEL**

AHOUR_#

Deleted "at this location" at the end of the question:

What time did (you/NAME) ARRIVE?

Additional Cities

Added the following cities (to the CATI and to the interviewer guidebooks):

1012 Hell **

1013 Croton **

**Do NOT use for MAILCITY!! Not acceptable for mailing!!

1012 should be between 426 (Hazel Park) and 427 (Hemlock)

1013 should be between 228 (Crosswell) and 229 (Crystal)

CHANGES RECOMMENDED AS A RESULT OF THE PILOT.

Creating new variables

The new variables will verify the number of people in the household:

(ASK IF FIRST PERSON/CONTACT PERSON FROM RECRUIT)

C_PPL.

Before recording the travel information, I need to confirm the number of people living in your household. In our first call to your household, you indicated, **<INSERT HHNUMPPL FROM RECRUIT>** person(s) live(s) in your household. Is that correct?

- 01 Yes - Household size is correct
- 02 No - ADD a household member
- 03 No - REMOVE a household member

(ASK IF C_PPL=2)

ADD_HM.

I need to ask a few quick questions about this household member.

(INTERVIEWER: COMPLETE ADDITIONAL PERSON FORM FOR EACH ADDITIONAL HOUSEHOLD MEMBER!)

(ASK IF C_PPL=3)

REM_HM.

Which person(s) are not actually members of your household?

(INTERVIEWER: COMPLETE REMOVAL FORM FOR EACH HOUSEHOLD MEMBER!)

<LIST NAME_# FOR EACH HOUSEHOLD MEMBER>

Creating new variables

The following new variables will verify the number of vehicles available to the household:

(ASK IF FIRST PERSON/CONTACT PERSON FROM RECRUIT)

C_VEH.

I also need to confirm the number of vehicles available to your household. In our first call to your household , you indicated <INSERT HHNUMVEH FROM RECRUIT> vehicle(s) are/is available to your household for regular use. Is that correct?

- 01 Yes - Number of vehicles is correct
- 02 No - Change number of vehicles

(ASK IF C_VEH=2)

CORR_VH.

How many working vehicles are available to your household?

(INTERVIEWER: Verify if more than 6 vehicles.)

(RECORD NUMBER OF HOUSEHOLD VEHICLES)

- ____ (PROGRAMMER: Allow 0 to 10 vehicles.)
- 97 Zero/None
- 98 Don't Know
- 99 Refused

(ASK IF CORR_VH=1)

CORRSB_A.

Is this vehicle provided or subsidized by a household member's employer?

- 01 Yes
- 02 No
- 98 Don't Know
- 99 Refused

(ASK CORR_VH=2:10)

CORRSB_B.

How many of these vehicles, if any, are provided or subsidized by a household member's employer?

____ (PROGRAMMER: Allow 0 to CORR_VH.)

(PROGRAMMER: IF CORRSB_A=1, CODE CORRSB_B=1,
ELSE CORRSB_B=0/97)

- 97 Zero/None
- 98 Don't Know
- 99 Refused

START

Changing the beginning of the first sentence:

Now I need to ask a few questions about school and work. These questions were included on the person information sheet, which was sent for each member of your household.

S_STATUS

Adding text to the question and an interviewer note:

(Are you/Is NAME) currently attending **any level of** school?

(INTERVIEWER NOTE: From preschool/nursery school to college.)

Creating new variables

The following new variables will verify work status.

(ASK IF WRKR_#=1:2)

W_CONF.

My records indicate that (you are/NAME is) currently employed. Is that correct?

- 01 Yes - employed
- 02 No - NOT employed

(ASK IF W_CONF=2)

CNOWK.

(Are you/Is NAME) looking for work?

- 01 Yes
- 02 No
- 98 Don't Know
- 99 Refused

(ASK IF WRKR_#=3:4)

NW_CONF.

My records indicate that (you are/NAME is) NOT currently employed in paid work. Is that correct?

- 01 Yes - NOT employed
- 02 No - employed

(ASK IF NW_CONF=2)

CWRKR_1.

(Are you/Is NAME) a...?

(READ LIST)

- 01 Full-time worker
- 02 Part-time worker
- 98 Don't Know
- 99 Refused

Update pre-logics

By changing the interview to confirm employment, the variables listed below will need the following pre-logic:

(ASK IF W_CONF=1 OR CWRKR_#=1:2)

W1_NAME

W1_TYPE

W1_ADDR

W1_TIMES

W1_EVES

W1_ONITE

W1_HRS

W1_FLEX

W1_COMP

W1_IND

W_MJOBS

W1_FLEX

W2_FLEX

To match the updated person information sheet, the first answer category should be changed to the following:

- 1 "I have no flexibility in **my work schedule.**"

W1_IND

W2_IND

For clarity, changing the question to the following:

What is (your/NAME's) employer's industry?

Also adding the following interviewer note:

(IF NEEDED: By industry, we mean the employer's principal business or activity.)

VIS_INT

The pre-logic should be updated, so that only those visitors of driving age are asked the question.

(ASK IF VISITOR AND ((SVAGE_#>15 AND SVAGE_#<116) OR (VAGE_#>2 AND VAGE_#<12) OR (VAGE18_#<>2))

An additional answer category will be added (code 4) to clarify the question and the question will be reworded appropriately:

Before we begin, did (you/NAME) use (your/his/her) own vehicle, rent a vehicle, **borrow a vehicle from the household (you are/he/she is) visiting, borrow someone else's vehicle**, or have no access to a vehicle for this overnight stay?

- 01 Used own vehicle
- 02 Rented a vehicle
- 03 Borrowed household vehicle
- 04 Borrowed other vehicle**
- 05 No vehicle access**
- 98 Don't Know
- 99 Refused

D_CMP

Update the pre-logic to the question.

(If AGE_#=18+)

Did (you/NAME) fill out the diary?

(If AGE_#<18)

Did someone fill out the diary for (NAME/NAME)?

TYPE_#

Text will be added to code 8:

008 Daycare Facility/**Preschool/Nursery School**

A1_#

A2_#

Programmer note for answer 1 will be changed to:

(SHOW IF LOCATE_#=1 AND (W_CONF=1 OR CWRKR_#=1:2))

WHYNO_S

Changing post-logic as follows:

(IF A1_1=1 OR A2_1=1 GO TO WKHM_S, ELSE GO TO LD_INT)

New variable – WKHM_S

Inserting new variable after WHYNO_S to determine approximately what time periods the respondent was working at home if they did not make any trips during the 48-hour travel period.

(ASK IF NOTRV_1=1 AND (A1_1=1 OR A2_1=1))

WKHM_S.

What time did you do paid work at home on Day 1? On Day 2?

(EXAMPLE: 8 am to 1 pm on Day 1, 10 am to 3:30 pm on Day 2)

(GO TO LD_INT)

TRS_TYPE_#

Moped will be moved from the “Bicycle/Moped” category to the “Motorcycle” category.

002 2 Motorcycle/**Moped**

003 3 **Bicycle**

New variable – DAR_#

(ASK IF TRS_TYPE_#=7)

DAR_#.

Which DIAL-A-RIDE provider did (you/NAME) ride?

(RECORD NUMBER FOR BUS PROVIDER FROM TRANSIT LIST)

(RECORD 996 FOR OTHER SPECIFY)

(DO NOT READ LIST. IF NEEDED, PROMPT WITH CATEGORIES.)

996 Other (Specify _____)

998 Don't Know

999 Refused

BUS_#

Change pre-logic:

(ASK IF TRS_TYPE_#=9)

Add “bus” to the question:

Which **BUS** provider did (you/NAME) ride?

Rename PAY1_#, PAY2A_#, PAY2B_#

Use PAY6_#, PAY6A_#, PAY6B_#

Change PAY6_# pre-logic to: (ASK IF TRS_TYPE_#=6)

Change “this trip” to “the taxi or shuttle”:

How much, in total, did (you/NAME) pay for **the TAXI or SHUTTLE?**

PAY6A_# pre-logic will be: (ASK IF PAY6_#=2)

PAY6B_# pre-logic will be: (ASK IF PAY6_#=2)

PAY6A_# and PAY6B_#

Change “transportation” to “taxi/shuttle”:

(RECORD TAXI/SHUTTLE COST - DOLLARS)

(RECORD TAXI/SHUTTLE COST - CENTS)

Create PAY7_#, PAY7A_#, PAY7B_#

Create PAY8_#, PAY8A_#, PAY8B_#

Create PAY9_#, PAY9A_#, PAY9B_#

Base text on 6 series, but change as follows:

PAY7_#

How much, in total, did (you/NAME) pay for **the DIAL-A-RIDE service, or was a transit pass used?**

Add answer code 3 (Used transit pass)

PAY7A_#

(RECORD **DIAL-A-RIDE** COST - DOLLARS)

PAY7B_#

(RECORD **DIAL-A-RIDE** COST - CENTS)

PAY8_#

How much, in total, did (you/NAME) pay for **the TRAIN?**

PAY8A_#

(RECORD **TRAIN** COST - DOLLARS)

PAY8B_#

(RECORD **TRAIN** COST - CENTS)

PAY9_#

How much, in total, did (you/NAME) pay for **the BUS, or was a bus or transit pass used?**

Add answer code 3 (Used bus or transit pass)

PAY9A_#

(RECORD **BUS** COST - DOLLARS)

PAY9B_#

(RECORD **BUS** COST - CENTS)

PAY6A_#

PAY7A_#

PAY8A_#

PAY9A_#

(PROGRAMMER: Allow 0 to 9000.)

TRS_DP_#

Update pre-logic:

(ASK IF TRS_TYPE_#=1 OR 2 AND ((SVAGE_#>13 AND SVAGE_#<116) OR
(VAGE_#>2 AND VAGE_#<12) OR (VAGE18_#<>2))

PK2A_#

(PROGRAMMER: Allow 0 to 9000.)

ASTOP_#

Deleting this question, per discussions at the project meeting on February 26th.

FCTY_#

At MDOT's request, adding an additional interviewer note:

(INTERVIEWER NOTE: For international trips, enter the name of the country in this field.

If trip to Canada, please probe for City and Province (Toronto, Ontario, Canada).

If respondent provides a place, like Disney World, and is unable to provide city when probed, enter the place provided in this field.)

TRTYPE_#

Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.

002 **Motorcycle/Moped**

003 **Bicycle**

FMODE_#

Moped will be moved from the "Bicycle/Moped" category to the "Motorcycle" category.

002 **Motorcycle/Moped**

003 **Bicycle**

CHANGES MADE APRIL 5, 2004 – AS A RESULT OF THE PILOT.

Global change of text to the following questions:

C_PPL

C_VEH

W_CONF

NW_CONF

Change text from “Our records indicate” or “According to our records,” to “In our first call to your household, you indicated”

The following interview note was added to DAR_# and BUS_# in order to allow for multiple mention.

(MULTIPLE MENTION, UP TO THREE RESPONSES.)

Add the following questions:

(IF [Ahour_# + LOC_ARR_#] minus [Dhours_# + LOC_DEP_#] = or > 1 HOUR, ASK:)

HOUR_CHK. Then this trip took over one hour, is that correct?

- 01 Yes (CONTINUE)
- 02 No (CORRECT Ahour_ AND LOC_ARR_#)
- 98 Don't Know (CONTINUE)
- 99 Refused (CONTINUE)

(AFTER DAY 2 TRAVEL IS COMPLETE, IF HOUR_CHK=01, ASK:)

LONGTRIP. Did any of the trips you've reported take significantly longer than usual?

- 01 Yes
- 02 No (GO TO LD_INT)
- 98 Don't Know (GO TO LD_INT)
- 99 Refused (Go to LD_INT)

(IF LONGTRIP=01, ASK:)

REAS_LT. Was this due to: (READ LIST)

- 01 Weather (rain or snow)
- 02 Construction
- 03 An accident
- 04 Traffic congestion
- 96 Other
- 98 Don't Know
- 99 Refused

Update pre-logics to the following question:

(ASK IF TRS_TYPE_#=1 OR 2 AND (HNUMVEH NE 0/97OR CORR_VH# NE 97)

HHV_#. Was a vehicle from your household used for this trip?

LD_INT

Add interviewer note the question. This will allow respondents to include long distance travel made during the two day travel period.

(INTERVIEWER NOTE: This information was asked for on the person information sheet that was sent out with the diary for each household member. **INCLUDE ANY LONG DISTANCE TRAVEL MADE DURING THE 48 HOUR TRAVEL PERIOD**)

CHANGES MADE APRIL 23, 2004

Reminder Call Script Changes

The bold text was added to the script eliminate respondent confusion

(INTERVIEWER: CONTINUE WITH CONTACT PERSON OR MEMBER OF THE HOUSEHOLD OVER 18 YEARS OF AGE. IF ANSWERING MACHINE, RECORD THE FOLLOWING ON THE ANSWERING MACHINE.)

I am calling to remind your household that tomorrow begins your 48-hour travel period for “MI Travel Counts”, a transportation study to better understand the travel characteristics of Michigan residents. Your household’s participation is extremely important. Please remember to record ALL locations that you and each member of your household go to, beginning at 3:00 am **on Day 1 and continuing to record Day 2. Please keep your diaries. We will phone you after your last travel day to collect your travel information.**

Diary Changes

A label was added to the top of pg.6 of every diary to eliminate respondent confusion.

Record travel for your TWO travel days, a full 48 hours.

BRE Changes

A label was added to the back center of every BRE to eliminate respondent confusion

Please mail diaries ONLY after we have phoned to collect your travel information. If mailing, include for each household member:

- **Completed Person Information sheet**
- **Travel Diary completed for your two travel days (48 hours).**



JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
LANSING

GLORIA J. JEFF
DIRECTOR

Dear <CONTACT NAME>:

Did you know that our travel habits can help shape Michigan's Transportation system?

It's true! Our daily commutes to work, cross-state vacations, errands around town, bus rides, bike rides, walks, and everything in between are important. Where we go, how we get there, and what we do when we get there - all shape the understanding of how Michigan's transportation system is used and how it can be improved for all of us - now and in the future.

Whether you travel by car, bus, train, airplane, boat, bike, or on foot, your participation is essential in helping Michigan and your community to create a safer and more efficient transportation system.

This is why your participation in *MI Travel Counts* is so important, and it's easy!

This packet contains everything your household needs to record travel.

- One Travel Diary for each member of your household, and any overnight visitors:
 - Please record ALL locations you visit during your assigned 48-hour travel period.
 - Each household member should complete his or her own diary whenever possible.
 - Even if your travel during the assigned period is not typical, we still need it reported.
 - Instructions and an example are included in the front of the diary.
- One Person Sheet for each member of your household:
 - Please fill in the school and work information and record recent trips over 100 miles.

The information you provide will only be used for the statistical purposes of this study. It will be kept **confidential** and **secure**.

A few days after your travel period, an interviewer from MORPACE International, a Michigan research firm, will call to collect your household's travel information. MORPACE would like to speak with each person age 16 or older. Adults will be asked to respond for children under 16 years of age.

If you have questions about filling out the *MI Travel Counts* diary, contact MORPACE International at 1-800-566-6262, or visit www.michigan.gov/mitravelcounts. If you have any other questions about the program, please contact Karen Faussett at MDOT at 517-241-1301.

As a small token of our appreciation, we have included a state map. Thank you for helping move Michigan forward, **your participation means better Michigan transportation!**

Sincerely,

A handwritten signature in black ink that reads "Gloria J. Jeff".

Gloria J. Jeff
Director



Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
109	148	Alphanumeric	Left	A40	CITY	Home City	Text	Text
216	235	Alphanumeric	Left	A20	COUNTY	Home County	Text	Text
23	24	Numeric	Right	I2	DAY1	Day 1	1-31	Valid Range
25	26	Numeric	Right	I2	DAY2	Day 2	1-31	Valid Range
27	27	Numeric	NA	I1	DAYWK DAYWK DAYWK	Days of Week	1 2 3	Monday/Tuesday Tuesday/Wednesday Wednesday/Thursday
295	296	Numeric	Right	I2	FUTURE FUTURE FUTURE	Willing to Participate in the Future	1 2 98	Yes No Don't Know
69	108	Alphanumeric	Left	A40	GADDR	Geocoded Home Address	Text	Text
273	274	Numeric	Right	I2	GEOLVL GEOLVL GEOLVL GEOLVL GEOLVL GEOLVL GEOLVL GEOLVL GEOLVL GEOLVL GEOLVL GEOLVL GEOLVL	Geocoding Level	1 2 3 4 5 6 7 8 9 10 11 12	Framework Street-Level MapMarker Street-Level Framework Intersection-Level MapMarker Intersection-Level TAZ Level Non-Geocodable Ohio Illinois Wisconsin Indiana Canada Other
258	272	Alphanumeric	Left	A15	GEORSL	Geocoding Result	Text	Text
283	284	Numeric	Right	I2	HHNUMPPL HHNUMVEH HHNUMVEH	Number of Persons in Household	1-15 98 99	Valid Range Don't Know Refused
287	288	Numeric	Right	I2	HHNUMVEH	Vehicles Available to Household	0-10	Valid Range
291	292	Numeric	Right	I2	INCOME INCOME INCOME INCOME INCOME INCOME INCOME INCOME INCOME INCOME INCOME INCOME INCOME	Income	1 2 3 4 5 6 7 8 9 10 11 12 98	Less than \$10,000 \$10,000 to \$19,999 \$20,000 to \$29,999 \$30,000 to \$39,999 \$40,000 to \$49,999 \$50,000 to \$59,999 \$60,000 to \$74,999 \$75,000 to \$99,999 \$100,000 to \$124,999 \$125,000 or more Below \$50,000 \$50,000 or above Don't Know

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					INCOME		99	Refused
248	257	Alphanum	Left	F10.6	LATI LATI	Home Latitude	Value 000.000000	Value Unknown Latitude
28	28	Numeric	NA	I1	LETTER LETTER	Advance Letter Sent	1 2	Yes No
238	247	Alphanum	Left	F10.6	LONG LONG	Home Longitude	Value 000.000000	Value Unknown Longitude
19 21	20 22	Numeric Numeric	Right Right	I2 I2	MONTH1 MONTH2 MONTH2 MONTH2 MONTH2 MONTH2 MONTH2 MONTH2 MONTH2 MONTH2 MONTH2	Month of Day 1 Month of Day 2	1 2 3 4 5 6 7 8 9 10 11 12	January February March April May June July August September October November December
293	294	Numeric	Right	I2	NUMVIS NUMVIS NUMVIS	Overnight Visitors	0-8 98 99	Valid Range Don't Know Refused
29	68	Alphanum	Left	A40	OADDR	Original Home Address	Text	Text
9	18	Alphanum	Left	A10	PHONENO	Phone Number	Value	Value
3	8	Numeric	Right	I6	QNO	Sample Number	Value	Value
1	2	Numeric	Right	I2	RECTYP	Record Type	1	Household Record
236	237	Alphanum	Left	A2	REGION REGION REGION REGION REGION REGION REGION	Region	1A 1B 2 3 4 5 6 7	SEMOG Detroit Small Cities Upper Peninsula Rural Northern Lower Peninsula Southern Lower Peninsula TMAs Small Urban Modeled Areas
149	150	Alphanum	Left	A2	STATE	Home State	Text	Text
289	290	Numeric	Right	I2	VEHSUB VEHSUB VEHSUB	Vehicles Subsidized by Employer	0-10 98 99	Valid Range Don't Know Refused
285	286	Numeric	Right	I2	WRKRS	Number Employed in Household	0-15	Valid Range
156	215	Alphanum	Left	A60	XSTS	Home Cross Streets	Text	Text
151	155	Numeric	Right	I5	ZIPCD	Home Zip Code	Value	Value

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
275	282	Alphanum	Left	A8	ZONE ZONE	Household TAZ	Value 88888888	Value Unknown Zone

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
23	25	Numeric	Right	I3	AGE AGE AGE	Age	0-115 998 999	Valid Range Don't Know Refused
28	29	Numeric	Right	I2	AGE18 AGE18 AGE18 AGE18	Age Above/Below 18	1 2 98 99	18 or older Under 18 Don't Know Refused
26	27	Numeric	Right	I2	AGERNG AGERNG AGERNG AGERNG AGERNG AGERNG AGERNG AGERNG AGERNG AGERNG AGERNG AGERNG AGERNG AGERNG AGERNG	Age Range	1 2 3 4 5 6 7 8 9 10 11 98 99	Under 5 5 to 15 16 to 17 18 to 24 25 to 34 35 to 44 45 to 54 55 to 64 65 to 74 75 to 84 85 and over Don't Know Refused
1480	1481	Numeric	Right	I2	DCOMP DCOMP DCOMP DCOMP DCOMP	Diary Completed	1 2 3 98 99	Yes No Did not receive materials Don't Know Refused
1482	1483	Numeric	Right	I2	DHAVE DHAVE DHAVE	Using Completed Diary	1 2 3	Yes No Not Applicable
341	342	Numeric	Right	I2	EDU EDU EDU EDU EDU EDU EDU EDU EDU	Education Level	0 1 2 3 4 5 6 7 98 99	Not Applicable (Too Young) Less Than High School High School Graduate Some College Vocational/Technical Training Associates Degree Bachelors Degree Graduate/Post-Graduate Degree Don't Know Refused
21	22	Numeric	Right	I2	GENDER GENDER GENDER	Gender	1 2 99	Male Female Refused

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
445	504	Alphanumeric	Left	A60	GSADDR	Geocoded School Address	Text	Text
844	903	Alphanumeric	Left	A60	GW1ADDR	Geocoded Primary Employer Address	Text	Text
1253	1312	Alphanumeric	Left	A60	GW2ADDR	Geocoded Secondary Employer Address	Text	Text
72	73	Numeric	Right	I2	LDRV LDRV LDRV LDRV LDRV	Licensed Driver	1 2 3 98 99	Yes No Not Applicable (Too Young) Don't Know Refused
1484	1485	Numeric	Right	I2	LDTRIPS LDTRIPS	Long-Distance Trips Taken	1 2	Yes No
1067	1068	Numeric	Right	I2	MJOBS MJOBS MJOBS MJOBS	Multiple Jobs	1 2 98 99	Yes No Don't Know Refused
659	660	Numeric	Right	I2	NOWK NOWK NOWK NOWK	Not Working Status	1 2 98 99	Looking for Work Not Looking for Work Don't Know Refused
385	444	Alphanumeric	Left	A60	OSADDR	Original School Address	Text	Text
784	843	Alphanumeric	Left	A60	OW1ADDR	Original Primary Employer Address	Text	Text
1193	1252	Alphanumeric	Left	A60	OW2ADDR	Original Secondary Employer Address	Text	Text
124	131	Alphanumeric	Left	F8.2	PCOST1	Amount Paid for Transit Pass 1	0.01-9000.99	Valid Range
197	204	Alphanumeric	Left	F8.2	PCOST2	Amount Paid for Transit Pass 2	0.01-9000.99	Valid Range
270	277	Alphanumeric	Left	F8.2	PCOST3	Amount Paid for Transit Pass 3	0.01-9000.99	Valid Range
9	10	Numeric	Right	I2	PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM	Person Number	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Person 1 Person 2 Person 3 Person 4 Person 5 Person 6 Person 7 Person 8 Person 9 Person 10 Person 11 Person 12 Person 13 Person 14 Person 15
11	20	Alphanumeric	Left	A10	PHONENO	Phone Number	Value	Value
132	134	Numeric	Right	I3	PRATE1 PRATE1 PRATE1	Transit Pass 1 Rate	1 2 3	Weekly Monthly Annually

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					PRATE1 PRATE1		998 999	Don't Know Refused
205	207	Numeric	Right	I3	PRATE2 PRATE2 PRATE2 PRATE2 PRATE2	Transit Pass 2 Rate	1 2 3 998 999	Weekly Monthly Annually Don't Know Refused
278	280	Numeric	Right	I3	PRATE3 PRATE3 PRATE3 PRATE3 PRATE3	Transit Pass 3 Rate	1 2 3 998 999	Weekly Monthly Annually Don't Know Refused
135	194	Alphanumeric	Left	A60	PRATEO1	Other Transit Pass 1 Rate	Text	Text
208	267	Alphanumeric	Left	A60	PRATEO2	Other Transit Pass 2 Rate	Text	Text
281	340	Alphanumeric	Left	A60	PRATEO3	Other Transit Pass 3 Rate	Text	Text
1476	1477	Numeric	Right	I2	PROXY PROXY PROXY PROXY	Proxy Status	1 2 3 4	Respondent Proxy Mailed Diary Internet
1478	1479	Numeric	Right	I2	PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM PROXYNAM	Person Providing Proxy	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Person 1 Person 2 Person 3 Person 4 Person 5 Person 6 Person 7 Person 8 Person 9 Person 10 Person 11 Person 12 Person 13 Person 14 Person 15
122	123	Numeric	Right	I2	PTRANS1 PTRANS1 PTRANS1 PTRANS1	Pay for Transit Pass 1	1 2 98 99	Yes No Don't Know Refused
195	196	Numeric	Right	I2	PTRANS2 PTRANS2 PTRANS2 PTRANS2	Pay for Transit Pass 2	1 2 98 99	Yes No Don't Know Refused
268	269	Numeric	Right	I2	PTRANS3	Pay for Transit Pass 3	1	Yes

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					PTRANS3		2	No
					PTRANS3		98	Don't Know
					PTRANS3		99	Refused
76	77	Numeric	Right	I2	PTYPE1	Type of Transit Pass - 1st Mention	1	Adrian Dial-A-Ride
78	79	Numeric	Right	I2	PTYPE2	Type of Transit Pass - 2nd Mention	2	Allegan County Transportation
80	81	Numeric	Right	I2	PTYPE3	Type of Transit Pass - 3rd Mention	3	Alma Dial-A-Ride
					PTYPE3		4	City Of Alpena Dial-A-Ride
					PTYPE3		5	Altran Transit Authority (Alger County)
					PTYPE3		6	Ann Arbor Transportation Authority (AATA)
					PTYPE3		7	Antrim County Transportation (ACT)
					PTYPE3		8	Arenac Dial-A-Ride
					PTYPE3		9	Barry County Transit
					PTYPE3		10	Battle Creek Transit
					PTYPE3		11	Bay Area Transportation Authority (BATA)
					PTYPE3		12	Bay Metro Transportation Authority (BMTA)
					PTYPE3		13	Belding Dial-A-Ride
					PTYPE3		14	Berrien Bus (Berrien County Public Transportation)
					PTYPE3		15	Big Rapids Dial-A-Ride
					PTYPE3		16	Blue Water Area Transportation Commission (BWATC)
					PTYPE3		17	Branch Area Transit Authority
					PTYPE3		18	Buchanan Dial-A-Ride
					PTYPE3		19	Cadillac/Wexford Transit Authority (CWTA)
					PTYPE3		20	Capital Area Transportation Authority (CATA)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					PType3		21	Caro Transit Authority (CTA)
					PType3		22	Cass County Transportation Authority
					PType3		23	Charlevoix County Public Transit (CCPT)
					PType3		24	Clare County Transit Corporation (CCTC)
					PType3		25	Clinton Area Transit System
					PType3		26	Crawford County Transportation Authority
					PType3		27	Delta Area Transit Authority (DATA)
					PType3		28	Detroit Department of Transportation (DDOT)
					PType3		29	Dowagiac Dial-A-Ride (DART)
					PType3		30	Eastern Upper Peninsula Transportation Authority (EUPTA)
					PType3		31	Eaton County Transportation Authority (EATRAN)
					PType3		32	Flint Mass Transportation Authority (MTA)
					PType3		33	Gladwin City/County Transit (GCCT)
					PType3		34	Gogebic County Transit (GTC)
					PType3		35	Grand Rapids - ITP/The Rapid (Interurban Transit Partnership)
					PType3		36	Greenville Transit
					PType3		37	Harbor Transit
					PType3		38	Hillsdale Dial-A-Ride
					PType3		39	Houghton Motor Transit Line
					PType3		40	Interurban Transit Authority (Saugatuck)
					PType3		41	City of Ionia Dial-A-Ride
					PType3		42	Ionia Transit Authority
					PType3		43	Iosco Transit Corporation (ITC)
					PType3		44	Isabella County Transportation Commission (ICTC)
					PType3		45	Jackson Transportation Authority (JTA)
					PType3		46	Kalamazoo County Human Services
					PType3		47	Kalamazoo Metro Transit System (KMTS)
					PType3		48	Kalkaska Public Transit Authority (KPTA)
					PType3		49	Lake Erie Transit
					PType3		50	Greater Lapeer Transportation Authority (GLTA)
					PType3		51	Lenawee Transportation Corporation
					PType3		52	Livingston Essential Transportation (LETS)
					PType3		53	Ludington Mass Transportation Authority (LMTA)
					PType3		54	Macatawa Area Express - MAX
					PType3		55	Manistee County Transportation
					PType3		56	Marquette County Transit Authority (MARQTRAN)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					PType3		57	City of Marshall Dial-A-Ride
					PType3		58	Mecosta County Area Transit
					PType3		59	Midland County Connection
					PType3		60	City of Midland Dial-A-Ride
					PType3		61	City of Milan Public Transportation (MPT)
					PType3		62	Muskegon Area Transit System (MATS)
					PType3		63	Niles Dial-A-Ride
					PType3		64	Ogemaw County Public Transportation (OCPT)
					PType3		65	Ontonagon County Public Transit
					PType3		66	Osceola County Area Transit
					PType3		67	Otsego County Bus System
					PType3		68	Rosco Mini Bus System (Roscommon)
					PType3		69	Saginaw Transit System (Saginaw Transit Authority Regional Services)
					PType3		70	Sanilac Transportation Corporation (STC)
					PType3		71	City of Sault Sainte Marie
					PType3		72	Schoolcraft County Public Transportation
					PType3		73	Shiawassee Area Transportation Agency
					PType3		74	SMART aka SEMTA (Suburban Mobility Authority For Regional Transportation)
					PType3		75	Thumb Area Transit (TAT) - Huron Transit Corporation
					PType3		76	Twin Cities Area Transportation Authority (TCATA)
					PType3		77	Van Buren Public Transit
					PType3		78	Yates Township Transportation System
					PType3		96	Other
					PType3		98	Don't Know
					PType3		99	Refused
82	121	Alphanum	Left	A40	PTypeOS	Other Type of Transit Pass	Text	Text
3	8	Numeric	Right	I6	QNO	Sample Number	Value	Value
1	2	Numeric	Right	I2	RECTYP	Record Type	2	Person Record
30	31	Numeric	Right	I2	RELAT	Relationship to Contact Person	0	Contact Person
					RELAT		1	Husband/Wife/Unmarried Partner
					RELAT		2	Son/Daughter/In-Law
					RELAT		3	Brother/Sister/In-Law
					RELAT		4	Mother/Father/In-Law
					RELAT		5	Other Relative
					RELAT		6	Roommate/Friend
					RELAT		7	Household Help
					RELAT		8	Foster Home Resident
					RELAT		96	Other

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					RELAT RELAT		98 99	Don't Know Refused
32	71	Alphanum	Left	A40	RELATOS	Other Relationship to Contact Person	Text	Text
505	544	Alphanum	Left	A40	SCITY	School City	Text	Text
647	648	Numeric	Right	I2	SGEOLVL SGEOLVL SGEOLVL SGEOLVL SGEOLVL SGEOLVL SGEOLVL SGEOLVL SGEOLVL SGEOLVL SGEOLVL SGEOLVL SGEOLVL	School Geocoding Level	1 2 3 4 5 6 7 8 9 10 11 12	Framework Street-Level MapMarker Street-Level Framework Intersection-Level MapMarker Intersection-Level TAZ Level Non-Geocodable Ohio Illinois Wisconsin Indiana Canada Other
632	646	Alphanum	Left	A15	SGEORSL	School Geocoding Result	Text	Text
622	631	Alphanum	Left	F10.6	SLATI SLATI	School Latitude	Value 000.000000	Value Unknown Latitude
612	621	Alphanum	Left	F10.6	SLONG SLONG	School Longitude	Value 000.000000	Value Unknown Longitude
345	384	Alphanum	Left	A40	SNAME	School Name	Text	Text
545	546	Alphanum	Left	A2	SSTATE	School State	Text	Text
343	344	Numeric	Right	I2	STYPE STYPE STYPE STYPE STYPE STYPE STYPE STYPE	Type of School	0 1 2 3 4 5 98 99	Not currently a student Pre-School/Nursery School K-12 Vocational/Technical Full-Time College Student Part-Time College Student Don't Know Refused
552	611	Alphanum	Left	A60	SXSTS	School Cross Streets	Text	Text
547	551	Alphanum	Left	A5	SZIPCD SZIPCD SZIPCD	School Zip Code	Text 99998 99999	Text Don't Know Refused
649	656	Alphanum	Left	A8	SZONE SZONE	School TAZ	Value 88888888	Value Unknown Zone
74	75	Numeric	Right	I2	TPASS TPASS TPASS	Transit Pass	1 2 98	Yes No Don't Know

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					TPASS		99	Refused
904	943	Alphanum	Left	A40	W1CITY	Primary Employer City	Text	Text
1065	1066	Numeric	Right	I2	W1COMP W1COMP W1COMP W1COMP	Primary Job Compressed Week	1 2 98 99	Compressed Work Week Offered Compressed Work Week Not Offered Don't Know Refused
1056	1057	Numeric	Right	I2	W1EVES W1EVES W1EVES W1EVES	Primary Job includes Evenings	1 2 98 99	Yes No Don't Know Refused
1063	1064	Numeric	Right	I2	W1FLEX W1FLEX W1FLEX W1FLEX W1FLEX	Primary Job Flexibility	1 2 3 98 99	No Flexibility Some Flexibility Complete Flexibility Don't Know Refused
1046	1047	Numeric	Right	I2	W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL W1GEOLVL	Primary Employer Geocoding Level	1 2 3 4 5 6 7 8 9 10 11 12	Framework Street-Level MapMarker Street-Level Framework Intersection-Level MapMarker Intersection-Level TAZ Level Non-Geocodable Ohio Illinois Wisconsin Indiana Canada Other
1031	1045	Alphanum	Left	A15	W1GEORSL	Primary Employer Geocoding Result	Text	Text
1060	1062	Numeric	Right	I3	W1HRS W1HRS W1HRS	Primary Job Weekly Hours	1-120 998 999	Valid Range Don't Know Refused
663	702	Alphanum	Left	A40	W1INDOS	Other Primary Industry	Text	Text
661	662	Numeric	Right	I2	W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST	Primary Industry	1 2 3 4 5 6 7 8 9 10 11	Agriculture, Forestry, Fishing and Hunting Mining Utilities Construction Manufacturing Wholesale Trade Retail Trade Transportation and Warehousing Information Finance and Insurance Real Estate, Rental/Leasing

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST W1INDUST		12 Professional, Scientific and Technical Services 13 Management of Companies and Enterprises 14 Administrative and Support and Waste Management and Remediation Services 15 Educational Services 16 Health Care and Social Services 17 Arts, Entertainment, and Recreation 18 Accommodation and Food Services 19 Public Administration/Government 20 Other Services 21 Military 22 Automotive 23 Child Care/Daycare/Adult Foster Care 24 Maintenance Services 25 Lumber/Lumber Mill 96 Other 98 Don't Know 99 Refused	
1021	1030	Alphanum	Left	F10.6	W1LATI W1LATI	Primary Employer Latitude	Value 000.000000	Value Unknown Latitude
783	783	Numeric	NA	I1	W1LOC W1LOC W1LOC	Primary Employer Location	1 2 3	Workplace Works Only at Home No Fixed Workplace
1011	1020	Alphanum	Left	F10.6	W1LONG W1LONG	Primary Employer Longitude	Value 000.000000	Value Unknown Longitude
703	742	Alphanum	Left	A40	W1NAME	Name of Primary Employer	Text	Text
1058	1059	Numeric	Right	I2	W1ONITE W1ONITE W1ONITE W1ONITE	Primary Job includes Overnights	1 2 98 99	Yes No Don't Know Refused
944	945	Alphanum	Left	A2	W1STATE	Primary Employer State	Text	Text
743	782	Alphanum	Left	A40	W1TYPE	Type of Primary Employer	Text	Text
951	1010	Alphanum	Left	A60	W1XSTS	Primary Employer Cross Streets	Text	Text
946	950	Alphanum	Left	A5	W1ZIPCD W1ZIPCD W1ZIPCD	Primary Employer Zip Code	Text 99998 99999	Text Don't Know Refused
1048	1055	Alphanum	Left	A8	W1ZONE W1ZONE	Primary Employer TAZ	Value 88888888	Value Unknown Zone
1313	1352	Alphanum	Left	A40	W2CITY	Secondary Employer City	Text	Text
1474	1475	Numeric	Right	I2	W2COMP W2COMP W2COMP W2COMP	Secondary Job Compressed Week	1 2 98 99	Compressed Work Week Offered Compressed Work Week Not Offered Don't Know Refused

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
1465	1466	Numeric	Right	I2	W2EVES W2EVES W2EVES W2EVES	Secondary Job includes Evenings	1 2 98 99	Yes No Don't Know Refused
1472	1473	Numeric	Right	I2	W2FLEX W2FLEX W2FLEX W2FLEX W2FLEX	Secondary Job Flexibility	1 2 3 98 99	No Flexibility Some Flexibility Complete Flexibility Don't Know Refused
1455	1456	Numeric	Right	I2	W2GEOLVL W2GEOLVL W2GEOLVL W2GEOLVL W2GEOLVL W2GEOLVL W2GEOLVL W2GEOLVL W2GEOLVL W2GEOLVL W2GEOLVL W2GEOLVL W2GEOLVL	Secondary Employer Geocoding Level	1 2 3 4 5 6 7 8 9 10 11 12	Framework Street-Level MapMarker Street-Level Framework Intersection-Level MapMarker Intersection-Level TAZ Level Non-Geocodable Ohio Illinois Wisconsin Indiana Canada Other
1440	1454	Alphanum	Left	A15	W2GEORSL	Secondary Employer Geocoding Result	Text	Text
1469	1471	Numeric	Right	I3	W2HRS W2HRS W2HRS	Secondary Job Weekly Hours	1-120 998 999	Valid Range Don't Know Refused
1071	1110	Alphanum	Left	A40	W2INDOS	Other Secondary Industry	Text	Text
1069	1070	Numeric	Right	I2	W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST	Secondary Industry	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	Agriculture, Forestry, Fishing and Hunting Mining Utilities Construction Manufacturing Wholesale Trade Retail Trade Transportation and Warehousing Information Finance and Insurance Real Estate, Rental/Leasing Professional, Scientific and Technical Services Management of Companies and Enterprises Administrative and Support and Waste Management and Remediation Services Educational Services Health Care and Social Services

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST W2INDUST		17 18 19 20 21 22 23 24 25 96 98 99	Arts, Entertainment, and Recreation Accommodation and Food Services Public Administration/Government Other Services Military Automotive Child Care/Daycare/Adult Foster Care Maintenance Services Lumber/Lumber Mill Other Don't Know Refused
1430	1439	Alphanum	Left	F10.6	W2LATI W2LATI	Secondary Employer Latitude	Value 000.000000	Value Unknown Latitude
1191	1192	Numeric	Right	I2	W2LOC W2LOC W2LOC	Secondary Employer Location	1 2 3	Workplace Works Only at Home No Fixed Workplace
1420	1429	Alphanum	Left	F10.6	W2LONG W2LONG	Secondary Employer Longitude	Value 000.000000	Value Unknown Longitude
1111	1150	Alphanum	Left	A40	W2NAME	Name of Secondary Employer	Text	Text
1467	1468	Numeric	Right	I2	W2ONITE W2ONITE W2ONITE W2ONITE	Secondary Job includes Overnights	1 2 98 99	Yes No Don't Know Refused
1353	1354	Alphanum	Left	A2	W2STATE	Secondary Employer State	Text	Text
1151	1190	Alphanum	Left	A40	W2TYPE	Type of Secondary Employer	Text	Text
1360	1419	Alphanum	Left	A60	W2XSTS	Secondary Employer Cross Streets	Text	Text
1355	1359	Alphanum	Left	A5	W2ZIPCD W2ZIPCD W2ZIPCD	Secondary Employer Zip Code	Text 99998 99999	Text Don't Know Refused
1457	1464	Alphanum	Left	A8	W2ZONE W2ZONE	Secondary Employer TAZ	Value 88888888	Value Unknown Zone
657	658	Numeric	Right	I2	WRKR WRKR WRKR WRKR WRKR WRKR WRKR	Working Status	1 2 3 4 5 98 99	Full-Time Worker Part-Time Worker Unpaid Worker or Volunteer Not Working Not Applicable (Too Young) Don't Know Refused

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
397	398	Numeric	Right	I2	ACT1	Primary Activity at Origin Location	1	Home - Paid Work
399	400	Numeric	Right	I2	ACT2	2nd Activity at Origin Location	2	Home - Other
401	402	Numeric	Right	I2	ACT3	3rd Activity at Origin Location	3	Work
403	404	Numeric	Right	I2	ACT4	4th Activity at Origin Location	4	Attend Childcare
					ACT4		5	Attend School
					ACT4		6	Attend College
					ACT4		7	Eat Out
					ACT4		8	Personal Business
					ACT4		9	Everyday Shopping
					ACT4		10	Major Shopping
					ACT4		11	Religious/Community
					ACT4		12	Social
					ACT4		13	Recreation - Participate
					ACT4		14	Recreation - Watch
					ACT4		15	Accompany Another Person
					ACT4		16	Pick-Up/Drop-Off Passenger
					ACT4		17	Turn Around
1102	1102	Numeric	NA	I1	ADAY	Time of Arrival - Day 1/Day 2	1	Day 1
					ADAY		2	Day 2
1098	1101	Numeric	Right	I4	ATIME	Time of Arrival - Hour/Minute	Value	Value
908	947	Alphanumeric	Left	A40	BUSOS	Other Bus Provider Used	Text	Text
862	863	Numeric	Right	I2	BUSTYPE1	1st Type of Bus Provider Used	4	City Of Alpena Dial-A-Ride
864	865	Numeric	Right	I2	BUSTYPE2	2nd Type of Bus Provider Used	5	Altran Transit Authority (Alger County)
866	867	Numeric	Right	I2	BUSTYPE3	3rd Type of Bus Provider Used	6	Ann Arbor Transportation Authority (AATA)
					BUSTYPE3		7	Antrim County Transportation (ACT)
					BUSTYPE3		8	Arenac Dial-A-Ride
					BUSTYPE3		9	Barry County Transit
					BUSTYPE3		10	Battle Creek Transit
					BUSTYPE3		11	Bay Area Transportation Authority (BATA)
					BUSTYPE3		12	Bay Metro Transportation Authority (BMTA)
					BUSTYPE3		13	Belding Dial-A-Ride
					BUSTYPE3		14	Berrien Bus (Berrien County Public Transportation)
					BUSTYPE3		15	Big Rapids Dial-A-Ride
					BUSTYPE3		16	Blue Water Area Transportation Commission (BWATC)
					BUSTYPE3		17	Branch Area Transit Authority
					BUSTYPE3		18	Buchanan Dial-A-Ride
					BUSTYPE3		19	Cadillac/Wexford Transit Authority (CWTA)
					BUSTYPE3		20	Capital Area Transportation Authority (CATA)
					BUSTYPE3		21	Caro Transit Authority (CTA)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					BUSTYPE3		22	Cass County Transportation Authority
					BUSTYPE3		23	Charlevoix County Public Transit (CCPT)
					BUSTYPE3		24	Clare County Transit Corporation (CCTC)
					BUSTYPE3		25	Clinton Area Transit System
					BUSTYPE3		26	Crawford County Transportation Authority
					BUSTYPE3		27	Delta Area Transit Authority (DATA)
					BUSTYPE3		28	Detroit Department of Transportation (DDOT)
					BUSTYPE3		29	Dowagiac Dial-A-Ride (DART)
					BUSTYPE3		30	Eastern Upper Peninsula Transportation Authority (EUPTA)
					BUSTYPE3		31	Eaton County Transportation Authority (EATRAN)
					BUSTYPE3		32	Flint Mass Transportation Authority (MTA)
					BUSTYPE3		33	Gladwin City/County Transit (GCCT)
					BUSTYPE3		34	Gogebic County Transit (GTC)
					BUSTYPE3		35	Grand Rapids - ITP/The Rapid (Interurban Transit Partnership)
					BUSTYPE3		36	Greenville Transit
					BUSTYPE3		37	Harbor Transit
					BUSTYPE3		38	Hillsdale Dial-A-Ride
					BUSTYPE3		39	Houghton Motor Transit Line
					BUSTYPE3		40	Interurban Transit Authority (Saugatuck)
					BUSTYPE3		41	City of Ionia Dial-A-Ride
					BUSTYPE3		42	Ionia Transit Authority
					BUSTYPE3		43	Iosco Transit Corporation (ITC)
					BUSTYPE3		44	Isabella County Transportation Commission (ICTC)
					BUSTYPE3		45	Jackson Transportation Authority (JTA)
					BUSTYPE3		46	Kalamazoo County Human Services
					BUSTYPE3		47	Kalamazoo Metro Transit System (KMTS)
					BUSTYPE3		48	Kalkaska Public Transit Authority (KPTA)
					BUSTYPE3		49	Lake Erie Transit
					BUSTYPE3		50	Greater Lapeer Transportation Authority (GLTA)
					BUSTYPE3		51	Lenawee Transportation Corporation
					BUSTYPE3		52	Livingston Essential Transportation (LETS)
					BUSTYPE3		53	Ludington Mass Transportation Authority (LMTA)
					BUSTYPE3		54	Macatawa Area Express - MAX
					BUSTYPE3		55	Manistee County Transportation

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					BUSTYPE3		56	Marquette County Transit Authority (MARQTRAN)
					BUSTYPE3		57	City of Marshall Dial-A-Ride
					BUSTYPE3		58	Mecosta County Area Transit
					BUSTYPE3		59	Midland County Connection
					BUSTYPE3		60	City of Midland Dial-A-Ride
					BUSTYPE3		61	City of Milan Public Transportation (MPT)
					BUSTYPE3		62	Muskegon Area Transit System (MATS)
					BUSTYPE3		63	Niles Dial-A-Ride
					BUSTYPE3		64	Ogemaw County Public Transportation (OCPT)
					BUSTYPE3		65	Ontonagon County Public Transit
					BUSTYPE3		66	Osceola County Area Transit
					BUSTYPE3		67	Otsego County Bus System
					BUSTYPE3		68	Rosco Mini Bus System (Roscommon)
					BUSTYPE3		69	Saginaw Transit System (Saginaw Transit Authority Regional Services)
					BUSTYPE3		70	Sanilac Transportation Corporation (STC)
					BUSTYPE3		71	City of Sault Sainte Marie
					BUSTYPE3		72	Schoolcraft County Public Transportation
					BUSTYPE3		73	Shiawassee Area Transportation Agency
					BUSTYPE3		74	SMART aka SEMTA (Suburban Mobility Authority For Regional Transportation)
					BUSTYPE3		75	Thumb Area Transit (TAT) - Huron Transit Corporation
					BUSTYPE3		76	Twin Cities Area Transportation Authority (TCATA)
					BUSTYPE3		77	Van Buren Public Transit
					BUSTYPE3		78	Yates Township Transportation System
					BUSTYPE3		96	Other
					BUSTYPE3		98	Don't Know
					BUSTYPE3		99	Refused
1481	1482	Numeric	Right	I2	DACT1	Primary Activity at Destination	1	Home - Paid Work
1483	1484	Numeric	Right	I2	DACT2	2nd Activity at Destination	2	Home - Other
1485	1486	Numeric	Right	I2	DACT3	3rd Activity at Destination	3	Work
1487	1488	Numeric	Right	I2	DACT4	4th Activity at Destination	4	Attend Childcare
					DACT4		5	Attend School
					DACT4		6	Attend College
					DACT4		7	Eat Out
					DACT4		8	Personal Business
					DACT4		9	Everyday Shopping
					DACT4		10	Major Shopping

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					DACT4 DACT4 DACT4 DACT4 DACT4 DACT4 DACT4		11 12 13 14 15 16 17	Religious/Community Social Recreation - Participate Recreation - Watch Accompany Another Person Pick-Up/Drop-Off Passenger Turn Around
868	907	Alphanumeric	Left	A40	DAROS	Other Dial-A-Ride Provider Used	Text	Text
856	857	Numeric	Right	I2	DARTYPE1	1st Type of Dial-A-Ride Provider Used	1	Adrian Dial-A-Ride
858	859	Numeric	Right	I2	DARTYPE2	2nd Type of Dial-A-Ride Provider Used	2	Allegan County Transportation
860	861	Numeric	Right	I2	DARTYPE3	3rd Type of Dial-A-Ride Provider Used	3	Alma Dial-A-Ride
1287	1326	Alphanumeric	Left	A40	DCITY	Destination City	Text	Text
809	809	Numeric	NA	I1	DDAY DDAY	Time of Departure - Day 1/Day 2	1 2	Day 1 Day 2
1107	1166	Alphanumeric	Left	A60	DEST	Destination of Trip	Text	Text
1429	1430	Numeric	Right	I2	DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL	Destination Geocoding Level	1 2 3 4 5 6 7 8 9 10 11 12	Framework Street-Level MapMarker Street-Level Framework Intersection-Level MapMarker Intersection-Level TAZ Level Non-Geocodable Ohio Illinois Wisconsin Indiana Canada Other
1414	1428	Alphanumeric	Left	A15	DGEORSL	Destination Geocoding Result	Text	Text
1404	1413	Alphanumeric	Left	F10.6	DLATI DLATI	Destination Latitude	Value 000.000000	Value Unknown Latitude
1394	1403	Alphanumeric	Left	F10.6	DLONG DLONG	Destination Longitude	Value 000.000000	Value Unknown Longitude
1327	1328	Alphanumeric	Left	A2	DSTATE DSTATE	Destination State	Text ZZ	Text Out of the Country
805	808	Numeric	Right	I4	DTIME	Time of Departure - Hour/Minute	Value	Value
1439	1440	Numeric	Right	I2	DTYPE DTYPE DTYPE	Destination Type of Location	1 2 3	Residential Automotive Dealer/Repair Bank/Financial Institution (Unknown)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					DTYPE		4	Barber/Beauty/Nail Salon (Unknown)
					DTYPE		5	Bookstore/Library/Newsstand (Unknown)
					DTYPE		6	Construction Site
					DTYPE		7	Convenience/Drug Store (Unknown)
					DTYPE		8	Daycare Facility/Preschool/Nursery School
					DTYPE		9	Gas Station
					DTYPE		10	Government/Municipal/City Offices
					DTYPE		11	Grocery
					DTYPE		12	Hotel/Motel/Other Lodging Facility
					DTYPE		13	Indoor Recreation (Unknown)
					DTYPE		14	Industrial Site
					DTYPE		15	Medical Facility/Hospital
					DTYPE		16	Movie Theater/Theatre/Concert Venue/Sports Arena (Unknown)
					DTYPE		17	Museum/Zoo/Historic Site
					DTYPE		18	Office Building
					DTYPE		19	Outdoor Recreation
					DTYPE		20	Religious - Church Synagogue/Houses of Worship
					DTYPE		21	Restaurant/Fast Food/Bar & Grill (Unknown)
					DTYPE		22	School - K-12
					DTYPE		23	School - College/University/Technical/Vocational
					DTYPE		24	Shopping Mall/Department Store (Unknown)
					DTYPE		25	Transportation Terminal (airport, train, bus)
					DTYPE		26	Bank/Financial Institution (Enclosed Mall)
					DTYPE		27	Bank/Financial Institution (Standalone or Strip Mall)
					DTYPE		28	Barber/Beauty/Nail Salon (Enclosed Mall)
					DTYPE		29	Barber/Beauty/Nail Salon (Standalone or Strip Mall)
					DTYPE		30	Bookstore/Library/Newsstand (Enclosed Mall)
					DTYPE		31	Bookstore/Library/Newsstand (Standalone or Strip Mall)
					DTYPE		32	Convenience/Drug Store (Enclosed Mall)
					DTYPE		33	Convenience/Drug Store (Standalone or Strip Mall)
					DTYPE		34	Indoor Recreation (Enclosed Mall)
					DTYPE		35	Indoor Recreation (Standalone or Strip Mall)
					DTYPE		36	Movie Theater/Theatre/Concert Venue/Sports Arena (Enclosed Mall)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					DTYPE		37	Movie Theater/Theatre/Concert Venue/Sports Arena (Standalone or Strip Mall)
					DTYPE		38	Restaurant/Fast Food/Bar & Grill (Enclosed Mall)
					DTYPE		39	Restaurant/Fast Food/Bar & Grill (Standalone or Strip Mall)
					DTYPE		40	Shopping Mall/Department Store (Enclosed Mall)
					DTYPE		41	Shopping Mall/Department Store (Standalone or Strip Mall)
					DTYPE		96	Other
					DTYPE		98	Don't Know
					DTYPE		99	Refused
1441	1480	Alphanumeric	Left	A40	DTYPEOS	Other Type of Destination Location	Text	Text
1334	1393	Alphanumeric	Left	A60	DXSTS	Destination Cross Streets	Text	Text
1329	1333	Alphanumeric	Left	A5	DZIP DZIP DZIP	Destination Zip Code	Text 99998 99999	Text Don't Know Refused
1431	1438	Alphanumeric	Left	A8	DZONE DZONE	Destination TAZ	Text 88888888	Text Unknown Zone
1227	1286	Alphanumeric	Left	A60	GDADDR	Geocoded Destination Address	Text	Text
143	202	Alphanumeric	Left	A60	GOADDR	Geocoded Origin Address	Text	Text
1024	1025	Numeric	Right	I2	HHV HHV HHV HHV	Household Vehicle Used for Trip	1 2 98 99	Yes No Don't Know Refused
1103	1104	Numeric	Right	I2	LGTRP LGTRP LGTRP LGTRP	Trip Length Longer than Usual	1 2 98 99	Yes No Don't Know Refused
203	242	Alphanumeric	Left	A40	OCITY	Origin City	Text	Text
1167	1226	Alphanumeric	Left	A60	ODADDR	Original Destination Address	Text	Text
345	346	Numeric	Right	I2	OGEOLVL OGEOLVL OGEOLVL OGEOLVL OGEOLVL OGEOLVL OGEOLVL OGEOLVL	Origin Geocoding Level	1 2 3 4 5 6 7 8	Framework Street-Level MapMarker Street-Level Framework Intersection-Level MapMarker Intersection-Level TAZ Level Non-Geocodable Ohio Illinois

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					Otype		26	Bank/Financial Institution (Enclosed Mall)
					Otype		27	Bank/Financial Institution (Standalone or Strip Mall)
					Otype		28	Barber/Beauty/Nail Salon (Enclosed Mall)
					Otype		29	Barber/Beauty/Nail Salon (Standalone or Strip Mall)
					Otype		30	Bookstore/Library/Newsstand (Enclosed Mall)
					Otype		31	Bookstore/Library/Newsstand (Standalone or Strip Mall)
					Otype		32	Convenience/Drug Store (Enclosed Mall)
					Otype		33	Convenience/Drug Store (Standalone or Strip Mall)
					Otype		34	Indoor Recreation (Enclosed Mall)
					Otype		35	Indoor Recreation (Standalone or Strip Mall)
					Otype		36	Movie Theater/Theatre/Concert Venue/Sports Arena (Enclosed Mall)
					Otype		37	Movie Theater/Theatre/Concert Venue/Sports Arena (Standalone or Strip Mall)
					Otype		38	Restaurant/Fast Food/Bar & Grill (Enclosed Mall)
					Otype		39	Restaurant/Fast Food/Bar & Grill (Standalone or Strip Mall)
					Otype		40	Shopping Mall/Department Store (Enclosed Mall)
					Otype		41	Shopping Mall/Department Store (Standalone or Strip Mall)
					Otype		96	Other
					Otype		98	Don't Know
					Otype		99	Refused
357	396	Alphanum	Left	A40	OtypeOS	Other Type of Origin Location	Text	Text
250	309	Alphanum	Left	A60	Oxsts	Origin Cross Streets	Text	Text
245	249	Alphanum	Left	A5	Ozip Ozip Ozip	Origin Zip Code	Text 99998 99999	Text Don't Know Refused
347	354	Alphanum	Left	A8	Ozone Ozone	Origin TAZ	Text 88888888	Text Unknown Zone
1026	1027	Numeric	Right	I2	PARK PARK PARK PARK	Pay for Parking	1 2 98 99	Yes No Don't Know Refused
1028	1035	Alphanum	Left	F8.2	PARKAMT	Amount Paid for Parking	0.01-9000.99	Valid Range

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
1036	1037	Numeric	Right	I2	PARKRATE PARKRATE PARKRATE PARKRATE PARKRATE PARKRATE PARKRATE	Parking Rate	1 2 3 4 96 98 99	Hourly Daily Monthly Annually Other Don't Know Refused
948	949	Numeric	Right	I2	PAY6 PAY6 PAY6 PAY6	Pay for Taxi/Shuttle	1 2 98 99	Yes No Don't Know Refused
950	957	Alphanumeric	Left	F8.2	PAY6AMT	Amount Paid for Taxi/Shuttle	0.01-9000.99	Valid Range
958	959	Numeric	Right	I2	PAY7 PAY7 PAY7 PAY7 PAY7	Pay for Dial-A-Ride	1 2 3 98 99	Yes No Used Transit Pass Don't Know Refused
960	967	Alphanumeric	Left	F8.2	PAY7AMT	Amount Paid for Dial-A-Ride	0.01-9000.99	Valid Range
968	969	Numeric	Right	I2	PAY8 PAY8 PAY8 PAY8	Pay for Train	1 2 98 99	Yes No Don't Know Refused
970	977	Alphanumeric	Left	F8.2	PAY8AMT	Amount Paid for Train	0.01-9000.99	Valid Range
978	979	Numeric	Right	I2	PAY9 PAY9 PAY9 PAY9 PAY9	Pay for Public Bus	1 2 3 98 99	Yes No Used Bus or Transit Pass Don't Know Refused
980	987	Alphanumeric	Left	F8.2	PAY9AMT	Amount Paid for Public Bus	0.01-9000.99	Valid Range
9	10	Numeric	Right	I2	PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM	Person Number	1 2 3 4 5 6 7 8 9 10 11 12	Person 1 Person 2 Person 3 Person 4 Person 5 Person 6 Person 7 Person 8 Person 9 Person 10 Person 11 Person 12

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					PERNUM PERNUM PERNUM		13 14 15	Person 13 Person 14 Person 15
13	22	Alphanumeric	Left	A10	PHONENO	Phone Number	Value	Value
1038	1097	Alphanumeric	Left	A60	PRATEOS	Other Parking Rate	Text	Text
3	8	Numeric	Right	I6	QNO	Sample Number	Value	Value
1	2	Numeric	Right	I2	RECTYP	Record Type	3	Trip Record
1105	1106	Numeric	Right	I2	RLGTRP RLGTRP RLGTRP RLGTRP RLGTRP RLGTRP RLGTRP	Reason Long Trip Length	1 2 3 4 96 98 99	Weather (rain or snow) Construction An Accident Traffic Congestion Other Don't Know Refused
405	406	Numeric	Right	I2	TRAV TRAV	Did Respondent Leave Location	1 2	Yes - Traveled From Origin Location No - Stayed at Origin Location til End of 48-hours
11	12	Numeric	Right	I2	TRIPNUM	Trip Number	0-99	Valid Range
988	989	Numeric	Right	I2	TRSDP TRSDP TRSDP TRSDP	Driver or Passenger	1 2 98 99	Driver Passenger Don't Know Refused
810	811	Numeric	Right	I2	TRSTYPE1	1st Type of Transportation Used	1	Car, Van, Truck
812	813	Numeric	Right	I2	TRSTYPE2	2nd Type of Transportation Used	2	Motorcycle/Moped
814	815	Numeric	Right	I2	TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3	3rd Type of Transportation Used	3 4 5 6 7 8 9 10 96	Bicycle Walk School Bus Taxi/Shuttle Dial-A-Ride Train Public Bus Private Bus Other
816	855	Alphanumeric	Left	A40	TRSTYPOS	Other Type of Transportation Used	Text	Text
992	993	Numeric	Right	I2	VHNUM VHNUM VHNUM VHNUM VHNUM	Number of Household Members in Vehicle	0 1 2 3 4 5	0 - None 1 household member 2 household members 3 household members 4 household members 5 household members

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					VHNUM VHNUM VHNUM		6 98 99	6 or more household members Don't Know Refused
990	991	Numeric	Right	I2	VTNUM VTNUM VTNUM VTNUM VTNUM VTNUM VTNUM VTNUM	Number of Additional People in Vehicle	0 1 2 3 4 5 6 98 99	0 - Alone 1 person 2 people 3 people 4 people 5 people 6 or more people Don't Know Refused
994	995	Numeric	Right	I2	WHOACC1	1st Household Member in Vehicle	1	Person 1
996	997	Numeric	Right	I2	WHOACC2	2nd Household Member in Vehicle	2	Person 2
998	999	Numeric	Right	I2	WHOACC3	3rd Household Member in Vehicle	3	Person 3
1000	1001	Numeric	Right	I2	WHOACC4	4th Household Member in Vehicle	4	Person 4
1002	1003	Numeric	Right	I2	WHOACC5	5th Household Member in Vehicle	5	Person 5
1004	1005	Numeric	Right	I2	WHOACC6	6th Household Member in Vehicle	6	Person 6
1006	1007	Numeric	Right	I2	WHOACC7	7th Household Member in Vehicle	7	Person 7
1008	1009	Numeric	Right	I2	WHOACC8	8th Household Member in Vehicle	8	Person 8
1010	1011	Numeric	Right	I2	WHOACC9	9th Household Member in Vehicle	9	Person 9
1012	1013	Numeric	Right	I2	WHOACC10	10th Household Member in Vehicle	10	Person 10
1014	1015	Numeric	Right	I2	WHOACC11	11th Household Member in Vehicle	11	Person 11
1016	1017	Numeric	Right	I2	WHOACC12	12th Household Member in Vehicle	12	Person 12
1018	1019	Numeric	Right	I2	WHOACC13	13th Household Member in Vehicle	13	Person 13
1020	1021	Numeric	Right	I2	WHOACC14	14th Household Member in Vehicle	14	Person 14
1022	1023	Numeric	Right	I2	WHOACC15	15th Household Member in Vehicle	15	Person 15
407 606	605 804	Alphanum Alphanum	Left Left	A199 A199	WHYNO WRKHM	Reason for No Travel Paid Work at Home Time Periods	Text Text	Text Text

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
65	66	Numeric	Right	I2	DWEEK DWEEK DWEEK DWEEK DWEEK DWEEK DWEEK DWEEK DWEEK	Departure Day of the Week	1 2 3 4 5 6 7 98 99	Monday Tuesday Wednesday Thursday Friday Saturday Sunday Don't Know Refused
121	170	Alphanum	Left	A50	FBUS	Bus Provider to Reach Location	Text	Text
23	62	Alphanum	Left	A40	FCITY	Long Distance City	Text	Text
229	278	Alphanum	Left	A50	FMBUS	Bus Provider Used at Location	Text	Text
171	172	Numeric	Right	I2	FMODE1	1st Type of Transportation Used	1	Car, Van, Truck
173	174	Numeric	Right	I2	FMODE2	2nd Type of Transportation Used	2	Motorcycle/Moped
175	176	Numeric	Right	I2	FMODE3	3rd Type of Transportation Used	3	Bicycle
177	178	Numeric	Right	I2	FMODE4 FMODE4 FMODE4 FMODE4 FMODE4 FMODE4 FMODE4 FMODE4 FMODE4 FMODE4 FMODE4 FMODE4	4th Type of Transportation Used	4 5 6 7 8 9 10 11 96 98 99	Walk School Bus Taxi/Shuttle Public Bus Train Airplane Boat Charter Bus Other Don't Know Refused
179	228	Alphanum	Left	A50	FMODEOS	Other Transportation Used at Location	Text	Text
63	64	Alphanum	Left	A2	FSTATE FSTATE	Long Distance State	Text ZZ	Text Out of the Country or Unknown
320	321	Numeric	Right	I2	LDGEOLVL LDGEOLVL LDGEOLVL LDGEOLVL LDGEOLVL LDGEOLVL LDGEOLVL LDGEOLVL LDGEOLVL LDGEOLVL LDGEOLVL LDGEOLVL	Long Distance Geocoding Level	1 2 3 4 5 6 7 8 9 10 11	Framework Street-Level MapMarker Street-Level Framework Intersection-Level MapMarker Intersection-Level TAZ Level Non-Geocodable Ohio Illinois Wisconsin Indiana Canada

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					LDGEOLVL		12	Other
305	319	Alphanumeric	Left	A15	LDGEORSL	Long Distance Geocoding Result	Text	Text
295	304	Alphanumeric	Left	F10.6	LDLATI LDLATI	Long Distance Latitude	Value 000.000000	Value Unknown Latitude
285	294	Alphanumeric	Left	F10.6	LDLONG LDLONG	Long Distance Longitude	Value 000.000000	Value Unknown Longitude
11	12	Numeric	Right	I2	LDTRIP	Long Distance Trip Number	1-99	Valid Range
9	10	Numeric	Right	I2	PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM PERNUM	Person Number	1 2 3 4 5 6 7 8 9 10 11 12 13 14 15	Person 1 Person 2 Person 3 Person 4 Person 5 Person 6 Person 7 Person 8 Person 9 Person 10 Person 11 Person 12 Person 13 Person 14 Person 15
13	22	Alphanumeric	Left	A10	PHONENO	Phone Number	Value	Value
283	284	Numeric	Right	I2	Q12MTH Q12MTH Q12MTH	Number of Times in Last 12 Months	1-90 98 99	Valid Range Don't Know Refused
281	282	Numeric	Right	I2	Q3MTH Q3MTH Q3MTH	Number of Times in Last 3 Months	1-90 98 99	Valid Range Don't Know Refused
3	8	Numeric	Right	I6	QNO	Sample Number	Value	Value
67	68	Numeric	Right	I2	REASON REASON REASON REASON REASON REASON REASON REASON REASON	Primary Reason for Trip	1 2 3 4 5 6 7 8 9	Work/Business School-related Vacation Social Sightseeing Recreation Entertainment Shopping Family/Personal Reasons

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					REASON REASON REASON REASON		10 11 98 99	Religious Medical Don't Know Refused
1	2	Numeric	Right	I2	RECTYP	Record Type	4	Long Distance Trip Record
279	280	Numeric	Right	I2	RWEEK RWEEK RWEEK RWEEK RWEEK RWEEK RWEEK RWEEK RWEEK	Return Day of the Week	1 2 3 4 5 6 7 98 99	Monday Tuesday Wednesday Thursday Friday Saturday Sunday Don't Know Refused
69	70	Numeric	Right	I2	TRTYP TRTYP TRTYP TRTYP TRTYP TRTYP TRTYP TRTYP TRTYP TRTYP TRTYP TRTYP TRTYP TRTYP	Transportation to Reach Location	1 2 3 4 5 6 7 8 9 10 11 96 98 99	Car, Van, Truck Motorcycle/Moped Bicycle Walk School Bus Taxi/Shuttle Public Bus Train Airplane Boat Charter Bus Other Don't Know Refused
71	120	Alphanum	Left	A50	TRTYPOS	Other Transportation to Reach Location	Text	Text

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
11	20	Alphanumeric	Left	A10	PHONENO	Phone Number	Value	Value
3	8	Numeric	Right	I6	QNO	Sample Number	Value	Value
1	2	Numeric	Right	I2	RECTYP	Record Type	5	Visitor Person Record
23	25	Numeric	Right	I3	VAGE VAGE VAGE	Visitor Age	0-115 998 999	Valid Range Don't Know Refused
28	29	Numeric	Right	I2	VAGE18 VAGE18 VAGE18 VAGE18	Visitor Age Above/Below 18	1 2 98 99	18 or older Under 18 Don't Know Refused
26	27	Numeric	Right	I2	VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG VAGERNG	Visitor Age Range	1 2 3 4 5 6 7 8 9 10 11 98 99	Under 5 5 to 15 16 to 17 18 to 24 25 to 34 35 to 44 45 to 54 55 to 64 65 to 74 75 to 84 85 and over Don't Know Refused
82	83	Numeric	Right	I2	VDCOMP VDCOMP VDCOMP VDCOMP VDCOMP	Visitor Completed Diary	1 2 3 98 99	Yes No Did not receive materials Don't Know Refused
84	85	Numeric	Right	I2	VDHAVE VDHAVE VDHAVE	Using Completed Diary for Visitor	1 2 3	Yes No Not Applicable
21	22	Numeric	Right	I2	VGENDER VGENDER VGENDER	Visitor Gender	1 2 99	Male Female Refused
36	75	Alphanumeric	Left	A40	VINDOS	Other Visitor Industry	Text	Text
34	35	Numeric	Right	I2	VINDUST VINDUST VINDUST VINDUST VINDUST VINDUST	Visitor Industry	1 2 3 4 5 6	Agriculture, Forestry, Fishing and Hunting Mining Utilities Construction Manufacturing Wholesale Trade

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					VINDUST		7	Retail Trade
					VINDUST		8	Transportation and Warehousing
					VINDUST		9	Information
					VINDUST		10	Finance and Insurance
					VINDUST		11	Real Estate, Rental/Leasing
					VINDUST		12	Professional, Scientific and Technical Services
					VINDUST		13	Management of Companies and Enterprises
					VINDUST		14	Administrative and Support and Waste Management and Remediation Services
					VINDUST		15	Educational Services
					VINDUST		16	Health Care and Social Services
					VINDUST		17	Arts, Entertainment, and Recreation
					VINDUST		18	Accommodation and Food Services
					VINDUST		19	Public Administration/Government
					VINDUST		20	Other Services
					VINDUST		21	Military
					VINDUST		22	Automotive
					VINDUST		23	Child Care/Daycare/Adult Foster Care
					VINDUST		24	Maintenance Services
					VINDUST		25	Lumber/Lumber Mill
					VINDUST		96	Other
					VINDUST		98	Don't Know
					VINDUST		99	Refused
9	10	Numeric	Right	I2	VISNUM	Visitor Number	1	Visitor 1
					VISNUM		2	Visitor 2
					VISNUM		3	Visitor 3
					VISNUM		4	Visitor 4
					VISNUM		5	Visitor 5
					VISNUM		6	Visitor 6
					VISNUM		7	Visitor 7
					VISNUM		8	Visitor 8
32	33	Numeric	Right	I2	VNOWK	Visitor Not Working Status	1	Looking for Work
					VNOWK		2	Not Looking for Work
					VNOWK		98	Don't Know
					VNOWK		99	Refused
78	79	Numeric	Right	I2	VPROXY	Visitor Proxy Status	1	Respondent
					VPROXY		2	Proxy
					VPROXY		3	Mailed Diary
					VPROXY		4	Internet
80	81	Numeric	Right	I2	VPROXYNM	Person Providing Proxy	1	Person 1
					VPROXYNM		2	Person 2

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					VPROXYNM		3	Person 3
					VPROXYNM		4	Person 4
					VPROXYNM		5	Person 5
					VPROXYNM		6	Person 6
					VPROXYNM		7	Person 7
					VPROXYNM		8	Person 8
					VPROXYNM		9	Person 9
					VPROXYNM		10	Person 10
					VPROXYNM		11	Person 11
					VPROXYNM		12	Person 12
					VPROXYNM		13	Person 13
					VPROXYNM		14	Person 14
					VPROXYNM		15	Person 15
76	77	Numeric	Right	I2	VVEHICLE	Visitor Vehicle Status	1	Used Own Vehicle
					VVEHICLE		2	Rented A Vehicle
					VVEHICLE		3	Borrowed Household Vehicle
					VVEHICLE		4	Borrowed Other Vehicle
					VVEHICLE		5	No Vehicle Access
					VVEHICLE		98	Don't Know
					VVEHICLE		99	Refused
30	31	Numeric	Right	I2	VWRKR	Visitor Working Status	1	Full-Time Worker
					VWRKR		2	Part-Time Worker
					VWRKR		3	Unpaid Worker or Volunteer
					VWRKR		4	Not Working
					VWRKR		5	Not Applicable (Too Young)
					VWRKR		98	Don't Know
					VWRKR		99	Refused

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
397	398	Numeric	Right	I2	ACT1	Primary Activity at Origin Location	1	Home - Paid Work
399	400	Numeric	Right	I2	ACT2	2nd Activity at Origin Location	2	Home - Other
401	402	Numeric	Right	I2	ACT3	3rd Activity at Origin Location	3	Work
403	404	Numeric	Right	I2	ACT4	4th Activity at Origin Location	4	Attend Childcare
					ACT4		5	Attend School
					ACT4		6	Attend College
					ACT4		7	Eat Out
					ACT4		8	Personal Business
					ACT4		9	Everyday Shopping
					ACT4		10	Major Shopping
					ACT4		11	Religious/Community
					ACT4		12	Social
					ACT4		13	Recreation - Participate
					ACT4		14	Recreation - Watch
					ACT4		15	Accompany Another Person
					ACT4		16	Pick-Up/Drop-Off Passenger
					ACT4		17	Turn Around
781	781	Numeric	Right	I1	ADAY	Time of Arrival - Day 1/Day 2	1	Day 1
					ADAY		2	Day 2
797	780	Numeric	Right	I4	ATIME	Time of Arrival - Hour/Minute	Value	Value
669	708	Alphanum	Left	A40	BUSOS	Other Bus Provider Used	Text	Text
663	664	Numeric	Right	I2	BUSTYPE1	1st Type of Bus Provider Used	4	City Of Alpena Dial-A-Ride
665	666	Numeric	Right	I2	BUSTYPE2	2nd Type of Bus Provider Used	5	Altran Transit Authority (Alger County)
667	668	Numeric	Right	I2	BUSTYPE3	3rd Type of Bus Provider Used	6	Ann Arbor Transportation Authority (AATA)
					BUSTYPE3		7	Antrim County Transportation (ACT)
					BUSTYPE3		8	Arenac Dial-A-Ride
					BUSTYPE3		9	Barry County Transit
					BUSTYPE3		10	Battle Creek Transit
					BUSTYPE3		11	Bay Area Transportation Authority (BATA)
					BUSTYPE3		12	Bay Metro Transportation Authority (BMTA)
					BUSTYPE3		13	Belding Dial-A-Ride
					BUSTYPE3		14	Berrien Bus (Berrien County Public Transportation)
					BUSTYPE3		15	Big Rapids Dial-A-Ride
					BUSTYPE3		16	Blue Water Area Transportation Commission (BWATC)
					BUSTYPE3		17	Branch Area Transit Authority
					BUSTYPE3		18	Buchanan Dial-A-Ride
					BUSTYPE3		19	Cadillac/Wexford Transit Authority (CWTA)
					BUSTYPE3		20	Capital Area Transportation Authority (CATA)
					BUSTYPE3		21	Caro Transit Authority (CTA)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					BUSTYPE3		22	Cass County Transportation Authority
					BUSTYPE3		23	Charlevoix County Public Transit (CCPT)
					BUSTYPE3		24	Clare County Transit Corporation (CCTC)
					BUSTYPE3		25	Clinton Area Transit System
					BUSTYPE3		26	Crawford County Transportation Authority
					BUSTYPE3		27	Delta Area Transit Authority (DATA)
					BUSTYPE3		28	Detroit Department of Transportation (DDOT)
					BUSTYPE3		29	Dowagiac Dial-A-Ride (DART)
					BUSTYPE3		30	Eastern Upper Peninsula Transportation Authority (EUPTA)
					BUSTYPE3		31	Eaton County Transportation Authority (EATRAN)
					BUSTYPE3		32	Flint Mass Transportation Authority (MTA)
					BUSTYPE3		33	Gladwin City/County Transit (GCCT)
					BUSTYPE3		34	Gogebic County Transit (GTC)
					BUSTYPE3		35	Grand Rapids - ITP/The Rapid (Interurban Transit Partnership)
					BUSTYPE3		36	Greenville Transit
					BUSTYPE3		37	Harbor Transit
					BUSTYPE3		38	Hillsdale Dial-A-Ride
					BUSTYPE3		39	Houghton Motor Transit Line
					BUSTYPE3		40	Interurban Transit Authority (Saugatuck)
					BUSTYPE3		41	City of Ionia Dial-A-Ride
					BUSTYPE3		42	Ionia Transit Authority
					BUSTYPE3		43	Iosco Transit Corporation (ITC)
					BUSTYPE3		44	Isabella County Transportation Commission (ICTC)
					BUSTYPE3		45	Jackson Transportation Authority (JTA)
					BUSTYPE3		46	Kalamazoo County Human Services
					BUSTYPE3		47	Kalamazoo Metro Transit System (KMTS)
					BUSTYPE3		48	Kalkaska Public Transit Authority (KPTA)
					BUSTYPE3		49	Lake Erie Transit
					BUSTYPE3		50	Greater Lapeer Transportation Authority (GLTA)
					BUSTYPE3		51	Lenawee Transportation Corporation
					BUSTYPE3		52	Livingston Essential Transportation (LETS)
					BUSTYPE3		53	Ludington Mass Transportation Authority (LMTA)
					BUSTYPE3		54	Macatawa Area Express - MAX
					BUSTYPE3		55	Manistee County Transportation

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					BUSTYPE3		56	Marquette County Transit Authority (MARQTRAN)
					BUSTYPE3		57	City of Marshall Dial-A-Ride
					BUSTYPE3		58	Mecosta County Area Transit
					BUSTYPE3		59	Midland County Connection
					BUSTYPE3		60	City of Midland Dial-A-Ride
					BUSTYPE3		61	City of Milan Public Transportation (MPT)
					BUSTYPE3		62	Muskegon Area Transit System (MATS)
					BUSTYPE3		63	Niles Dial-A-Ride
					BUSTYPE3		64	Ogemaw County Public Transportation (OCPT)
					BUSTYPE3		65	Ontonagon County Public Transit
					BUSTYPE3		66	Osceola County Area Transit
					BUSTYPE3		67	Otsego County Bus System
					BUSTYPE3		68	Rosco Mini Bus System (Roscommon)
					BUSTYPE3		69	Saginaw Transit System (Saginaw Transit Authority Regional Services)
					BUSTYPE3		70	Sanilac Transportation Corporation (STC)
					BUSTYPE3		71	City of Sault Sainte Marie
					BUSTYPE3		72	Schoolcraft County Public Transportation
					BUSTYPE3		73	Shiawassee Area Transportation Agency
					BUSTYPE3		74	SMART aka SEMTA (Suburban Mobility Authority For Regional Transportation)
					BUSTYPE3		75	Thumb Area Transit (TAT) - Huron Transit Corporation
					BUSTYPE3		76	Twin Cities Area Transportation Authority (TCATA)
					BUSTYPE3		77	Van Buren Public Transit
					BUSTYPE3		78	Yates Township Transportation System
					BUSTYPE3		96	Other
					BUSTYPE3		98	Don't Know
					BUSTYPE3		99	Refused
1160	1161	Numeric	Right	I2	DACT1	Primary Activity at Destination	1	Home - Paid Work
1162	1163	Numeric	Right	I2	DACT2	2nd Activity at Destination	2	Home - Other
1164	1165	Numeric	Right	I2	DACT3	3rd Activity at Destination	3	Work
1166	1167	Numeric	Right	I2	DACT4	4th Activity at Destination	4	Attend Childcare
					DACT4		5	Attend School
					DACT4		6	Attend College
					DACT4		7	Eat Out
					DACT4		8	Personal Business
					DACT4		9	Everyday Shopping
					DACT4		10	Major Shopping

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					DACT4 DACT4 DACT4 DACT4 DACT4 DACT4 DACT4		11 12 13 14 15 16 17	Religious/Community Social Recreation - Participate Recreation - Watch Accompany Another Person Pick-Up/Drop-Off Passenger Turn Around
657	658	Numeric	Right	I2	DARTYPE1	1st Type of Dial-A-Ride Provider Used	1	Adrian Dial-A-Ride
659	660	Numeric	Right	I2	DARTYPE2	2nd Type of Dial-A-Ride Provider Used	2	Allegan County Transportation
661	662	Numeric	Right	I2	DARTYPE3	3rd Type of Dial-A-Ride Provider Used	3	Alma Dial-A-Ride
966	1005	Alphanum	Left	A40	DCITY	Destination City	Text	Text
610	610	Numeric	Right	I1	DDAY DDAY	Time of Departure - Day 1/Day 2	1 2	Day 1 Day 2
786	845	Alphanum	Left	A60	DEST	Destination of Trip	Text	Text
1108	1109	Numeric	Right	I2	DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL DGEOLVL	Destination Geocoding Level	1 2 3 4 5 6 7 8 9 10 11 12	Framework Street-Level MapMarker Street-Level Framework Intersection-Level MapMarker Intersection-Level TAZ Level Non-Geocodable Ohio Illinois Wisconsin Indiana Canada Other
1093	1107	Alphanum	Left	A15	DGEORSL	Destination Geocoding Result	Text	Text
1083	1092	Alphanum	Left	F10.6	DLATI DLATI	Destination Latitude	Value 000.000000	Value Unknown Latitude
1073	1082	Alphanum	Left	F10.6	DLONG DLONG	Destination Longitude	Value 000.000000	Value Unknown Longitude
1006	1007	Alphanum	Left	A2	DSTATE DSTATE	Destination State	Text ZZ	Text Out of the Country
606	609	Numeric	Right	I4	DTIME	Time of Departure - Hour/Minute	Value	Value
1118	1119	Numeric	Right	I2	DTYPE DTYPE DTYPE DTYPE	Destination Type of Location	1 2 3 4	Residential Automotive Dealer/Repair Bank/Financial Institution (Unknown) Barber/Beauty/Nail Salon (Unknown)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					DTYPE		5	Bookstore/Library/Newsstand (Unknown)
					DTYPE		6	Construction Site
					DTYPE		7	Convenience/Drug Store (Unknown)
					DTYPE		8	Daycare Facility
					DTYPE		9	Gas Station
					DTYPE		10	Government/Municipal/City Offices
					DTYPE		11	Grocery
					DTYPE		12	Hotel/Motel/Other Lodging Facility
					DTYPE		13	Indoor Recreation (Unknown)
					DTYPE		14	Industrial Site
					DTYPE		15	Medical Facility/Hospital
					DTYPE		16	Movie Theater/Theatre/Concert Venue/Sports Arena (Unknown)
					DTYPE		17	Museum/Zoo/Historic Site
					DTYPE		18	Office Building
					DTYPE		19	Outdoor Recreation
					DTYPE		20	Religious - Church Synagogue/Houses of Worship
					DTYPE		21	Restaurant/Fast Food/Bar & Grill (Unknown)
					DTYPE		22	School - K-12
					DTYPE		23	School - College/University/Technical/Vocational
					DTYPE		24	Shopping Mall/Department Store (Unknown)
					DTYPE		25	Transportation Terminal (airport, train, bus)
					DTYPE		26	Bank/Financial Institution (Enclosed Mall)
					DTYPE		27	Bank/Financial Institution (Standalone or Strip Mall)
					DTYPE		28	Barber/Beauty/Nail Salon (Enclosed Mall)
					DTYPE		29	Barber/Beauty/Nail Salon (Standalone or Strip Mall)
					DTYPE		30	Bookstore/Library/Newsstand (Enclosed Mall)
					DTYPE		31	Bookstore/Library/Newsstand (Standalone or Strip Mall)
					DTYPE		32	Convenience/Drug Store (Enclosed Mall)
					DTYPE		33	Convenience/Drug Store (Standalone or Strip Mall)
					DTYPE		34	Indoor Recreation (Enclosed Mall)
					DTYPE		35	Indoor Recreation (Standalone or Strip Mall)
					DTYPE		36	Movie Theater/Theatre/Concert Venue/Sports Arena (Enclosed Mall)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					DTYPE		37	Movie Theater/Theatre/Concert Venue/Sports Arena (Standalone or Strip Mall)
					DTYPE		38	Restaurant/Fast Food/Bar & Grill (Enclosed Mall)
					DTYPE		39	Restaurant/Fast Food/Bar & Grill (Standalone or Strip Mall)
					DTYPE		40	Shopping Mall/Department Store (Enclosed Mall)
					DTYPE		41	Shopping Mall/Department Store (Standalone or Strip Mall)
					DTYPE		96	Other
					DTYPE		98	Don't Know
					DTYPE		99	Refused
1120	1159	Alphanum	Left	A40	DTYPEOS	Other Type of Destination Location	Text	Text
1013	1072	Alphanum	Left	A60	DXSTS	Destination Cross Streets	Text	Text
1008	1012	Alphanum	Left	A5	DZIP DZIP DZIP	Destination Zip Code	Text 99998 99999	Text Don't Know Refused
1110	1117	Alphanum	Left	A8	DZONE DZONE	Destination TAZ	Text 88888	Text Unknown Zone
906	965	Alphanum	Left	A60	GDADDR	Geocoded Destination Address	Text	Text
143	202	Alphanum	Left	A60	GOADDR	Geocoded Origin Address	Text	Text
723	724	Numeric	Right	I2	HHV HHV HHV HHV	Household Vehicle Used for Trip	1 2 98 99	Yes No Don't Know Refused
782	783	Numeric	Right	I2	LGTRP LGTRP LGTRP LGTRP	Trip Length Longer than Usual	1 2 98 99	Yes No Don't Know Refused
203	242	Alphanum	Left	A40	OCITY	Origin City	Text	Text
846	905	Alphanum	Left	A60	ODADDR	Original Destination Address	Text	Text
345	346	Numeric	Right	I2	OGEOLVL OGEOLVL OGEOLVL OGEOLVL OGEOLVL OGEOLVL OGEOLVL OGEOLVL	Origin Geocoding Level	1 2 3 4 5 6 7 8	Framework Street-Level MapMarker Street-Level Framework Intersection-Level MapMarker Intersection-Level TAZ Level Non-Geocodable Ohio Illinois

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					OTYPE		26	Bank/Financial Institution (Enclosed Mall)
					OTYPE		27	Bank/Financial Institution (Standalone or Strip Mall)
					OTYPE		28	Barber/Beauty/Nail Salon (Enclosed Mall)
					OTYPE		29	Barber/Beauty/Nail Salon (Standalone or Strip Mall)
					OTYPE		30	Bookstore/Library/Newsstand (Enclosed Mall)
					OTYPE		31	Bookstore/Library/Newsstand (Standalone or Strip Mall)
					OTYPE		32	Convenience/Drug Store (Enclosed Mall)
					OTYPE		33	Convenience/Drug Store (Standalone or Strip Mall)
					OTYPE		34	Indoor Recreation (Enclosed Mall)
					OTYPE		35	Indoor Recreation (Standalone or Strip Mall)
					OTYPE		36	Movie Theater/Theatre/Concert Venue/Sports Arena (Enclosed Mall)
					OTYPE		37	Movie Theater/Theatre/Concert Venue/Sports Arena (Standalone or Strip Mall)
					OTYPE		38	Restaurant/Fast Food/Bar & Grill (Enclosed Mall)
					OTYPE		39	Restaurant/Fast Food/Bar & Grill (Standalone or Strip Mall)
					OTYPE		40	Shopping Mall/Department Store (Enclosed Mall)
					OTYPE		41	Shopping Mall/Department Store (Standalone or Strip Mall)
					OTYPE		96	Other
					OTYPE		98	Don't Know
					OTYPE		99	Refused
357	396	Alphanum	Left	A40	OTYPEOS	Other Type of Origin Location	Text	Text
250	309	Alphanum	Left	A60	OXSTS	Origin Cross Streets	Text	Text
245	249	Alphanum	Left	A5	OZIP OZIP OZIP	Origin Zip Code	Text 99998 99999	Text Don't Know Refused
347	354	Alphanum	Left	A8	OZONE OZONE	Origin TAZ	Text 88888	Text Unknown Zone
725	726	Numeric	Right	I2	PARK PARK PARK PARK	Pay for Parking	1 2 98 99	Yes No Don't Know Refused
727	734	Alphanum	Left	F8.2	PARKAMT	Amount Paid for Parking	0.01-9000.99	Valid Range

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
735	736	Numeric	Right	I2	PARKRATE PARKRATE PARKRATE PARKRATE PARKRATE PARKRATE PARKRATE	Parking Rate	1 2 3 4 96 98 99	Hourly Daily Monthly Annually Other Don't Know Refused
709	710	Numeric	Right	I2	PAY PAY PAY PAY	Pay for Trip	1 2 98 99	Yes No Don't Know Refused
711	718	Alphanum	Left	F8.2	PAYAMT	Amount Paid for Trip	0.01-9000.99	Valid Range
13	22	Alphanum	Left	A10	PHONENO	Phone Number	Value	Value
737	796	Alphanum	Left	A60	PRATEOS	Other Parking Rate	Text	Text
3	8	Numeric	Right	I6	QNO	Sample Number	Value	Value
1	2	Numeric	Right	I2	RECTYP	Record Type	6	Visitor Trip Record
784	785	Numeric	Right	I2	RLGTRP RLGTRP RLGTRP RLGTRP RLGTRP RLGTRP RLGTRP	Reason Long Trip Length	1 2 3 4 96 98 99	Weather (rain or snow) Construction An Accident Traffic Congestion Other Don't Know Refused
405	406	Numeric	Right	I2	TRAV TRAV	Did Respondent Leave Location	1 2	Yes - Traveled From Origin Location No - Stayed at Origin Location til End of 48-hours
11	12	Numeric	Right	I2	TRIPNUM	Trip Number	0-99	Valid Range
719	720	Numeric	Right	I2	TRSDP TRSDP TRSDP TRSDP	Driver or Passenger	1 2 98 99	Driver Passenger Don't Know Refused
611	612	Numeric	Right	I2	TRSTYPE1	1st Type of Transportation Used	1	Car, Van, Truck
613	614	Numeric	Right	I2	TRSTYPE2	2nd Type of Transportation Used	2	Motorcycle/Moped
615	616	Numeric	Right	I2	TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3 TRSTYPE3	3rd Type of Transportation Used	3 4 5 6 7 8 9 10	Bicycle Walk School Bus Taxi/Shuttle Dial-A-Ride Train Public Bus Private Bus

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
					TRSTYPE3		96	Other
617	656	Alphanum	Left	A40	TRSTYPOS	Other Type of Transportation Used	Text	Text
9	10	Numeric	Right	I2	VISNUM VISNUM VISNUM VISNUM VISNUM VISNUM VISNUM VISNUM	Visitor Number	1 2 3 4 5 6 7 8	Visitor 1 Visitor 2 Visitor 3 Visitor 4 Visitor 5 Visitor 6 Visitor 7 Visitor 8
721	722	Numeric	Right	I2	VTNUM VTNUM VTNUM VTNUM VTNUM VTNUM VTNUM VTNUM	Number of Additional People in Vehicle	0 1 2 3 4 5 6 98 99	0 - Alone 1 person 2 people 3 people 4 people 5 people 6 or more people Don't Know Refused
407	605	Alphanum	Left	A199	WHYNO	Reason for No Travel	Text	Text

MORPACE Post-Processing Data Checks

Data processing prepares SAS data files according to specifications provided by the research department (SAS is a data analysis system). The research department uses SAS to run post-processing data checks, ensuring that the information provided to MDOT is complete and accurate. The following pages itemize the MDOT MI Travel Counts data checks that are performed.

Household File

1. Every variable should have an answer. There should be no blanks.
 2. Each case should have a record type of "1" for "Household Record".
 3. Check that there are no duplicate QNOs or phone numbers.
 4. Check that the area codes are valid Michigan area codes.
 5. Check that the month/day combinations are correct and that they match the day of the week variable.
 6. Perform a quick visual check for city misspellings.
 7. Check that all home addresses are located in Michigan.
 8. Check that all home zip codes are between 48000 and 49999.
 9. Check that all counties listed are included in the master list of the 83 Michigan counties.
 10. Check that home longitude is always a negative value, typically between 80 and 90.
 11. Check that home latitude is always a positive value, typically between 40 and 50.
 12. Check that longitude and latitude is not rounded. Data should be to six decimal places.
 13. Check that the number of workers in the household does not exceed the number of people in the household.
 14. Check that the number of subsidized vehicles does not exceed the number of vehicles available to the household.
- In the raw data file from the recruit, the region assignment is checked for each household.

Person File

1. Each case should have a record type of "2" for "Person Record".
2. QNO and phone number will have duplicates. Frequency of QNO and phone number is the number of persons in the household.
3. Person number will have duplicates.
4. Check person number against the number of people in the household from the household file.
5. Person number 1 frequency should be the total number of households.
6. Check that all cases have a value for age range.
7. Only respondents with AGERNG=98 OR 99 should have an answer for the AGE18 variable.
8. Check that all cases have a value for relationship.
9. Check that the contact person (code 0) is person number 1.
10. Spot check ages of a few relationship categories (spouses are probably not under 18 years of age).
11. Only respondents that said "other" for relationship should have an answer for other relationship to contact person.
12. Check that no cases are missing for licensed driver. Check that respondents 16 years of age or older are not code 3 for licensed driver. Check that respondents under 16 years of age are code 3 (not applicable).
13. Check that no cases are missing for transit pass. The majority of cases should be no.
14. Check that only respondents with a transit pass have one or more answers for type of transit pass.
15. Check that only respondents who indicated "other" transit pass have an answer for other type of transit pass.
16. Check that no cases are missing for education level. Check that respondents 18 years of age or older are not code 0 for education level. Check that respondents under 18 years of age are code 0 (not applicable).
17. Check that no cases are missing school type.

18. Check that no cases are missing for school name through school zone, if respondent is currently a student.
19. Check that almost all states for school address are Michigan and zip codes are between 48000 and 49999, unless student is above K-12 level.
20. Check that school longitude is always a negative value, typically between 80 and 90.
21. Check that school latitude is always a positive value, typically between 40 and 50.
22. Check that longitude and latitude is not rounded. Data should be to six decimal places.
23. Check that no cases are missing for working status. Check that respondents 16 years of age or older are not code 5 for working status. Check that respondents under 16 years of age are code 5 (not applicable).
24. Check that respondents that are not working are asked the not working status question.
25. Check that worker questions are only asked if working status is code 1 or code 2.
26. Check that only respondents who indicated "other" industry have an answer for other industry.
27. Check that only respondents who have a fixed workplace have answers for work address through work zone.
28. Check that almost all states for work address are Michigan and zip codes are between 48000 and 49999.
29. Check that work longitude is always a negative value, typically between 80 and 90.
30. Check that work latitude is always a positive value, typically between 40 and 50.
31. Check that longitude and latitude is not rounded. Data should be to six decimal places.
32. Check that secondary job questions are only asked if respondent has more than one job.
33. Check that no cases are missing proxy status.
34. Check that an infant or child is not a "respondent" interview. Interviewers are not allowed to talk directly with someone under 14 years of age. Interviewers are only allowed to talk directly to 14 and 15 year olds with parental approval.
35. Check that all proxy cases indicate which household member provided the proxy information.
36. Check that no proxy cases indicate that the person number providing the proxy is the same as the person number of the respondent.
37. Check that no cases are missing the diary completed variable.
38. Check that respondents who completed the diary are not code 3 (not applicable) for using the completed diary. Other respondents should be code 3 for using the completed diary.
39. Check that no cases are missing for long distance trips taken.

Person File Benchmarks

- a. Distribution of gender should be approximately 50% male and 50% female. May have slightly more females than males.
- b. More cases should be no than yes for primary job including evenings.
- c. Most cases should be no for primary job including overnights.
- d. A large percent of primary job weekly hours should be 40 hours.
- e. Primary job flexibility should mostly be no or some flexibility.
- f. Primary job compressed week should mostly be no.
- g. Secondary job may be more flexible than primary job.
- h. Secondary job weekly hours should be much lower than hours for primary job.

Trip File

1. Each case should have a record type of "3" for "Trip Record".
2. QNOs with a frequency of 1 are households that did not take any trips. There should be very few no trip households.
3. TRIPNUM=0 frequency is the number of no trip people. Again, there should be very few no trip people.
4. Cases that did not take any trips will only have origin information – where they started and ended the travel period.
5. Check that origin and destination longitude is always a negative value, often between 80 and 90.
6. Check that origin and destination latitude is always a positive value, often between 40 and 50.

7. Check that longitude and latitude is not rounded. Data should be to six decimal places.
8. Check that only respondents who indicated "other" for type of origin or destination have an answer for other type of location.
9. Check that the number of TRAV=2 is equal to the number of people in the study.
10. Check that all cases of TRAV=2 and TRIPNUM=0 provided a reason for no travel.
11. If the trip number is equal to 1, time of departure and type of transportation used should be answered, unless respondent began travel period traveling. If the trip number is greater than 1, time of departure and type of transportation used should be answered.
12. Check that only cases with "other" for type of transportation have an answer for other type of transportation used.
13. Check that the bus provider used is not missing if the trip involved dial-a-ride or a public bus as one of the transportation modes.
14. Check that only cases with "other" for bus provider have an answer for other bus provider used.
15. Check that there are no cases missing "pay for trip" if transportation types 6 (taxi/shuttle), 7 (dial-a-ride), 8 (train), or 9 (public bus) were used as a transportation mode.
16. Check that if the respondent indicated they paid for the trip that a valid amount has been recorded for amount paid for trip.
17. Check that if a trip involved a car, van, truck, or motorcycle that the driver/passenger variable is not missing. Note that children that are too young to drive (under 14 years of age) are not asked the question, but are postcoded as passengers.
18. Check that if a trip involved a car, van, truck, or motorcycle that the number of additional people in the vehicle was asked.
19. If the respondent did take a trip with other people in a car, van, truck, or motorcycle, check that the number of household members in the vehicle was asked, unless the respondent lives alone. If the respondent is a one-member household, the variable is postcoded with "none".
20. Check that the number of household members in the vehicle is not greater than the number of people in the vehicle.
21. Check that the respondent is not listed as a household member in the vehicle.
22. Check that if a trip involved a car, van, truck, or motorcycle that the respondent was asked if a household vehicle was used for the trip, unless the household does not have any available vehicles. If the respondent is a zero-vehicle household, the variable is postcoded with "no".
23. Check that if a trip involved a car, van, truck, or motorcycle that the respondent was asked if they paid for parking.
24. Check that if the respondent indicated they paid for parking that a valid amount has been recorded for amount paid for parking and that a parking rate has been identified. If the parking rate is "other", the answer should be recorded in the other parking rate variable.
25. Check that all cases (except those respondents that did not travel) are not missing arrival time or destination information.
26. Check that if the respondent was at home that only activity codes 1 or 2 are used.
27. Check that if the respondent was not at home that activity codes are not code 1 or 2.
28. Check that the departure and arrival times are in military time.

Long Distance File

1. Each case should have a record type of "4" for "Long Distance Trip Record".
2. The frequency of LDTRIP=1 should be the number of LDTRIPS=2 in the person file.
3. Check that only cases with "other" for type of transportation used to reach location have an answer for other type of transportation used.
4. Check that the bus provider used to reach the location is not missing if a public bus was the mode of transportation used to reach the location.
5. Check that only cases with "other" for bus provider have an answer for other bus provider used to reach the location.
6. Check that only cases with "other" for type of transportation used at the location have an answer for other type of transportation used at the location.
7. Check that the bus provider used at the location is not missing if a public bus was used at the location.

8. Check that only cases with “other” for bus provider used have an answer for other bus provider used at the location.
9. Check that the number of times the trip was taken in the last 3 months is not greater than the number of times the trip has been taken in the last 12 months.
10. Check that the number of times the trip has been taken in the last 12 months is asked, unless the respondent indicated don't know or refused to the number of times the trip was taken in the last 3 months.

Any discrepancies or missing values are further investigated by the research department, in conjunction with data processing.

For the pilot, the following issues were faced:

SNAME (Person File)

SNAME was originally omitted from the data structure. This was an oversight by the research department. The variable was added and the data structure was updated accordingly prior to data delivery.

W1NAME and W1TYPE (Person File)

Originally, there were 11 cases missing these variables. These were the 11 cases that reported working only at home or having no fixed workplace (W1LOC=2 OR 3). They were asked W1NAME and W1TYPE, but the data processing department had not included the information in the original data file. The problem was identified and corrected before the pilot data was delivered.

NO TRAVEL PERSONS (Trip File)

For the 25 persons (TRIPNUM=0) that did not travel during the 48-hour travel period, the ORIGIN to ACT4 variables were originally blank in the data file. These variables were updated in the data file so that MDOT can see at what location the respondent spent the travel period.

VHNUM (Trip File)

There were 25 cases missing originally. These were cases where the household is a one-member household. The cases were correctly post-coded as "0" prior to data delivery.

DTIME and ATIME (Trip File)

The values for these variables are to be delivered in military time. The data was originally delivered with a combination of am/pm and military times. The research department did not check for or realize the mistake prior to data delivery, which was an oversight. A check has been added to the post-processing data checks to ensure that this mistake will not happen in the future.

Parsons Brinckerhoff (PB) Post-Processing Data Checks

PB's review of data will include the following:

Review of interim datasets to assure that all logic checks specified in the MORPACE Post-Processing Data Checks section of the *Data Coding and Quality Control Manual* meet specifications. The following checks will be made by PB for the following record sets:

1. Home File

- a. Check that the month/day combinations are correct and that they match the day of the week variable
- b. Check that the number of workers in the household does not exceed the number of people in the household
- c. Check that the number of subsidized vehicles does not exceed the number of vehicles available in the household
- d. Ensure that all the following fields have information

2. Person File

- a. Check that the QNO has corresponding QNO in home file
- b. Check if person number proxy is less than number of people in the household
- c. Check if person interviewed was under 16 years of age was proxied
- d. Check for transit pass and type of transit pass
- e. Check person number does not exceed number of persons in home file
- f. Check respondents under 16 years of age are not licensed driver and are not applicable
- g. Check respondents 18 years of age or older are not code 3 or less for education level, check that respondents 18 year of age or younger are code 3 or less
- h. If currently a student, check for school name through school zone
- i. Check that respondents under 16 years of age are code 5 in working status
- j. Check that respondents that are not working are asking the not working status question
- k. Check that worker questions are only asked if working status is code 1 or code 2
- l. Check that only respondents who indicated "other" industry have an answer for other industry
- m. Check that only respondents who have a fixed workplace have answers for work address through work zone.
- n. Check that secondary job questions are only asked if respondent has more than one job.
- o. Check that respondents who completed the diary are not code 3 for using the completed diary, other respondents should be code 3 for using completed diary
- p. Check that no information is missing for the following: Gender, Age, Age Range, Relationship, Licensed Driver, Transit Pass, Education Level, School Type, Working Status, Proxy, Diary Completed, Long Distance Trip

3. Trip File

- a. Check that only respondents who indicated "other" for type of origin, destination, type of transportation, bus provider have an answer in the other category
- b. Check that the number of TRAV=2 is equal to the number of people in the study
- c. Check that all cases of TRAV=2 and TRIPNUM=0 provided a reason for no travel
- d. If the trip number is greater than zero, check time of departure and type of transportation used
- e. Check that bus provider is not missed if trip involved dial-a-ride or public bus
- f. Check for pay for trip if transportation mode is 6,7,8, or 9
- g. Check for amount paid if paid for trip
- h. If Type of Transportation used is 1,2,3, then check to make sure if driver or passenger and number of people in vehicle and that number of household members is not greater than number of persons in household
- i. Check that respondent is not listed as a household member in the vehicle
- j. If Type of Transportation Used is 1,2,3, then check for household vehicle used in trip and pay for parking
- k. Check to see if paid for parking that amount paid, parking rate are valid

- l. If parking rate is other, check for other parking rate
- m. Check that all cases (except those respondents that did not travel) are not missing arrival time or destination time
- n. Check that arrival time is after departure time
- o. Check length of trip
- p. Check Tour Activities for Logical Progressions
- q. Check Average Number of Trips per households by day to monitor drop-off of reported trips on second day
- r. Check percentage of workers who didn't make a work trip
- s. Long Distance File
- t. Check for respondents that indicated "other" for Transportation to Reach Location, Type of Transportation Used has a value in the corresponding other field
- u. If public bus was used for Transportation to Reach Location, or Type of Transportation Used, check bus provider for corresponding bus field
- v. Check that the number of times the trip was taken in the last three months is less than the number of times the trip has been taken in the last 12 months

4. Review of zero trip households for exclusion or inclusion based on reasonability standards.

5. Review of interim sampling data cell target progress and deviations. PB will create and review the table to review sampling and make recommendations based on the results of these tables:

6. Total Number of households by cell completed

Percent complete by cell for each geographic region, by household size, auto ownership, and number of workers

7. Review of geocoding results codes and non-geocodable issues and rates, based on reasonability standards. The geocoding checks which will be performed by PB has been outlined in detail in the Geocoding Manual.

8. Review of interim geocoding points by TransCad for time duration and distance testing with a flagging of all points not meeting logic standards. The description of time checks to be performed by PB has been outlined in detail in the Geocoding Manual.

9. Review of monthly report tables, progress, and corrective actions.

10. PB Reports

PB's reports will be in writing, citing specific case problems, and will be sent via e-mail in Microsoft Word format. The report will be in the following format:

- a. Executive Summary
- b. Review of Logic Checks
- c. Introduction: Total number of records received from MORPACE to PB by record type
- d. Listing of Problems found by dataset
 - Household
 - Person
 - Trip
 - Long Distance
 - Visitor
- e. Recommendations
- f. Review of Zero Trip Households
- g. Summary of zero trip households and zero trip persons, detailing the reasons for each household or person
- h. Recommendations
- i. Review of interim sampling data target process and deviations

- j. Tables showing sampling rates and target rates for data received since last submission and data received to date. Significant target differences will be highlighted and comments made.
- k. Recommendations
- l. Review of geocoding results
- m. Introduction detailing number of records received total from MORPACE and the number of geocoded records by type of geocoding results (address, intersection, TAZ, and non-geocodable) and the percentage. This will be done for the household file as well as for the trip file.
- n. Summary of geocoding checks performed by PB, which is detailed in the Geocoding Manual.
- o. Geocoding Points Summary – details on those points which could have a higher accuracy and nongeocodable points, also summaries on multi-TAZ points
- p. Time Duration Summary – details on those records that have trip time duration inconsistencies
- q. Recommendations

The Executive Summary of the report will give a brief summary of each of sections 2 through 5 and highlight general recommendations of the review. The recommendations for each section will be more detailed and provide direction to MORPACE and MDOT concerning actions that should be taken, recommended to be taken, or to be furthered reviewed.

Appendix 26: Schedule for Monthly and Interim Reporting

Revised Schedule for Monthly and Interim Reporting– Revised August 4, 2004

Dates for monthly reports and interim data submissions in 2004 will be the same, except for January, March, April, and August. For 2005, after January, monthly reports will be submitted on the same dates that draft final, interim final, and final data files and reports are due.

Changes to this version include dates for the 8,000; 10,000; 12,000; and 14,280 deliveries. All data delivery dates are within the 5-day grace period of the milestone dates listed in the contract.

Dates for submission of MORPACE and PB Interim Reports to MDOT	Items Due to MDOT	Number of Completed Households in Interim/Final Data File	Last Travel Day	Fully Geocoded Files Due to PB	MORPACE Review of PB Report and Recommendations Due
January 31, 2004	Monthly Progress Report	NA	NA	NA	NA
February 24, 2004	Pilot Report Pilot Data	110	2/5/04	NA	2/20/04
March 5, 2004	Monthly Progress Report	NA	NA	NA	NA
April 9, 2004	Monthly Progress Report	NA	NA	NA	NA
MORPACE 1 st Interim Report Due 5/21/04 with data file for 2,000 completes with 986 geocoded; fully geocoded file to MDOT/PB on 6/2/04 PB Report due June 14, 2004	Interim and Monthly Progress Report Interim Data Interim Geocoding Files PB Report	2000	5/13/04	6/2/04	6/18/04
June 23, 2004 – MORPACE Interim Report and Data file June 28, 2004 – PB Report	Interim and Monthly Progress Report Interim Data Interim Geocoding Files PB Report	4000	6/2/04	6/17/04	7/2/04
July 22, 2004	Interim and Monthly Progress Report Interim Data Interim Geocoding Files PB Report	6000	6/10/04	7/12/04	7/30/04
August 6, 2004	Resolved Non-Geocodables	4000	NA	NA	NA
August 18, 2004	Resolved Time and Distance Checks	6000	NA	NA	NA
August 31, 2004	Monthly Progress Report	NA	NA	NA	NA
October 26, 2004 – MORPACE Interim Report and Data File October 29, 2004 – PB Report	Interim and Monthly Progress Report Interim Data PB Report	8,000	9/30/04	10/20/04	11/5/04
November 24, 2004 – MORPACE Interim Report and Data File November 30, 2004 – PB Report	Interim and Monthly Progress Report Interim Data PB Report	10,000	10/28/04	11/17/04	12/7/04
December 22, 2004	Interim and Monthly Progress Report Interim Data PB Report	12,000	11/24/04	12/15/04	1/5/05
January 19, 2005 – MORPACE Interim Report and Data File January 22, 2005 – PB Report	Interim and Monthly Progress Report Interim Data	14,280	12/16/04	1/12/05	2/4/05

	PB Report				
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MDOT and to PB for Reviews – Revised August 4, 2004 *(Continued)*

February 24, 2005	Monthly Progress Report Draft Final Data Files Draft Final Merged Geocoding Files Draft Final Project Report	14,280	12/16/04	2/24/04	NA
March 20, 2005	Monthly Progress Report Final Interim Data Files Final Interim Data Merged Geocoding Files Final Interim Project Report	14,280	12/16/04	3/20/05	NA
April 25, 2005	Monthly Progress Report Final Data Files Final Merged Geocoding Files Final Project Report	14,280	12/16/04	4/25/05	NA
May 31, 2005	Monthly Progress Report Final Copies of Project Report	NA	NA	NA	NA



MI Travel Counts
Monthly Report
04/25/05
Submitted by MORPACE International, Inc.

1.0 Monthly Update

1.1 WORK ACCOMPLISHED DURING THE REPORT PERIOD

1.1.1 Recruit and Retrieval Data Collection Effort

As of April 25, 2005, 29,278 households have been recruited and 16,898 households have been retrieved. Both the recruit and the retrieval are now closed. Retrievals by phone, mailed-in diaries, calls to the 800-number, and Internet retrievals are being processed on a continuous basis. Also, all mailbacks in data cells that have not achieved target have been reviewed to see if any completes can be achieved.

By household size, 24.3% of households retrieved are 4+-person household (4,099). Of the total retrieved, 6.5% (1,094) are zero vehicle households, which is 112% of the total zero vehicle household target of 979 households. However, zero-vehicle households are over target for HH Size=1 in five areas and slightly under target in two areas (UPR and NLP); for HH Size=2+ and vehicles=0, retrievals are significantly under target within the three rural sampling areas and slightly under target in one area (Small Urban Modeled Areas).

The results of modifications made to sampling and incentives for the recruit, which started in the fall of 2004 and concluded March 24 2005, continued to increase retrievals among difficult-to-fill data cell households. These modifications to sampling included releasing targeted RDD low-income sample proportional to the remaining number of “autos fewer than workers” households needed by region and, when less than 10% of the retrieval sample remained to be filled in difficult-to-fill data cells (where population incidence rates are low), a sampling technique using RDD selected listed numbers, targeted within regions by both household size and income, was deployed. These methodologies were considered warranted because remaining sample needed was among rare population groups.

The plan for MORPACE to institute incentives for zero vehicle households was fully implemented the week of October 25, 2004. All newly recruited zero vehicle households are offered an incentive of \$20 to \$30 (depending on household size), if all household members complete. Implementation of the incentive plan has improved retrieval participation rates among zero-vehicle households from 35% to 58% overall.

In order to meet the sampling requirements of the MI Travel Counts Sampling Technical Document, other adjusted plans have since been submitted, approved by MDOT, and implemented by MORPACE, since the zero-vehicle household incentive was initiated. These plans have been documented under separate cover. They are:

- Implementation of expanded incentives of \$20 were offered to households in additional, difficult-to-fill, data cells where autos are fewer than workers, or where autos=1 and household size is two and workers are greater than zero, or where autos=1 and household size is greater than two. These are largely lower-income households.
- An adjusted work plan that included travel periods through the last week of February, 2005 using a refusal conversion technique for households recruited in the difficult-to-fill data cells who were non-responders to the retrieval. These households were assigned new travel days as appropriate.
- Use of targeted RDD listed sample by income and household size for the remaining 10% of retrieved households to be obtained; since these remaining completes required are a rare population. Bias is considered minimal since 91% of retrieved households have come from listed households who received the pre-notification letter.
- A sampling technique has been developed that links the targeted RDD listed sample (by region, income, and household size) to specific open data cells within the CATI. This enables the CATI system to close a sample segment when all of the associated data cells have been filled; thus, concentrating remaining recruitment efforts on data cells, and associated sample, remaining to be filled.
- Using the later two techniques in early March 2005, new recruits were attempted for 4+-person households with autos>0 but less than workers in four sampling areas: SEMCOG, UPR, TMAs, and SUMAs. For UPR, only 20 listed households meeting the 4+ household size criteria and that had not previously been called, could be identified. As of April 25, 2005, of this new listed targeted sample of 4,320 households, only 4 both met the data cell criteria and were willing to participate in the travel inventories.

Households with 4+-persons and autos>0 but fewer than workers represent less than 2.5% of the households in each of the sampling areas. Households with 3-persons and autos>0 but fewer than workers generally represent less than 1.5% of households. Thus, data collection was suspended because interviewers were looking for the proverbial needle in a haystack, and was well documented that these households cannot be found within a reasonable timeframe by RDD telephone methodologies.

Completion by geographic sampling strata as of April 25 2005 is shown in Table 1.1.

Table 1.1 Retrieved Households by Sampling Strata –4/25/05

Sampling Area	Frequency
SEMCOG	2,565
Small Cities	2,800
Upper Peninsula Rural	2,318
Northern Lower Peninsula	2,366
Southern Lower Peninsula	2,275
TMA's	2,331
Small Urban Modeled Areas	2,243
Total	16,898

1.1.2 Geocoding Progress

Final region assignment using geocoding coordinates for residence in Maptitude has been accomplished as a part of this report. Households with 25% or more of their trips with one or more trip ends not geocoded have been fully reviewed. A further detailed analysis of the status of completed households in regard to meeting the less than 25% nongeocodable criteria by data cell will be accomplished this week, based on the results of this last interim report. A status variable has been placed in the data file to flag the trips not meeting the stated criteria. A running tally of the questionable households will be made until project data reporting completion. The priority was on salvaging the households needed to meet geocoding criteria in the difficult to fill data cells. On the same priority basis, MORPACE reviewed the questionable households using the list provided by Jesse Gwilliams of MDOT, PB reports on time and distance issues, and other MDOT communications. This April 2005 report includes the draft final results of MORPACE's unacceptable review.

The MORPACE on-going tally of retrievals has been corrected to eliminate the 90 households which to date have been determined as not meeting either zero trip or the non-geocoded trip ends criteria to date. The pilot records have also been corrected for geocoding and added to the current interim file. The internet and non-response retrievals, and household of 5+ with only one-member's travel missing, have also been added to the updated tally that is being sent to MDOT on a weekly basis. The data cells where quotas have been exceeded are clearly marked in the interim report recruitment and retrieval tables.

1.1.5. Public Awareness

Public awareness activities have concluded. MORPACE data collection efforts in February and March of 2005 have been concentrated on filling data cells to the maximum extent through the non-response interviewing process, targeting households in remaining unfilled cells who were recruited but not successfully retrieved.

1.1.6 Reports

All data checks for this report have been completed using SAS. All tables and charts were automated for this April 25, 2005 Interim Report. Weekly reports and tallies have been submitted as scheduled.

The draft final MI Travel Counts report has been reviewed by all subconsultants, revised accordingly, and submitted to MDOT for review. The executive summary and final section on “Lessons Learned and Recommendations” will be submitted to MDOT for review the week of April 25, 2005.

1.2 PLAN FOR THE NEXT REPORT PERIOD

1. Final review of completed households in terms of meeting time and distance and geocoding criteria.
2. Prepare final data set for PB and MDOT review.
3. PB will develop weighting and expansion factors
4. Revise Final Report incorporating MDOT’s comments and review.

1.3 PROBLEMS ENCOUNTERED DURING THE REPORT PERIOD

The time required for implementation of the geocoding and data review process of flagged unacceptable completes was a challenge, but final geocoding reviews of flagged trips with either geocoding or time and distance problems has been completed.

MORPACE will not be able to reach targets for households with 2+ persons and zero vehicles in the three rural sampling areas (Upper Peninsula Rural, Northern Lower Peninsula Rural, and Southern Lower Peninsula Rural), and also for 4+ and a few 3-persons household data cells with autos>0 but less than workers, using RDD telephone sampling techniques. For zero-vehicle households, MDOT and PB have accepted that unusual small clusters of these stand-alone households appear to exist (as shown by MDOT through Census block mapping). However, these clusters are impossible to reach efficiently through RDD sampling methodologies. Additionally, the proportions of 3-person and 4+-person households with autos>0 but less than workers are so small (less than 2.5%) as to make recruiting the targeted number of households for these cells unattainable by RDD techniques. This was documented by the MORPACE data collection effort .

2.0 Recruitment Summary

This and the following sections summarize the data collected for the 10th interim data delivery: 16,751 completed households. This section specifically addresses the recruitment.

2.1 RECRUITMENT TABLES BY SAMPLING AREA

Recruitment results through February 21, 2005 are presented by the sample design data cells (household size, number of vehicles, and number of workers) for each of the seven MI Travel Counts sampling areas. Completed/retrieved results are provided later in this report. The percentages shown in each cell represent the percent of the targeted sample in that cell that has

been recruited. Each cell also contains the number of households recruited and the targeted number of households. Recruitment targets by data cell were adjusted before interviewing restarted in the fall, based on the varying data cell retrieval levels experienced in the spring of 2004, when approximately 6,000 households were complete. Additional adjustments in recruit targets have been made as appropriate, based on the results of fall Interim and weekly reports.

Table 2.1. Sample Area 1 – SEMCOG: Recruitment by Data Cells (w/ Aggregation) as of 2/21/05

Household Size=1					
Workers		Number of Autos			
Number	Total	0	1+		
0		230/244 (94%)	286/261 (110%)		
1			516/463 (111%)		
2					
3+					
Total	1032/968 (107%)	230/244 (94%)	802/724 (111%)		
Household Size=2					
Workers		Number of Autos			
Number	Total	0	1	2+	
0		146/277 (53%)	129/128 (101%)	134/113 (119%)	
1			260/203 (128%)	201/157 (128%)	
2			89/120 (74%)	386/324 (119%)	
3+					
Total	1346/1322 (102%)		478/451 (106%)	721/594 (121%)	
Household Size=3					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		↓	115/73 (158%)		
1			130/103 (126%)	242/139 (174%)	
2			119/68 (175%)	275/236 (117%)	75/65 (115%)
3+					72/70 (103%)
Total	1135/1052 (108%)				
Household Size=4+					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		226/785 (29%)	93/72 (129%)		
1			137/224 (61%)	298/218 (137%)	317/264 (120%)
2			191/294 (65%)	340/319 (107%)	
3+					357/287 (124%)
Total	1854/2165 (86%)	228/785 (29%)			

Findings:

1. As of February 21, 2005, overall recruitment for sampling areas 1 – 7 is 100% complete. SEMCOG recruitment is at 98% (5,367 of 5,507).
2. Recruitment data cell filling is low for zero vehicle households when HH Size=2+, as well as for 4+-person households with either 1 auto and 1 worker, or with autos fewer than workers. .

Table 2.2. Sample Area 2 – Small Cities: Recruitment by Data Cells (w/ Aggregation) as of 2/21/05

Household Size=1					
Workers		Number of Autos			
Number	Total	0	1+		
0		165/132	293/280 (105%)		
1		(125%)	416/352 (118%)		
2					
3+					
Total	874/764 (114%)	165/132	709/632 (112%)		
Household Size=2					
Workers		Number of Autos			
Number	Total	0	1	2+	
0		↓	124/117 (106%)	217/215 (101%)	
1			166/136 (122%)	277/263 (105%)	
2			68/46 (148%)	427/373 (114%)	
3+					
Total	1325/1277 (104%)		358/299 (120%)	921/851 (108%)	
Household Size=3					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		↓	125/104 (120%)		
1			100/70 (143%)	114/78 (146%)	
2			77/60 (128%)	228/227 (100%)	
3+				119/87 (137%)	
Total	893/750 (119%)			111/70 (159%)	
Household Size=4+					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		79/235 (34%)	118/102 (116%)		
1			88/231 (38%)	179/152 (118%)	
2			122/188 (65%)	442/369 (120%)	
3+				228/200 (114%)	
Total	1412/1428 (99%)	79/235 (34%)	221/132 (167%)		

Findings:

1. As of February 21, 2005 overall recruitment for sampling areas 1 – 7 is approximately 100% complete. Small Cities recruitment is at 107% (4,504 of 4,219); however, not all data cells reached their recruitment target.
2. Recruitment data cell filling is low for zero vehicle households when HH Size=2+, as well as for 4+-person households with either 1 auto and 1 worker, or with autos fewer than workers.

Table 2.3. Sample Area 3 – Upper Peninsula Rural: Recruitment by Data Cells (w/ Aggregation) as of 2/21/05

Household Size=1						
Workers		Number of Autos				
Number	Total	0	1+			
0		156/161 (97%)	373/372 (100%)			
1			406/331 (123%)			
2						
3+						
Total	936/864 (108%)	156/161 (97%)	779/703 (111%)			
Household Size=2						
Workers		Number of Autos				
Number	Total	0	1	2+		
0		↓	143/135 (106%)	214/214 (100%)		
1			161/138 (117%)	212/199 (107%)		
2			65/71 (92%)	331/316 (105%)		
3+						
Total	1157/1155 (100%)		369/344 (107%)	757/729 (104%)		
Household Size=3						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		↓	102/96 (106%)			
1			70/92 (76%)	81/78 (104%)		
2			55/60 (92%)		180/126 (143%)	85/84 (101%)
3+						
Total	643/620 (104%)					
Household Size=4+						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		49/142 (35%)	83/80 (104%)			
1			78/111 (70%)	128/121 (106%)		
2			80/116 (69%)		347/225 (154%)	142/120 (118%)
3+						
Total	1034/963 (107%)	49/142 (35%)				

Findings:

1. As of February 21, 2005 overall recruitment for sampling areas 1 – 7 is approximately 100% complete. Upper Peninsula Rural recruitment is at 105% (3,770 of 3,602); however, not all data cell recruitment targets were met.
2. The number of zero-vehicle households recruited when HH Size=2+ is much lower than anticipated, as is the number of 4+-person households with either 1 auto and 1 worker, or with autos fewer than workers.

Table 2.4. Sample Area 4 – Northern Lower Peninsula: Recruitment by Data Cells (w/ Aggregation) as of 2/21/05

Household Size=1					
Workers		Number of Autos			
Number	Total	0	1+		
0		110/245 (45%)	381/382 (100%)		
1			359/288 (125%)		
2					
3+					
Total	851/915 (93%)	110/245 (45%)	740/670 (110%)		
Household Size=2					
Workers		Number of Autos			
Number	Total	0	1	2+	
0		↓	168/140 (120%)	289/288 (100%)	
1			141/110 (128%)	220/217 (101%)	
2			54/53 (102%)	318/308 (103%)	
3+					
Total	1228/1197 (103%)		364/303 (120%)	827/813 (102%)	
Household Size=3					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		↓	110/107 (103%)		
1			85/64 (133%)	100/72 (139%)	
2			66/120 (55%)	164/123 (133%)	103/83 (124%)
3+					53/49 (108%)
Total	689/655 (105%)				
Household Size=4+					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		50/155 (32%)	102/88 (116%)		
1			66/60 (110%)	190/173 (110%)	
2			92/139 (66%)	310/227 (137%)	160/140 (114%)
3+					166/141 (118%)
Total	1091/1005 (109%)	50/155 (32%)			

Findings:

1. As of February 21, 2005 overall recruitment for sampling areas 1 – 7 is approximately 100% complete. Northern Lower Peninsula recruitment is at 102% (3,859 of 3,772); however, not all data cell recruitment targets were met.
2. The number of zero-vehicle households is much lower than anticipated, as is the number of 3+ person households where autos are fewer than workers.

Table 2.5. Sample Area 5 – Southern Lower Peninsula: Recruitment by Data Cells (w/ Aggregation) as of 2/21/05

Household Size=1						
Workers		Number of Autos				
Number	Total	0	1+			
0		111/97 (114%)	261/259 (101%)			
1			366/311 (118%)			
2						
3+						
Total	738/667 (111%)	111/97 (114%)	627/570 (110%)			
Household Size=2						
Workers		Number of Autos				
Number	Total	0	1	2+		
0		↓	107/98 (109%)	230/229 (100%)		
1			112/107 (105%)	216/216 (100%)		
2			58/58 (100%)	382/380 (101%)		
3+						
Total	1134/1113 (102%)		277/263 (105%)	828/825 (100%)		
Household Size=3						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		↓	81/79 (103%)			
1			96/76 (126%)	86/72 (119%)		
2			71/103 (69%)	261/193 (135%)		83/79 (105%)
3+						
Total	744/676 (110%)					
Household Size=4+						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		40/50 (80%)	150/148 (101%)			
1			80/80 (100%)	166/129 (129%)		
2			111/166 (67%)	345/314 (110%)		187/165 (113%)
3+						
Total	1224/1168 (105%)	40/50 (80%)				

Findings:

1. As of February 21, 2005 overall recruitment for sampling areas 1 – 7 is approximately 100% complete. Southern Lower Peninsula recruitment is at 106% (3,840 of 3,624); however, not all data cells have reached their recruitment target.
2. The number of zero-vehicle households when HH Size=2+ is somewhat lower than anticipated, as is the number of 3+ households where autos are fewer than workers.

Table 2.6. Sample Area 6 – TMA’s: Recruitment by Data Cells (w/ Aggregation) as of 2/21/05

Household Size=1						
Workers		Number of Autos				
Number	Total	0	1+			
0		135/112	233/233 (100%)			
1		(121%)	366/344 (106%)			
2						
3+						
Total	734/689 (107%)	135/112	599/577 (104%)			
Household Size=2						
Workers		Number of Autos				
Number	Total	0	1	2+		
0		↓	101/90 (112%)	129/129 (100%)		
1			181/150 (121%)	193/187 (103%)		
2			69/100 (69%)	417/415 (100%)		
3+						
Total	1160/1188 (98%)		352/340 (104%)	739/731 (101%)		
Household Size=3						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		↓	93/83 (112%)			
1			121/205 (59%)	111/90 (123%)		
2			65/120 (54%)	225/202 (111%)		87/81 (107%)
3+						64/51 (125%)
Total	794/896 (89%)					
Household Size=4+						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		135/254 (53%)	150/109 (138%)			
1			111/156 (71%)	183/163 (112%)		
2			122/510 (24%)	313/257 (122%)		206/183 (113%)
3+						260/200 (130%)
Total	1386/1652 (84%)	136/254 (54%)				

Findings:

1. As of February 21, 2005 overall recruitment for sampling areas 1 – 7 is approximately 100% complete. TMA recruitment is at 92% (4,074 of 4,425).
2. Recruitment of zero vehicle households with HH Size=2+ is very low, as is recruitment of 2-person households with 1 auto and 2 workers, 3+-person households with 1 auto and 1 worker, and 3+-person households with autos fewer than workers.

Table 2.7. Sample Area 7 – Small Urban Modeled Areas: Recruitment by Data Cells (w/ Aggregation) as of 2/21/05

Household Size=1						
Workers		Number of Autos				
Number	Total	0	1+			
0		145/158 (92%)	259/259 (100%)			
1			354/326 (109%)			
2						
3+						
Total	758/743 (102%)	145/158 (92%)	613/585 (105%)			
Household Size=2						
Workers		Number of Autos				
Number	Total	0	1	2+		
0		↓	123/111 (111%)	201/200 (101%)		
1			164/116 (141%)	221/218 (101%)		
2			49/72 (68%)	347/346 (100%)		
3+						
Total	1161/1299 (89%)		337/299 (113%)	769/764 (101%)		
Household Size=3						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		↓	76/65 (117%)			
1			100/76 (132%)	81/71 (114%)		
2			70/143 (49%)	211/205 (103%)		91/81 (112%)
3+						
Total	716/817 (88%)					
Household Size=4+						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		105/482 (22%)	102/96 (106%)			
1			101/68 (149%)	162/146 (111%)		
2			108/361 (30%)	322/269 (120%)		188/182 (103%)
3+						
Total	1222/1460 (84%)	106/482 (22%)				

Findings:

1. As of February 21, 2005 overall recruitment for sampling areas 1 – 7 is approximately 100% complete. Small Urban Modeled Area recruitment is at 89% (3,857 of 4,319).
2. The number of zero-vehicle households when household size=2+ is very low, as is the number of 2-person households with 1 auto and 2 workers, and 3+ size households with autos fewer than workers.

2.2 CHARACTERISTICS OF RECRUITED HOUSEHOLDS

Table 2.8 displays the distribution of recruited households by sampling area, household size, number of vehicles, number of workers, and household income, along with the targeted distribution. As of February 21, 2005, the percentages of recruited households in the SEMCOG and Small Cities sampling areas are high (since recruit rates were adjusted upwards to account for lower than average participation rates). Recruit proportions in the remaining areas are on par. Likewise, the percent of 4+-person recruited households is high because early MI Travel Counts experience revealed that retrieval rates for larger households would be low. Zero-vehicle household recruits are now underrepresented by only 0.6%. The sample distribution by number of workers and income is on track, with households with income under \$10,000 and incomes over \$100,000 slightly under target. Putting special efforts into listed RDD samples of lower income groups, in addition to implementation of incentives for zero vehicle households and households with fewer autos than workers, has increased proportional recruitment by key demographic characteristics.

Table 2.8. Characteristics of Recruited Households as of 2/21/05

Characteristic	Percent	Goal as Set by Sample Design/2000 PUMA Data
Sampling Area		
SEMCOG	18.3%	14.3%
Small Cities	15.4%	14.3%
Upper Peninsula Rural	12.9%	14.3%
Northern Lower Peninsula	13.2%	14.3%
Southern Lower Peninsula	13.1%	14.3%
TMA's	13.9%	14.3%
Small Urban Modeled Areas	13.2%	14.3%
Household Size		
1 Person	20.2%	26%
2 Persons	29.1%	34%
3 Persons	19.2%	16%
4+ Persons	31.5%	24%
Number of Vehicles		
0 Vehicles	6.4%	7%
1 Vehicle	29.3%	38%
2 Vehicles	39.7%	41%
3+ Vehicles	24.5%	14%
Refused	0%	0%
Number of Workers		
0 Workers	21.9%	25%
1 Worker	35.4%	33%
2 Workers	33.2%	35%
3+ Workers	9.5%	7%

Table 2.8. Characteristics of Recruited Households as of 2/21/05 (Continued)

Characteristic	Percent	Goal as Set by Sample Design/2000 PUMA Data
Household Income		
Less than \$10,000	6%	8%
\$10,000 to \$49,999	46.2%	47%
\$50,000 to \$74,999	19.7%	20%
\$75,000 to \$99,999	9.4%	12%
\$100,000 +	7%	13%
Below \$50,000	2.9%	0%
\$50,000 or above	2.2%	0%
Unknown Income	6.6%	0%
Total	100.0%	

2.3 RECRUITMENT RESPONSE RATE

MI Travel Counts uses a two-stage interviewing process: (1) recruit households from an RDD sample, and (2) retrieve information from all members of the recruited household. The two response rates are determined separately and are called, respectively, the recruit response rate and the participation rate.

The MORPACE CATI system recorded a disposition (or outcome) for each of the 284,949 phone numbers in the sample as of February 21, 2005. Call attempts yielded three types of dispositions: (1) eligible, (2) ineligible, and (3) unknown eligibility. Subcategories for each of these dispositions are shown below in Table 2.9.

The sample classified as unknown eligibility is mostly households, or perhaps some small businesses or organizations, that are just not picking up the phone. The exact outcome for this portion of the sample is unknown. The unknown portion of the sample at this interim point is unusually high because the sample has not been fully culled for those listed numbers not attempted due meeting recruit quota goals by data cell.

Based on the American Association for Public Opinion Research's (AAPOR) Response Rate 3 (RR3) method, the assumption that 20% of unknown eligibility cases are actually eligible is used. Using this approach, we assume that 20% of the unknown eligibility sample is eligible ($0.20 \times 114,383 = 22,877$). Adding this to the known eligible sample (71,984), we assume there are 94,820 eligible numbers ($22,985 + 71,835 = 94,861$). In calculating a recruit response rate this way, 30.9% of all assumed eligible households were recruited ($29,278/94,861 = 30.9\%$).

Note: Some of the unknown numbers are rare population listed numbers that were not attempted. They numbers will be removed from final sample disposition and response rate calculations.

Using the CASRO method of estimating response rates, we would assume, based on our experience to date, that the percent of unknown numbers that will be found to be eligible will be 29.6% ($71,984/242,814 = 29.6\%$). Thus, the total eligible numbers would be estimated at $[(114,383 * 0.296) + 71,984] = 105,841$. The interim response rate would then be estimated at 27.7% ($29,278/105,841 = 27.7\%$). This preliminary recruit response rate will need further call disposition investigation.

Note: Some of the unknown numbers are rare population listed numbers that were not attempted. They numbers will be removed from final sample disposition and response rate calculations.

Table 2.9. Recruit Sample Dispositions as of 2/21/05

Sample Category	Frequency	Percent
<i>Eligible</i>	<i>71,984</i>	<i>20%</i>
Completed Recruit Interviews	29,278	8%
Refused	38,901	11%
Terminated Mid-Interview/Cancelled	1579	0%
Language Barrier/Deaf	2226	1%
<i>Ineligible</i>	<i>170,830</i>	<i>47%</i>
Geographic Quota Reached	102,947	29%
Disconnected	43,626	12%
Fax Machine/Data Line	8,335	2%
Wrong/Business Number	15,922	4%
<i>Unknown</i>	<i>114,383</i>	<i>33%</i>
No Answer/Busy	44,975	13%
Answering Machine	56,012	16%
Scheduled for Callback	13,396	4%
<i>Total Sample</i>	<i>357,197</i>	<i>100%</i>

2.4 LARGE HOUSEHOLDS NOT COMPLETED

Table 2.10 below lists the 5+-person households for which we have missing retrieval information from only one household member.

Table 2.10 Large Households with One Household Member Not Complete

Sampling Area	Household Size	Household Number of Vehicles	Household Income	Age of Contact Person
Small Urban Modeled Areas	6	1	Refused	22
Southern Lower Peninsula	5	2	\$60,000 to less than \$75,000	46
Southern Lower Peninsula	5	4	\$30,000 to less than \$40,000	52
Upper Peninsula Rural	5	2	\$20,000 to less than \$30,000	26
Upper Peninsula Rural	11	4	\$30,000 to less than \$40,000	51
SEMCOG No Detroit	6	0	\$10,000 to less than \$20,000	37
Northern Lower Peninsula	5	2	\$60,000 to less than \$75,000	38
Upper Peninsula Rural	5	3	\$60,000 to less than \$75,000	37
TWAs	5	2	\$60,000 to less than \$75,000	33
TWAs	5	2	\$125,000 or more	42
Southern Lower Peninsula	8	2	\$20,000 to less than \$30,000	31
Southern Lower Peninsula	5	2	\$30,000 to less than \$40,000	47
Small Cities	5	2	Refused	53
Southern Lower Peninsula	5	2	\$30,000 to less than \$40,000	39
Upper Peninsula Rural	6	2	\$50,000 to less than \$60,000	52
Northern Lower Peninsula	5	2	\$60,000 to less than \$75,000	34
Small Cities	5	3	\$50,000 to less than \$60,000	38
TWAs	5	2	\$40,000 to less than \$50,000	28
Southern Lower Peninsula	7	3	\$30,000 to less than \$40,000	67
Small Urban Modeled Areas	5	5	\$50,000 to less than \$60,000	49
Upper Peninsula Rural	5	2	\$30,000 to less than \$40,000	39
Small Urban Modeled Areas	6	2	\$75,000 to less than \$100,000	45
Small Cities	5	4	Refused	36
Small Cities	5	3	\$60,000 to less than \$75,000	41

3.0 Retrieval Summary

3.1 RETRIEVAL TABLES BY SAMPLING AREA

Retrieval results as of March 1, 2005 are presented by the sample design data cells (household size, number of vehicles, and number of workers) for each of the seven MI Travel Counts sampling areas. The percentages shown in each cell represent the percent of the targeted sample in that cell that has been completed. Each cell also contains the number of households completed and the targeted number of households. Recruiting within the SEMCOG sampling area (Area 1) did not begin until early April 2004.

Overall, retrieval for sampling areas 1-7 is 118% complete; however not all data cells have been filled as it is shown in Tables 3.1 through 3.7.

Table 3.1. Sample Area 1 – SEMCOG: Retrieval by Data Cells (w/ Aggregation) as of 3/1/05

Household Size=1					
Workers		Number of Autos			
Number	Total	0	1+		
0		140/100	204/185 (110%)		
1		(140%)	338/273 (124%)		
2					
3+					
Total	682/558 (122%)	140/100	542/458 (118%)		
Household Size=2					
Workers		Number of Autos			
Number	Total	0	1	2+	
0		61/36 (169%)	93/73 (127%)	99/89 (111%)	
1			104/75 (139%)	139/121 (115%)	
2			33/30 (110%)	228/211 (108%)	
3+					
Total	757/635 (119%)	61/36 (169%)	230/178 (129%)	466/421 (111%)	
Household Size=3					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		↓	35/30 (117%)		
1			43/41 (105%)	115/68 (169%)	
2			31/30 (103%)	118/78 (151%)	43/40 (108%)
3+					32/32 (100%)
Total	459/337 (136%)				
Household Size=4+					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		77/47 (164%)	33/31 (106%)		
1			36/38 (95%)	145/87 (167%)	114/82 (139%)
2			32/50 (64%)	137/124 (110%)	
3+					104/69 (151%)
Total	636/510 (125%)	77/47 (164%)			

Findings

1. Overall, retrieval for sampling areas 1-7 is 118% complete; however not all data cells have been filled. SEMCOG retrieval is at 124% (2,534 of 2,040), with not all data cells complete.
2. Only data cells where HH size=4+ and either autos=1 and workers=1 (95% complete), or autos>0 but fewer than workers are significantly under target at this point (64% complete).

Table 3.2. Sample Area 2 – Small Cities: Retrieval by Data Cells (w/ Aggregation) as of 3/1/05

Household Size=1					
Workers		Number of Autos			
Number	Total	0	1+		
0		125/86 (145%)	245/216 (113%)		
1			313/229 (137%)		
2					
3+					
Total	683/531 (129%)	125/86 (145%)	558/445 (125%)		
Household Size=2					
Workers		Number of Autos			
Number	Total	0	1	2+	
0			99/87 (114%)	168/150 (112%)	
1			105/68 (154%)	192/147 (131%)	
2			37/32 (116%)	254/224 (113%)	
3+					
Total	888/734 (121%)		241/187 (129%)	614/521 (118%)	
Household Size=3					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		↓	85/46 (185%)		
1			51/37 (138%)	67/42 (160%)	
2			39/30 (130%)	138/75 (184%)	70/45 (156%)
3+					55/31 (177%)
Total	514/317 (162%)				
Household Size=4+					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		48/47 (102%)	66/46 (143%)		
1			37/30 (123%)	120/70 (171%)	
2			45/47 (96%)	222/129 (172%)	95/68 (140%)
3+					84/62 (135%)
Total	675/462 (146%)	48/47 (102%)			

Findings

1. Small Cities retrieval is at 135% (2,760 of 2,040) with not all data cells complete. A slightly low percentage complete (96%) exists for 4+-person households when autos>0 but fewer than workers.

Table 3.3. Sample Area 3 – Upper Peninsula Rural: Retrieval by Data Cells (w/ Aggregation) as of 3/1/05

Household Size=1						
Workers		Number of Autos				
Number	Total	0	1+			
0		104/108 (96%)	276/246 (112%)			
1			264/218 (121%)			
2						
3+						
Total	645/572 (113%)	104/108 (96%)	540/464 (116%)			
Household Size=2						
Workers		Number of Autos				
Number	Total	0	1	2+		
0		↓	111/99 (112%)	172/171 (101%)		
1			90/69 (130%)	170/152 (112%)		
2			33/31 (106%)	205/198 (104%)		
3+						
Total	800/747 (107%)		234/199 (118%)	547/521 (105%)		
Household Size=3						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		↓	61/49 (124%)			
1			32/35 (91%)	60/42 (143%)		
2			33/30 (110%)	92/71 (130%)		46/43 (107%)
3+						29/30 (97%)
Total	355/310 (115%)					
Household Size=4+						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		24/47 (51%)	49/39 (126%)			
1			37/30 (123%)	75/62 (121%)		
2			32/44 (73%)	171/120 (143%)		61/60 (102%)
3+						78/57 (137%)
Total	506/422 (120%)	24/47 (51%)				

Findings

1. Upper Peninsula Rural retrieval is at 113% (2,306 of 2,040).
2. Zero-vehicle household retrievals when household size=2+ are only 51% complete. Also with a low completion rate is 4+-person households where autos>0 but fewer than workers (73% complete). All other data cells are over 90% complete.

Table 3.4. Sample Area 4 – Northern Lower Peninsula: Retrieval by Data Cells (w/ Aggregation) as of 3/1/05

Household Size=1					
Workers		Number of Autos			
Number	Total	0	1+		
0		72/81 (89%)	284/245 (116%)		
1			235/207 (114%)		
2					
3+					
Total	592/533 (111%)	72/81 (89%)	519/452 (115%)		
Household Size=2					
Workers		Number of Autos			
Number	Total	0	1	2+	
0		↓	128/110 (116%)	231/189 (122%)	
1			87/63 (138%)	161/148 (109%)	
2			28/30 (93%)	208/206 (101%)	
3+					
Total	867/768 (113%)		243/203 (120%)	600/543 (110%)	
Household Size=3					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		↓	77/47 (164%)		
1			41/34 (121%)	56/45 (124%)	
2			17/30 (57%)	78/69 (113%)	56/46 (122%)
3+					29/30 (97%)
Total	356/311 (114%)				
Household Size=4+					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		30/42 (71%)	66/47 (140%)		
1			37/30 (123%)	89/66 (135%)	
2			35/43 (81%)	170/122 (139%)	75/66 (114%)
3+					61/58 (105%)
Total	537/442 (121%)	30/42 (71%)			

Findings

1. Northern Lower Peninsula retrieval is at 115% (2,352 of 2,040) with not all data cells complete.
2. Zero-vehicle 1-person households are 89% complete, while 2+person household retrievals are only 71% complete. Also with low complete rates are 3+-person households with autos>0 but fewer than workers.

**Table 3.5. Sample Area 5 – Southern Lower Peninsula: Retrieval by Data Cells
(w/ Aggregation) as of 3/1/05**

Household Size=1					
Workers		Number of Autos			
Number	Total	0	1+		
0		75/73 (103%)	196/194 (101%)		
1			262/233 (112%)		
2					
3+					
Total	533/500 (107%)	75/73 (103%)	458/427 (107%)		
Household Size=2					
Workers		Number of Autos			
Number	Total	0	1	2+	
0		↓	84/76 (111%)	182/131 (139%)	
1			66/66 (100%)	155/145 (107%)	
2			33/32 (103%)	241/237 (102%)	
3+					
Total	784/713 (110%)		183/174 (105%)	578/513 (113%)	
Household Size=3					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		↓	54/45 (120%)		
1			44/38 (116%)	54/42 (129%)	
2			27/30 (90%)	121/79 (153%)	50/47 (106%)
3+					
Total	388/327 (119%)				
Household Size=4+					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		27/50 (54%)	71/50 (142%)		
1			35/31 (113%)	86/77 (112%)	
2			44/48 (92%)	157/138 (114%)	85/76 (112%)
3+					
Total	556/503 (111%)	27/50 (54%)			

Findings

1. Southern Lower Peninsula retrieval is at 111% (2,261 of 2,040) with not all data cells complete.
2. Zero-vehicle household retrievals when household size=2+ are only 54% complete. 3+-person households with autos>0 but fewer than workers also have slightly low completion rates.

Table 3.6. Sample Area 6 – TMA’s: Retrieval by Data Cells (w/ Aggregation) as of 3/1/05

Household Size=1					
Workers		Number of Autos			
Number	Total	0	1+		
0		94/77 (122%)	184/172 (107%)		
1			270/258 (105%)		
2					
3+					
Total	548/507 (108%)	94/77 (122%)	454/430 (106%)		
Household Size=2					
Workers		Number of Autos			
Number	Total	0	1	2+	
0		↓	79/67 (118%)	112/100 (112%)	
1			95/72 (132%)	140/128 (109%)	
2			29/31 (94%)	273/245 (111%)	
3+					
Total	763/669 (114%)		203/170 (119%)	525/473 (111%)	
Household Size=3					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		↓	53/43 (123%)		
1			47/39 (121%)	61/43 (142%)	
2			27/30 (90%)	116/85 (136%)	
3+					48/45 (107%)
Total	405/334 (121%)				
Household Size=4+					
Workers		Number of Autos			
Number	Total	0	1	2	3+
0		61/56 (109%)	71/52 (137%)		
1			44/36 (122%)	97/85 (114%)	
2			31/51 (61%)	159/144 (110%)	
3+					85/71 (120%)
Total	596/531 (112%)	61/56 (109%)			

Findings

1. TMA retrieval is at 113% (2,312 of 2,040).
2. Low complete rates are for 3+-person households with autos>0 but fewer than workers.

Table 3.7. Sample Area 7 – Small Urban Modeled Areas: Retrieval by Data Cells (w/ Aggregation) as of 3/1/05

Household Size=1						
Workers		Number of Autos				
Number	Total	0	1+			
0		98/76 (129%)	206/199 (104%)			
1			243/234 (104%)			
2						
3+						
Total	547/509 (107%)	98/76 (129%)	449/433 (104%)			
Household Size=2						
Workers		Number of Autos				
Number	Total	0	1	2+		
0		↓	89/79 (113%)	163/132 (123%)		
1			91/68 (134%)	144/141 (102%)		
2			29/30 (97%)	242/235 (103%)		
3+						
Total	790/711 (111%)		209/177 (118%)	549/508 (108%)		
Household Size=3						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		↓	44/42 (105%)			
1			48/38 (126%)	48/42 (114%)		
2			19/30 (63%)	106/78 (136%)	48/45 (107%)	
3+					40/35 (114%)	
Total	364/323 (113%)					
Household Size=4+						
Workers		Number of Autos				
Number	Total	0	1	2	3+	
0		51/53 (96%)	60/48 (125%)			
1			40/30 (133%)	85/76 (112%)		
2			23/48 (48%)	150/140 (107%)	86/71 (121%)	
3+					73/72 (101%)	
Total	525/499 (105%)	51/53 (96%)				

Findings

1. Small Urban Modeled Areas retrieval is at 109% (2,226 of 2,040).
2. Zero-vehicle household retrieval when household size=2+ is somewhat low; 3+ household retrieval where autos>0 but fewer than workers is very low.

Note that a lot of the cells have more than 100% of their targets completed. This is due to the fact that quotas were enforced on the recruitment, and some data cells had much higher than expected retrieval rates. Since September 2004, retrieval quotas have been closely monitored to ensure that resources are not wasted collecting information for households in already completed cells. However, once a household is recruited it must be retrieved, so some exceeding of quotas is unavoidable.

3.2 CHARACTERISTICS OF RETRIEVED (COMPLETED) HOUSEHOLDS THAT TRAVELED

The participation rate (the ratio of completed households to recruited households) is approximately 57.7%.

Table 3.8 displays the distribution of completed households that traveled by sampling area, household size, number of vehicles, number of workers, and household income, along with the targeted distribution. The percentages of completed households in the SEMCOG and Small Cities regions are higher. In the SEMCOG area this is largely due to retrievals over target. Household size is on target, while zero vehicle households are underrepresented and the current sample (with over targets) is slightly skewed toward 3+ vehicle households. 2+-worker households are slightly underrepresented. However, the distribution by income is roughly on track, with households with income under \$10,000 and over \$100,000 slightly under target.

Table 3.8. Characteristics of Completed Households with Travel Through 3/1/05

Characteristic	Percent	Goal as Set by Sample Design/2000 PUMA Data
Sampling Area		
SEMCOG	15.1%	14.3%
Small Cities	16.5%	14.3%
Upper Peninsula Rural	13.6%	14.3%
Northern Lower Peninsula	13.8%	14.3%
Southern Lower Peninsula	13.6%	14.3%
TMA's	14.1%	14.3%
Small Urban Modeled Areas	13.3%	14.3%
Household Size		
1 Person	23.3%	26%
2 Persons	33.9%	34%
3 Persons	17.6%	16%
4+ Persons	25.2%	24%
Number of Vehicles		
0 Vehicles	5%	7%
1 Vehicle	30%	38%
2 Vehicles	41.5%	41%
3+ Vehicles	23.5%	14%
Refused	0%	0%

**Table 3.8. Characteristics of Completed Households with Travel Through 3/1/05
 (Continued)**

Characteristic	Percent	Goal as Set by Sample Design/2000 PUMA Data
Number of Workers		
0 Workers	24.6%	25%
1 Worker	37.7%	33%
2 Workers	31%	35%
3+ Workers	6.7%	7%
Household Income		
Less than \$10,000	4.6%	8%
\$10,000 to \$49,999	47.6%	47%
\$50,000 to \$74,999	22%	20%
\$75,000 to \$99,999	10.2%	12%
\$100,000 +	7.7%	13%
Below \$50,000	1.9%	0%
\$50,000 or above	2%	0%
Unknown Income	3.8%	0%
Total	100.0%	

Appendix A provides a summary of the completed households by area within each region.

4.0 Data Quality Checks

The MI Travel Counts Data Coding and Quality Control Manual specifies an extensive list of data checks that will be provided by MORPACE. These data checks have been run and corrections have been made to the data. A summary of these data checks follows. Appendix B contains frequency distributions of select variables from each of the household, person, trip, long-distance trip, visitor person, and visitor trip file.

4.0 Data Quality Checks

The MI Travel Counts Data Coding and Quality Control Manual specifies an extensive list of data checks that will be provided by MORPACE. These data checks have been run and corrections have been made to the data. A summary of these data checks follows. Appendix B contains frequency distributions of select variables from each of the household, person, trip, long-distance trip, visitor person, and visitor trip file.

4.1 HOUSEHOLD FILE

1. Every case has a record type of 1.
2. There are no duplicate QNO or PHONENO values.

3. All area codes are valid Michigan area codes.
4. All month/day combinations are valid and they match the day of the week.
5. All home addresses are located in Michigan.
6. All home zip codes are valid.
7. All Home Counties are listed in the master list of the 83 Michigan counties.
8. Home longitude is always a negative value and always between -80 and -90.
9. Home latitude is always a positive value and always between 40 and 50.
10. All latitude and longitude values have six decimal places and are not rounded.
11. The number of workers never exceeds the number of household members.
12. The number of subsidized vehicles never exceeds the number of household vehicles.
13. Zero records have missing values for the number of overnight visitors.

4.2 PERSON FILE

1. Every case has a record type of 2.
2. The frequency of QNO and PHONENO is always equal to the number of household members.
3. The maximum person number in the person file for a given QNO never exceeds the number of household members listed for that QNO in the household file.
4. The number of PERNUM = 1 is equal to the number of households (16,751).
5. The value of PERNUM is always 1 for RELAT = 0 (Contact Person).
6. There are 23 records that indicate "Other" for the value of RELAT.
7. 312 people "Don't Know" or refused to answer the age question. There are also 115 records from the pretest and the age question was not included in the questionnaire, and they were assigned the answer "Don't Know". Of those 427 people, 412 provided an age range. Nine of the remaining people provided "18 or older," the other refused. Therefore, there are six people with missing age information.
8. There are no respondents 16 years of age or older that are coded "Not Applicable" for LDRV. All respondents that are under 16 years old are coded as "Not Applicable" for LDRV.
9. Only respondents with a transit pass have one or more answers for the type of transit pass possessed. Only respondents that indicated "Other" type of transit pass have a value in the "Other, Specify" field.
10. There are no respondents 18 years of age or older that are coded "Not Applicable" for EDU. All respondents that are under 18 years old are coded as "Not Applicable" for EDU. Respondents with a missing value for the age questions are also "Not Applicable".
11. There are no missing values for school state.
12. School address longitude values are always negative and typically between -80 and -90.
13. School address latitude values are always positive and typically between 40 and 50.
14. All school address latitude and longitude values have six decimal places and are not rounded.
15. All of the 1,473 full- or part-time college students who go to school in Michigan provided the name of the college.
16. There are no respondents 16 years of age or older that are coded "Not Applicable" for WRKR. All respondents that are under 16 years old are coded as "Not Applicable" for WRKR. Respondents with a missing value for the age questions are also "Not Applicable".
17. Respondents who reported not working were asked the not working status question.

18. The worker questions were only asked if working status was full-time worker, part-time worker.
19. Only respondents who indicated “Other” type of industry were asked the “Other, Specify” question for the industry.
20. Work address, city, state, zip code, cross streets, geocoding information, and TAZ are only present for respondents with a fixed workplace. This applies to both the primary and secondary workplace information.
21. Work address longitude values are always negative and typically between –80 and –90. This applies to both the primary and secondary workplace information.
22. Work address latitude values are always positive and typically between 40 and 50. This applies to both the primary and secondary workplace information.
23. All work address latitude and longitude values have six decimal places and are not rounded. This applies to both the primary and secondary workplace information.
24. The secondary job questions are only asked if the respondent indicates having a second job.
25. There are no cases with missing values for proxy status. No infants or children are listed as “Respondent” interviews. All proxy cases indicate who provided the proxy information and proxy information is never listed as being provided by the current respondent.
26. Respondents who completed the diary are never “Not Applicable” for using the diary. However, all other respondents are “Not Applicable” for using the diary.

4.3 TRIP FILE

1. All cases have a record type of 3.
2. There are 3,904 people who reported no trips in the 48-hour period.
3. There are 2,723 households with at least one person reporting no trips. Of these, there are 920 households with all persons reporting no trips (542 1-person, 278 2-person, 52 3-person, 31 4-person, 15 5-person, 1 6-person households, and 1 10 person household) and 867 with all but one person reporting no trips (657 2-person, 126 3-person, 60 4-person, 14 5-person, 8 6-person, and 2 7-person households).
4. 65.6% of the 2,723 households are one and two people households. The age distribution of the non-travelers is: 21% under 18, 45% are 55 and over.
5. All cases with no-trips (TRIPNUM = 0) have missing or blank values for the destination fields.
6. All origin longitude values are negative, often between –80 and –90.
7. All origin latitude values are positive, often between 40 and 50.
8. All origin latitude and longitude values have 6 decimal places and are not rounded.
9. All destination longitude values are negative, often between –80 and –90.
10. All destination latitude values are positive, often between 40 and 50.
11. All destination latitude and longitude values have 6 decimal places and are not rounded.
12. Only respondents who indicated an “Other” type of origin or destination have an “Other, Specify” response for the type of location.
13. All cases of TRAV = 2 and TRIPNUM = 0 provided a reason for not traveling.
14. Only respondents who indicated an “Other” type of transportation have an “Other, Specify” response for the type of transportation.
15. Bus provider information is never missing when “Public Bus” or “Dial-a-Ride” is one of the modes of transportation.

16. Only respondents who indicated an “Other” type of bus or dial-a-ride provider have an “Other, Specify” response for the respective provider.
17. All cases having a taxi/shuttle, dial-a-ride, a train, or a public bus as a means of transportation have a valid response for whether or not the respondent paid for the trip, however, in 476 cases the response was “Don’t know”.
18. For cases where the respondent indicated he/she paid for the trip, the amounts are provided, except for one case that failed to provide the amount paid for a “Dial-a-Ride” trip.
19. If the trip involved a car/truck/van or motorcycle, the number of household members in the vehicle is never larger than the number of total people in the vehicle.
20. The ID of household members traveling in the vehicle is provided if the mode of transportation was a car, truck, van, or motorcycle.
21. The respondent is not listed as a household member in the vehicle.
22. For all cases where the respondent indicated he/she paid for parking, a valid parking amount and a parking rate are provided. If a respondent indicated “Other” for the parking rate, a response is always provided in the “Other, Specify” parking rate field.
23. All departure and arrival times are in military time.

4.4 LONG-DISTANCE TRIP FILE

1. All cases have a record type of 4.
2. The frequency of LDTRIP = 1 is equal to the number of LDTRIPS = 1 in the person file (22,966).
3. Only respondents who indicated an “Other” type of transportation used to reach the location have an “Other, Specify” response for the type of transportation.
4. There are 39 records where the bus provider is not specified if “Public Bus” is indicated as the mode of transportation used to reach the location, and in general, the responses are not specific.
5. There are 132 records with a form of “Don’t Know” answer for the bus provider when “Public Bus” is indicated as a mode of transportation used at the location. In addition, most of the available responses are not specific.
6. The number of times each long distance trip was taken in the last 3 months never exceeds the number of times the trip was taken in the last 12 months for those cases with valid responses for both questions.
7. 752 records answered “Don’t Know” or “Refused” to the number of long trips taken in the last 3 months.

4.5 VISITOR PERSON FILE

1. Every case has a record type of 5.
2. The frequency of QNO and PHONENO is always equal to the number of visitors reported by the household, and also the maximum visitor number in the visitor person file for a given QNO does not exceed the number of visitors listed for that QNO in the household file.
3. The number of VISNUM = 1 is not equal to the number of households with NUMVIS > 0 (275). Not all visitors completed the survey.
4. Two visitors refused to provide gender information.
5. Three visitors did not provide age information.

6. There are no respondents 16 years of age or older that are coded “Not Applicable” for WRKR. All respondents that are under 16 years old are coded as “Not Applicable” for WRKR. Respondents with a missing value for the age questions are also “Not Applicable”.
7. There are four records with missing values for work status (3=Refused, 1=Don’t Know).
8. Respondents who reported not working were asked the not working status question.
9. The work industry question was only asked if working status was full-time worker, part-time worker.
10. None of the respondents indicated “Other” for their employment type of industry, so nobody was asked the “Other, Specify” question for the industry (VINDOS variable).
11. There are no cases with missing values for proxy status. No infants or children are listed as “Respondent” interviews. All proxy cases indicate who provided the proxy information.
12. There are no records with missing values for whether or not they completed the diary. Visitors who completed the diary are never “Not Applicable” for using the diary. However, all other visitors are “Not Applicable” or missing for using the diary.

4.6 VISITOR TRIP FILE

1. All cases have a record type of 6.
2. There are 39 visitors who reported no trips in the 48-hour period.
3. All cases with no-trips (TRIPNUM = 0) have missing or blank values for the destination fields.
4. All origin longitude values are negative, often between -80 and -90.
5. All origin latitude values are positive, often between 40 and 50.
6. There are 71 records with non-geocodable origin.
7. All origin latitude and longitude values have 6 decimal places and are not rounded.
8. All destination longitude values are negative often between -80 and -90.
9. All destination latitude values are positive often between 40 and 50.
10. There are 82 records with non-geocodable destination.
11. All destination latitude and longitude values have 6 decimal places and are not rounded.
12. Only respondents who indicated an “Other” type of origin or destination have an “Other, Specify” response for the type of location.
13. There are 205 records with TRAV = 2. This is equal to the number of visitors in the study.
14. All cases where TRAV = 2 and TRIPNUM = 0 provided a reason for not traveling.
15. There are five records with missing departure time and main type of transportation for the first trip. These records represent a respondent who was traveling at the start of the first travel day.
16. Only respondents who indicated an “Other” type of transportation have an “Other, Specify” response for the type of transportation.
17. Bus provider information is never missing when “Public Bus” or “Dial-a-Ride” is one of the modes of transportation.
18. Only respondents who indicated an “Other” type of bus or dial-a-ride provider have an “Other, Specify” response for the respective provider.
19. All cases having a taxi/shuttle, dial-a-ride, a train, or a public bus as a means of transportation have responses for whether or not the respondent paid for the trip.
20. For all cases where the respondent indicated he/she paid for the trip, valid amounts are provided.

21. If the trip involved a car/truck/van or motorcycle/moped:
 - a. Zero records have “Don’t Know” or “Refused” for the driver/passenger status.
 - b. Zero records have a missing value for the number of additional people in the vehicle.
 - c. All values for the number of household members in the vehicle are missing. This is because visitors are not asked that question.
 - d. One record has “Don’t Know” for whether a household vehicle was used.
 - e. All respondents have a valid response for whether the respondent paid for parking.
22. For all cases where the respondent indicated he/she paid for parking, a valid parking amount and a parking rate are provided. If a respondent indicated “Other” for the parking rate, a response would always be provided in the “Other, Specify” parking rate field.
23. There are no records missing arrival time, other than for those not traveling.
24. All departure and arrival times are in military time.

5.0 Missing Data

5.1 HOUSEHOLD-LEVEL INFORMATION

1. 133 households (0.8%) said “Don’t Know” to the household income question.
2. 513 households (3.1%) refused to answer the household income question.
3. Four records have missing information for the number of household vehicles (1=Don’t Know, 3=Refused).
4. Five records have missing information for the number of subsidized vehicles.

5.2 PERSON-LEVEL INFORMATION

1. Nine people refused to provide gender information.
2. 312 people “Don’t Know” or refused to answer the age question. There are also 115 records from the pretest and the age question was not included in the questionnaire, and they were assigned the answer “Don’t Know”. Of those 427 people, 412 provided an age range. Nine of the remaining people provided “18 or older,” the other refused. Therefore, there are six people with missing age information.
3. There are seven missing values for RELAT (5=Don’t Know, 2=Refused), the relationship of the respondent to the household contact person.
4. There are 11 records with missing driver’s license status (9=Don’t Know, 2=Refused).
5. There are 26 records with a missing value for transit pass (23=Don’t Know, 3=Refused).
6. There are 102 records with missing values for educational level.
7. There are 12 records with a missing value for school type (10=Don’t Know, 2=Refused).
8. All but 6 of the 10,718 respondents who reported being a student provided some sort of answer for the name of the school.
9. 12 respondents indicated “Don’t Know” or refused to answer when asked if they completed the diary.
10. 321 respondents indicated “Don’t Know” or “Refused” when asked if long distance trips were taken.
11. There are 18 missing values for work status (15=Don’t Know, 3=Refused).
12. 362 respondents “Don’t Know” or “Refused” when asked if they have multiple jobs.

5.3 TRIP-LEVEL INFORMATION

1. There are 118 records with missing departure time and main type of transportation for the first trip. These represent people who were traveling at the start of the first travel day (ORIGIN = traveling).
2. All cases having a taxi/shuttle, dial-a-ride, a train, or a public bus as a means of transportation have responses for whether or not the respondent paid for the trip, however in 476 cases the response is a “Don’t Know”.
3. One case failed to provide (“Don’t Know”) the amount paid for a “Dial-a-Ride” trip.
4. 80 records have “Don’t Know” or “Refused” for the driver/passenger status.
5. There are 284 values with “Don’t Know” or “Refused” for how many people were in the vehicle with the respondent.
6. 261 records have “Don’t Know” for the number of household members in the vehicle.
7. There are 211 records with “Don’t Know” for whether a household vehicle was used.
8. There are 233 records have “Don’t Know” or “Refused” for whether the respondent paid for parking.
9. There are four records missing the interval times of day at home during which the respondent was engaged in paid work activities.
10. There are 750 trips that began or ended on Day 3.

5.4 ADDRESS INFORMATION

1. There are 6 non-geocodable households (0.04% of the total 16,751 households).
2. All household records have values of 88888888 for ZONE. PB will be providing a value for TAZ.
3. 13 households have UNKNOWN listed for the geocoded street address.
4. 46 households do not know or refused to provide the cross streets for their home address.
5. 65 respondents have UNKNOWN for the geocoded school address.
6. Four respondents have UNKNOWN for the school city.
7. 323 respondents have UNKNOWN or some form of “Don’t know” for the school cross streets.
8. 91 out of 10,718 (0.8%) school addresses are non-geocodable.
9. 41 records have values of 99998 or 99999 for SZIPCD (“Don’t Know” or “Refused”)
10. All 10,718 records have values of 88888888 for SZONE. These will be filled in by PB.
11. There are 95 records that refused to provide primary workplace location.
12. There are 261 values of UNKNOWN for primary workplace address (1.4%).
13. 470 out of 18,911 (2.5%) primary work addresses are non-geocodable.
14. 89 records have values of 99999 for W1ZIPCD (“Refused”).
15. All 18,911 records have values of 88888888 for W1ZONE. PB will fill these in.
16. There are 19 values of UNKNOWN or some form of “Don’t Know” for secondary workplace address.
17. 34 out of 897 (3.8%) secondary work addresses are non-geocodable.
18. 13 records have values of 99998 for W2ZIPCD (“Don’t Know”).
19. All 897 records have values of 88888888 for W2ZONE. PB will fill these in.
20. 8,220 destinations are non-geocodable.
21. 8,455 origins are non-geocodable.
22. There are 183 records with ORIGIN unknown.
23. There are 6,025 records with the geocoded origin address missing.
24. There are 49,870 records with the original origin address missing.

25. There are 2,198 records with the origin cross streets missing.
26. There are 332 records with the origin city missing.
27. There are 2,021 cases with values 99998 or 99999 for origin zip code (“Don’t Know”, “Refused”).
28. All OZONE values are missing or 88888888 and will be filled in by PB.
29. There are 135 records with destination unknown.
30. There are 5,674 records with the geocoded destination address missing.
31. There are 49,638 records with the original destination address missing.
32. There are 2,001 records with the destination cross streets missing.
33. There are 168 records with the destination city missing.
34. There are 1,709 cases with values 99998 or 99999 for destination zip code (“Don’t Know”, “Refused”).
35. All DZONE values are missing or 88888888 and will be filled in by PB.

6.0 General Data Summary

The following sections provide a brief summary of the no-trip households, person-level data, such as age, gender, and proxy status, and trip-level data, such as trips per person, mode of transportation, and primary activity.

6.1 ZERO-TRIP HOUSEHOLDS

There were 3,904 people that reported no trips during their 48-hour travel period. A list of all these cases is presented in Appendix D-1, and Appendix D-2.

6.2 PERSON AND TRIP CHARACTERISTICS

Table 6.2 summarizes gender, age, transit pass, work status, school status, and proxy status (by sample area) for persons with travel days through March 1, 2005.

Table 6.2 Characteristics for Completed Persons with Travel Dates through 3/1/05

Characteristic	Frequency	Percent
Gender		
Male	20,061	48%
Female	22,154	52%
Refused	9	0%
Age		
Under 5	2696	6%
5 to 15	7,075	17%
16 to 17	1272	3%
18 to 24	2111	5%
25 to 34	3,827	9%
35 to 44	6,102	14%
45 to 54	7,253	17%
55 to 64	5,680	13%
65 to 74	3,570	8%
75 to 84	2166	5%
85 and over	457	1%
Don't Know	6	0%
Refused	9	0%
Transit Pass		
Yes	695	2%
No	38,183	90%
Not Applicable (Too Young)	3320	8%
Don't Know	23	0%
Refused	3	0%
Work Status		
Full-Time Worker	14,759	35%
Part-Time Worker	4,707	11%
Unpaid Volunteer or Worker	1036	2%
Not Working	11,933	28%
Not Applicable (Too Young)	9,771	23%
Don't Know	15	0%
Refused	3	0%

**Table 6.2 Characteristics for Completed Persons with Travel Dates through 3/1/05
(Continued)**

Characteristic	Frequency	Percent
School Status		
Not currently a student	31,506	75%
Pre-School/Nursery School	718	2%
K-12	8,357	20%
Vocational/Technical	103	0%
Full-Time College Student	939	2%
Part-Time College Student	589	1%
Don't Know	10	0%
Refused	2	0%
Proxy Status by Sample Area		
<i>SEMCOG</i>		
Respondent	2173	5%
Proxy	2546	6%
Used Diary	2199	86%
Diary Not Used	30	1%
Not Applicable	317	12%
Mailed Diary	1704	4%
<i>Small Cities</i>		
Respondent	2440	6%
Proxy	2884	7%
Used Diary	2566	89%
Diary Not Used	14	0%
Not Applicable	304	11%
Mailed Diary	1682	4%
<i>Upper Peninsula Rural</i>		
Respondent	2068	5%
Proxy	2134	5%
Used Diary	1861	87%
Diary Not Used	16	1%
Not Applicable	257	12%
Mailed Diary	1409	3%
<i>Northern Lower Peninsula</i>		
Respondent	2076	5%
Proxy	2302	5%
Used Diary	2008	87%
Diary Not Used	16	1%
Not Applicable	278	12%
Mailed Diary	1421	3%

**Table 6.2 Characteristics for Completed Persons with Travel Dates through 3/1/05
(Continued)**

Characteristic	Frequency	Percent
<i>Southern Lower Peninsula</i>		
Respondent	2,048	5%
Proxy	2,351	6%
Used Diary	2089	89%
Diary Not Used	27	1%
Not Applicable	235	10%
Mailed Diary	1427	3%
<i>TMA's</i>		
Respondent	2050	5%
Proxy	2333	6%
Used Diary	2057	88%
Diary Not Used	29	1%
Not Applicable	247	11%
Mailed Diary	1589	4%
<i>Small Urban Modeled Areas</i>		
Respondent	1969	5%
Proxy	2125	5%
Used Diary	1826	86%
Diary Not Used	24	1%
Not Applicable	275	13%
Mailed Diary	1493	4%

Table 6.3 below summarizes trip characteristics statewide and by sample area for persons with travel days through March 1, 2005.

The number of zero-trip persons is reasonable, however some of the reasons for not traveling should be reviewed.

Table 6.3. Trip Characteristics for Persons with Travel Dates Through 3/1/05, Statewide and by Sample Area.

Characteristic	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Trip Status of Persons																
No Trip Persons	3,904	9.25%	656	10.21%	650	9.28%	533	9.50%	675	11.64%	493	8.46%	431	7.22%	466	8.34%
Traveler	38,320	90.75%	5,767	89.79%	6356	90.72%	5,078	90.50%	5,124	88.36%	5,333	91.54%	5,541	92.78%	5,121	91.66%
Number of Trips Reported																
Number of Reported Trips	295,894	100.00%	44,444	14.82%	52,518	17.52%	37,883	12.64%	37,282	12.44%	39,572	13.20%	43,703	14.58%	40,492	13.51%
Number of Trips per Person																
Number of Trips per Person	8		8		8		7		7		7		8		8	
Transportation Mode																
No Travel/Traveling at Start	4,022	1.34%	674	0.22%	668	0.22%	548	0.18%	688	0.23%	517	0.17%	448	0.15%	479	0.16%
Car, Van, Truck	267,158	89.11%	39,371	13.13%	47,472	15.83%	33,797	11.27%	33,914	11.31%	36,124	12.05%	39,559	13.20%	36,921	12.32%
Motorcycle	404	0.13%	47	0.02%	35	0.01%	71	0.02%	70	0.02%	93	0.03%	30	0.01%	58	0.02%
Bicycle/Moped	1391	0.46%	259	0.09%	311	0.10%	137	0.05%	123	0.04%	144	0.05%	191	0.06%	226	0.08%
Walk	11,344	3.78%	2323	0.77%	2944	0.98%	1502	0.50%	899	0.30%	933	0.31%	1476	0.49%	1267	0.42%
School Bus	12,651	4.22%	1464	0.49%	1380	0.46%	2096	0.70%	2021	0.67%	2063	0.69%	1992	0.66%	1635	0.55%
Taxi/Shuttle	319	0.11%	111	0.04%	51	0.02%	35	0.01%	30	0.01%	13	0.00%	54	0.02%	25	0.01%
Dial-A-Ride	270	0.09%	14	0.00%	102	0.03%	7	0.00%	36	0.01%	33	0.01%	24	0.01%	54	0.02%
Train	9	0.00%	1	0.00%	0	0.00%	0	0.00%	1	0.00%	2	0.00%	4	0.00%	1	0.00%
Public Bus	1645	0.55%	756	0.25%	132	0.04%	119	0.04%	84	0.03%	55	0.02%	306	0.10%	193	0.06%
Private Bus	120	0.04%	13	0.00%	27	0.01%	17	0.01%	6	0.00%	26	0.01%	15	0.01%	16	0.01%
Boat/Ferry boat/Kayak	33	0.01%	0	0.00%	2	0.00%	17	0.01%	2	0.00%	0	0.00%	1	0.00%	11	0.00%
Skateboard/Scooter	29	0.01%	6	0.00%	10	0.00%	0	0.00%	2	0.00%	2	0.00%	1	0.00%	8	0.00%
Airplane	145	0.05%	37	0.01%	17	0.01%	11	0.00%	16	0.01%	16	0.01%	20	0.01%	28	0.01%
Tractor	53	0.02%	0	0.00%	0	0.00%	4	0.00%	2	0.00%	38	0.01%	5	0.00%	4	0.00%
Golf cart	5	0.00%	0	0.00%	0	0.00%	3	0.00%	2	0.00%	0	0.00%	0	0.00%	0	0.00%
Ambulance	11	0.00%	1	0.00%	1	0.00%	0	0.00%	7	0.00%	1	0.00%	0	0.00%	1	0.00%
ATV	15	0.01%	0	0.00%	2	0.00%	12	0.00%	0	0.00%	1	0.00%	0	0.00%	0	0.00%
Funeral home limousine	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Rollerblades/Rollerskates	7	0.00%	2	0.00%	1	0.00%	0	0.00%	2	0.00%	0	0.00%	0	0.00%	2	0.00%
Horseback	31	0.01%	16	0.01%	5	0.00%	0	0.00%	8	0.00%	2	0.00%	0	0.00%	0	0.00%
Motorhome	20	0.01%	2	0.00%	4	0.00%	0	0.00%	0	0.00%	0	0.00%	6	0.00%	8	0.00%
Other	116	0.04%	3	0.00%	4	0.00%	40	0.01%	44	0.01%	2	0.00%	2	0.00%	21	0.01%
Driver Status																
Not Applicable	32,137	10.72%	5654	1.89%	5642	1.88%	4,542	1.52%	3,965	1.32%	3,841	1.28%	4,520	1.51%	3,973	1.33%
Driver	195,939	65.36%	28,807	9.61%	34,938	11.65%	25,009	8.34%	24,866	8.29%	26,277	8.76%	29,014	9.68%	27,028	9.02%
Passenger	71,642	23.90%	10,634	3.55%	12,577	4.20%	8,849	2.95%	9,124	3.04%	9,919	3.31%	10,592	3.53%	9,947	3.32%
Don't Know	79	0.03%	5	0.00%	11	0.00%	15	0.01%	2	0.00%	28	0.01%	8	0.00%	10	0.00%
Refused	1	0.00%	0	0.00%	0	0.00%	1	0.00%	0	0.00%	0	0.00%	0	0.00%	0	0.00%
Drive Alone																
0 - Alone	141,146	100.00%	21,037	14.90%	25,324	17.94%	18,060	12.80%	17,657	12.51%	18,683	13.24%	20,962	14.85%	19,423	13.76%

Table 6.3. Trip Characteristics for Persons with Travel Dates Through 3/1/05, Statewide and by Sample Area.(Continued)

Characteristic	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Activity at Destination																
Traveling at Start	118	0.04%	18	0.01%	18	0.01%	15	0.01%	13	0.00%	24	0.01%	17	0.01%	13	0.00%
Home - Paid Work	1208	0.40%	182	0.06%	203	0.07%	148	0.05%	189	0.06%	181	0.06%	150	0.05%	155	0.05%
Home - Other	97,502	32.52%	14,951	4.99%	17,983	6.00%	12,481	4.16%	11,967	3.99%	12,688	4.23%	14,126	4.71%	13,306	4.44%
Work	40,962	13.66%	6,006	2.00%	7,162	2.39%	5,151	1.72%	5,196	1.73%	5,731	1.91%	6,247	2.08%	5,469	1.82%
Attend Childcare	1953	0.65%	235	0.08%	313	0.10%	239	0.08%	241	0.08%	280	0.09%	345	0.12%	300	0.10%
Attend School	15,836	5.28%	2598	0.87%	2619	0.87%	2063	0.69%	2139	0.71%	2174	0.73%	2270	0.76%	1973	0.66%
Attend College	1311	0.44%	313	0.10%	220	0.07%	157	0.05%	126	0.04%	134	0.04%	218	0.07%	143	0.05%
Eat Out	13,167	4.39%	2035	0.68%	2168	0.72%	1479	0.49%	1530	0.51%	1,843	0.61%	2093	0.70%	2,019	0.67%
Personal Business	33,890	11.30%	4611	1.54%	5810	1.94%	4,674	1.56%	4,718	1.57%	4,586	1.53%	4,814	1.61%	4,677	1.56%
Everyday Shopping	26,429	8.82%	3896	1.30%	4331	1.44%	3,624	1.21%	3,466	1.16%	3,455	1.15%	3,973	1.33%	3,684	1.23%
Major Shopping	2209	0.74%	381	0.13%	299	0.10%	260	0.09%	267	0.09%	309	0.10%	350	0.12%	343	0.11%
Religious/Community	4,516	1.51%	705	0.24%	806	0.27%	633	0.21%	509	0.17%	558	0.19%	636	0.21%	669	0.22%
Social	11,074	3.69%	1469	0.49%	1872	0.62%	1749	0.58%	1531	0.51%	1524	0.51%	1491	0.50%	1438	0.48%
Recreation - Participate	8,260	2.76%	1138	0.38%	1613	0.54%	1134	0.38%	971	0.32%	995	0.33%	1183	0.39%	1226	0.41%
Recreation - Watch	2,664	0.89%	347	0.12%	460	0.15%	365	0.12%	311	0.10%	397	0.13%	392	0.13%	392	0.13%
Accompany Another Person	13,074	4.36%	2008	0.67%	2577	0.86%	1544	0.52%	1671	0.56%	1795	0.60%	1850	0.62%	1629	0.54%
Pick-Up/Drop-Off Passenger	23,232	7.75%	3862	1.29%	4323	1.44%	2449	0.82%	2823	0.94%	3,057	1.02%	3,572	1.19%	3,146	1.05%
Turn Around	2,393	0.80%	345	0.12%	391	0.13%	251	0.08%	289	0.10%	334	0.11%	407	0.14%	376	0.13%

7.0 Geocoding Results

This section summarizes the geocoding results to date. Table 7.1 provides a summary of the percentage of non-geocodable locations for each location type. Tables 7.2a through 7.7b present the geocoding results and levels for home, school, primary work location, secondary work location, origin, and destination addresses, respectively. The results are presented statewide and by sample area. Appendix C provides similar summaries for the origin and destination address by origin/destination location type.

Table 7.1 Non-Geocodable Location Disposition Table

Location Type	Locations				
	Non-Geocodable	Total	Achieved	Targeted	Difference
Household	6	16,751	100%	99%	1%
School	91	10,718	99%	95%	4%
Primary Work	470	18,911	98%	95%	3%
Secondary Work	34	897	96%	95%	1%
School/Work Combined	595	30,526	98%	95%	3%
Trip Origin	8,455	299,798	97%	90%	7%
Trip Destination	8,220	295,894	96%	90%	6%

Table 7.1 lists the number of all non-geocodable locations, the total number of locations, the percentage of the locations that were geocodable, the targeted geocoding percentage, and the difference between the percentages (achieved – target). The table illustrates that the achieved percentage exceeds the target percentage for each type of location. (This table is based on non-unique locations.) MORPACE continues to work on non-geocodables and particularly on further geocoding of those households not meeting the agreed upon criteria of less than 25% of trip origins or destinations not geocoded.

Table 7.2a. Distribution of the Home Address Geocoding Result Code, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
ARCVIEW	10,787	64.4%	1,744	68.82%	2,236	81.01%	795	34.48%	1,229	52.25%	1,509	66.74%	1,648	71.28%	1,626	73.05%
MAPT	355	2.12%	18	0.71%	16	0.58%	197	8.54%	49	2.08%	29	1.28%	27	1.17%	19	0.85%
N	6	0.04%	0	0%	0	0%	4	0.17%	0	0%	1	0.04%	1	0.04%	0	0%
S5--NT-CZA	2	0.01%	0	0%	1	0.04%	0	0%	0	0%	0	0%	0	0%	1	0.04%
S5-PNTSCZA	5	0.03%	0	0%	1	0.04%	2	0.09%	1	0.04%	1	0.04%	0	0%	0	0%
S5H--SCZA	5	0.03%	2	0.08%	0	0%	1	0.04%	1	0.04%	0	0%	0	0%	1	0.04%
S5H-TSCZA	1	0.01%	0	0%	0	0%	1	0.04%	0	0%	0	0%	0	0%	0	0%
S5H-NTSCZA	1	0.01%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0.04%
S5HP--SCZA	25	0.15%	2	0.08%	3	0.11%	6	0.26%	3	0.13%	1	0.04%	4	0.17%	6	0.27%
S5HP-T-CZA	1	0.01%	0	0%	0	0%	0	0%	1	0.04%	0	0%	0	0%	0	0%
S5HP-TSCZA	77	0.46%	3	0.12%	2	0.07%	33	1.43%	16	0.68%	4	0.18%	14	0.61%	5	0.22%
S5HPN-SC-A	2	0.01%	0	0%	0	0%	0	0%	0	0%	1	0.04%	1	0.04%	0	0%
S5HPN-SCZA	173	1.03%	41	1.62%	29	1.05%	20	0.87%	20	0.85%	22	0.97%	22	0.95%	19	0.85%
S5HPNT-CZA	9	0.05%	0	0%	3	0.11%	1	0.04%	0	0%	2	0.09%	0	0%	3	0.13%
S5HPNTS-ZA	2	0.01%	1	0.04%	0	0%	0	0%	0	0%	1	0.04%	0	0%	0	0%
S5HPNTSC-A	13	0.08%	1	0.04%	0	0%	4	0.17%	1	0.04%	2	0.09%	1	0.04%	4	0.18%
S5HPNTSCZA	4,300	25.67%	676	26.68%	436	15.8%	737	31.96%	857	36.44%	561	24.81%	552	23.88%	481	21.61%
SX	817	4.88%	40	1.58%	29	1.05%	425	18.43%	147	6.25%	95	4.2%	35	1.51%	46	2.07%
SXU	170	1.01%	6	0.24%	4	0.14%	80	3.47%	27	1.15%	32	1.42%	7	0.3%	14	0.63%
Total	16,751	100%	2,534	100%	2,760	100%	2,306	100%	2,352	100%	2,261	100%	2,312	100%	2,226	100%

Table 7.2b. Distribution of the Home Address Geocoding Level, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Framework Street-Level	10,787	64.4%	1,744	68.82%	2,236	81.01%	795	34.48%	1,229	52.25%	1,509	66.74%	1,648	71.28%	1,626	73.05%
Mapitude	355	2.12%	18	0.71%	16	0.58%	197	8.54%	49	2.08%	29	1.28%	27	1.17%	19	0.85%
MapMarker Street-Level	4,616	27.56%	726	28.65%	475	17.21%	805	34.91%	900	38.27%	595	26.32%	594	25.69%	521	23.41%
Framework Intersection-Level	170	1.01%	6	0.24%	4	0.14%	80	3.47%	27	1.15%	32	1.42%	7	0.3%	14	0.63%
MapMarker Intersection-Level	817	4.88%	40	1.58%	29	1.05%	425	18.43%	147	6.25%	95	4.2%	35	1.51%	46	2.07%
Non-Geocodable	6	0.04%	0	0%	0	0%	4	0.17%	0	0%	1	0.04%	1	0.04%	0	0%
Total	16,751	100%	2,534	100%	2,760	100%	2,306	100%	2,352	100%	2,261	100%	2,312	100%	2,226	100%

Table 7.3a. Distribution of the School Address Geocoding Result Code, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMCOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Not a Student	31,506	74.62%	4,655	72.47%	5,150	73.51%	4,304	76.71%	4,425	76.31%	4,355	74.75%	4,419	74%	4,198	75.14%
ARCVIEW	4,457	10.56%	673	10.48%	926	13.22%	451	8.04%	411	7.09%	711	12.2%	686	11.49%	599	10.72%
CITYFILE	12	0.03%	2	0.03%	4	0.06%	3	0.05%	0	0%	1	0.02%	0	0%	2	0.04%
N	91	0.22%	24	0.37%	10	0.14%	24	0.43%	9	0.16%	6	0.1%	7	0.12%	11	0.2%
S5--N-SCZA	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	0.04%
S5-P-TSCZA	1	0%	0	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%
S5-PNT-CZA	1	0%	0	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%
S5-PNTSCZA	11	0.03%	0	0%	3	0.04%	2	0.04%	2	0.03%	0	0%	2	0.03%	2	0.04%
S5H--SC-A	1	0%	1	0.02%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
S5H--SCZA	9	0.02%	2	0.03%	1	0.01%	0	0%	0	0%	3	0.05%	0	0%	3	0.05%
S5H--T-CZA	3	0.01%	0	0%	1	0.01%	0	0%	0	0%	2	0.03%	0	0%	0	0%
S5H--TSCZA	1	0%	1	0.02%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
S5H-NTSCZA	12	0.03%	0	0%	1	0.01%	4	0.07%	5	0.09%	0	0%	0	0%	2	0.04%
S5HP--S-ZA	1	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%	0	0%	0	0%
S5HP--SCZA	66	0.16%	11	0.17%	15	0.21%	2	0.04%	7	0.12%	12	0.21%	7	0.12%	12	0.21%
S5HP-T-CZA	2	0%	1	0.02%	0	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%
S5HP-TSC-A	1	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%	0	0%	0	0%
S5HP-TSCZA	98	0.23%	25	0.39%	7	0.1%	18	0.32%	17	0.29%	9	0.15%	8	0.13%	14	0.25%
S5HPN-CZA	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	0.03%	0	0%
S5HPN-S--A	1	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%	0	0%	0	0%
S5HPN-S-ZA	4	0.01%	0	0%	2	0.03%	0	0%	0	0%	2	0.03%	0	0%	0	0%
S5HPN-SC-A	59	0.14%	29	0.45%	5	0.07%	0	0%	0	0%	1	0.02%	13	0.22%	11	0.2%
S5HPN-SCZA	960	2.27%	204	3.18%	184	2.63%	59	1.05%	85	1.47%	128	2.2%	136	2.28%	164	2.94%
S5HPNT-CZA	10	0.02%	2	0.03%	0	0%	0	0%	1	0.02%	1	0.02%	3	0.05%	3	0.05%
S5HPNTS--A	3	0.01%	0	0%	1	0.01%	2	0.04%	0	0%	0	0%	0	0%	0	0%
S5HPNTS-ZA	3	0.01%	0	0%	1	0.01%	0	0%	0	0%	0	0%	0	0%	2	0.04%
S5HPNTSC-A	127	0.3%	37	0.58%	6	0.09%	7	0.12%	16	0.28%	11	0.19%	26	0.44%	24	0.43%
S5HPNTSCZA	2,596	6.15%	264	4.11%	333	4.75%	429	7.65%	549	9.47%	371	6.37%	340	5.69%	310	5.55%
SX	1,415	3.35%	284	4.42%	224	3.2%	220	3.92%	201	3.47%	142	2.44%	220	3.68%	124	2.22%
SXU	747	1.77%	208	3.24%	132	1.88%	67	1.19%	67	1.16%	67	1.15%	102	1.71%	104	1.86%
MAPITUDE	22	0.05%	0	0%	0	0%	16	0.29%	4	0.07%	2	0.03%	0	0%	0	0%
Total	42,224	100%	6,423	100%	7,006	100%	5,611	100%	5,799	100%	5,826	100%	5,972	100%	5,587	100%

Table 7.3b. Distribution of the School Address Geocoding Level, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Not a Student	31,506	74.62%	4,655	72.47%	5,150	73.51%	4,304	76.71%	4,425	76.31%	4,355	74.75%	4,419	74%	4,198	75.14%
Framework Street-Level	4,457	10.56%	673	10.48%	926	13.22%	451	8.04%	411	7.09%	711	12.2%	686	11.49%	599	10.72%
Maptitude	22	0.05%	0	0%	0	0%	16	0.29%	4	0.07%	2	0.03%	0	0%	0	0%
MapMarker Street-Level	3,974	9.41%	577	8.98%	560	7.99%	526	9.37%	682	11.76%	542	9.3%	538	9.01%	549	9.83%
Framework Intersection-Level	747	1.77%	208	3.24%	132	1.88%	67	1.19%	67	1.16%	67	1.15%	102	1.71%	104	1.86%
MapMarker Intersection-Level	1,415	3.35%	284	4.42%	224	3.2%	220	3.92%	201	3.47%	142	2.44%	220	3.68%	124	2.22%
Non-Geocodable	91	0.22%	24	0.37%	10	0.14%	24	0.43%	9	0.16%	6	0.1%	7	0.12%	11	0.2%
City File	12	0.03%	2	0.03%	4	0.06%	3	0.05%	0	0%	1	0.02%	0	0%	2	0.04%
Total	42,224	100%	6,423	100%	7,006	100%	5,611	100%	5,799	100%	5,826	100%	5,972	100%	5,587	100%

Table 7.4a. Distribution of the Primary Workplace Address Geocoding Result Code, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Not a Worker	22,758	53.9%	3,488	54.3%	3,687	52.63%	3,065	54.62%	3,340	57.6%	3,099	53.19%	3,072	51.44%	3,007	53.82%
No Fixed Workplace/Refused	555	1.31%	83	1.29%	71	1.01%	66	1.18%	91	1.57%	71	1.22%	91	1.52%	82	1.47%
ARCVIEW	7,005	16.59%	1,080	16.81%	1,251	17.86%	671	11.96%	700	12.07%	1,123	19.28%	1,104	18.49%	1,076	19.26%
CITYFILE	46	0.11%	3	0.05%	11	0.16%	11	0.2%	2	0.03%	12	0.21%	3	0.05%	4	0.07%
MAPTITUDE	50	0.12%	3	0.05%	3	0.04%	25	0.45%	8	0.14%	6	0.1%	1	0.02%	4	0.07%
N	470	1.11%	73	1.14%	93	1.33%	121	2.16%	47	0.81%	43	0.74%	60	1%	33	0.59%
S5--TSCZA	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0.02%
S5-P--SCZA	2	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%	1	0.02%
S5-PN-SC-A	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%
S5-PN-SCZA	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%
S5-PNT-CZA	1	0%	0	0%	1	0.01%	0	0%	0	0%	0	0%	0	0%	0	0%
S5-PNTSCZA	17	0.04%	0	0%	1	0.01%	5	0.09%	4	0.07%	1	0.02%	2	0.03%	4	0.07%
S5H--SC-A	2	0%	0	0%	0	0%	0	0%	1	0.02%	1	0.02%	0	0%	0	0%
S5H--SCZA	32	0.08%	1	0.02%	7	0.1%	2	0.04%	11	0.19%	2	0.03%	4	0.07%	5	0.09%
S5H--T-CZA	3	0.01%	0	0%	1	0.01%	0	0%	0	0%	1	0.02%	0	0%	1	0.02%
S5H--TSCZA	3	0.01%	0	0%	0	0%	1	0.02%	0	0%	1	0.02%	0	0%	1	0.02%
S5H-N-SCZA	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0.02%
S5H-NT-CZA	1	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%	0	0%
S5H-NTSC-A	2	0%	1	0.02%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0.02%
S5H-NTSCZA	23	0.05%	3	0.05%	2	0.03%	1	0.02%	8	0.14%	5	0.09%	2	0.03%	2	0.04%
S5HP--SC-A	12	0.03%	3	0.05%	2	0.03%	1	0.02%	1	0.02%	0	0%	4	0.07%	1	0.02%
S5HP--SCZA	144	0.34%	28	0.44%	20	0.29%	14	0.25%	17	0.29%	18	0.31%	29	0.49%	18	0.32%
S5HP-T-CZA	2	0%	0	0%	0	0%	0	0%	2	0.03%	0	0%	0	0%	0	0%
S5HP-TSC-A	4	0.01%	1	0.02%	0	0%	0	0%	0	0%	0	0%	1	0.02%	2	0.04%
S5HP-TSCZA	249	0.59%	64	1%	31	0.44%	35	0.62%	48	0.83%	35	0.6%	19	0.32%	17	0.3%
S5HPN--CZA	1	0%	0	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%
S5HPN-S--A	1	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%	0	0%	0	0%
S5HPN-S-A	5	0.01%	1	0.02%	0	0%	2	0.04%	0	0%	2	0.03%	0	0%	0	0%
S5HPN-SC-A	120	0.28%	47	0.73%	6	0.09%	5	0.09%	2	0.03%	4	0.07%	37	0.62%	19	0.34%
S5HPN-SCZA	1,753	4.15%	336	5.23%	343	4.9%	126	2.25%	174	3%	259	4.45%	269	4.5%	246	4.4%
S5HPNT-CZA	39	0.09%	2	0.03%	3	0.04%	9	0.16%	1	0.02%	4	0.07%	9	0.15%	11	0.2%
S5HPNTS--A	6	0.01%	2	0.03%	3	0.04%	0	0%	0	0%	0	0%	1	0.02%	0	0%
S5HPNTS-ZA	28	0.07%	4	0.06%	7	0.1%	4	0.07%	1	0.02%	6	0.1%	3	0.05%	3	0.05%
S5HPNTSC-A	347	0.82%	84	1.31%	42	0.6%	21	0.37%	22	0.38%	34	0.58%	70	1.17%	74	1.32%
S5HPNTSCZA	5,813	13.77%	627	9.76%	988	14.1%	888	15.83%	955	16.47%	796	13.66%	854	14.3%	705	12.62%
SX	1,935	4.58%	290	4.52%	312	4.45%	443	7.9%	293	5.05%	197	3.38%	236	3.95%	164	2.94%
SXU	791	1.87%	199	3.1%	121	1.73%	94	1.68%	69	1.19%	105	1.8%	99	1.66%	104	1.86%
Total	42,224	100%	6,423	100%	7,006	100%	5,611	100%	5,799	100%	5,826	100%	5,972	100%	5,587	100%

Table 7.4b. Distribution of the Primary Workplace Address Geocoding Level, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Not a Worker	22,758	53.9%	3,488	54.3%	3,687	52.63%	3,065	54.62%	3,340	57.6%	3,099	53.19%	3,072	51.44%	3,007	53.82%
No Fixed Workplace/Refused	555	1.31%	83	1.29%	71	1.01%	66	1.18%	91	1.57%	71	1.22%	91	1.52%	82	1.47%
Framework Street-Level	7,005	16.59%	1,080	16.81%	1,251	17.86%	671	11.96%	700	12.07%	1,123	19.28%	1,104	18.49%	1,076	19.26%
Maptitude	50	0.12%	3	0.05%	3	0.04%	25	0.45%	8	0.14%	6	0.1%	1	0.02%	4	0.07%
MapMarker Street-Level	8,614	20.4%	1,204	18.75%	1,457	20.8%	1,115	19.87%	1,249	21.54%	1,170	20.08%	1,306	21.87%	1,113	19.92%
Framework Intersection-Level	791	1.87%	199	3.1%	121	1.73%	94	1.68%	69	1.19%	105	1.8%	99	1.66%	104	1.86%
MapMarker Intersection-Level	1,935	4.58%	290	4.52%	312	4.45%	443	7.9%	293	5.05%	197	3.38%	236	3.95%	164	2.94%
Non-Geocodable	470	1.11%	73	1.14%	93	1.33%	121	2.16%	47	0.81%	43	0.74%	60	1%	33	0.59%
City File	46	0.11%	3	0.05%	11	0.16%	11	0.2%	2	0.03%	12	0.21%	3	0.05%	4	0.07%
Total	42,224	100%	6,423	100%	7,006	100%	5,611	100%	5,799	100%	5,826	100%	5,972	100%	5,587	100%

Table 7.5a. Distribution of the Secondary Workplace Address Geocoding Result Code, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
No 2nd Job	41,256	97.71%	6,276	97.71%	6,833	97.53%	5,468	97.45%	5,657	97.55%	5,699	97.82%	5,862	98.16%	5,461	97.74%
No Fixed Workplace/Refused	71	0.17%	8	0.12%	13	0.19%	13	0.23%	10	0.17%	4	0.07%	9	0.15%	14	0.25%
ARCVIEW	378	0.9%	63	0.98%	65	0.93%	32	0.57%	35	0.6%	73	1.25%	55	0.92%	55	0.98%
CITYFILE	2	0%	0	0%	1	0.01%	0	0%	0	0%	1	0.02%	0	0%	0	0%
MAPTITUDE	6	0.01%	0	0%	0	0%	4	0.07%	0	0%	2	0.03%	0	0%	0	0%
N	34	0.08%	7	0.11%	4	0.06%	7	0.12%	10	0.17%	1	0.02%	2	0.03%	3	0.05%
S5-PNTSCZA	1	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%	0	0%
S5H--SCZA	1	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%	0	0%	0	0%
S5HP--SCZA	11	0.03%	2	0.03%	3	0.04%	1	0.02%	1	0.02%	0	0%	2	0.03%	2	0.04%
S5HP-TSCZA	6	0.01%	0	0%	2	0.03%	1	0.02%	3	0.05%	0	0%	0	0%	0	0%
S5HPN-SC-A	4	0.01%	2	0.03%	0	0%	0	0%	0	0%	0	0%	1	0.02%	1	0.02%
S5HPN-SCZA	66	0.16%	7	0.11%	16	0.23%	7	0.12%	5	0.09%	6	0.1%	9	0.15%	16	0.29%
S5HPNT-CZA	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0.02%	0	0%
S5HPNTS-ZA	2	0%	1	0.02%	1	0.01%	0	0%	0	0%	0	0%	0	0%	0	0%
S5HPNTSC-A	9	0.02%	3	0.05%	1	0.01%	1	0.02%	1	0.02%	2	0.03%	0	0%	1	0.02%
S5HPNTSCZA	232	0.55%	22	0.34%	42	0.6%	47	0.84%	51	0.88%	24	0.41%	18	0.3%	28	0.5%
SX	106	0.25%	22	0.34%	17	0.24%	23	0.41%	20	0.34%	7	0.12%	11	0.18%	6	0.11%
SXU	38	0.09%	10	0.16%	8	0.11%	7	0.12%	4	0.07%	7	0.12%	2	0.03%	0	0%
Total	42,224	100%	6,423	100%	7,006	100%	5,611	100%	5,799	100%	5,826	100%	5,972	100%	5,587	100%

Table 7.5b. Distribution of the Secondary Workplace Address Geocoding Level, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
No 2nd Job	41,256	97.71%	6,276	97.71%	6,833	97.53%	5,468	97.45%	5,657	97.55%	5,699	97.82%	5,862	98.16%	5,461	97.74%
No Fixed Workplace/Refused	71	0.17%	8	0.12%	13	0.19%	13	0.23%	10	0.17%	4	0.07%	9	0.15%	14	0.25%
Framework Street-Level	378	0.9%	63	0.98%	65	0.93%	32	0.57%	35	0.6%	73	1.25%	55	0.92%	55	0.98%
Maptitude	6	0.01%	0	0%	0	0%	4	0.07%	0	0%	2	0.03%	0	0%	0	0%
MapMarker Street-Level	333	0.79%	37	0.58%	65	0.93%	57	1.02%	63	1.09%	32	0.55%	31	0.52%	48	0.86%
Framework Intersection-Level	38	0.09%	10	0.16%	8	0.11%	7	0.12%	4	0.07%	7	0.12%	2	0.03%	0	0%
MapMarker Intersection-Level	106	0.25%	22	0.34%	17	0.24%	23	0.41%	20	0.34%	7	0.12%	11	0.18%	6	0.11%
Non-Geocodable	34	0.08%	7	0.11%	4	0.06%	7	0.12%	10	0.17%	1	0.02%	2	0.03%	3	0.05%
City File	2	0%	0	0%	1	0.01%	0	0%	0	0%	1	0.02%	0	0%	0	0%
Total	42,224	100%	6,423	100%	7,006	100%	5,611	100%	5,799	100%	5,826	100%	5,972	100%	5,587	100%

Table 7.6a. Distribution of the Trip Origin Address Geocoding Result Code, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMCOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
ARCVIEW	135,020	45.04%	20,942	46.43%	28,023	52.71%	11,281	29.37%	12,910	34.01%	19,407	48.44%	22,068	50%	20,389	49.78%
CITYFILE	414	0.14%	49	0.11%	65	0.12%	81	0.21%	34	0.09%	90	0.22%	35	0.08%	60	0.15%
MAPITUDE	2,611	0.87%	130	0.29%	139	0.26%	1,363	3.55%	356	0.94%	207	0.52%	205	0.46%	211	0.52%
N	8455	2.82%	991	2.2%	1488	2.8%	1851	4.82%	1232	3.25%	1036	2.59%	985	2.23%	872	2.13%
S5--TSCZA	3	0%	0	0%	0	0%	0	0%	0	0%	3	0.01%	0	0%	0	0%
S5--N-SCZA	6	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	6	0.01%
S5--NT-CZA	6	0%	0	0%	1	0%	0	0%	0	0%	0	0%	0	0%	5	0.01%
S5-P--SCZA	10	0%	0	0%	3	0.01%	0	0%	5	0.01%	0	0%	0	0%	2	0%
S5-P-TSC-A	1	0%	0	0%	0	0%	0	0%	0	0%	1	0%	0	0%	0	0%
S5-P-TSCZA	7	0%	4	0.01%	0	0%	0	0%	0	0%	2	0%	0	0%	1	0%
S5-PN-SC-A	4	0%	0	0%	0	0%	0	0%	0	0%	0	0%	4	0.01%	0	0%
S5-PN-SCZA	6	0%	0	0%	1	0%	0	0%	1	0%	1	0%	3	0.01%	0	0%
S5-PNT-CZA	5	0%	0	0%	1	0%	0	0%	1	0%	0	0%	0	0%	3	0.01%
S5-PNTS-ZA	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%	0	0%
S5-PNTSC-A	6	0%	1	0%	1	0%	0	0%	0	0%	2	0%	2	0%	0	0%
S5-PNTSCZA	168	0.06%	6	0.01%	26	0.05%	45	0.12%	28	0.07%	26	0.06%	18	0.04%	19	0.05%
S5H--SC-A	12	0%	0	0%	0	0%	0	0%	4	0.01%	5	0.01%	0	0%	3	0.01%
S5H--SCZA	445	0.15%	24	0.05%	108	0.2%	23	0.06%	113	0.3%	79	0.2%	43	0.1%	55	0.13%
S5H--T-C-A	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%
S5H--T-CZA	49	0.02%	2	0%	8	0.02%	0	0%	4	0.01%	11	0.03%	10	0.02%	14	0.03%
S5H--TSC-A	3	0%	0	0%	0	0%	0	0%	1	0%	2	0%	0	0%	0	0%
S5H--TSCZA	69	0.02%	9	0.02%	4	0.01%	13	0.03%	8	0.02%	8	0.02%	4	0.01%	23	0.06%
S5H-N-S--A	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%	0	0%
S5H-N-SCZA	31	0.01%	0	0%	0	0%	2	0.01%	8	0.02%	9	0.02%	1	0%	11	0.03%
S5H-NT-CZA	7	0%	0	0%	0	0%	3	0.01%	3	0.01%	0	0%	1	0%	0	0%
S5H-NTSC-A	20	0.01%	0	0%	1	0%	6	0.02%	2	0.01%	4	0.01%	3	0.01%	4	0.01%
S5H-NTSCZA	207	0.07%	11	0.02%	20	0.04%	34	0.09%	62	0.16%	32	0.08%	16	0.04%	32	0.08%
S5HP--CZA	4	0%	0	0%	2	0%	0	0%	0	0%	0	0%	1	0%	1	0%
S5HP--S-ZA	9	0%	0	0%	0	0%	5	0.01%	2	0.01%	1	0%	0	0%	1	0%
S5HP--SC-A	76	0.03%	33	0.07%	2	0%	4	0.01%	3	0.01%	4	0.01%	26	0.06%	4	0.01%
S5HP--SCZA	1613	0.54%	294	0.65%	215	0.4%	192	0.5%	192	0.51%	210	0.52%	271	0.61%	239	0.58%
S5HP-T-C-A	4	0%	0	0%	0	0%	0	0%	4	0.01%	0	0%	0	0%	0	0%
S5HP-T-CZA	29	0.01%	1	0%	2	0%	0	0%	22	0.06%	2	0%	2	0%	0	0%
S5HP-TSC-A	44	0.01%	5	0.01%	8	0.02%	5	0.01%	4	0.01%	9	0.02%	7	0.02%	6	0.01%
S5HP-TSCZA	2328	0.78%	445	0.99%	274	0.52%	396	1.03%	464	1.22%	234	0.58%	294	0.67%	221	0.54%
S5HPN--C-A	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	0%	0	0%

Table 7.6a. Distribution of the Trip Origin Address Geocoding Result, Statewide and by Sampling Area (Continued)

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
S5HPN--CZA	19	0.01%	0	0%	2	0%	3	0.01%	2	0.01%	3	0.01%	9	0.02%	0	0%
S5HPN-S--A	4	0%	2	0%	0	0%	2	0.01%	0	0%	0	0%	0	0%	0	0%
S5HPN-S-ZA	55	0.02%	9	0.02%	10	0.02%	11	0.03%	4	0.01%	12	0.03%	6	0.01%	3	0.01%
S5HPN-SC-A	1134	0.38%	453	1%	57	0.11%	29	0.08%	15	0.04%	79	0.2%	260	0.59%	241	0.59%
S5HPN-SCZA	18692	6.23%	3473	7.7%	3928	7.39%	1539	4.01%	1803	4.75%	2420	6.04%	2602	5.9%	2927	7.15%
S5HPNT-C-A	5	0%	2	0%	0	0%	0	0%	1	0%	0	0%	2	0%	0	0%
S5HPNT-CZA	359	0.12%	15	0.03%	44	0.08%	67	0.17%	34	0.09%	45	0.11%	64	0.15%	90	0.22%
S5HPNTS--A	39	0.01%	9	0.02%	7	0.01%	3	0.01%	1	0%	5	0.01%	8	0.02%	6	0.01%
S5HPNTS-ZA	173	0.06%	26	0.06%	36	0.07%	22	0.06%	15	0.04%	29	0.07%	17	0.04%	28	0.07%
S5HPNTSC-A	2709	0.9%	694	1.54%	246	0.46%	156	0.41%	167	0.44%	267	0.67%	533	1.21%	646	1.58%
S5HPNTSCZA	80304	26.79%	9407	20.86%	11953	22.48%	12594	32.78%	14466	38.11%	10808	26.98%	10949	24.81%	10127	24.73%
SX	31097	10.37%	4925	10.92%	4199	7.9%	6710	17.47%	4673	12.31%	3496	8.73%	4190	9.49%	2904	7.09%
SXU	13531	4.51%	3138	6.96%	2294	4.31%	1976	5.14%	1313	3.46%	1516	3.78%	1491	3.38%	1803	4.4%
Total	299,798	100%	45,100	100%	53,168	100%	38,416	100%	37,957	100%	40,065	100%	44,134	100%	40,958	100%

Table 7.6b. Distribution of the Trip Origin Address Geocoding Level, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Framework Street-Level	135,020	45.04%	20,942	46.43%	28,023	52.71%	11,281	29.37%	12,910	34.01%	19,407	48.44%	22,068	50%	20,389	49.78%
Mapitude	2,611	0.87%	130	0.29%	139	0.26%	1,363	3.55%	356	0.94%	207	0.52%	205	0.46%	211	0.52%
MapMarker Street-Level	108,670	36.25%	14,925	33.09%	16,960	31.9%	15,154	39.45%	17,439	45.94%	14,313	35.72%	15,160	34.35%	14,719	35.94%
Framework Intersection-Level	13,531	4.51%	3,138	6.96%	2,294	4.31%	1,976	5.14%	1,313	3.46%	1,516	3.78%	1,491	3.38%	1,803	4.4%
MapMarker Intersection-Level	31,097	10.37%	4,925	10.92%	4,199	7.9%	6,710	17.47%	4,673	12.31%	3,496	8.73%	4,190	9.49%	2,904	7.09%
Non-Geocodable	8,455	2.82%	991	2.2%	1,488	2.8%	1,851	4.82%	1,232	3.25%	1,036	2.59%	985	2.23%	872	2.13%
City File	414	0.14%	49	0.11%	65	0.12%	81	0.21%	34	0.09%	90	0.22%	35	0.08%	60	0.15%
Total	299,798	100%	45,100	100%	53,168	100%	38,416	100%	37,957	100%	40,065	100%	44,134	100%	40,958	100%

Table 7.7a. Distribution of the Trip Destination Address Geocoding Result Code, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMCOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Did Not Travel	3,904	1.3%	656	1.45%	650	1.22%	533	1.39%	675	1.78%	493	1.23%	431	0.98%	466	1.14%
ARCVIEW	132,763	44.28%	20508	45.47%	27550	51.82%	11140	29%	12567	33.11%	19123	47.73%	21784	49.36%	20091	49.05%
CITYFILE	320	0.11%	39	0.09%	55	0.1%	76	0.2%	21	0.06%	73	0.18%	18	0.04%	38	0.09%
MAPTITUDE	2,518	0.84%	127	0.28%	130	0.24%	1298	3.38%	344	0.91%	211	0.53%	201	0.46%	207	0.51%
N	8,220	2.74%	950	2.11%	1438	2.7%	1838	4.78%	1194	3.15%	989	2.47%	972	2.2%	839	2.05%
S5--TSCZA	3	0%	0	0%	0	0%	0	0%	0	0%	3	0.01%	0	0%	0	0%
S5--N-SCZA	6	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	6	0.01%
S5--NT-CZA	5	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	5	0.01%
S5-P--SCZA	10	0%	0	0%	3	0.01%	0	0%	5	0.01%	0	0%	0	0%	2	0%
S5-P-TSCZA	7	0%	4	0.01%	0	0%	0	0%	0	0%	2	0%	0	0%	1	0%
S5-PN-SC-A	4	0%	0	0%	0	0%	0	0%	0	0%	0	0%	4	0.01%	0	0%
S5-PN-SCZA	6	0%	0	0%	1	0%	0	0%	1	0%	1	0%	3	0.01%	0	0%
S5-PNT-CZA	5	0%	0	0%	1	0%	0	0%	1	0%	0	0%	0	0%	3	0.01%
S5-PNTS-ZA	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%	0	0%
S5-PNTSC-A	6	0%	1	0%	1	0%	0	0%	0	0%	2	0%	2	0%	0	0%
S5-PNTSCZA	168	0.06%	6	0.01%	26	0.05%	45	0.12%	27	0.07%	26	0.06%	18	0.04%	20	0.05%
S5H--SC-A	12	0%	0	0%	0	0%	0	0%	4	0.01%	5	0.01%	0	0%	3	0.01%
S5H--SCZA	446	0.15%	24	0.05%	108	0.2%	23	0.06%	114	0.3%	79	0.2%	43	0.1%	55	0.13%
S5H--T-C-A	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%
S5H--T-CZA	48	0.02%	2	0%	8	0.02%	0	0%	4	0.01%	11	0.03%	9	0.02%	14	0.03%
S5H--TSC-A	3	0%	0	0%	0	0%	0	0%	1	0%	2	0%	0	0%	0	0%
S5H--TSCZA	70	0.02%	9	0.02%	4	0.01%	13	0.03%	8	0.02%	8	0.02%	4	0.01%	24	0.06%
S5H-N-S-A	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%	0	0%
S5H-N-SCZA	32	0.01%	0	0%	0	0%	2	0.01%	9	0.02%	9	0.02%	1	0%	11	0.03%
S5H-NT-CZA	7	0%	0	0%	0	0%	3	0.01%	3	0.01%	0	0%	1	0%	0	0%
S5H-NTSC-A	20	0.01%	0	0%	1	0%	6	0.02%	2	0.01%	4	0.01%	3	0.01%	4	0.01%
S5H-NTSCZA	205	0.07%	11	0.02%	20	0.04%	34	0.09%	62	0.16%	28	0.07%	16	0.04%	34	0.08%
S5HP--CZA	4	0%	0	0%	2	0%	0	0%	0	0%	0	0%	1	0%	1	0%
S5HP--S-ZA	9	0%	0	0%	0	0%	5	0.01%	2	0.01%	1	0%	0	0%	1	0%
S5HP--SC-A	75	0.03%	33	0.07%	2	0%	4	0.01%	3	0.01%	4	0.01%	25	0.06%	4	0.01%
S5HP--SCZA	1,601	0.53%	295	0.65%	214	0.4%	189	0.49%	196	0.52%	206	0.51%	272	0.62%	229	0.56%
S5HP-T-C-A	4	0%	0	0%	0	0%	0	0%	4	0.01%	0	0%	0	0%	0	0%
S5HP-T-CZA	29	0.01%	1	0%	2	0%	0	0%	22	0.06%	2	0%	2	0%	0	0%
S5HP-TSC-A	45	0.02%	5	0.01%	8	0.02%	5	0.01%	4	0.01%	9	0.02%	8	0.02%	6	0.01%
S5HP-TSCZA	2,312	0.77%	448	0.99%	273	0.51%	391	1.02%	461	1.21%	228	0.57%	290	0.66%	221	0.54%
S5HPN-C-A	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	0%	0	0%

Table 7.7a. Distribution of the Trip Origin Address Geocoding Result, Statewide and by Sampling Area (Continued)

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
S5HPN--CZA	19	0.01%	0	0%	2	0%	3	0.01%	2	0.01%	3	0.01%	9	0.02%	0	0%
S5HPN-S--A	4	0%	2	0%	0	0%	2	0.01%	0	0%	0	0%	0	0%	0	0%
S5HPN-S-ZA	55	0.02%	8	0.02%	10	0.02%	11	0.03%	5	0.01%	12	0.03%	6	0.01%	3	0.01%
S5HPN-SC-A	1,136	0.38%	456	1.01%	60	0.11%	29	0.08%	15	0.04%	79	0.2%	259	0.59%	238	0.58%
S5HPN-SCZA	18,643	6.22%	3459	7.67%	3928	7.39%	1539	4.01%	1804	4.75%	2413	6.02%	2586	5.86%	2914	7.11%
S5HPNT-C-A	5	0%	2	0%	0	0%	0	0%	1	0%	0	0%	2	0%	0	0%
S5HPNT-CZA	354	0.12%	15	0.03%	43	0.08%	66	0.17%	34	0.09%	45	0.11%	61	0.14%	90	0.22%
S5HPNTS--A	39	0.01%	9	0.02%	7	0.01%	3	0.01%	1	0%	5	0.01%	8	0.02%	6	0.01%
S5HPNTS-A	169	0.06%	26	0.06%	37	0.07%	21	0.05%	16	0.04%	29	0.07%	14	0.03%	26	0.06%
S5HPNTSC-A	2,704	0.9%	691	1.53%	246	0.46%	157	0.41%	167	0.44%	264	0.66%	535	1.21%	644	1.57%
S5HPNTSCZA	79,393	26.48%	9265	20.54%	11850	22.29%	12408	32.3%	14227	37.48%	10698	26.7%	10872	24.63%	10073	24.59%
SX	30,887	10.3%	4911	10.89%	4187	7.88%	6606	17.2%	4640	12.22%	3486	8.7%	4182	9.48%	2875	7.02%
SXU	13,518	4.51%	3137	6.96%	2301	4.33%	1966	5.12%	1311	3.45%	1512	3.77%	1488	3.37%	1803	4.4%
Total	299,798	100%	45,100	100%	53,168	100%	38,416	100%	37,957	100%	40,065	100%	44,134	100%	40,958	100%

Table 7.7b. Distribution of the Trip Destination Address Geocoding Level, Statewide and by Sampling Area

Geocoding Result Code	Statewide		SEMOG		Small Cities		Upper Peninsula Rural		Northern Lower Peninsula		Southern Lower Peninsula		TMA's		Small Urban Modeled Areas	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Did Not Travel	3,904	1.3%	656	1.45%	650	1.22%	533	1.39%	675	1.78%	493	1.23%	431	0.98%	466	1.14%
Framework Street-Level	132,763	44.28%	20508	45.47%	27550	51.82%	11140	29%	12567	33.11%	19123	47.73%	21784	49.36%	20091	49.05%
Mapitude	2,518	0.84%	127	0.28%	130	0.24%	1298	3.38%	344	0.91%	211	0.53%	201	0.46%	207	0.51%
MapMarker Street-Level	107,668	35.91%	14772	32.75%	16857	31.71%	14959	38.94%	17205	45.33%	14178	35.39%	15058	34.12%	14639	35.74%
Framework Intersection-Level	13,518	4.51%	3137	6.96%	2301	4.33%	1966	5.12%	1311	3.45%	1512	3.77%	1488	3.37%	1803	4.4%
MapMarker Intersection-Level	30,887	10.3%	4911	10.89%	4187	7.88%	6606	17.2%	4640	12.22%	3486	8.7%	4182	9.48%	2875	7.02%
Non-Geocodable	8,220	2.74%	950	2.11%	1438	2.7%	1838	4.78%	1194	3.15%	989	2.47%	972	2.2%	839	2.05%
City File	320	0.11%	39	0.09%	55	0.1%	76	0.2%	21	0.06%	73	0.18%	18	0.04%	38	0.09%
Total	299,798	100%	45,100	100%	53,168	100%	38,416	100%	37,957	100%	40,065	100%	44,134	100%	40,958	100%