2004-2005
Comprehensive Household Travel
Data Collection Program

MI Travel Counts

Final Report Appendices

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List of Appendices

Appendix 20: 1-800 Line Greeting

TRANSPORTATION LINE
1-800-566-6262

"Live" Greeting

"MORPACE International"

Voicemail Greeting

"Hello, you've reached MORPACE International. Please leave a message and a staff member will return your call as soon as possible. Be sure to include your name and telephone number with area code, as well as the best time to reach you. Thank you."

Appendix 21: Answering Machine Message

Michigan Department of Transportation
"MI Travel Counts"
Job M030504

Answering Machine Message

"Hello, I'm calling about MDOT's "MI Travel Counts" study.
Please call 1-800-566-6262 at your earliest convenience.
We are looking forward to including your household in this important project.
Thank you."

Appendix 22: Geocoding Procedures Manual

MORPACE GEOCODING PROCESS TRANSPORTATION STUDIES

1. OVERVIEW

The geocoding process will take place concurrently with the data collection task, and on a continuous basis. This will allow a higher level of quality control and for callbacks to respondents as needed within a five business-day window. Geocoding will generally be attempted within four business days.

The 2-digit model area codes in the data structure will conform to MDOT model coding schemes in its Transportation Management System (TMS). The model area code field and the TAZ field will be separate fields in the databases MDOT receives. All final and interim household geocoding trip reports will be broken out by type (home, work, school, start, and trip). All final and interim datasets to MDOT will include repeat trip location addresses for home, work, and school. (These unique locations are all listed once in the home, work, school, start, and trip geocoding files). The final .DBF trip file will have origin and destination on each trip record and home, work, and school trip locations will be fully integrated into these datasets.

MORPACE's geocoding rates to latitude/longitude (the street address or street intersection level) will be 99% or better for home addresses, 95% or better for work and school addresses, and 90% or better for all other trip locations. The assignment of TAZ to each geocoded location will be done by Parsons-Brinckerhoff (PB). The reason for the shift from MORPACE to PB is outlined in Section 1 of Appendix C, along with documentation of the methodology to assign TAZ when a location falls on the boundary. (Pilot geocoding results exceeded these levels as shown in the MI Travel Counts Pilot Report). Pilot results are shown in Table 1 below:

Table 1: MI Travel Counts Pilot Geocoding Results – Within Michigan

FILE	Street Address Level	Street Intersection Level	TAZs	Not Geocoded
Home	98%	2%	100%	0%
School	98%	2%	100%	0%
Work	90%	9%	99%	1%

Start (not home)	100%	0%	100%	0%
Trip	85%	10%	95%	4%

MORPACE is committed to meeting or exceeding these levels of accuracy for the MDOT project and to providing geocoding to at least the TAZ level. MORPACE planned its proposed budget to complete 105% of the 14,280 households required, with the knowledge that approximately 5% of completed households may need to be eliminated from the final dataset, due to problems of incomplete geocoding and/or other data required for completeness. However, there may be a trade-off between the level of completeness of individual records within households and overall response bias. For example, if when trying to get a minimum of 30 households in the SEMCOG sampling area with a household size of 3, with 1 or 2 autos and 2+ workers, if you reject 60% (18) of households completed in this cell and replace them with new households that you consider complete, the effective response rate for the cell is decreased by the rejected households. Thus, if the normal response rate for the cell (and other cells) is 30% (30/100), after rejecting 18 households, the response rate for this cell is now decreased to 25%. To account for this unevenness, data cells within sampling areas should then be weighted by response rates per cell, to account for significant differences in treatment. Overall, the goal is to assure complete households without significantly unbalancing (biasing) sampling rates per cell.

For this reason a process for deciding which households should be removed from the final dataset has been developed and will be as follows:

- With the interim data and report submitted to MDOT, MORPACE will submit a household trip file with all persons in all households (including Household, Person, and Trip ID) with any locations not geocoded to x,y coordinates and/or missing any of the key variables listed in 2.1 through 2.3 of the Data Coding and Quality Control Manual.

- Appended to this trip file will be the following variables for each person:

  Sampling Area
  Number in Household
  Number of Autos
  Number of Workers
  Percent of Assigned Data Cell Complete
  Household Income

Home Address and Geocoding Result
Age or Group Age
Gender
Employment Status
Workplace Address Geocoding Result
Student Status and Geocoding Result of School Location
Driver's license status

.

- Also added to this trip file will be any households found questionable by Parsons Brinckerhoff (PB) in their review as described in section 5. This file/list of possibly incomplete households will be thoroughly reviewed by MORPACE and PB. MORPACE will expend considerable effort at this time to "salvage" households by manually attempting geocoding to TAZs (where valid addresses are available but neither system could provide an x,y coordinate). MORPACE will also further investigate Internet and Atlas look-ups, and/or make recalls to respondents for missing demographic information. Recalls will be made as appropriate, especially if the household was not called during the initial recall phase. Recommendations as to which households to exclude will be made by PB and MORPACE within ten days of submitting the Interim report and the trip file of incomplete households. In making the decisions as to which households should be excluded, the following two factors will be taken into account:

    1. The comprehensive quality of the household's information, and
    2. The effects of bias on proportional sampling.

- MDOT will make the final decision regarding which households to remove from the interim and final data file, based on balancing the two factors above and on guidelines for completeness described in this document and in the Data Coding and Quality Control Manual.

  Within 5 days from receiving MDOT's determination, MORPACE will move households that have been deemed uncompleted from the main dataset to a separate deleted household file, and return to MDOT an updated interim and final dataset and tally of completed households. .

MORPACE will fully utilize the resources provided by the Michigan's Geographic Information Center using MI geographic Framework V3 (MGFv3), which has been fully integrated with MapMarker. Trip files will have a designated geocoding results code confirming the record was coded either to Framework V3 or MapMarker Plus.

MORPACE was initially unable to get Framework integrated with its MapInfo MapMarker Plus system and files. MORPACE purchases an annual license for MapMarker from MapInfo. MapInfo's licensed technical help staff took over the task

and, after a week, provided MORPACE with a password to MapInfo's FTP site from which MORPACE downloaded the finished integrated product. Mapinfo will not provide us with a summary of their process to accomplish this integration since they consider the information proprietary. Since the dictionary for Framework is large, MORPACE divided the dictionary in four parts to load it into the MapMarker system. Framework and MapMarker are now fully integrated and processes with a single pass. While MapMarker is still an integral part of the MOPRACE geocoding process, ArcView has been incorporated to address a number of glitches in the process. Details on those issues and the adjustments to the process are outlined in Section 2 of Appendix C.

2. MDOT GEOCODING HIERARCHY

The MDOT Geocoding Team developed a geocoding hierarchy to serve as a spatial guide for the geocoding process. The hierarchy applies five steps to MI Travel Counts geocoding to improve both efficiency and accuracy. This hierarchy of preferred spatial scales is integrated with the detailed geocoding tasks, which are described in the section that follows:

Step 1: Framework street-level: Geocode to the street address location on the street using the Framework network in combination with either MapMarker, ArcInfo, ArcView, or TransCAD. All Framework street-level results will come from ArcView with a 90% or greater match. Any ties will be considered not a match to Framework street-level and sent through Step 2.

Step 2: MapMarker street-level: Addresses not found in Step 1 should be geocoded to the street address location on the street using MapMarker and its GDT-enhanced streets file. The resulting Step 2 lat/long coordinates do not need to be repositioned, unless, of course, a method is developed where such points can be migrated to Framework. Based on our review of initial pilot results, we feel Step 2-coded points are more positionally accurate than Framework intersections.

Step 3: Framework intersection-level: Addresses not found in Steps 1 and 2 should be geocoded by locating the nearest intersection in Framework. The nearest intersection is to be located by finding the street on which the address is located and identifying the nearest intersection in proximity to the cross streets identified for the record.

Step 4: MapMarker intersection-level: Addresses not found in Steps 1 through 3 should be geocoded by locating the nearest intersection using MapMarker and its GDT-enhanced streets file. The resulting Step 4 lat/long coordinates do not need to be repositioned, unless, of course, a method is developed where such points can be migrated to

Framework. Based on our review of initial pilot results, we feel Step 4-coded points will be more accurate than TAZ-coded points (see Step 5 below).

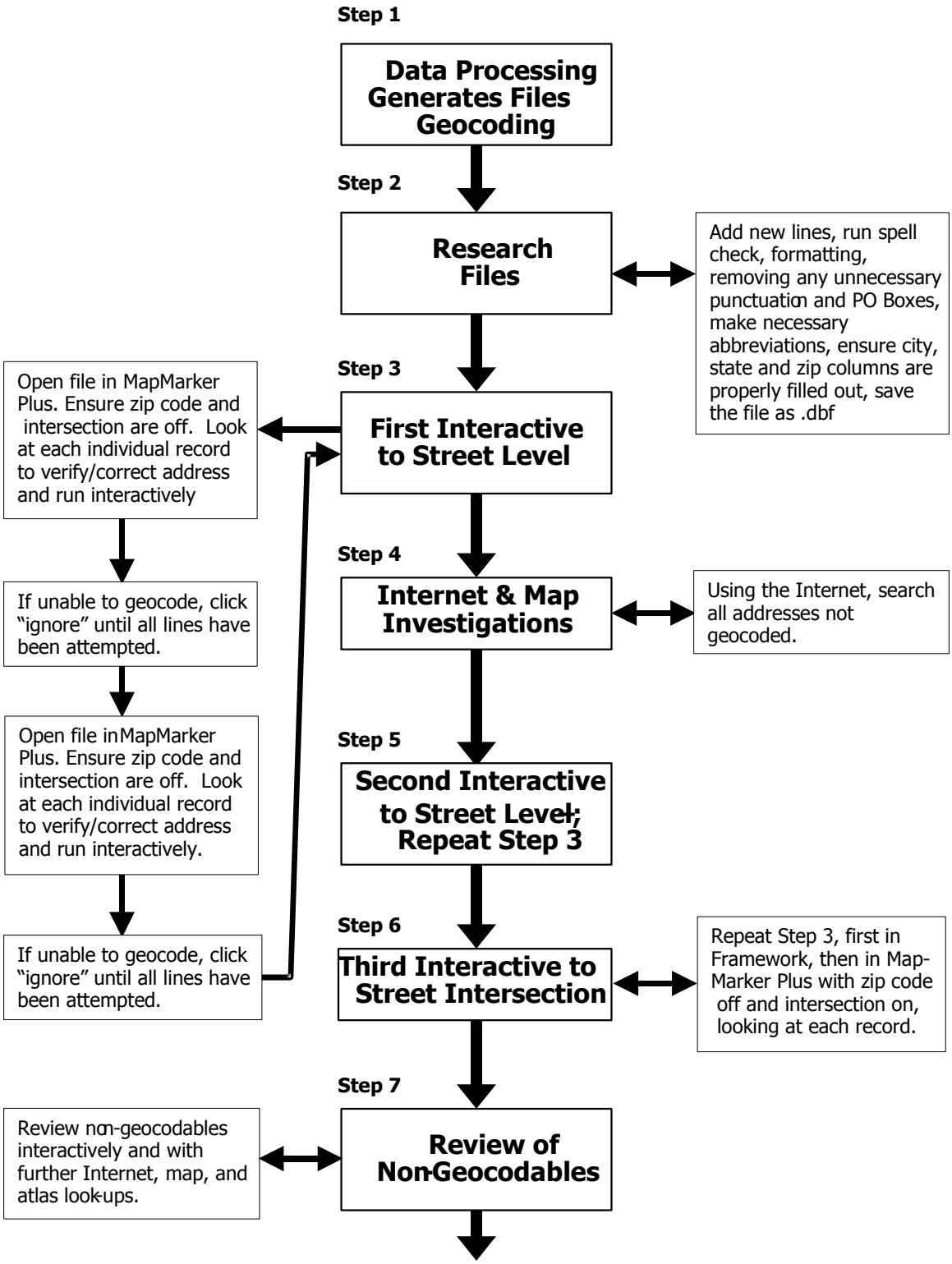
Step 5: TAZ level: As a last resort, if Steps 1 through 4 fail to locate an address, then the centroid for the closest, logical Transportation Analysis Zone (TAZ) should be provided. (Note: If it comes to Step 5, we are unsure how one can code to a TAZ if there is no street address or intersection information associated with a record. Outside of urban areas, perhaps a record's MCD affiliation will provide enough spatial information to code to the appropriate TAZ. Specific details are provided in Section 2 of Appendix C.)

This hierarchy applies to the geocoding for all household point locations, all work-school point locations, and all other trip-end point locations. A field has been added to the data structure relating to whether a point was coded to Framework streets, Framework intersections, MapMarker streets, MapMarker intersections. In addition, as part of the revised process, all points geocoded in ArcView will be identified.

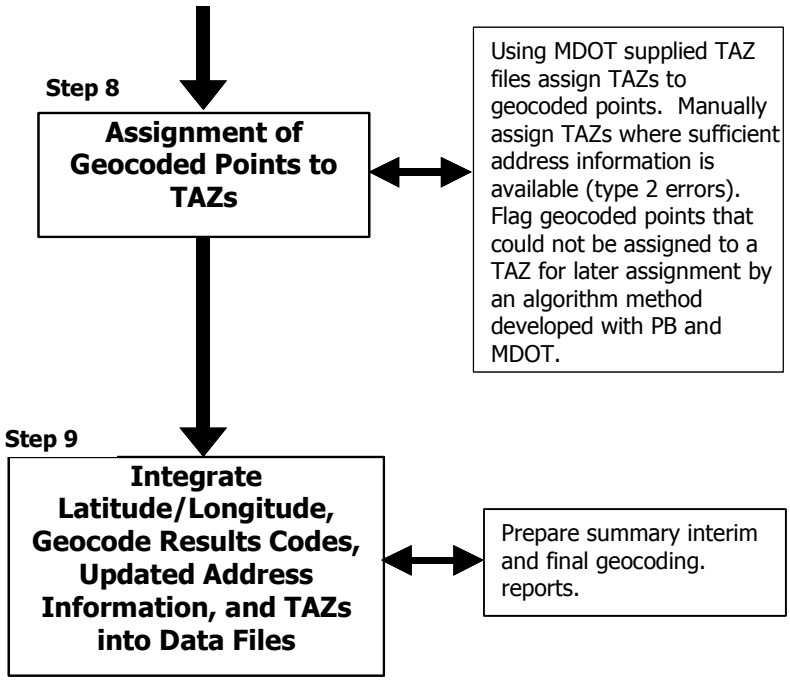
3. MORPACE GEOCODING PROCESS

The flow chart on the following page provides an overview of the MI Travel Counts geocoding task process. This process incorporates the "Geocoding Hierarchy", or preferred spatial scales for geocoding passes, developed by MDOT's Geocoding Team. The goal is to get as many locations geocoded to Framework v3 (the Michigan Center for Geographic Information's system) as is possible before moving to MapInfo's MapMarker Plus (GDT enhanced) files as a back-up. The "offset" distances for both systems will be set at 25 feet. The MI Travel Counts Geocoding Flowchart is followed by a step-by-step description of the process, with additional detailing in Section 4. Section 2 of Appendix C provides an updated flowchart and step-by-step description.

MI Travel Counts Geocoding Procedures Flowchart



MI Travel Counts Geocoding Procedures Flowchart *(Continued)*



Geocoding Steps

Step 1: Data Processing Generates Files for Geocoding

- MORPACE's Data Processing department (DP) prepares home and trip .csv files

Step 2: Research Files

- Research prepares files for geocoding using the geographic Framework v3 files supplied by the Michigan Geographic Information Center, which has been integrated with MORPACE's MapInfo MapMarker Plus system. (MapMarker Plus is compatible with ArcView and TransCAD) (If for any reasons problems develop with using MapMarker Plus with Framework v3, MORPACE will switch to ArcView). See Appendix C for details of migration to ArcView.
- Preparing the Files (MORPACE has developed its own in-house address cleaning system for this task)
  - Open the .csv file provided by Data Processing. Format all columns by:
    1) Insert a new column "A" titled "Line." Number all cells in column "A" 1,2,3…
    2) Run spell check in the Location Name and Location Type columns.
    3) Format in upper case the Location Name, Location Type, Location Address, Location City, and Location State.
    4) Edit each record by removing any periods, apostrophes, commas, hyphen, ampersand, number sign, and extra spaces.
    5) In the Location Address field remove any P.O. Boxes and cut intersecting streets from the Location Address column and paste in the Intersection column. (P.O. Boxes are not used since they would geocode to a post office location. The recruit interview script assures

that P.O. Box addresses are not taken for Location Address for the respondent's residence.)

6) Also, the Location Address field will use the following abbreviations:

Street	ST
Drive	DR
Lane	LN
Road	RD
Court	CT
Circle	CIR
Highway	HWY
Place	PL
Boulevard	BLVD
Avenue	AVE
North	N
South	S
East	E
West	W
Parkway	PKWY
Trail	TRL
State Route	M

Quadrant Locations in an address suffix such as 141 Cherry St., SE are used.

Other options for abbreviating highway names such as US 41 will be tested during both interactive phases of the geocoding process. If a street name includes a direction, the direction will NOT be abbreviated. For example, 1234 West RD will remain 1234 West RD, 1234 Northfield RD would remain 1234 Northfield RD, 1234 North Pike ST would become 1234 N Pike ST.

Also where "First" or "Third" is part of the street name they will not be changed to 1st or 3rd unless otherwise required by CGI/Framework v3 standards.
Likewise, all abbreviations will conform to CGI/Framework v3 standards.

7) In the Location City column ensure all cells list a city only. If there is no city listed replace the blank cell with the word "NONE."
8) In the Location State column ensure all states are abbreviated with the proper state abbreviation.
9) In the Location Zip Code column replace any 99998 (CATI generated code for "Don't Know"), 99999 (CATI generated code for "Refused"), or any unfamiliar zip code with "0."
10) Save the .csv file as a .dbf file.

There are other possible cleaning steps such as how to handle "Saint" or "Mount" in street or city names (e.g. St. Johns, Sault Ste. Marie, or Mt. Pleasant) or other conventions such as "Heights" (HTS), Hills (HLS), and Martin Luther King Jr. Blvd (MLK) that are best handled by the MapMarker interactive geocoding function, in combination with CGI/Framework v3 files, as described in Step 4.

Step 3: First Interactive to Street Level

- Files are interactively geocoded to Framework v3 street-level (First Interactive)
    1) On the command screen check to run the file interactive. Ensure the zip code and intersection options are off.
    2) Look at each individual record to verify address information. If the address cannot be geocoded click "Ignore" until all lines have been checked.
    3) If there is a non-geocodable address listed in the Home File, re-contact the respondent for the correct home address.
    4) Following the complete interactive process, if addresses still cannot be geocoded to Framework v3 street level, they will be interactively geocoded to MapMarker Plus (GDT enhanced) street-level. *(MapInfo Professional v6.0 and MapMarker Plus v6.5, Entire U.S).*
    5) No geocoding other than to street-level will be done during this step.

Step 4: Internet & Map Investigations

- Research will print all locations that have not yet been geocoded to street-level.
- Internet Searching
    1) Using Internet look up, all locations that have not been geocoded to street-level will be investigated. Addresses are confirmed by using cross streets provided by respondents. Commonly used websites are Yahoo interactive maps and company websites, switchboard.com, and ses.standardandpoors.com. Internet searches will be performed in Farmington Hills by MORPACE's geocoding research staff.
    2) At this stage respondent provided cross streets will be used only to verify the location of a street address. The purpose of this task at this stage is only to find full street address information.
    3) Recalls and information calls are made as appropriate at this stage.
    4) Search information is entered into the file

Step 5: Second Interactive to Street-Level

- A second interactive geocoding process is performed, again looking at every record individually as described in step 3.
- Following the complete interactive process, if addresses still cannot be geocoded to Framework v3 street level, they will be interactively geocoded to MapMarker Plus (GDT enhanced) street-level.
- No geocoding other than to street-level will be done during this step.

Step 6: Third Interactive to Street Intersection Level

- The third interactive geocoding to street intersection level will apply to the remaining locations not geocoded to street-level in the home, work, school, start locations other than home, and trip files. (The trip file is all locations other than home, school. work, or non-home start locations). From the Pilot this is expected to be 3% or less for home, 5% or less for school, 12% or less for work, 20% or less for trips. (Approximately 16% of all locations in the files). Note that when the complete trip file is constructed by putting all the home, work, and school trips back into the final data file as origin and destination points, the final percent of trip locations geocoded to street intersection level, or considered non-geocodable, will be lower.
- These remaining locations will be interactively geocoded, first to Framework v3 nearest street intersection. The nearest intersection will be located

interactively by finding the street on which the address is located and identifying the nearest intersection in proximity to the cross streets identified for the location. In-system and Internet maps as well as a set of atlases will be used in this interactive geocoding to street intersection. Those locations not able to be interactively geocoded to Framework v3 street intersection level will be geocoded to MapMarker Plus.

Step 7: Review of Non-Geocodables

- The remaining non-geocodables will be reviewed and are expected to be 1% or less for home addresses, and 2% to 5% for all other files. Attempts will be made through Internet sites and other resources to get these last locations to street-intersection. But extraordinary time spent on finding each of these individual points at this time may be inefficient. In total for the pilot, there were 27 non-geocodable addresses in Michigan to street or intersection level (3%) of all locations; and of these 27, 5 (19%) were errors where the street address is correct but neither system was able to provide an x, y coordinate.

Step 8: Assignment of Geocoded Points to Traffic Analysis Zones (TAZs)

- All locations geocoded to street address and street intersection will then be automatically geocoded to TAZ using the files provided by MDOT. Non-geocodables, of course, cannot be placed to TAZ at this time.
- We will flag any locations that cannot be geocoded to a single TAZ because of its location on a boundary line. In the Pilot, there appear to be 3 such records where a location was geocoded to street-level but no TAZ could be assigned (0.03%). PB, MDOT, and MORPACE have developed an algorithm (based on household and employment densities of TAZs) for manually assigning TAZs to these locations, on an interim basis.
- Non-geocodable locations that were errors where a street level or street intersection address exists, but the systems did not provide an x,y coordinate, in most cases, can be manually geocoded to TAZ.

There have been some changes to this step in the process, mainly that PB will assign all TAZ values. Section 1 of Appendix C provides detailed information.

Step 9: Integrate Latitude/Longitude, Geocoding Results Codes, Updated Address Information, and TAZs into Data Files

- Latitude and longitude variables and a geocode result variable are entered into the project data files with corrected address information in the variable structure provided for this purpose.

When interim geocoding files are submitted to Parsons Brinckerhoff (PB) for review, a home address map will be submitted separately from travel locations. Each file and each address record within the files will contain a geocoding results code that shows final disposition of geocoding to street level, street intersection level, TAZ, or non-geocodable. The results code will also show whether each location was geocoded to Framework or MapMarker Plus.

4. GEOCODING PROCESS DETAILS

During Step 7, non-geocodable addresses are reviewed for spelling mistakes. Common mistakes are corrected in city names (Nappa vs. Napa) and major streets (Alcamino vs. El Camino Real) by using Microsoft Excel's Find and Replace command.

During Step 4, Internet searches are conducted to obtain business addresses respondents did not know or were unwilling to report (i.e., Trader Joe's on Third in San Rafael is 337 Third Street, or Hogan High School in Vallejo is located at 850 Rosewood Avenue.) The most common sites visited for address cleaning are:

www.yahoo.com/r/mp	Yahoo! Map site
www.mapquest.com	Mapquest Map site
www.smartpages.com	Yellow pages site ; employer look-ups
www.infoseek.com	Information site with mapping capabilities and Yellow page link
www.bigbook.com	Yellow pages site
www.usps.com	Post Office site-for address or city/zip code issues
www.referenceusa.com	Provider of consumer and business information; employer look-ups
www.switchboard.com	Internet based yellow pages; employer look-ups
www.cis.state.mi.us/bcs_corp/sr_corp.asp.	Bureau of commercial services
www.accumail.com	Business address search site
www.google.com	For address look-ups and cleaning

Since not all businesses can be located by using these sites, a secondary measure is to visit the corporation's website, if possible. For example, Albertson's, Best Buy, Outback Steakhouse, and several fast food chains were more easily pinpointed by using the store locator feature of the corporate website. Many large companies have store locators at their corporate website.

Occasionally a call to information is necessary (1-555-1212). MORPACE's cadre of geocoders is instructed not to guess on addresses since not all addresses can be located. The concern is with accuracy rather than quantity.

Home residence street addresses cannot be found if incomplete or incorrect. In these cases respondents will be recalled. Yellow pages searches are best with a business name and a city and can also be searched by business type with a city. Some fire code or Rural Delivery addresses in the Upper Peninsula will be problematic since they are not included in either Framework v3 or MapMarker Plus files.

For other addresses, if both cross streets are given, Yahoo! maps is usually the quickest route. The cross streets can be entered with the city and state. If it maps, click on "Find Nearby Businesses". Provide the business name or click on the type of business, Yahoo! will show the businesses and provide the distance from the intersection.

MORPACE provides its geocoders with reference lists for correct city spellings and addresses of airports and public transit stations.

Sometimes, respondents are unable to correctly identify the city their trip took place in. The United States Postal Service's website (www.usps.com) is very helpful in determining zip codes for cities, cleaning residential addresses, and identifying the names of cities when only a zip code is given.

In many cases, respondents are unwilling to give out useful address information. Most often, respondents are reluctant to give addresses for trips to friends' or family members' homes, and children's schools or day care centers. If a school name and city is provided, the location of the school usually can be found.

5. GEOCODING AND TRIP TIME CHECKS

Along with full interim data files, MORPACE will submit geocoding files to Parsons Brinckerhoff (PB) on an interim basis as shown in the attached Appendix A schedule. PB will use the MI geographic Framework V3 (MGFv3), ArcGIS 8.x, and the TransCAD

statewide model network provided by MDOT to check geocoding results provided by MORPACE. PB will do the following geocoding checks:

1. Regeocode 5% of the household file to check for point accuracy. (This sample will have a maximum sampling error of ± 9.8% at the 95% confidence level). Verify the points are the same placement for each QNO and position is correct
2. Verify Geocoding levels are to best possible geocoding level (GEOLVL)
   - Geocode Mapmarker Address points (GEOLVL 2) to MGF to verify cannot be matched to MGF
   - Geocode MGF Intersection points (GEOLVL 3) to MGF line to verify cannot be matched to address range rather than intersection
   - Geocode Mapmarker Intersection points (GEOLVL 4) to MGF on line and intersection to verify neither level can be obtained within MGF file
   - Check placement accuracy of those that are only matched to Mapmarker in relation to MGF
   - Check all points geocoded to TAZ level (GEOLVL 5) for possible geocoding placement to MGF rather than TAZ
3. Review trip file for geocoding data accuracy
   - Review that all points fall within correct TAZ according to geocoding placement
   - Review all points that fall near a TAZ boundary
   - Review that all points fall within the correct City
4. Review Non-geocodables within trip file, the following procedures will be conducted in the review:
   - Sort on the Location field
     - Find commonality between location titles
     - Review the common locations with differing address by looking at address and cross street information
     - Determine from the information if more research could be done to determine a geocoding location
   - Sort on State field then City field
     - Review locations outside of the state of Michigan for possible geocoding assignment to city center
   - Sort on Respondent Address field
     - Try to locate address on either the respondent address or the geocoded address to verify that none can be found
     - If an address can be found, specify new address, and verify the corresponding City and Zipcode
   - Sort on Geocoded Address field
     - Review all unknowns against location and cross streets to determine if further research could place the trip.
   - Sort on Cross Street field
     - Review trips with cross-street information to determine if placement can be done to a cross-street, in the process verify the City.

PB will provide in a report the results of the geocoding checks. PB will also check the trip time based on departure and arrival time for each trip by using the TransCAD statewide model network provided by MDOT. The TransCAD statewide model network is based on MGFv3 file, but only has higher level roadways included in the

network. This file also has speed and time associated with each link. PB will also use the Southeast Michigan Council of Government (SEMCOG) TransCAD 2000 travel demand forecasting model for those trips that are made completely within the SEMCOG region. The SEMCOG TransCAD network is based off of the MGFv2 file. The following is a list of steps to check time of trip.

1. Convert trip file so that each line contains a combined household, person and trip identification number, this number will be in the format of QNO*10000+PersonID*100+TripNo, this will be IDNO. Each line will contain only the origin or destination information of the trip. This file will have twice as many records as the original trip file and will be saved as a .DBF file. All non-vehicular trips will be removed from the file as well as all trips that are non-geocoded.

2. Using TransCAD, this new trip file will be opened onto the MDOT network file. The corresponding geocoded coordinates for each record will be automatically converted by TransCAD into a standard geographic file with points located onto the network file.

3. Using TransCAD, the trip points will then be connected onto the network file by using Tools…Map Editing…Connect.

4. Within the trip file a new field will be created (NodeNo) to copy the node number from the network file into the new trip file for each point. This is done by using Edit…Fill…Tag.

5. The trip file will then be sorted by IDNO and saved as a .DBF file and closed.

6. All files except the network file will be closed.

7. The trip file will be reopened in TransCAD using File…open.

8. Using TransCAD, the distance and time will be determined for each trip by using the following commend: Route Systems…Utilities…Create from File. This will take the trip file and map the shortest route (via distance and also time) and create a table for each trip. For trips taken within the SEMCOG area, the SEMCOG network will be utilized, for all other trips, the MDOT network will be utilized. For trips made during the peak times in the SEMCOG region, the peak model times will be utilized. The times found from the TransCAD program will be compared to the times reported by the departure and arrival time.

9. The following checks will be done with the calculated distances, calculated travel time, and respondent travel time:

a. The trip will be flagged if the TransCAD travel time has more than a 60-minute difference from the reported respondent travel time. These trips will be documented in the report with recommendations.
b. A trip will be flagged if a trip is made within the same city/township and is greater than 60 minutes, or 90 minutes for the city of Detroit. These trips will be further reviewed to determine the time of day of the trip to determine if congestion could be a factor. These trips will be documented in the report with recommendations. The time thresholds for intra-city/township travel will be monitored by PB and MDOT as interim data is released and is subject to change and further refinement as may be necessary.
c. Average travel speed will be calculated for each trip by using the TransCAD shortest route distance and respondent travel time. A trip will be flagged if the average travel speed is less than 5 miles per hour (mph). If a trip is greater than 30 miles in length, the trip will be flagged if the average travel speed is greater than 80 mph, otherwise it will be flagged if the average travel speed is greater than 65 mph. 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 within the speed parameters, the record will be flagged and reviewed. These trips will be documented in the report with recommendations.

These methods are useful for identifying outliers for further review, correction, or elimination as "incomplete".

Following receipt of PB's written review report (see Appendix A for schedule), MORPACE will have 7 days to make any corrections or recommended actions before submitting interim geocoding files, simultaneously with corrected data files, to MDOT for review. The geocoding and data files will be accompanied by a written MORPACE report of corrective or recommended actions. (PB's report will be appended to this report). PB's interim geocoding reviews will cover the following:

(1) Any outliers found using TransCAD review by time, mode and distance. Findings will cite full file ID numbers for household/person/trip.

(2) Review of geocoding result code rates with regard to meeting the geocoding specifications of this manual. (Stated in the third paragraph, page 1)

(3) Review of non-geocodables and any recommendations for corrections or exclusion of the household. Again, PB will cite full case number IDs.

Within seven days of receiving each PB interim written report, MORPACE will submit to MDOT its written case-by-case and procedural corrective actions and recommendations. This will include consulting with the Michigan Center for Geographic Information before submission of the report to MDOT on non-geocodables in the incomplete household file (submitted 10 days after the interim report). MDOT will make final determinations regarding household case (record) outcomes in accordance with the guidelines outlined on pages 2 and 3 of this manual. MORPACE will correct the comprehensive data file to reflect these changes. MORPACE will also maintain a record of households deleted. MORPACE will be required to meet geocoding rates specified in the third paragraph of page 1.

According to the work plan, the schedule of interim data releases to MDOT (including interim geocoding files) after the pilot is at 2,000, 4,000 6,000, 8,000, 10,000, 12,000, and 14,280 household completes. The monthly report and interim data delivery schedules have been combined to streamline reporting requirements, and to assure that monthly report information on progress matches interim data and geocoding deliveries. Sampling area maps of the home addresses of completed households will accompany the geocoding files. Appendix A shows a detailed schedule for monthly reports, interim data and geocoding submissions, and PB written review reports. This schedule has evolved since the start of the project. Reasons and an updated schedule are provided in Appendix A.

6. REPORTS AND RESULTS

As specified in the Appendix A Schedule, interim monthly geocoding reports will be given to PB and MDOT in the form of .DBF files with a map of home address locations (in bitmap format). The reports will document geocoding progress on an interim and final basis. The interim and final data will include a variable for results codes that are defined as explained in Appendix B. Whether a location was geocoded to Framework v3 or MapMarker Plus is identified within the geocoding results code. These results codes are defined by MapMarker and provide a preliminary means for identifying the level of geocoding performed. They in no way should be interpreted within this document or elsewhere as contradicting the levels of geocoding specified as required by MDOT.

Appendix A provides a schedule for the submission of monthly and final reports, interim and final data, and interim and final geocoding files. MORPACE will submit interim data and geocoding files, along with monthly reports, to PB as scheduled, approximately two weeks after the last travel day for the interim report period. PB will submit, as scheduled, written reports citing specific case numbers with problems or concerns. MORPACE will then have seven working days to submit a written report with its corrections and recommended action to MDOT (PB's report will be appended to each MORPACE interim report).

As described in Section 1 of this Geocoding Manual, MORPACE will provide a separate data file with all households with incomplete geocoding or with incomplete other required information. This "Household Information Incomplete" file will be submitted to MDOT with the Interim Report, and within 10 days, MORPACE and PB will submit final reviews and recommendations as to which households should be retained. MDOT will make a final case-by-case determination of households that will be eliminated from the data file due to missing information or non-geocodables. These determinations will be made based on the geocoding goals as established herein. These decisions will also take into account the total and overall quality of the household's travel information and the impact on filling difficult to find data cells.

Appendix A

APPENDIX A: Schedule for Submission of Monthly Reports, Interim Data and Geocoding Files to MDOT and to PB For Reviews

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 for review, and final data files and reports are due.

Dates for Monthly, Interim, and Final Submission of Reports, Data, and Geocoding Files to MDOT	Number of Completed Households in Interim/Final Data File	Last Travel Day	PB Review Due Date
January 31, 2004: Monthly Report	NA	NA	NA
February 24, 2004: Pilot Report	110	2/5/04	2/20/04
March 5, 2004: Monthly Report	NA	NA	NA
April 9, 2004: Monthly Report	NA	NA	NA
May 21, 2004: Monthly Report, Interim Data, Interim Geocoding Files, and Interim Report	2000	4/29/04	5/13/04
June 22, 2004: Monthly Report, Interim Data, Interim Geocoding Files, and Interim Report	4000	5/20/04	6/11/04
July 22, 2004: Monthly Report, Interim Data, Interim Geocoding Files, and Interim Report	6000	6/10/04	7/9/04
August 31, 2004: Monthly Report	NA	NA	NA
October 20, 2004: Monthly Report Interim Data, Interim Geocoding Files, and Interim Report	8,000	9/30/04	10/15/04
November 19, 2004: Monthly Report, Interim Data, Interim Geocoding Files, and Interim Report	10,000	10/28/04	11/16/04
December 20, 2004: Monthly Report, Interim Data, Interim Geocoding Files, and Interim Report	12,000	11/24/04	12/15/04
January 26, 2005: Monthly Report, Interim Data, Interim Geocoding Files, and Interim Report	14,280	12/16/04	1/16/05
February 24, 2005: Monthly Report, Draft Final Data Files, Draft Final Merged Geocoding Files, and Draft Final Project Report	14,280	12/16/04	2/18/05
March 24, 2005: Monthly Report, Final Interim Data Files, Final Interim Data Merged Geocoding Files, and Final Interim Project Report	14,280	12/16/04	3/18/05
April 25, 2005: Monthly Report, Final Data Files, Final Merged Geocoding Files and Final Project Report	14,280	12/16/04	4/18/05
May 31, 2005: Monthly Report, Final Copies of Project Report	NA	NA	NA

The "MI Travel Counts" project has encountered a number of unusual circumstances that have impacted the schedule developed at the beginning of the project. The situation having the most influence on the schedule has been the geocoding of the various locations collected during the interviews. These unique circumstances are detailed in the updated Geocoding Process Manual. The first three interim data deliveries were delayed, but were delivered within the 5-day grace period of the milestone dates set forth in the contract. However, extensive review of the non-geocodable locations and updated time and distance checks required that two new interim deliveries be established. These new dates are August 6, 2004 and August 18, 2004. The August 6, 2004 delivery will contain the final geocoding information for the first 4000 HH. The August 18, 2004 delivery will contain the final data for all households in the first three deliveries, including reviewed and updated non-geocodable locations and resolved issues raised in the time and distance checks. The separated deliveries were established to allow MDOT time to review the data for any unacceptable households prior to the restart of recruitment on August 23, 2004.

The interim delivery dates for the Fall portion of the schedule had to be revised due to an inaccurate assessment of the dates originally provided. For instance, the 8000 HH delivery was originally scheduled for October 20, 2004. The final travel day for this delivery is September 30, 2004. Since follow-up calls for retrieval continue for a week, the final day of retrieval interviewing for the 8000 HH delivery is October 7, 2004. The original schedule calls for fully geocoded files to be delivered to PB on October 8, 2004. Obviously, this is not possible. Therefore, the delivery of fully geocoded files to PB has been rescheduled for October 19, 2004 and the interim data report and delivery has been rescheduled for October 26, 2004.

Similar changes were made to the 10000 and 12000 HH deliveries to allow an adequate window for the geocoding process. All interim report and data delivery dates are still within the 5-day grace period of the milestone dates outlined in the contract. These dates were revised in order to ensure that MORPACE delivered on or before the dates promised. One remaining unknown factor in the schedule is the timing of the new geocoding process now that ArcView has been incorporated. The implementation of ArcView may allow for deliveries earlier than scheduled. Every effort will be made to provide the interim data and reports as quickly as possible following each interim cut-off. This includes providing the information by noon on the scheduled dates. However, according to the contract, the deliveries will be considered on time if received by close of business on the due date.

Adjustments were also made to the scheduled dates for receipt of PB's report and MORPACE's corresponding response to accommodate the change in when PB will receive the data. These dates do not fall within the 5-day grace period of the milestone dates. No changes were made to the deliverable dates scheduled after data collection.

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 1st 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 PB Report	14,280	12/16/04	1/12/05	2/4/05

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

Appendix B

Understanding Geocoding Result Codes Reported by MapMarker

MapMarker Plus returns a result code for every record it attempts to match that helps flag insufficient matches in interim files. The code is an alphanumeric code of 1-10 characters. The codes fall into three major categories:

- Single close match (S)
- Best match from multiple candidates (M)
- Non-match (N)

Single Close Match
Matches in the S category indicate that the record was matched to a single address candidate. The first character (S) reflects that MapMarker found a street address that matches the record. The second position in the code reflects the positional accuracy of the resulting point for the geocoded record, as indicated below:

S1 through S4 will not be used for MI Travel Counts
S5 single close match, point located at a street address position (highest accuracy available)
SX single close match, point located at street intersection

Best Match For Multiple Candidates ("Best Match" is a MapMarker term)
Matches in the M category indicate that there is more than one close match candidate for the record and MapMarker chose the best one of those candidates. This function is used only when the "Accept First" in the Multiple Match dialog tab is checked, which MORPACE does not check as standard policy. Therefore, MapMarker will not geocode any MDOT records that have multiple matches. MORPACE will not be providing MDOT with any records with a geocoding result starting with "M".

For either S or M category result codes, eight (8) additional characters describe how closely the address being geocoded matches an address in the Address Dictionary. The characters appear in the order given. Any non-matched components are represented by a dash.

Result Code Component	Description	Example
H	House Number	110
P	Street Prefix	North
N	Street Name	Fletcher
T	Street Type	Place
S	Street Suffix	SE
C	City Name	Boulder
Z	Zip Code	80303
A or U	Address Dictionary or User Dictionary	A

For example, the result code S5—N-SCZA represents a single close match that matched the street name, street suffix direction, city and zip code exactly, but could not match the house number, street prefix direction or the street type. The match came from the MapMarker Address Dictionary. This record would spot at the street address position of the match candidate. A perfect street level match would return a

result code with every component of the address matched and would look like S5HPNTSCZA.

Non-Match Codes
The following result codes indicate no match was made:

N No close match. Records can be re-geocoded during interactive process or during subsequent automatic passes under different matching conditions.
NX No close match for street intersections.
ND MapMarker could not find the Address Dictionary for the given zip code or city/state.
NG These records were marked during the interactive geocoding process as non-geocodable. MapMarker will not attempt to match these records again until the code is removed.

(Information based on MapInfo Corporation's documentation.)

Appendix C

Revised Geocoding Specifications

The following Appendix serves as documentation for the changes in the MORPACE/PB geocoding procedures and responsibilities. These changes are due primarily to the interaction of MapMarker Plus, MORPACE's standard geocoding software, and the Michigan Geographic Framework, v3. The following sections provide details for all proposed changes in methodology.

Section 1: Assignment of TAZ

The assignment of TAZ to each geocoded location will be done by Parsons-Brinckerhoff (PB). The reason for the shift from MORPACE to PB is due to the number of errors in TAZ assignment and unknown TAZs using MapInfo. PB was spending more time checking the TAZ assignment than they would by just assigning the value themselves. All parties (MDOT, PB, and MORPACE) agreed to have PB assign the TAZ to all geocoded locations after all data has been collected.

PB also developed a methodology for assigning TAZ when the geocoded point falls on the boundary of more than one TAZ. PB will provide documentation of this methodology when Sarah Binkowski returns from maternity leave.

Section 2: ArcView and the Revised Geocoding Process

While the MGFv3 was integrated into MapMarker, resulting street-level latitude and longitude values using the Framework dictionary in MapMarker would sometimes be located on the incorrect side of the street. This occurred in roughly 50% of the Framework Street-Level points. It was determined that using ArcView to geocode these locations provided the correct latitude and longitude values. An interim process consisted of sending all Framework street-level points identified by MapMarker to PB for re-geocoding in ArcView. While this solution served a purpose, it was not the optimum solution. Therefore, MORPACE purchased a license to use ArcView and has incorporated it as the first step in the new geocoding process (following file preparation), which is detailed below. The flowchart on pages 28-29 illustrates the process.

Step 1: Data Processing Generates Files for Geocoding

- MORPACE's Data Processing department (DP) prepares home, start, work, school, and trip .csv files

Step 2: Research Files

- Research prepares files for geocoding using the geographic Framework v3 files supplied by the Michigan Geographic Information Center, which has been integrated with MORPACE's MapInfo MapMarker Plus system. (MapMarker Plus is compatible with ArcView and TransCAD). As noted, MORPACE is now also using ArcView to geocode files to Framework street-level.
- Preparing the Files (MORPACE has developed its own in-house address cleaning system for this task)
  - Open the .csv file provided by Data Processing. Format all columns by:

1) Insert a new column "A" titled "Line." Number all cells in column "A" 1,2,3…
2) Run spell check in the Location Name and Location Type columns.
3) Format in upper case the Location Name, Location Type, Location Address, Location City, and Location State.
4) Edit each record by removing any periods, apostrophes, commas, hyphen, ampersand, number sign, and extra spaces.
5) In the Location Address field remove any P.O. Boxes and cut intersecting streets from the Location Address column and paste in the Intersection column. (P.O. Boxes are not used since they would geocode to a post office location. The recruit interview script limits the P.O. Box addresses that are taken for Location Address for the respondent's residence.)
6) Also, the Location Address field will use the following abbreviations:

Street	ST
Drive	DR
Lane	LN
Road	RD
Court	CT
Circle	CIR
Highway	HWY
Place	PL
Boulevard	BLVD
Avenue	AVE
North	N
South	S
East	E
West	W
Parkway	PKWY
Trail	TRL
State Route	M

Quadrant Locations in an address suffix such as 141 Cherry St., SE are used.

Other options for abbreviating highway names such as US 41 will be tested during both interactive phases of the geocoding process. If a street name includes a direction, the direction will NOT be abbreviated. For example, 1234 West RD will remain 1234 West RD, 1234 Northfield RD would remain 1234 Northfield RD, 1234 North Pike ST would become 1234 N Pike ST.

Also where "First" or "Third" is part of the street name they will not be changed to 1st or 3rd unless otherwise required by CGI/Framework v3 standards.
Likewise, all abbreviations will conform to CGI/Framework v3 standards.

7) In the Location City column ensure all cells list a city only. If there is no city listed replace the blank cell with the word "NONE."
8) In the Location State column ensure all states are abbreviated with the proper state abbreviation.
9) In the Location Zip Code column replace any 99998 (CATI generated code for "Don't Know"), 99999 (CATI generated code for "Refused"), or any unfamiliar zip code with "0."

10) Save the .csv file as a .dbf file.

There are other possible cleaning steps such as how to handle "Saint" or "Mount" in street or city names (e.g. St. Johns, Sault Ste. Marie, or Mt. Pleasant) or other conventions such as "Heights" (HTS), Hills (HLS), and Martin Luther King Jr. Blvd (MLK) that are best handled by the MapMarker interactive geocoding function, in combination with CGI/Framework v3 files, as described in Step 4.

Step 3: First Automatic to Street Level using ArcView

- Files are automatically geocoded to Framework v3 street-level (First Automatic) using ArcView.
    1) Records will be matched to a minimum 90% accuracy and have an offset of 25 feet.

Step 4: First Interactive to Street Level using MapMarker

- Files are interactively geocoded to MapMarker Plus (GDT enhanced) street-level (First Interactive) using MapMarker. All Framework v3 street-level locations were identified in Step 3.
    1) On the command screen check to run the file interactive. Ensure the zip code and intersection options are off.
    2) Look at each individual record to verify address information. If the address cannot be geocoded click "Ignore" until all lines have been checked.
    3) If there is a non-geocodable address listed in the Home File, re-contact the respondent for the correct home address.
    4) No geocoding other than to street-level will be done during this step.

Step 5: Internet & Map Investigations

- Research will print all locations that have not yet been geocoded to street-level.
- Internet Searching
    1) Using Internet look up, all locations that have not been geocoded to street-level will be investigated. Addresses are confirmed by using cross streets provided by respondents. Commonly used websites are Yahoo interactive maps and company websites, switchboard.com, and ses.standardandpoors.com. Internet searches will be performed in Farmington Hills by MORPACE's geocoding research staff.
    2) At this stage respondent provided cross streets will be used only to verify the location of a street address. The main purpose of this task is to find full street address information. However, for efficiency, cross streets will be updated where necessary to avoid the need for further Internet research at a later stage.
    3) Recalls for home addresses and information calls are made as appropriate at this stage.
    4) Search information is entered into the file.

Step 6: Second Automatic to Street-Level using ArcView

- A second automatic geocoding process is performed (Second Automatic) as described in Step 3.
- Following the complete automatic process, if addresses still cannot be geocoded to Framework v3 street level in ArcView, they will be interactively geocoded to MapMarker Plus (GDT enhanced) street-level using MapMarker.

Step 7: Final Interactive to Street-Level and Street-Intersection using MapMarker

- A final interactive geocoding process is performed (Final Interactive), again looking at every record individually as described in Step 4.
- All locations will be geocoded to street-level where possible. The majority of street-level locations at this stage will be MapMarker street-level. Framework v3 street-level could be achieved if a street name is changed during the interactive process (e.g., 123 Main Rd changed to 123 Main St). This is expected to be a rare occurrence.
- If a location cannot be geocoded to street-level, then it will be geocoded to Framework Intersection and then to MapMarker Intersection.

Step 8: Final Automatic to Street-Level using ArcView

- A final automatic geocoding process is performed (Final Automatic) as described in Step 3, when necessary. This step is only needed for the rare occurrence of a Framework v3 street-level location found in Step 7. This pass through ArcView is necessary to ensure that the location is geocoded to the correct side of the street.

Step 9: Review of Non-Geocodables

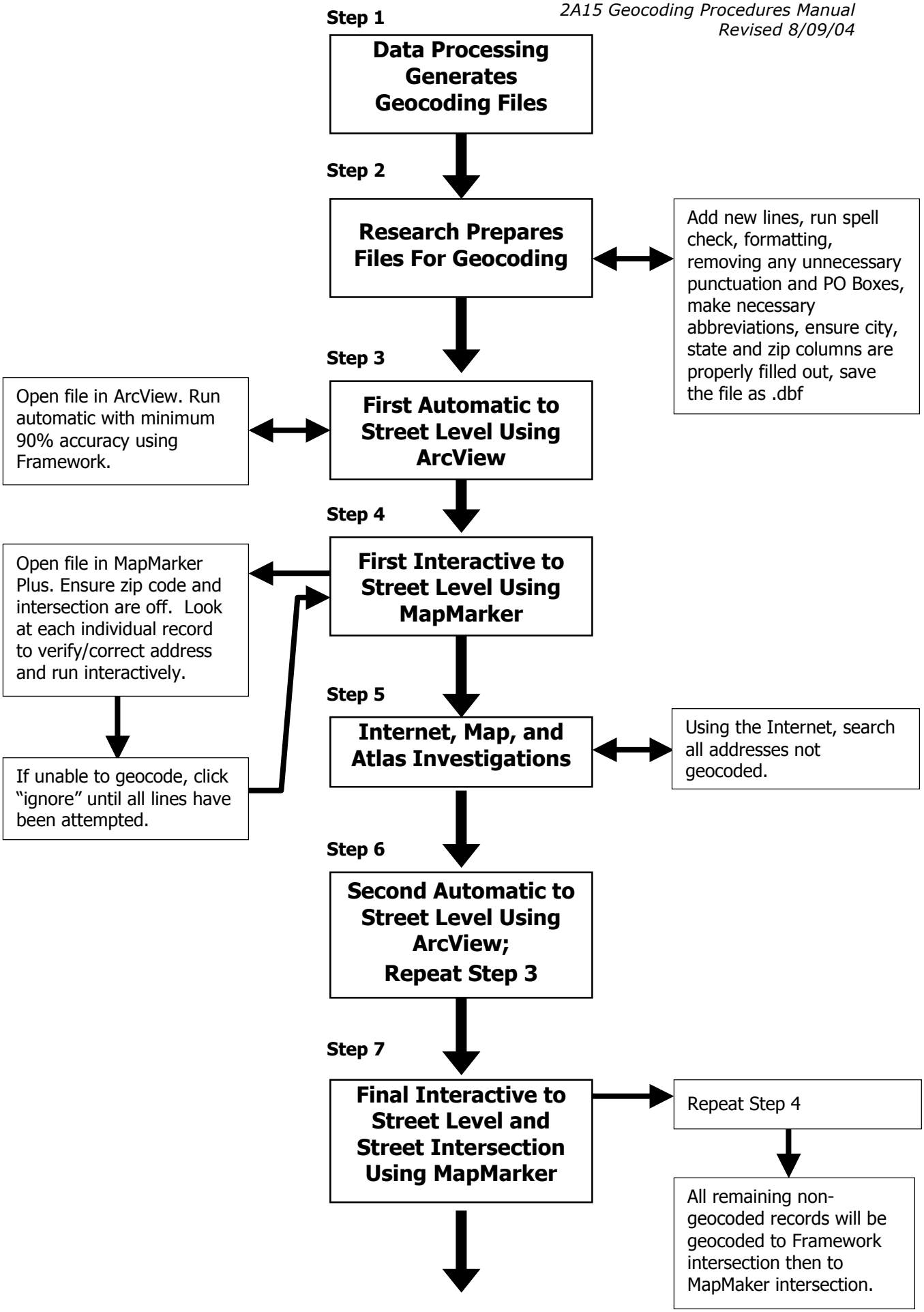
- The remaining non-geocodables will be reviewed and are expected to be 1% or less for home addresses, 5% or less for school and work files, and 10% or less for trip files. Attempts will be made through Internet sites and other resources to get these last locations to street-intersection. But extraordinary time spent on finding each of these individual points at this time may be inefficient. When necessary, an attempt will be made to manually geocode all home locations using Maptitude.

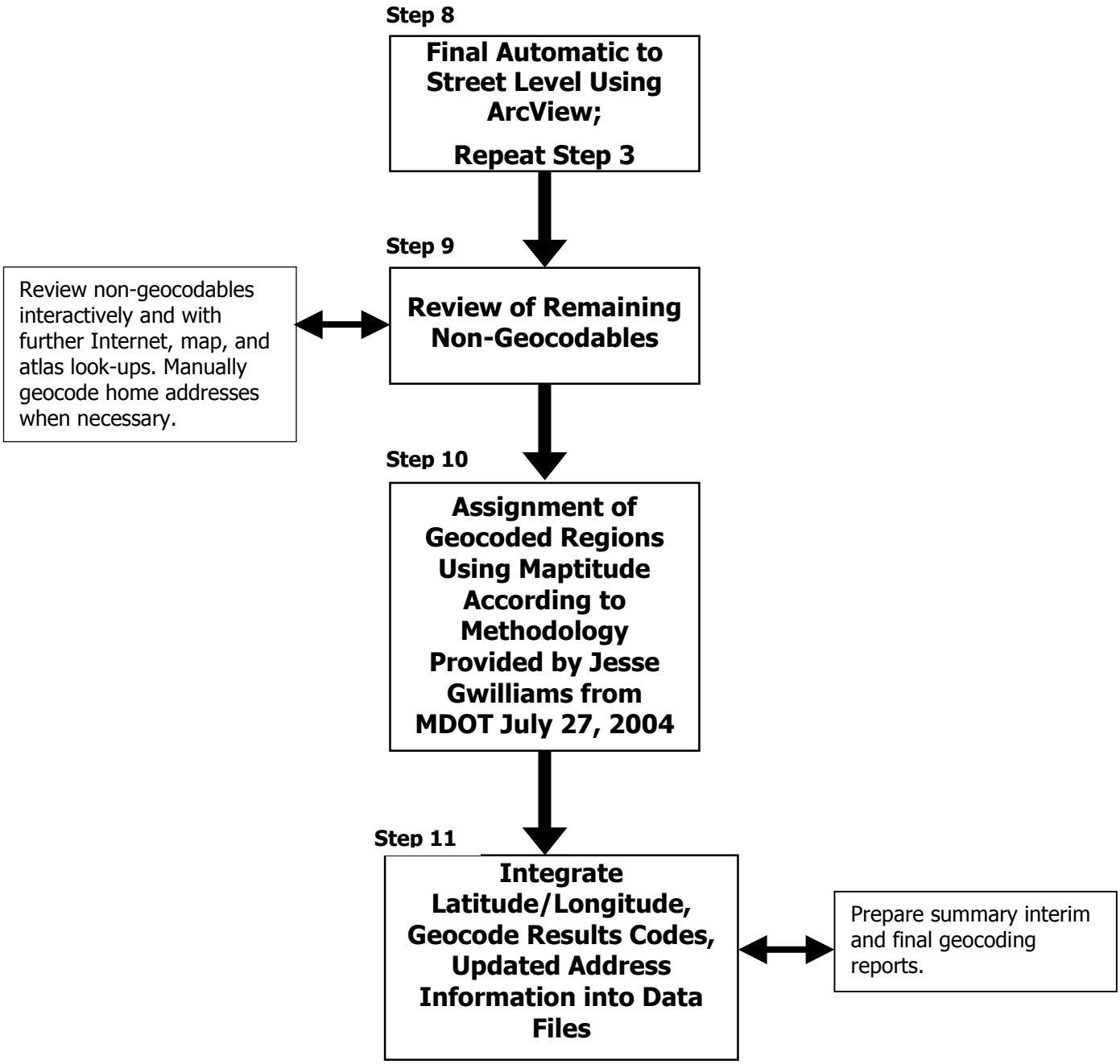
Step 10: Assignment of Regions using Maptitude

- Regions will be assigned to home locations using the geocoded information according to the methodology provided by Jesse Gwilliams, from MDOT, July 27, 2004.

Step 11: Integrate Latitude/Longitude, Geocoding Results Codes, and Updated Address Information into Data Files

- Latitude and longitude variables and a geocode result variable are entered into the project data files along with corrected address information in the variable structure provided for this purpose.


Step 1
Data Processing Generates Geocoding Files
Step 2
Research Prepares Files For Geocoding
Add new lines, run spell check, formatting, removing any unnecessary punctuation and PO Boxes, make necessary abbreviations, ensure city, state and zip columns are properly filled out, save the file as .dbf
Step 3
First Automatic to Street Level Using ArcView
Open file in ArcView. Run automatic with minimum 90% accuracy using Framework.
Step 4
First Interactive to Street Level Using MapMarker
Open file in MapMarker Plus. Ensure zip code and intersection are off. Look at each individual record to verify/correct address and run interactively.
If unable to geocode, click "ignore" until all lines have been attempted.
Step 5
Internet, Map, and Atlas Investigations
Using the Internet, search all addresses not geocoded.
Step 6
Second Automatic to Street Level Using ArcView; Repeat Step 3
Step 7
Final Interactive to Street Level and Street Intersection Using MapMarker
Repeat Step 4
All remaining non-geocoded records will be geocoded to Framework intersection then to MapMaker intersection.


Step 8
Final Automatic to Street Level Using ArcView;
Repeat Step 3
Step 9
Review of Remaining Non-Geocodables
Review non-geocodables interactively and with further Internet, map, and atlas look-ups. Manually geocode home addresses when necessary.
Step 10
Assignment of Geocoded Regions Using Maptitude According to Methodology Provided by Jesse Gwilliams from MDOT July 27, 2004
Step 11
Integrate Latitude/Longitude, Geocode Results Codes, Updated Address Information into Data Files
Prepare summary interim and final geocoding reports.

Appendix 23: Data Coding & Quality Procedures Manual

Draft Data Coding and Quality Control Manual

Overview

This manual consists of five parts:

1. Commitment to quality through the ISO 9001-2000 process and standards
2. Project specific quality control measures
3. The pilot
4. Specific data checking procedures
5. Data Codebook and coding specifications

This manual documents all parts. Project specific details will be developed in conjunction with the CATI script programs.

1. Commitment to Quality

CASRO

MORPACE International is committed to highest research industry standards. MORPACE International's membership in CASRO *(Council of American Survey Research Organizations*) is evidence of this commitment. CASRO is the trade organization for full-service survey research companies based in the United States. Organizational practices promoted by CASRO are designed to help ensure quality service delivery by its membership. This is pursued, while at the same time protecting project respondent and client confidentiality.

CASRO members represent what is best in the research industry: "an uncompromising commitment to ethics and professionalism, combined with the desire to know what opinions and beliefs about products, services and people will shape and color our world."

INTERNATIONAL STANDARDS ORGANIZATION (ISO) 9000

MORPACE International (MPI) has instituted a documented quality management system that addresses the requirements of ISO 9001-2000 as its minimum standards in quality management. MORPACE is a registered ISO 9001-2000 organization. MORPACE is among the first market research companies in the nation to have obtained this international standards certification.

The ISO certification process requires organizations to first document internal process procedures, and then to conduct internal audits to ensure that these processes are being followed. Certification is achieved when external ISO auditors perform similar audits to verify that the organization is in compliance with its ISO standards. The external audit process is conducted on an annual basis. Appendix B contains the key flowcharts for MORPACE International's quality process control that pertain to MI Travel Counts.

QUALITY COMMITTEE

MORPACE's commitment to quality extends beyond ISO certification. MORPACE's Quality Committee provides an opportunity for representatives from each MORPACE Team to share

information impacting the quality of the products and services provided by MORPACE International to our clients.

This Committee meets each Tuesday morning at 10:45 a.m. Meetings are open to all MORPACE staff. All employees are welcome to bring issues to the committee by attending or by sending their issues through their Team representative. The MORPACE Quality Committee distributes its recommendations to the entire organization. The Quality Committee reports activities to the MORPACE Executive Committee through the Management Review Procedures.

MPI conducts a client satisfaction survey after each project to ensure that client expectations are met and to identify any opportunities for improvement.

QUALITY ASSURANCE OFFICER

The MORPACE Vice President of Quality oversees implementation of the ISO 9000 quality management system and the activities of the Quality Committee. This person is MPI's designated Quality Assurance Officer. The name, address, phone number, fax, and e-mail address for this individual is as follows:

Sharna Morelli, Quality Assurance Officer
MORPACE International, Inc.
E-mail: smorelli@morpace.com

31700 Middlebelt Road, Ste. 200
Farmington Hills, MI 48334
Phone: 248-737-3441
Fax: 248-737-5326

2. Project Specific Quality Control and Data Checking Measures

MORPACE's emphasis is on providing a high quality dataset that accurately reflects the responses provided by household members and captures tours and sub-tours with all the MDOT required information in a consistent manner. Travel inventories will be collected from all household members for the same 48-hour travel period. MORPACE accepts that the data requirements set out in Task 2 of the MDOT RFP in order for a household to be deemed complete. However, quite a few of the results requirements of Task 2.1 Activity-Travel Diaries are post-data collection modeling tasks that require considerable modeling analysis and time (See bullets 4 and 5). MORPACE's responsibility is to collect the data necessary to perform all of these tasks. This includes:

2.1 Activity-Travel Diary Characteristics that will be noted if missing:

- Times of day during which the respondent was at home, regardless of activity
- Interval times of day at home in which the respondent was engaged in paid work activities of any kind
- Recording of each change in location the respondent made, along with the times of departure and arrival at the next location, the primary and secondary activities at each location, and the modes of travel used to get between locations, over the 48-hour recording period
- Indication when a tour (travel) begins before the travel period or ends after the travel period.
- Street address (or other geographic identification such as place name or business name) for geocoding (see Geocoding Procedures Manual for requirements)
- Number of persons traveling with respondents between locations if an auto-mobile/van/truck/ motorcycle/moped is used

- Relationship and ID of household members traveling with respondents to locations in an automobile/van/truck/ motorcycle/moped
- If a household vehicle was used
- If an auto-mobile/van/truck/ motorcycle/moped is used, the cost of parking fees and the basis on which they were paid
- Transit fares or/or method of payment fur public transit

2.2 Additional Required Person Socioeconomic Attributes that will be noted if missing:

- Age or group age
- Gender
- Employment status
- Student status and school name; college name and campus location if in Michigan
- Address of primary workplace
- Driver's license status
- Number of operable vehicles on travel days

2.3 Additional Required Household Socioeconomic Attributes that will be noted if missing

- Address of residence (See requirements in Geocoding Procedures Manual)
- Number of overnight visitors on data collection days
- Household income

MORPACE's CATI programming and post-processing data checks are extensively designed to assure delivery of complete household data. However, it is possible that a trade-offs between the level of completeness of individual records within households and overall response bias will develop. For this reason a process for deciding which households should be removed from the final dataset has been developed and will be as follows:

- With the interim data and report submitted to MDOT, MORPACE will submit a household trip file with all persons in all households (including Household, Person, and Trip ID) with any locations not geocoded to x,y coordinates and/or missing any of the key variables listed in 2.1 through 2.3 of the Data Coding and Quality Control Manual.

- Appended to this trip file will be the following variables for each person:

  Sampling Area
  Number in Household
  Number of Autos
  Number of Workers
  Percent of Assigned Data Cell Complete
  Household Income
  Homes Address and Geocoding Result
  Age or Group Age
  Gender
  Employment Status
  Workplace Address Geocoding Result
  Student Status and Geocoding Result of School Location
  Driver's license status

.

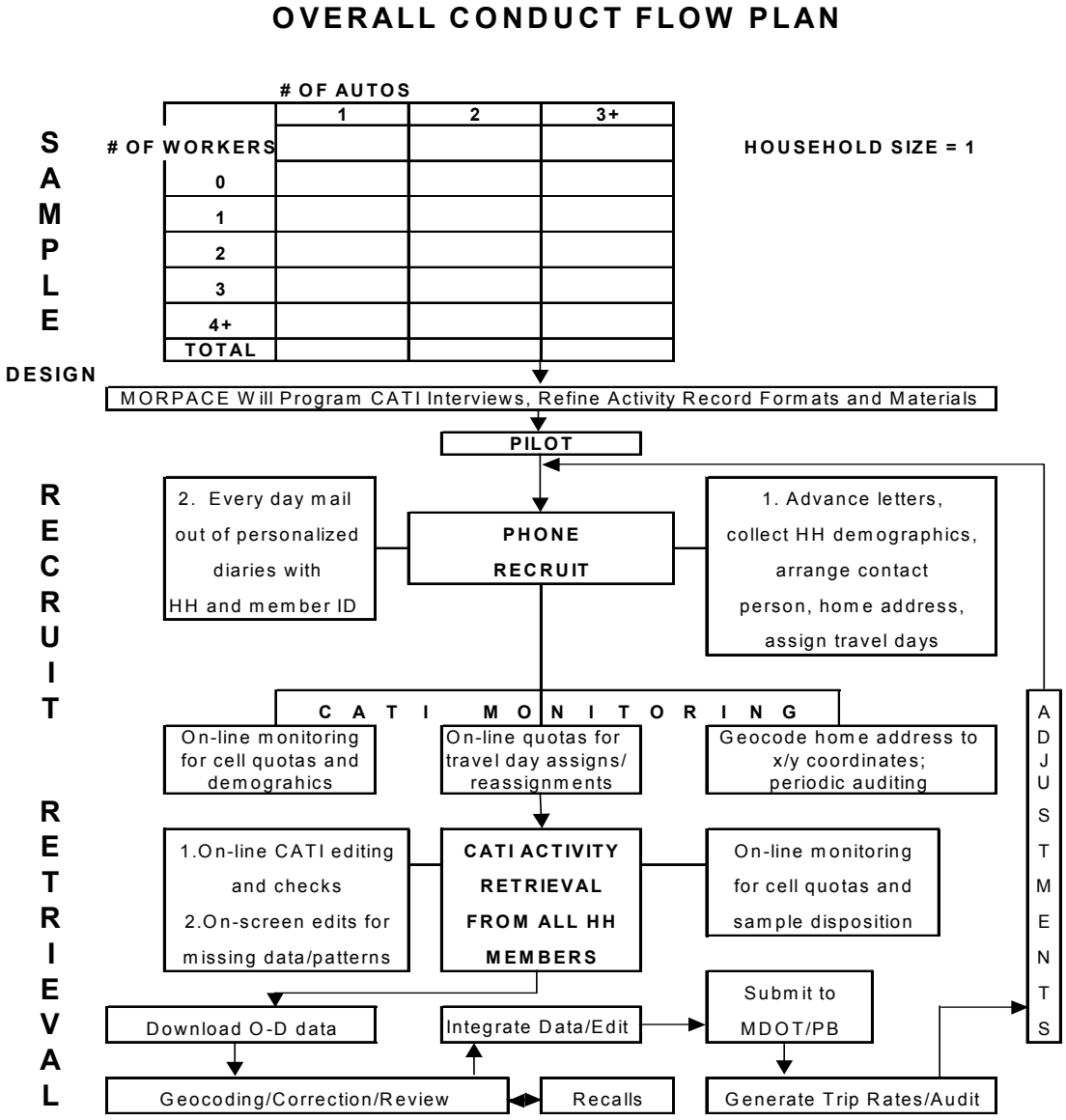
- Also added to this trip file will be any households found questionable by PB. This file/list of possibly incomplete households will be thoroughly reviewed by MORPACE and PB. MORPACE will expend considerable effort at this time to "salvage" households by manually attempting geocoding to TAZs (for type 2 errors), by further investigating Internet or Atlas look-ups, and/or by making recalls to respondents for missing demographic information. Recommendations as to which households to exclude will be made by PB and MORPACE within ten days of submitting the Interim report and the trip file of incomplete households. In making the decisions as to which households should be excluded, the following two factors will be taken into account:

    1. The comprehensive quality of the household's information
    2. Whether the household is from a difficult to fill data cell.

- MDOT will make the final decision regarding which households to remove from the final data file, based on balancing the two factors above and on guidelines for completeness described in this document.

On the following page, as Figure 1, is a flow chart of MI Travel Counts work tasks and monitoring activities:

Figure 1



As is required 99% or better of home addresses, 95% or better of school and work locations, and 90% or better of other stops/locations will be geocoded to latitude and longitude with the remainder to the appropriate TAZ level. MORPACE's geocoding process is described in the Geocoding Procedures Manual.

As previously noted, MORPACE International's research activities and processes are thoroughly controlled by our audited ISO 9000-2000 procedures. These procedures require written specifications and appropriate sign-offs for all research components. Affected work activities include sampling design and selection, CATI and Internet format design, phone protocols, phone room monitoring, the approval and mailing of materials, Internet and data checking, coding, and

report writing. Further the requirement of double-checking by appropriate senior-level personnel addresses the issue of missed items.

CATI Customization and Quality Control Features

MORPACE has considerable experience in customizing our advanced CATI data collection system for household travel inventories. Innovative and standard CATI features typically employed for travel data collection efforts include:

- **Household information is linked for the retrieval interview.** It may take more than one evening to collect all needed information for each requested household member. MORPACE's electronically controlled system allows interviewers to view the last disposition, name, and age of each household member. When all appropriate data is collected for household members is complete, the household disposition automatically shows as complete, and does not come up again for interviewing.

- **On-line time checks are performed.** Respondents cannot provide an end time that is before a start time, or a start time that is before the previous end time.

- **City lists are compiled**. Complete city lists for the inventory area are developed and provided to the interviewers in alphabetical order. The interviewer simply types the city number into the CATI system, saving time and avoiding common spelling mistakes. (The other-specify option is always allowed.)

- **Previously reported locations are automatically recorded.** Respondent burden is greatly reduced when location information only needs to be reported once. If a respondent goes to work, then goes out for lunch, and then returns to work, the respondent is very frustrated if the work location information must be recorded twice. MORPACE's CATI system allows the interviewer to select the previously reported location and move forward with the interview, relieving the respondent of duplicating information.

- **Trips and locations reported by other household members are automatically confirmed and recorded.** Respondent burden is significantly reduced when trips and locations reported by other household members do not need to be repeated. If multiple household members go to lunch before coming home together from church, they are understandingly frustrated if the trip and location information must be recorded multiple times.

- **Many other checks are either automatic or can be customized within our CATI system**. (A more complete listing of these additional, specific in-CATI data checks is given below.) For example, not allowing inconsistent answers such as an under 16 year old driving alone, an unemployed person reporting work trips, consistency between number of vehicles available to the household and number of vehicles used on a travel day, and consistency in mode changes.

- **Person counts will always match reported household size.** There cannot be a vehicle trip without a driver, and if the last location of each travel day wasn't "home", the CATI prompts to confirm that no more trips were taken for the remainder of the day until after 3 a.m. This helps to ensure that trips aren't missed.

- **Client remote and on-site access to the CATI system and reports assures quality control**. Using a modem and standard remote connection software, clients can access MORPACE's CATI system. Clients may personally test the project's questionnaires, seeing the questionnaires as they appear on the screen to the interviewer. Clients are also

welcome to personally visit the interviewing location in Sterling Heights and/or monitor interviewing via telephone.

Specific In-CATI Data Logic Checks

Data file structure:

1. All files are consistent on the key fields. There are no duplicate records. The key files are: Household, Person, and Trip (Activity), Long Distance, Visitor, and Visitor Trips.
2. One-to-many correspondence exists between the household file and the person file. After merging the two files by the RECRUIT ID variable, it will be found that there are no household IDs in the household file that do not exist in the person file and vice versa. It will also be found that there are no missing household IDs for any observation in the person file.
3. One-to-many correspondence exists between the person file and the trip (activity) file. After merging the two files by the RECRUIT ID and the PERSON variable, it will be found that there are no person IDs in the person file that do not exist in the trip (activity) file and vice versa. It will also be found that there are no missing person IDs for any observation in the activity file.
4. The number of persons with unique PERSON ID within a Household ID can be counted and found to be equal to the number of household members reported in the household file.
5. For the different household size variable, the value in the household file equals the number of persons for the household in the person file.

Additional CATI Logic Checks:

Household File

6. All observations in the Household file will have consecutive weekdays for travel.
7. The home address is not missing in any of the observations.

Person File

9. The number of observations in the person file for which person is the first person to be questioned (person=1) or number of persons in the household is 1, will equal the number of missing responses to relationship.
10. There are no observations for which age is between 0 and 13 and licensed driver or engaged in work for pay is not negative or missing.
11. The number of workers in the household file will equal the number of persons (in the person file) for each household, that report paid work full or part-time.
12. The number of observations for which the response to "paid work" is yes will equal responses for "full or part-time work", "industry", and "work location".
13. The number of observations for which the response to "attend school at any level" is yes will equal responses for "attend school full or part-time", "what type of school", and "school location".

Trip (Activity) File

14. The end times of the last location (activity) for day 2 will be 2:59 AM.
15. The sum of the activity duration variable i.e. end times (including stop minutes) will be 48 hours (2880 min).
16. There are no observations for which the "type of transportation" was car/van/truck or carpool and the response to driver/passenger and parking questions are missing. Likewise, there are no observations for which the "type of transportation" is something other than car/van/truck or carpool and the response to driver/passenger and parking questions are not missing.
17. There are no "work" trips reported for respondents who report that they are unemployed and not looking for work.

It is important to emphasize that all of these logic data checks are customized within the MORPACE CATI system to avoid the possibility of these problems occurring during phone interviewing. These are not post-processing checks or edits made after the problem has occurred.

MORPACE customizes the Internet version of the retrieval to incorporate these innovative CATI techniques.

Zero Trip Persons

If a person reports that no trips were taken on an assigned travel day, the CATI will skip the interviewer to a question asking the respondent for additional clarification about the reasons or circumstances for not taking any trips on that day. A supervisor will review the records of all persons reporting no trips to determine whether the reasons/circumstances are valid. On a weekly basis, MORPACE will send a file of these households to MDOT for review with the households' sampling area, data cell, ages and incomes, along with a recommendation as to which households should constitute legitimate interviews and which should be replaced. If it is determined by MDOT that a response is not reasonable, the entire household will be considered non-responsive and the household will be replaced.

Quality Control Plan

To reinforce our ISO procedures, the MORPACE transportation team has developed complementary, mostly electronically controlled systems to ensure quality products when conducting Household Travel Data Collection Programs. The overall description and summary for the major data collection activities (pre-notification, recruit, mailing of materials, reminder calls, retrieval of travel inventories, and recalls) is part of the Data Collection Methodology Report. More detailed electronic, logic check quality procedures and reports developed by MORPACE for the benefit of travel inventories are described below. All of the report formats can be customized to the needs of MDOT.

MORPACE Quality Control System for MI Travel Counts

Stage: SAMPLE SELECTION AND MAINTENENCE

Activity and Quality Method: MORPACE will order the sample from GENESYS according to the specifications of this document. (See MI Travel Counts Sample Design Technical Memorandum). GENESYS is one of two companies nationwide that has a database of all USA telephone exchange and block numbers. Utilizing this database, GENESYS will generate the random-digit-dial sampling frame to the specifications outlined in the MI Travel Counts Sample Design Technical Memorandum. GENESYS will provide full documentation of the ineligible numbers screened by sampling area through its ID Plus program. GENESYS will attach census density codes (urban, suburban, and rural) and provides 2000 updated socioeconomic breakdowns by the sampling areas.

A MORPACE programmer will randomly divide the sample into replicates of 500 numbers within each sampling area and set up a tally within the CATI for providing real-time tracking of sample disposition, data cell filling, and socioeconomic attributes of reached and completed households. The CATI call system will control number distribution to interviewers. MORPACE will not use predictive dialers. The interviewer will manually dial the phone numbers. Replicates will be released one at a time until all households receive a minimum of six calls. A maximum of two calls will be made to a number (one hour apart) in any one evening. Daytime and weekend attempts will be made before numbers are retired.

MORPACE will order one-fourth of the sample at a time because GENESYS updates quarterly to include new numbers.

Within the CATI screens via modem, MDOT, Parsons Brinckerhoff (PB), and MORPACE management will be able to view directly from their desktop PCs, the real-time sample disposition reports. These will include counts on ineligible numbers, uninformed and informed refusals, non-contacts (busy, answering machines) and completes. The CATI screens will also contain counts of recruited and retrieved households by data cells within sampling areas and by socioeconomic attributes including household density, which will then be compared with the GENESYS reports for the geographic sampling area.

Reports Due:

- CATI screen tallies will be faxed or emailed to MDOT on a weekly basis.
- Electronically prepared summaries of sample and respondent dispositions will be submitted to MDOT as part of the monthly progress reports.

Stage: PRE-NOTIFICATION

Activity and Quality Method: Sample replicates will be released for pre-notification letters on a scheduled basis. This is done so that respondents do not receive the letter too far in advance of the recruit phone call. Replicates will be sent to Acxiom for address matching. Acxiom is a company that maintains a database service for matching USA phone numbers to addresses, and vice versa. Acxiom is able to provide addresses for some unlisted numbers since its database includes information from additional marketing sources such as magazine subscriptions. A match rate of 60% to 65% is expected.

Households who receive advance letters will be flagged in the data file. After MDOT approves, the letter will be subjected to MORPACE's internal ISO check-off process. The project director or her designee will be present to audit the mailing process and check the appearance and stuffing of envelopes. MORPACE and MDOT staff names and addresses will be inserted in the mailing list as a final check. MORPACE monitors and logs all undeliverable mailings and will flag these in a data file. An attempt will be made to correct the address through the USPS website. A log will also be kept of phone calls to the 1-800-566-6262, to Internet help, and of any mail responses. Any non-routine responses will be referred to MDOT and/or the public information sub-consultant.

Reports Due:

- An electronic tally report will be available for each mailing and in total for the number of pre-notification letters sent, the number of undeliverable letters, and the outcome results of recruit interviews for those receiving and not receiving pre-notification letters.
- Weekly progress reports will also contain a summary of any non-routine respondent inquiries or comments regarding the pre-notification process or the project.

Stage: RECRUIT

Activity and Quality Method: The CATI system tracks the sample disposition and number and type of data cell and socioeconomic attributes for the completed sample. Partial completes will be assigned as callbacks by the CATI scheduler system. As described elsewhere, refusals will be coded as uninformed, soft, or hard refusals. Hard refusals are reviewed by the supervisor and usually will not be called back. Uninformed refusals will be

scheduled for new attempts in 7 days. Soft refusals will be scheduled by the system for refusal conversion attempts by senior interviewers.

Two-consecutive travel days will be randomly assigned to a household by the CATI system, keeping assignment even by eligible days over the interviewing period. At the end of every interviewing evening the supervisor will write a project note in the CATI to the senior project manager reporting on progress in meeting objectives, and relay any non-routine issues that arose with respondents.

MORPACE project management will continue to monitor interviews remotely. This capability will also be available to Parsons Brinckerhoff and MDOT.

Reports Due:

- Real-time tallies of sample disposition, data cell filling, and socioeconomic attributes of respondents will be available by modem and will be faxed or emailed to MDOT weekly.
- Monthly electronic reports will be included with progress reports.
- Weekly progress reports will include report on non-routine problems encountered or comments received from respondents.

Stage: MATERIALS & MAILING

***Activity and Quality Method*:** The cover letter, informational materials, and the diary, approved by MDOT, will be checked and approved through MORPACE's ISO process. Home addresses will be checked using the USPS website. Any addresses that do not match will be sent back to the phone room for re-contacting.

The diaries will be mailed out daily by the MORPACE coding department with a full sign-off procedure. Personal labels will be applied to diaries with the name, ID #, and the travel days for each respondent. A business reply envelope will be included with the household packet. A full mailing log will be electronically maintained in the database. Any undeliverable mailings will be fully explored and the household will be re-contacted by phone for corrected information. The data file will be continually edited with these changes by an assigned assistant programmer. Calls to the 1-800 number, online help, or mail responses will be logged.

Reports Due:

- Respondent mailings will be noted in the data file along with any edited address information not contained in a monthly or weekly progress report.

Stage: REMINDER CALLS

Activity and Quality Method: Re-mailings and rescheduling of travel dates will be edited into the data file on a daily basis by the assistant programmer. Hard refusals will be recorded and reviewed by a supervisor for possible refusal conversion.

Reports Due:

- No separate reports are due at this stage.

Stage: RETRIEVAL

Activity and Quality Method: Household retrieval interviews will be automatically scheduled by the CATI system for the evening following the assigned travel day. Retrieval interviews will continue to be scheduled automatically for the following three days until the CATI records that all members have completed the travel inventory. Phone messages will

be left. Respondents will be asked for the most convenient time to call them back, and the CATI scheduler will automatically bring the call up at this time for an available interviewer. Attempts will be made during the day and on weekends.

Those respondents who indicated in the recruit that they would complete by Internet will be automatically called on the second and succeeding nights, if their interview is not recorded in the database as a total household complete. Difficult to reach respondents will be asked to mail in their diaries or to call into the 1-800 number provided. The CATI system will provide all of the real-time tallies specified for the recruit, by person and household as appropriate. The data file will be edited daily with any corrected information that is received from respondents.

MORPACE project management will continue to monitor interviews remotely. This capability will be available to Parsons Brinckerhoff and MDOT.

Reports Due:

- Real-time tallies of sample disposition, data cell filling, and socioeconomic attributes of respondents will be available by modem and will be faxed or emailed to MDOT weekly.
- Monthly electronic reports will be included with monthly progress reports.
- Weekly progress reports will include report on non-routine problems encountered or comments received from respondents.
- Zero trip persons and the reasons will be reported to MDOT weekly for review.

Stage: RECALLS

Activity and Quality Method: Mailed in travel diaries will be manually reviewed for completeness and callbacks will be made to respondents to collect missing information. The completed inventories will then be entered into the CATI system. Recalls will also be made to clarify or collect missing data that is discovered when performing computer checks of completed CATI or Internet travel inventories. Finally, callbacks will be made, for address information when an address is found to be non-geocodable to latitude and longitude. All corrected information will be entered into or edited into the CATI data file.

Reports Due:

- A final edited data file with the required 14,280 completed households and non-completed households with missing data.

Stage: GEOCODING

Activity and Quality Method: All address information will be continually downloaded for geocoding by MORPACE's specialized staff. The first attempt will be to geocode to street address. If no street address is available, Internet address look-ups will be manually attempted using business name and type, cross streets, and city. Failures will be referred to the phone room for re-contact. If re-contact does not provide appropriate data, then geocoding to city and street intersection will be attempted. Incompletes will be flagged in the data file and reviewed with MDOT.

MORPACE will coordinate with and use the resources of the Michigan Center for Geographic Information. Anticipated cases where MORPACE will not be able to geocode to at least the nearest street intersection are only where the respondent refuses to provide the needed information, the respondent cannot be re-contacted, or the respondent cannot provide enough information to geocode. In these cases the entire household record will be

reviewed with MDOT personnel to determine whether the household should be removed from the data file and replaced, or whether the household's overall demographic and trip/activity information is sufficient to warrant keeping the household in the final data file, since the trade-off might be a less representative overall household sample base.

Reports Due:

- A report will be submitted to MDOT on a monthly basis, along with an .DBF file report of non-geocodable points and points geocoded only to TAZ. All geocoded points will have a code indicating the level to which they were geocoded to such as street address, intersection, etc. (See Appendix A for the Specific Schedule for Data Review and Submission)
- Maps of home, school, and work geocoded points by sampling area will be submitted on a monthly basis.
- Parsons Brinckerhoff will submit a monthly report of their review of interim geocoding files and corrective actions. The report will encompass a review of trips with mode and trip duration times for consistency with distance. (See Appendix A)

Stage: DATA CHECKS

Activity and Quality Method: An electronic program will be developed for reviewing all inventories on a continuous basis for missing data that would cause the household interview to be considered an incomplete under the requirements of Task 2 of the RFP. Households with missing data will be referred to the phone room for recall. Corrected data will be edited into the file. Incomplete households will be flagged in the data file.

The sample disposition for all recruit and retrieval interviews will be reviewed periodically by the senior MORPACE project manager to assure that the maximum number of call attempts are being made, within the time period allowed. The comparative outcomes of phone, Internet, 1-800, and mailed interviews will be reviewed. Adult proxy reporting by gender and relationship will be reviewed.

Reports Due:

- Electronic reports of the results of the data checking will be submitted to Parsons Brinckerhoff and MDOT on a monthly basis. (Appendix A)
- Reports on incomplete households including their data file ID numbers will be submitted monthly along with electronic sample disposition reports for both the recruit and the retrieval.
- As part of the monthly report (Appendix A), MORPACE will report the results of the multi-modal comparisons and report on adult proxy interviewing.

MORPACE Post Processing Data Check List

Household File

- Every variable should have an answer. There should be no blanks.
- Each case should have a record type of "1" for "Household Record".
- Check that there are no duplicate QNOs or phone numbers.
- Check that the area codes are valid Michigan area codes.
- Check that the month/day combinations are correct and that they match the day of the week variable.
- Check that all home addresses are located in Michigan.

- Check that all home zip codes are between 48000 and 49999.
- Check that all counties listed are included in the master list of the 83 Michigan counties.
- Check that home longitude is always a negative value, typically between 80 and 90.
- Check that home latitude is always a positive value, typically between 40 and 50.
- Check that longitude and latitude is not rounded. Data should be to six decimal places.
- Check that the number of workers in the household does not exceed the number of people in the household.
- 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 sampling area assignment is checked for each household.

Person File

- Each case should have a record type of "2" for "Person Record".
- QNO and phone number will have duplicates. Frequency of QNO and phone number is the number of persons in the household.
- Person number will have duplicates.
- Person number should be equal to the maximum number of people in the household from the household file.
- Person number 1 frequency should be the total number of households.
- Check that all cases have a value for age range.
- Only respondents with AGERNG= 98 or 99 should have an answer for the AGE18 variable.
- Check that all cases have a value for relationship.
- Check that the contact person (code 0) is person number 1.
- Only respondents that said "other" for relationship should have an answer for other relationship to contact person.
- 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).
- Check that no cases are missing for transit pass.
- Check that only respondents with a transit pass have one or more answers for type of transit pass.
- Check that only respondents who indicated "other" transit pass have an answer for other type of transit pass.
- 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).
- Check that no cases are missing school type.
- Check that no cases are missing for school name through school zone, if respondent is currently a student.
- Check that school longitude is always a negative value, typically between 80 and 90.
- Check that school latitude is always a positive value, typically between 40 and 50.
- Check that longitude and latitude is not rounded. Data should be to six decimal places.
- 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).
- Check that respondents that are not working are asked the not working status question.
- Check that worker questions are only asked if working status is code 1, 2 or code 3.
- Check that only respondents who indicated "other" industry have an answer for other industry.
- Check that only respondents who have a fixed workplace have answers for work address through work zone.
- Check that work longitude is always a negative value, typically between 80 and 90.

- Check that work latitude is always a positive value, typically between 40 and 50.
- Check that longitude and latitude is not rounded. Data should be to six decimal places.
- Check that secondary job questions are only asked if respondent has more than one job.
- Check that no cases are missing proxy status.
- Check that an infant or child is not a "respondent" interview. Interviewers are not allowed to talk directly with someone less than 14 years of age. Interviewers are only allowed to talk directly to 14 and 15 year olds with parental approval.
- Check that all proxy cases indicate which household member provided the proxy information.
- Check that no proxy cases indicate that the person number providing the proxy is the same as the person number of the respondent.
- Check that no cases are missing the diary completed variable.
- 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.
- Check that no cases are missing for long distance trips taken.

Trip File

- Each case should have a record type of "3" for "Trip Record".
- QNOs with a frequency of 1 are households that did not take any trips.
- TRIPNUM=0 frequency is the number of no trip people.
- Cases that did not take any trips will only have origin information – where they started and ended the travel period.
- Check that origin and destination longitude is always a negative value, often between 80 and 90.
- Check that origin and destination latitude is always a positive value, often between 40 and 50.
- Check that longitude and latitude is not rounded. Data should be to six decimal places.
- Check that only respondents who indicated "other" for type of origin or destination have an answer for other type of location.
- Check that the number of TRAV=2 is equal to the number of people in the study.
- Check that all cases of TRAV=2 and TRIPNUM=0 provided a reason for no travel.
- 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.
- Check that only cases with "other" for type of transportation have an answer for other type of transportation used.
- 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.
- Check that only cases with "other" for bus provider have an answer for other bus provider used.
- 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.
- Check that if the respondent indicated they paid for the trip that a valid amount has been recorded for amount paid for trip.
- 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 post-coded as passengers.
- Check that if a trip involved a car, van, truck, or motorcycle that the number of additional people in the vehicle was asked.
- 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 post-coded with "none".
- Check that the number of household members in the vehicle is not greater than the number of people in the vehicle.
- Check that the respondent is not listed as a household member in the vehicle.

- 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 post-coded with "no".
- Check that if a trip involved a car, van, truck, or motorcycle that the respondent was asked if they paid for parking.
- 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.
- Check that all cases (except those respondents that did not travel) are not missing arrival time or destination information.
- Check that if the respondent was at home that only activity codes 1 or 2 are used.
- Check that if the respondent was not a home that activity codes are not code 1 or 2.
- Check that departure & arrival times are in Military time.

Long Distance File

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

Stage: Communicating and Reporting

Activity and Quality Method: MORPACE will schedule a teleconference meeting at a predetermined time with the MDOT Project Director and Parsons Brinckerhoff on an every-other week basis. Meetings in Lansing will be attended by the MORPACE-PB Team as scheduled or requested.

Reports Due:

- Weekly progress reports will consist of the faxed or emailed tally reports on data cell quotas and socioeconomic characteristics of households recruited and retrieved.

- The weekly progress report will also include a brief narrative on any significant problems encountered.

- Monthly progress reports will include the electronic sample disposition report, the data checking report, and the report on incompletes. Other reports will be submitted as requested.

- Full interim data files and geocoding reports will be submitted after the pilot, after 2,000 completes, 4,000 completes, 6,000 completes, 8,000 completes, 12,000 completes, and 14,280 household complete

MORPACE backs up its data files on a daily basis. Teleconferences with MORPACE-PB relevant team members or meetings in Lansing will be attended as scheduled or requested throughout the project period.

3. The Pilot

Overcoming potential obstacles
A full pilot test will take place in January-early February of 2004. The pretest will allow for a final check of the data collection materials and instruments, and is of critical importance to test the entire research design, quality control measures, and fit of the data to modeling requirements and needs. The pilot will ensure that the data collection effort not only *appears* to meet the needs of MDOT, but that it *actually meets* the needs and objectives. The pilot will allow sufficient time for analysis, reflection, and potentially major modifications. Reprogramming of MORPACE's CATI system will not be a lengthy process (10 to 14 days) because we do not use licensed software; advanced programming is accomplished in-house.

Methodology
For the pilot, 220 households will be recruited according to the approved sampling design, evenly distributed across the seven geographic sampling areas, with 20 additional recruits targeted within the City of Detroit. It is anticipated that at least 110 of these households (50%) will complete the retrieval portion of the data collection effort according to the requirements of Task 2 of the RFP. At least ten attempts will be made to complete at least one recruited zero vehicle pilot household. Completed pilot households will count towards total project completes, if materials do not substantially change as a result of the pilot.

The actual pilot will start with the briefing and training of MORPACE interviewers and interactive practice with the CATI scripts. It is important that MDOT officials be present so that the interviewers get a full and personal sense of the importance of this project and of the commitment interviewers must make to quality. The recruitment and retrieval data collection will be monitored on-site. Additionally these functions can be remotely monitored by MORPACE transportation research staff and PB and, most importantly, by MDOT project management. (This monitoring will be in addition to the full monitoring procedures employed by MORPACE phone room supervisory personnel).

A computerized sample disposition for all dialings made will be provided. The recruited households will be assigned a 48-hour activity-travel recording period and mailed information and diaries for each member of the household (and any visitors). Reminder calls will be made the evening before the travel period. The day following the second assigned travel day, the household will be recalled to retrieve activity and trip information by phone. All phone contact with respondents can be remotely monitored by PB, our sub-consultants, and MDOT. At the time of this retrieval phone call, reluctant or unavailable respondents will be provided with the option of completing their travel information by Internet, by mailing the completed person information sheet and diary back to MORPACE in the postage-paid envelope provided, or by calling the MORPACE 1-800 number during operating hours, from 9:00 a.m. to 9 p.m. EST.

The Quality Control Plan and all reporting systems outlined previously will be thoroughly pre-tested. Problems encountered will be documented and reviewed with MDOT. MORPACE will provide PB and MDOT with fully edited and checked data sets, including geocoding. A map of the home locations of completed households will be provided.

In addition to monitoring and reviewing the pilot results, MORPACE will conduct a thorough debriefing with the interviewers to identify any questions with which respondents had difficulty answering – either in regard to confusion or sensitivity. Questions will then be reworded or deleted from the instruments, prior to executing the full data collection effort. The pilot will also determine the adequacy of training materials, the training manual, and interactive review of CATI scripts.

Pilot Report

A full report of the pilot results and any recommendations will be submitted to MDOT. The report will document response rates, item non-response evaluation, the adequacy of materials and scripts, the refusal conversion procedures, and the efficiency of edit and data checking programs. The MORPACE-PB team will closely evaluate those variables eliciting high non-response rates or refusals. The pilot report will identify methods to deal with hard to fill data cells. The pilot will also be used to test geocoding programs and timing, including review of geocoded files by the Michigan Geographic Information Center. File structure will additionally be a topic for review and correction. The full pilot report must be delivered 15 working days following the completion of pilot interviewing. MDOT will review the report and data file with the full assistance of PB and Peter Stopher, who will recommend changes.

4. Quality Control Procedures

MORPACE believes that proactive quality checks are of vital importance to reliable results. Our sophisticated, in-house CATI system allows for on-line clarification of inconsistent respondent information and multiple data checks. Logic errors are avoided because the questionnaire, including the appropriate skip patterns and valid answer ranges, is programmed into the system. Information is collected in an efficient and consistent manner. The quality control procedures will be developed and programmed and implemented on a continuous basis.

A completed Household is one in which all of the required Task 2 specified data items have been obtained for the three mandatory parts of the data collection program: (1) household data, (2) person data, and (3) trip data (see section 2 of this Manual). A diary must be completed for all members of the household and any visitors in the household on the assigned travel days. The only exception may be for households with 5 or more members, where the household may be deemed a complete if no more than one household member fails to report a completed diary. Such exceptions will be applied only on a case-by-case basis within difficult to fill data cells, and for no more than 10% of all households having five or more members. Households who fail to complete diaries on the assigned travel days will be rescheduled for a different 48-hour period. Re-mailing of diary packets to households will be performed as needed. Replacement households for those who do not complete the full retrieval interview for whatever reason will be replaced by recruited households from the same data cells. This procedure will preserve the integrity of the sampling quota design targets by sampling area and data cells. Weekly and monthly reports to MDOT on sample disposition will be submitted as described in Task 4, and will also be available in real-time

to MDOT via modem on a continuous basis. Partially completed and rejected interviews will be maintained in the data file and will be delivered to MDOT as a final deliverable.

Weekly and monthly reports to MDOT on the status of the project will ensure that, if problems with data collection do arise, solutions can be implemented quickly during the course of data collection. For instance, if certain types of households (i.e., larger households or households with no vehicles) are initially agreeing to take part in the inventory, but refusing to provide the person-level travel information, intensive callback or information strategies may be instituted to increase participation rates for these difficult to complete households.

While our interviewers are trained to probe thoroughly and prompts are provided for sensitive questions (such as household income), there will always be certain respondents that are unwilling to answer some of the questions, and there will be households that refuse to participate in the retrieval process. However, the data collection effort must gather information from an accurate representation of the sampling area's residents. Therefore, allowance for some "refused" or "don't know" answers--and innovations such as mail-back, Internet, and 1-800 call in options--will be done to increase response rates among representative households. Recalls will be made to insure refused" or "don't know" answers are low.

Throughout the MI Travel Counts program, the emphasis will be on the accessibility of real-time monitoring information to the MORPACE-PB Team and MDOT. The more quickly on-going results are available in a simple format, the less disruptive will be any corrective measures that are required. It is essential that our clients know where we are with data collection, both in terms of progress on completing sampling cells and the quality of the data being collected. If problems arise, they are anticipated to be with sample representation and non-response bias or with difficulties in geocoding some locations. Given the commitment of the MORPACE-PB Team to this project and the extensive resources of the firm, we do not anticipate any problems with the schedule or resources.

Reports and Interim Data Delivery
Complete interim data files will be submitted to PB for review and then to MDOT after the pilot when 100 households are complete, after 2,000 completes, 4,000 completes, 6,000 completes, 8,000 completes, 10,000 completes, 12,000 completes, and upon completion of 14,280 households. The geocoding files will be accompanied by maps by sampling area of the home address of completed households. Appendix A shows a detailed schedule for submission of monthly and final reports, interim and final data, and interim and final geocoding files.

As shown in the Appendix A, Reporting and Review Schedule, MORPACE will submit interim data and geocoding files in .dbf format, along with written monthly reports to MDOT, after these files have been thoroughly reviewed by PB. PB will submit, as scheduled, written reports citing specific case numbers with problems or concerns. Part of PB's report will be TransCAD based. Both PB reports to MORPACE and MORPACE's report to MDOT will be sent via e-mail. Portions of MORPACE's reports will be based on programmed electronic data from the CATI and other customized post-processing data reports. Formats for these reports will be worked out as a part of the Pilot when test data is available.

After receiving PB's report (Appendix A), MORPACE will have seven working days to submit a written report with its corrections and recommended action to MDOT. MDOT will make a final case-

by-case determination of households that will be eliminated from the data file due to missing information or non-geocodedable household. These determinations will be made based on the data and geocoding goals as described herein, in Task 2 of the RFP, and as described in the Geocoding Procedures Manual. These decisions will also take into account the total and overall quality of the household's travel information and the extent and impact of missing data.

Interim reports (submitted with interim data) will include: participation rates including progress on hard to fill cells, average trip rates, geocoding rates including a report on non-geocodable household, and a total of 17 tables, including cross-tabulations of the responses to selected questions:

1. By sampling area, recruit progress by sampling data cells
2. By sampling area, retrieval progress by sampling data cells
3. By sampling area, completed home, school, and work geocoded results codes and mapped
4. Non-geocodable disposition report
5. By sampling area, completed household trip locations by geocoding results codes
6. By sampling area, completed households by appropriate geographic areas (county, city, or township)
7. Distribution of households by income
8. Gender distribution for completed persons
9. Age distribution for completed persons
10. By sampling area, disposition of zero trip households
11. By sampling area, proxy interviews with and without diary
12. By sampling area, average trip rates per person
13. By sampling area, cumulative percent of types of transportation
14. By sampling area, cumulative percent of primary activities at locations
15. Review of item non-response for key socio-demographic variables
16. A cumulative list of zero vehicles households that have been removed from the data file.
17. Percent of large (+5) households missing complete data from one member.

During months when interim data is not due, the monthly report will consist of tables 1, 2, 10, and 16, as well as a synopsis of activities undertaken during the previous month, activities planned for the coming month, and progress on any previous designated corrective actions.

Geocoding information will lag somewhat behind other data information provided since geocoding is not a real-time data processing task. Home and trip geocoding interim files will be separately provided to PB and MDOT in a .DBF format, with address and latitude/longitude information and geocoding results codes attached. This geocoding information will later be merged back into the data file once it has been fully reviewed by PB and reviewed and approved by MDOT.

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.

Parsons Brinckerhoff (PB) Post-Processing Data Checks and Review Procedures

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 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 under 16 years of age was by proxy
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 0 for education level, check that respondents 18 year of age or younger are code 0
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 asked the not working status question
k. Check that worker questions are only asked if working status is code 1, 2, or code 3
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 those 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, and 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, 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 is 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

4. Long Distance File

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

5. Review of zero trip households for exclusion or inclusion based on reasonability standards.

6. 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:

7. Total Number of households by cell completed

Percent complete by cell for each geographic sampling area, by household size, auto ownership, and number of workers

8. Review of geocoding results codes and non-geocodable issues and rates, based on reasonability standards. The geocoding checks which will be performed by PB have been outlined in detail in the Geocoding Manual.

9. 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.

10. Review of monthly report tables, progress, and corrective actions.

11. 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, Visitor Trip
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 non-geocodable points, also summaries on multi-TAZ points

p. Time Duration Summary – details on those records that have trip time duration inconsistencies
q. Recommendations

Peter Stopher will review monthly and interim reports and comment on progress and concerns. (See Appendix A for Schedule of reviews and interim/monthly reports.)

The monthly reports will include a task-by-task summary of work performed during the month and anticipated activities for the following month, including any proposed corrective action. Reporting of response rates will be delivered with interim data on the scheduled outlined in Appendix A. Response rate reporting will conform to standards established by CASRO.

Meetings between the MORPACE senior data collection team and the MDOT project manager will be held in Lansing as requested, with teleconferences conducted on at least an every other week basis. MORPACE proposes hosting a monthly end of the month meeting with the MDOT project manager and key MDOT staff in the MORPACE phone room to review project status and debrief with interviewers.

5. Data Codebook and Coding Specifications

Initial coding structure will be presented as a part of the Pilot Report and will be revised, based on PB and MDOT input, as submission of interim data proceeds (Appendix C).

Appendix A

APPENDIX A: Schedule for Submission of Monthly Reports, Interim Data and Geocoding Files to MDOT and to PB for Reviews

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 for and final data files and reports are due.

Dates for submission to MDOT	Items Due to MDOT	Number of Completed Households in Interim/Final Data File	Last Travel Day	PB Review Due Date
January 31, 2004	Monthly Progress Report	NA	NA	NA
February 24, 2004	Pilot Report Pilot Data	110	2/5/04	2/20/04
March 5, 2004	Monthly Progress Report	NA	NA	NA
April 9, 2004	Monthly Progress Report	NA	NA	NA
May 21, 2004	Monthly Progress Report Interim Data Interim Geocoding Files Interim Report	2000	4/29/04	5/13/04
June 22, 2004	Monthly Progress Report Interim Data Interim Geocoding Files Interim Report	4000	5/20/04	6/11/04
July 22, 2004	Monthly Progress Report Interim Data Interim Geocoding Files Interim Report	6000	6/10/04	7/9/04
August 31, 2004	Monthly Progress Report	NA	NA	NA
October 20, 2004	Monthly Progress Report Interim Data Interim Geocoding Files Interim Report	8,000	9/30/04	10/15/04
November 19, 2004	Monthly Progress Report Interim Data Interim Geocoding Files Interim Report	10,000	10/28/04	11/16/04
December 20, 2004	Monthly Progress Report Interim Data Interim Geocoding Files Interim Report	12,000	11/24/04	12/15/04
January 26, 2005	Monthly Progress Report Interim Data Interim Geocoding Files Interim Report	14,280	12/16/04	1/16/05
February 24, 2005	Monthly Progress Report Draft Final Data Files Draft Final Merged Geocoding Files Draft Final Project Report	14,280	12/16/04	2/18/05
March 24, 2005	Monthly Progress Report Final Interim Data Files Final Interim Data Merged Geocoding Files Final Interim Project Report	14,280	12/16/04	3/18/05
April 25, 2005	Monthly Progress Report Final Data Files Final Merged Geocoding Files Final Project Report	14,280	12/16/04	4/18/05
May 31, 2005	Monthly Progress Report Final Copies of Project Report	NA	NA	NA

Appendix 24: Codebook

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
109	148	Alphanum	Left	A40	CITY	Home City	Text	Text
216	235	Alphanum	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	Days of Week	1	Monday/Tuesday
							2	Tuesday/Wednesday
							3	Wednesday/Thursday
297	302	Numeric	Right	I6	DELIV	Interim Delivery	2000	2000 Household Delivery
							4000	4000 Household Delivery
							6000	6000 Household Delivery
							8000	8000 Household Delivery
							10000	10000 Household Delivery
							12000	12000 Household Delivery
							14280	14280 Household Delivery
295	296	Numeric	Right	I2	FUTURE	Willing to Participate in the Future	1	Yes
							2	No
							98	Don't Know
69	108	Alphanum	Left	A40	GADDR	Geocoded Home Address	Text	Text
273	274	Numeric	Right	I2	GEOLVL	Geocoding Level	1	Framework Street-Level
							2	MapMarker Street-Level
							3	Framework Intersection-Level
							4	MapMarker Intersection-Level
							5	TAZ Level
							6	Non-Geocodable
							7	Ohio
							8	Illinois
							9	Wisconsin
							10	Indiana
							11	Canada
							12	Other (CITYFILE)
							13	Manually Geocoded
258	272	Alphanum	Left	A15	GEORSL	Geocoding Result	Text	Text
283	284	Numeric	Right	I2	HHNUMPPL	Number of Persons in Household	1-15	Valid Range
287	288	Numeric	Right	I2	HHNUMVEH	Vehicles Available to Household	0-10	Valid Range
							98	Don't Know
							99	Refused
291	292	Numeric	Right	I2	INCOME	Income	1	Less than $10,000
							2	$10,000 to $19,999
							3	$20,000 to $29,999

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							4	$30,000 to $39,999
							5	$40,000 to $49,999
							6	$50,000 to $59,999
							7	$60,000 to $74,999
							8	$75,000 to $99,999
							9	$100,000 to $124,999
							10	$125,000 or more
							11	Below $50,000
							12	$50,000 or above
							98	Don't Know
							99	Refused
248	257	Alphanum	Left	F10.6	LATI	Home Latitude	Value	Value
							000.000000	Unknown Latitude
28	28	Numeric	NA	I1	LETTER	Advance Letter Sent	1	Yes
							2	No
238	247	Alphanum	Left	F10.6	LONG	Home Longitude	Value	Value
							000.000000	Unknown Longitude
19	20	Numeric	Right	I2	MONTH1	Month of Day 1	1	January
21	22	Numeric	Right	I2	MONTH2	Month of Day 2	2	February
							3	March
							4	April
							5	May
							6	June
							7	July
							8	August
							9	September
							10	October
							11	November
							12	December
293	294	Numeric	Right	I2	NUMVIS	Overnight Visitors	0-8	Valid Range
							98	Don't Know
							99	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	1A	SEMCOG
							1B	Detroit
							2	Small Cities
							3	Upper Peninsula Rural
							4	Northern Lower Peninsula

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							5	Southern Lower Peninsula
							6	TMAs
							7	Small Urban Modeled Areas
149	150	Alphanum	Left	A2	STATE	Home State	Text	Text
303	304	Numeric	Right	I2	STATUS	Status of HH	1	Household removed, they are in data cells with qota closed
							2	Household agreed upon to remove (no trips)
							3	Part of the 79 from MDOT to remove
							4	Household 20% or more non-geocodable
							5	Household with 25% or less non-geocodable
289	290	Numeric	Right	I2	VEHSUB	Vehicles Subsidized by Employer	0-10	Valid Range
							98	Don't Know
							99	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
275	282	Alphanum	Left	A8	ZONE	Household TAZ	Value	Value
							88888888	Unknown Zone

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
23	25	Numeric	Right	I3	AGE	Age	0-115	Valid Range
							998	Don't Know
							999	Refused
28	29	Numeric	Right	I2	AGE18	Age Above/Below 18	1	18 or older
							2	Under 18
							98	Don't Know
							99	Refused
26	27	Numeric	Right	I2	AGERNG	Age Range	1	Under 5
							2	5 to 15
							3	16 to 17
							4	18 to 24
							5	25 to 34
							6	35 to 44
							7	45 to 54
							8	55 to 64
							9	65 to 74
							10	75 to 84
							11	85 and over
							98	Don't Know
							99	Refused
1483	1484	Numeric	Right	I2	DCOMP	Diary Completed	1	Yes
							2	No
							3	Did not receive materials
							98	Don't Know
							99	Refused
1489	1494	Numeric	Right	I6	DELIV	Interim Deilvery	2000	2000 Household Delivery
							4000	4000 Household Delivery
							6000	6000 Household Delivery
							8000	8000 Household Delivery
							10000	10000 Household Delivery
							12000	12000 Household Delivery
							14280	14280 Household Delivery
1485	1486	Numeric	Right	I2	DHAVE	Using Completed Diary	1	Yes
							2	No
							3	Not Applicable
341	342	Numeric	Right	I2	EDU	Education Level	0	Not Applicable (Too Young)
							1	Less Than High School
							2	High School Graduate
							3	Some College
							4	Vocational/Technical Training
							5	Associates Degree
							6	Bachelors Degree
							7	Graduate/Post-Graduate Degree

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							98	Don't Know
							99	Refused
21	22	Numeric	Right	I2	GENDER	Gender	1	Male
							2	Female
							99	Refused
72	73	Numeric	Right	I2	LDRV	Licensed Driver	1	Yes
							2	No
							3	Not Applicable (Too Young)
							98	Don't Know
							99	Refused
1487	1488	Numeric	Right	I2	LDTRIPS	Long-Distance Trips Taken	1	Yes
							2	No
							98	Don't Know
							99	Refused
1069	1070	Numeric	Right	I2	MJOBS	Multiple Jobs	1	Yes
							2	No
							98	Don't Know
							99	Refused
660	661	Numeric	Right	I2	NOWK	Not Working Status	1	Looking for Work
							2	Not Looking for Work
							98	Don't Know
							99	Refused
385	444	Alphanum	Left	A60	OSADDR	Original School Address	Text	Text
785	844	Alphanum	Left	A60	OW1ADDR	Original Primary Employer Address	Text	Text
1195	1254	Alphanum	Left	A60	OW2ADDR	Original Secondary Employer Address	Text	Text
124	131	Alphanum	Left	F8.2	PCOST1	Amount Paid for Transit Pass 1	0.01-9000.99	Valid Range
197	204	Alphanum	Left	F8.2	PCOST2	Amount Paid for Transit Pass 2	0.01-9000.99	Valid Range
270	277	Alphanum	Left	F8.2	PCOST3	Amount Paid for Transit Pass 3	0.01-9000.99	Valid Range
9	10	Numeric	Right	I2	PERNUM	Person Number	1	Person 1
							2	Person 2
							3	Person 3
							4	Person 4
							5	Person 5
							6	Person 6
							7	Person 7
							8	Person 8
							9	Person 9
							10	Person 10
							11	Person 11
							12	Person 12
							13	Person 13
							14	Person 14
							15	Person 15

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
11	20	Alphanum	Left	A10	PHONENO	Phone Number	Value	Value
132	134	Numeric	Right	I3	PRATE1	Transit Pass 1 Rate	1	Weekly
							2	Monthly
							3	Annually
							996	Other
							998	Don't Know
							999	Refused
205	207	Numeric	Right	I3	PRATE2	Transit Pass 2 Rate	1	Weekly
							2	Monthly
							3	Annually
							996	Other
							998	Don't Know
							999	Refused
278	280	Numeric	Right	I3	PRATE3	Transit Pass 3 Rate	1	Weekly
							2	Monthly
							3	Annually
							996	Other
							998	Don't Know
							999	Refused
135	194	Alphanum	Left	A60	PRATEO1	Other Transit Pass 1 Rate	Text	Text
208	267	Alphanum	Left	A60	PRATEO2	Other Transit Pass 2 Rate	Text	Text
281	340	Alphanum	Left	A60	PRATEO3	Other Transit Pass 3 Rate	Text	Text
1479	1480	Numeric	Right	I2	PROXY	Proxy Status	1	Respondent
							2	Proxy
							3	Mailed Diary
							4	Internet
1481	1482	Numeric	Right	I2	PROXYNAM	Person Providing Proxy	1	Person 1
							2	Person 2
							3	Person 3
							4	Person 4
							5	Person 5
							6	Person 6
							7	Person 7
							8	Person 8
							9	Person 9
							10	Person 10
							11	Person 11
							12	Person 12
							13	Person 13
							14	Person 14
							15	Person 15
122	123	Numeric	Right	I2	PTRANS1	Pay for Transit Pass 1	1	Yes
							2	No

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							98	Don't Know
							99	Refused
195	196	Numeric	Right	I2	PTRANS2	Pay for Transit Pass 2	1	Yes
							2	No
							98	Don't Know
							99	Refused
268	269	Numeric	Right	I2	PTRANS3	Pay for Transit Pass 3	1	Yes
							2	No
							98	Don't Know
							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
							4	City Of Alpena Dial-A-Ride
							5	Altran Transit Authority (Alger County)
							6	Ann Arbor Transportation Authority (AATA)
							7	Antrim County Transportation (ACT)
							8	Arenac Dial-A-Ride
							9	Barry County Transit
							10	Battle Creek Transit
							11	Bay Area Transportation Authority (BATA)
							12	Bay Metro Transportation Authority (BMTA)
							13	Belding Dial-A-Ride
							14	Berrien Bus (Berrien County Public Transportation)
							15	Big Rapids Dial-A-Ride
							16	Blue Water Area Transportation Commission (BWATC)
							17	Branch Area Transit Authority
							18	Buchanan Dial-A-Ride
							19	Cadillac/Wexford Transit Authority (CWTA)
							20	Capital Area Transportation Authority (CATA)
							21	Caro Transit Authority (CTA)
							22	Cass County Transportation Authority
							23	Charlevoix County Public Transit (CCPT)
							24	Clare County Transit Corporation (CCTC)
							25	Clinton Area Transit System
							26	Crawford County Transportation Authority
							27	Delta Area Transit Authority (DATA)
							28	Detroit Department of Transportation (DDOT)
							29	Dowagiac Dial-A-Ride (DART)
							30	Eastern Upper Peninsula Transportation Authority (EUPTA)
							31	Eaton County Transportation Authority (EATRAN)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							32	Flint Mass Transportation Authority (MTA)
							33	Gladwin City/County Transit (GCCT)
							34	Gogebic County Transit (GTC)
							35	Grand Rapids - ITP/The Rapid (Interurban Transit Partnership)
							36	Greenville Transit
							37	Harbor Transit
							38	Hillsdale Dial-A-Ride
							39	Houghton Motor Transit Line
							40	Interurban Transit Authority (Saugatuck)
							41	City of Ionia Dial-A-Ride
							42	Ionia Transit Authority
							43	Iosco Transit Corporation (ITC)
							44	Isabella County Transportation Commission (ICTC)
							45	Jackson Transportation Authority (JTA)
							46	Kalamazoo County Human Services
							47	Kalamazoo Metro Transit System (KMTS)
							48	Kalkaska Public Transit Authority (KPTA)
							49	Lake Erie Transit
							50	Greater Lapeer Transportation Authority (GLTA)
							51	Lenawee Transportation Corporation
							52	Livingston Essential Transportation (LETS)
							53	Ludington Mass Transportation Authority (LMTA)
							54	Macatawa Area Express - MAX
							55	Manistee County Transportation
							56	Marquette County Transit Authority (MARQTRAN)
							57	City of Marshall Dial-A-Ride
							58	Mecosta County Area Transit
							59	Midland County Connection
							60	City of Midland Dial-A-Ride
							61	City of Milan Public Transportation (MPT)
							62	Muskegon Area Transit System (MATS)
							63	Niles Dial-A-Ride
							64	Ogemaw County Public Transportation (OCPT)
							65	Ontonagon County Public Transit
							66	Osceola County Area Transit
							67	Otsego County Bus System
							68	Rosco Mini Bus System (Roscommon)
							69	Saginaw Transit System (Saginaw Transit Authority Regional Services)
							70	Sanilac Transportation Corporation (STC)
							71	City of Sault Sainte Marie
							72	Schoolcraft County Public Transportation

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							73	Shiawassee Area Transportation Agency
							74	SMART aka SEMTA (Suburban Mobility Authority For Regional Transportation)
							75	Thumb Area Transit (TAT) - Huron Transit Corporation
							76	Twin Cities Area Transportation Authority (TCATA)
							77	Van Buren Public Transit
							78	Yates Township Transportation System
							79	Blue Lakes Charter
							80	DASH
							81	Hope
							82	University of Michigan
							84	MASS
							85	MTA
							96	Other
							98	Don't Know
							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
							1	Husband/Wife/Unmarried Partner
							2	Son/Daughter/In-Law
							3	Brother/Sister/In-Law
							4	Mother/Father/In-Law
							5	Other Relative
							6	Roommate/Friend
							7	Household Help
							8	Foster Home Resident
							9	Grandchild
							10	Child of Boyfriend/Girlfriend/Spouse
							11	Boyfriend/Girlfriend/Spouse of Son/Daughter
							12	Tenant
							13	Cousin
							14	Exchange Student
							15	Foster Child/Daughter/Son
							16	Grandmother/Grandfather/In Law
							17	Great Grandchild
							18	Stepdaughter's son/Stepson's Girlfriend
							19	Legal Guardian
							20	Step Granddaughter
							21	Caregiver/Care Worker
							22	Dependent

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							23	Niece/Nephew
							24	Aunt/Uncle
							25	Grandparent
							26	Employers Child
							96	Other
							98	Don't Know
							99	Refused
32	71	Alphanum	Left	A40	RELATOS	Other Relationship to Contact Person	Text	Text
445	504	Alphanum	Left	A60	SADDR	Geocoded School Address	Text	Text
505	544	Alphanum	Left	A40	SCITY	School City	Text	Text
648	649	Numeric	Right	I2	SGEOLVL	School Geocoding Level	1	Framework Street-Level
							2	MapMarker Street-Level
							3	Framework Intersection-Level
							4	MapMarker Intersection-Level
							5	TAZ Level
							6	Non-Geocodable
							7	Ohio
							8	Illinois
							9	Wisconsin
							10	Indiana
							11	Canada
							12	Other (CITYFILE)
633	647	Alphanum	Left	A15	SGEORSL	School Geocoding Result	Text	Text
623	632	Alphanum	Left	F10.6	SLATI	School Latitude	Value	Value
							000.000000	Unknown Latitude
612	622	Alphanum	Left	F10.6	SLONG	School Longitude	Value	Value
							000.000000	Unknown Longitude
345	384	Alphanum	Left	A40	SNAME	School Name	Text	Text
545	546	Alphanum	Left	A2	SSTATE	School State	Text	Text
1495	1496	Numeric	Right	I2	STATUS	Status of HH	1	Household removed, they are in data cells with qota clos
							2	Household agreed upon to remove (no trips)
							3	Part of the 79 from MDOT to remove
							4	Household 20% or more non-geocodable
							5	Household with 25% or less non-geocodable
343	344	Numeric	Right	I2	STYPE	Type of School	0	Not currently a student
							1	Pre-School/Nursery School
							2	K-12
							3	Vocational/Technical
							4	Full-Time College Student
							5	Part-Time College Student
							98	Don't Know
							99	Refused
552	611	Alphanum	Left	A60	SXSTS	School Cross Streets	Text	Text

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
547	551	Alphanum	Left	A5	SZIPCD	School Zip Code	Text	Text
							99998	Don't Know
							99999	Refused
650	657	Alphanum	Left	A8	SZONE	School TAZ	Value	Value
							88888888	Unknown Zone
74	75	Numeric	Right	I2	TPASS	Transit Pass	1	Yes
							2	No
							3	Not Applicable (Too Young)
							98	Don't Know
							99	Refused
845	904	Alphanum	Left	A60	W1ADDR	Geocoded Primary Employer Address	Text	Text
905	944	Alphanum	Left	A40	W1CITY	Primary Employer City	Text	Text
1067	1068	Numeric	Right	I2	W1COMP	Primary Job Compressed Week	1	Compressed Work Week Offered
							2	Compressed Work Week Not Offered
							98	Don't Know
							99	Refused
1058	1059	Numeric	Right	I2	W1EVES	Primary Job includes Evenings	1	Yes
							2	No
							98	Don't Know
							99	Refused
1065	1066	Numeric	Right	I2	W1FLEX	Primary Job Flexibility	1	No Flexibility
							2	Some Flexibility
							3	Complete Flexibility
							98	Don't Know
							99	Refused
1048	1049	Numeric	Right	I2	W1GEOLVL	Primary Employer Geocoding Level	1	Framework Street-Level
							2	MapMarker Street-Level
							3	Framework Intersection-Level
							4	MapMarker Intersection-Level
							5	TAZ Level
							6	Non-Geocodable
							7	Ohio
							8	Illinois
							9	Wisconsin
							10	Indiana
							11	Canada
							12	Other (CITYFILE)
1033	1047	Alphanum	Left	A15	W1GEORSL	Primary Employer Geocoding Result	Text	Text
1062	1064	Numeric	Right	I3	W1HRS	Primary Job Weekly Hours	1-120	Valid Range
							998	Don't Know
							999	Refused
664	703	Alphanum	Left	A40	W1INDOS	Other Primary Industry	Text	Text
662	663	Numeric	Right	I2	W1INDUST	Primary Industry	1	Agriculture, Forestry, Fishing and Hunting

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							2	Mining
							3	Utilities
							4	Construction
							5	Manufacturing
							6	Wholesale Trade
							7	Retail Trade
							8	Transportation and Warehousing
							9	Information
							10	Finance and Insurance
							11	Real Estate, Rental/Leasing
							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
							26	Church
							27	Marketing/Advertising
							28	Charity/Charitable Organizations
							29	Self-Employed/Owns Business
							30	Gaming/Gambling
							31	Media/Publishing
							96	Other
							98	Don't Know
							99	Refused
1023	1032	Alphanum	Left	F10.6	W1LATI	Primary Employer Latitude	Value	Value
							000.000000	Unknown Latitude
784	784	Numeric	NA	I1	W1LOC	Primary Employer Location	1	Workplace
							2	Works Only at Home
							3	No Fixed Workplace
							4	Refused
1012	1022	Alphanum	Left	F10.6	W1LONG	Primary Employer Longitude	Value	Value
							000.000000	Unknown Longitude
704	743	Alphanum	Left	A40	W1NAME	Name of Primary Employer	Text	Text

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
1060	1061	Numeric	Right	I2	W1ONITE	Primary Job includes Overnights	1	Yes
							2	No
							98	Don't Know
							99	Refused
945	946	Alphanum	Left	A2	W1STATE	Primary Employer State	Text	Text
744	783	Alphanum	Left	A40	W1TYPE	Type of Primary Employer	Text	Text
952	1011	Alphanum	Left	A60	W1XSTS	Primary Employer Cross Streets	Text	Text
947	951	Alphanum	Left	A5	W1ZIPCD	Primary Employer Zip Code	Text	Text
							99998	Don't Know
							99999	Refused
1050	1057	Alphanum	Left	A8	W1ZONE	Primary Employer TAZ	Value	Value
							88888888	Unknown Zone
1255	1314	Alphanum	Left	A60	W2ADDR	Geocoded Secondary Employer Address	Text	Text
1315	1354	Alphanum	Left	A40	W2CITY	Secondary Employer City	Text	Text
1477	1478	Numeric	Right	I2	W2COMP	Secondary Job Compressed Week	1	Compressed Work Week Offered
							2	Compressed Work Week Not Offered
							98	Don't Know
							99	Refused
1468	1469	Numeric	Right	I2	W2EVES	Secondary Job includes Evenings	1	Yes
							2	No
							98	Don't Know
							99	Refused
1475	1476	Numeric	Right	I2	W2FLEX	Secondary Job Flexibility	1	No Flexibility
							2	Some Flexibility
							3	Complete Flexibility
							98	Don't Know
							99	Refused
1458	1459	Numeric	Right	I2	W2GEOLVL	Secondary Employer Geocoding Level	1	Framework Street-Level
							2	MapMarker Street-Level
							3	Framework Intersection-Level
							4	MapMarker Intersection-Level
							5	TAZ Level
							6	Non-Geocodable
							7	Ohio
							8	Illinois
							9	Wisconsin
							10	Indiana
							11	Canada
							12	Other (CITYFILE)
1443	1457	Alphanum	Left	A15	W2GEORSL	Secondary Employer Geocoding Result	Text	Text
1472	1474	Numeric	Right	I3	W2HRS	Secondary Job Weekly Hours	1-120	Valid Range
							998	Don't Know
							999	Refused

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
1073	1112	Alphanum	Left	A40	W2INDOS	Other Secondary Industry	Text	Text
1071	1072	Numeric	Right	I2	W2INDUST	Secondary Industry	1	Agriculture, Forestry, Fishing and Hunting
							2	Mining
							3	Utilities
							4	Construction
							5	Manufacturing
							6	Wholesale Trade
							7	Retail Trade
							8	Transportation and Warehousing
							9	Information
							10	Finance and Insurance
							11	Real Estate, Rental/Leasing
							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
							26	Church
							27	Marketing/Advertising
							28	Charity/Charitable Organizations
							29	Self-Employed/Owns Business
							30	Gaming/Gambling
							31	Media/Publishing
							96	Other
							98	Don't Know
							99	Refused
1433	1442	Alphanum	Left	F10.6	W2LATI	Secondary Employer Latitude	Value	Value
							000.000000	Unknown Latitude
1193	1194	Numeric	Right	I2	W2LOC	Secondary Employer Location	1	Workplace
							2	Works Only at Home
							3	No Fixed Workplace
1422	1432	Alphanum	Left	F10.6	W2LONG	Secondary Employer Longitude	Value	Value
							000.000000	Unknown Longitude

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
1113	1152	Alphanum	Left	A40	W2NAME	Name of Secondary Employer	Text	Text
1470	1471	Numeric	Right	I2	W2ONITE	Secondary Job includes Overnights	1	Yes
							2	No
							98	Don't Know
							99	Refused
1355	1356	Alphanum	Left	A2	W2STATE	Secondary Employer State	Text	Text
1153	1192	Alphanum	Left	A40	W2TYPE	Type of Secondary Employer	Text	Text
1362	1421	Alphanum	Left	A60	W2XSTS	Secondary Employer Cross Streets	Text	Text
1357	1361	Alphanum	Left	A5	W2ZIPCD	Secondary Employer Zip Code	Text	Text
							99998	Don't Know
							99999	Refused
1460	1467	Alphanum	Left	A8	W2ZONE	Secondary Employer TAZ	Value	Value
							88888888	Unknown Zone
658	659	Numeric	Right	I2	WRKR	Working Status	1	Full-Time Worker
							2	Part-Time Worker
							3	Unpaid Worker or Volunteer
							4	Not Working
							5	Not Applicable (Too Young)
							98	Don't Know
							99	Refused

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
398	399	Numeric	Right	I2	ACT1	Primary Activity at Origin Location	1	Home - Paid Work
400	401	Numeric	Right	I2	ACT2	2nd Activity at Origin Location	2	Home - Other
402	403	Numeric	Right	I2	ACT3	3rd Activity at Origin Location	3	Work
404	405	Numeric	Right	I2	ACT4	4th Activity at Origin Location	4	Attend Childcare
							5	Attend School
							6	Attend College
							7	Eat Out
							8	Personal Business
							9	Everyday Shopping
							10	Major Shopping
							11	Religious/Community
							12	Social
							13	Recreation - Participate
							14	Recreation - Watch
							15	Accompany Another Person
							16	Pick-Up/Drop-Off Passenger
							17	Turn Around
1103	1103	Numeric	NA	I1	ADAY	Time of Arrival - Day 1/Day 2	1	Day 1
							2	Day 2
							3	Day 3
1099	1102	Numeric	Right	I4	ATIME	Time of Arrival - Hour/Minute	Value	Value
909	948	Alphanum	Left	A40	BUSOS	Other Bus Provider Used	Text	Text
863	864	Numeric	Right	I2	BUS1	1st Type of Bus Provider Used	1	Adrian Dial-A-Ride
865	866	Numeric	Right	I2	BUS2	2nd Type of Bus Provider Used	2	Allegan County Transportation
867	868	Numeric	Right	I2	BUS3	3rd Type of Bus Provider Used	3	Alma Dial-A-Ride
							4	City Of Alpena Dial-A-Ride
							5	Altran Transit Authority (Alger County)
							6	Ann Arbor Transportation Authority (AATA)
							7	Antrim County Transportation (ACT)
							8	Arenac Dial-A-Ride
							9	Barry County Transit
							10	Battle Creek Transit
							11	Bay Area Transportation Authority (BATA)
							12	Bay Metro Transportation Authority (BMTA)
							13	Belding Dial-A-Ride
							14	Berrien Bus (Berrien County Public Transportation)
							15	Big Rapids Dial-A-Ride
							16	Blue Water Area Transportation Commission (BWATC)
							17	Branch Area Transit Authority

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

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							53	Ludington Mass Transportation Authority (LMTA)
							54	Macatawa Area Express - MAX
							55	Manistee County Transportation
							56	Marquette County Transit Authority (MARQTRAN)
							57	City of Marshall Dial-A-Ride
							58	Mecosta County Area Transit
							59	Midland County Connection
							60	City of Midland Dial-A-Ride
							61	City of Milan Public Transportation (MPT)
							62	Muskegon Area Transit System (MATS)
							63	Niles Dial-A-Ride
							64	Ogemaw County Public Transportation (OCPT)
							65	Ontonagon County Public Transit
							66	Osceola County Area Transit
							67	Otsego County Bus System
							68	Rosco Mini Bus System (Roscommon)
							69	Saginaw Transit System (Saginaw Transit Authority Regional Services)
							70	Sanilac Transportation Corporation (STC)
							71	City of Sault Sainte Marie
							72	Schoolcraft County Public Transportation
							73	Shiawassee Area Transportation Agency
							74	SMART aka SEMTA (Suburban Mobility Authority For Regional Transportation)
							75	Thumb Area Transit (TAT) - Huron Transit Corporation
							76	Twin Cities Area Transportation Authority (TCATA)
							77	Van Buren Public Transit
							78	Yates Township Transportation System
							79	Blue Lakes Charter
							80	DASH
							81	Hope
							82	University of Michigan
							84	MASS
							85	MTA
							96	Other
							98	Don't Know

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							99	Refused
1483	1484	Numeric	Right	I2	DACT1	Primary Activity at Destination	1	Home - Paid Work
1485	1486	Numeric	Right	I2	DACT2	2nd Activity at Destination	2	Home - Other
1487	1488	Numeric	Right	I2	DACT3	3rd Activity at Destination	3	Work
1489	1490	Numeric	Right	I2	DACT4	4th Activity at Destination	4	Attend Childcare
							5	Attend School
							6	Attend College
							7	Eat Out
							8	Personal Business
							9	Everyday Shopping
							10	Major Shopping
							11	Religious/Community
							12	Social
							13	Recreation - Participate
							14	Recreation - Watch
							15	Accompany Another Person
							16	Pick-Up/Drop-Off Passenger
							17	Turn Around
1228	1287	Alphanum	Left	A60	DADDR	Geocoded Destination Address	Text	Text
869	908	Alphanum	Left	A40	DAROS	Other Dial-A-Ride Provider Used	Text	Text
857	858	Numeric	Right	I2	DAR1	1st Type of Dial-A-Ride Provider Used	1-99	See BUS1 - BUS3
859	860	Numeric	Right	I2	DAR2	2nd Type of Dial-A-Ride Provider Used	1-99	See BUS1 - BUS3
861	862	Numeric	Right	I2	DAR3	3rd Type of Dial-A-Ride Provider Used	1-99	See BUS1 - BUS3
1288	1327	Alphanum	Left	A40	DCITY	Destination City	Text	Text
810	810	Numeric	NA	I1	DDAY	Time of Departure - Day 1/Day 2	1	Day 1
							2	Day 2
							3	Day 3
1108	1167	Alphanum	Left	A60	DEST	Destination of Trip	Text	Text
1491	1496	Numeric	Right	I6	DELIV	Interim Deilvery	2000	2000 Household Delivery
							4000	4000 Household Delivery
							6000	6000 Household Delivery
							8000	8000 Household Delivery
							10000	10000 Household Delivery
							12000	12000 Household Delivery
							14280	14280 Household Delivery
1431	1432	Numeric	Right	I2	DGEOLVL	Destination Geocoding Level	1	Framework Street-Level
							2	MapMarker Street-Level
							3	Framework Intersection-Level

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							4	MapMarker Intersection-Level
							5	TAZ Level
							6	Non-Geocodable
							7	Ohio
							8	Illinois
							9	Wisconsin
							10	Indiana
							11	Canada
							12	Other (CITYFILE)
1416	1430	Alphanum	Left	A15	DGEORSL	Destination Geocoding Result	Text	Text
1406	1415	Alphanum	Left	F10.6	DLATI	Destination Latitude	Value	Value
							000.000000	Unknown Latitude
1395	1405	Alphanum	Left	F10.6	DLONG	Destination Longitude	Value	Value
							000.000000	Unknown Longitude
1328	1329	Alphanum	Left	A2	DSTATE	Destination State	Text	Text
							ZZ	Out of the Country
806	809	Numeric	Right	I4	DTIME	Time of Departure - Hour/Minute	Value	Value
1441	1442	Numeric	Right	I2	DTYPE	Destination Type of Location	1	Residential
							2	Automotive Dealer/Repair
							3	Bank/Financial Institution (Unknown)
							4	Barber/Beauty/Nail Salon (Unknown)
							5	Bookstore/Library/Newsstand (Unknown)
							6	Construction Site
							7	Convenience/Drug Store (Unknown)
							8	Daycare Facility/Preschool/Nursery School
							9	Gas Station
							10	Government/Municipal/City Offices
							11	Grocery
							12	Hotel/Motel/Other Lodging Facility
							13	Indoor Recreation (Unknown)
							14	Industrial Site
							15	Medical Facility/Hospital
							16	Movie Theater/Theatre/Concert Venue/Sports Arena (Unknown)
							17	Museum/Zoo/Historic Site
							18	Office Building
							19	Outdoor Recreation
							20	Religious - Church Synagogue/Houses of Worship
							21	Restaurant/Fast Food/Bar & Grill (Unknown)
							22	School - K-12

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							23	School - College/University/Technical/Vocational
							24	Shopping Mall/Department Store (Unknown)
							25	Transportation Terminal (airport, train, bus)
							26	Bank/Financial Institution (Enclosed Mall)
							27	Bank/Financial Institution (Standalone or Strip Mall)
							28	Barber/Beauty/Nail Salon (Enclosed Mall)
							29	Barber/Beauty/Nail Salon (Standalone or Strip Mall)
							30	Bookstore/Library/Newsstand (Enclosed Mall)
							31	Bookstore/Library/Newsstand (Standalone or Strip Mall)
							32	Convenience/Drug Store (Enclosed Mall)
							33	Convenience/Drug Store (Standalone or Strip Mall)
							34	Indoor Recreation (Enclosed Mall)
							35	Indoor Recreation (Standalone or Strip Mall)
							36	Movie Theater/Theatre/Concert Venue/Sports Arena (Enclosed Mall)
							37	Movie Theater/Theatre/Concert Venue/Sports Arena (Standalone or Strip Mall)
							38	Restaurant/Fast Food/Bar & Grill (Enclosed Mall)
							39	Restaurant/Fast Food/Bar & Grill (Standalone or Strip Mall)
							40	Shopping Mall/Department Store (Enclosed Mall)
							41	Shopping Mall/Department Store (Standalone or Strip Mall)
							42	Senior Care (Assisted Living/Retirement Communities/Nursing Homes etc.)
							43	Retail (Retail Shops/Unspecified Sales)
							44	Agriculture (Farms/Dairy, Egg Production etc.)
							45	Other Academic (Unspecified Teaching/School Administration/Dance Classes/Karate Classes etc.)
							46	Animal Care/Control (Veterinary/Boarding/Grooming/Supplies etc.)
							47	Military

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							48	Non-Profit
							49	Cemeteries
							50	Utilities (Gas/Electric/Water/Waste Disposal etc.)
							51	Indoor Work (Non-Industrial Labor/Small Production)
							52	Commercial Services (Shipping/Packaging/Plumbing/Tailoring etc.)
							96	Other
							98	Don't Know
							99	Refused
1443	1482	Alphanum	Left	A40	DTYPEOS	Other Type of Destination Location	Text	Text
1335	1394	Alphanum	Left	A60	DXSTS	Destination Cross Streets	Text	Text
1330	1334	Alphanum	Left	A5	DZIP	Destination Zip Code	Text	Text
							99998	Don't Know
							99999	Refused
1433	1440	Alphanum	Left	A8	DZONE	Destination TAZ	Text	Text
							88888888	Unknown Zone
1025	1026	Numeric	Right	I2	HHV	Household Vehicle Used for Trip	1	Yes
							2	No
							98	Don't Know
							99	Refused
1104	1105	Numeric	Right	I2	LGTRP	Trip Length Longer than Usual	1	Yes
							2	No
							98	Don't Know
							99	Refused
143	202	Alphanum	Left	A60	OADDR	Geocoded Origin Address	Text	Text
203	242	Alphanum	Left	A40	OCITY	Origin City	Text	Text
1168	1227	Alphanum	Left	A60	ODADDR	Original Destination Address	Text	Text
346	347	Numeric	Right	I2	OGEOLVL	Origin Geocoding Level	1	Framework Street-Level
							2	MapMarker Street-Level
							3	Framework Intersection-Level
							4	MapMarker Intersection-Level
							5	TAZ Level
							6	Non-Geocodable
							7	Ohio
							8	Illinois
							9	Wisconsin
							10	Indiana
							11	Canada

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							12	Other
331	345	Alphanum	Left	A15	OGEORSL	Origin Geocoding Result	Text	Text
321	330	Alphanum	Left	F10.6	OLATI	Origin Latitude	Value	Value
							000.000000	Unknown Latitude
310	320	Alphanum	Left	F10.6	OLONG	Origin Longitude	Value	Value
							000.000000	Unknown Longitude
83	142	Alphanum	Left	A60	OOADDR	Original Origin Address	Text	Text
23	82	Alphanum	Left	A60	ORIGIN	Origin of Trip	Text	Text
243	244	Alphanum	Left	A2	OSTATE	Origin State	Text	Text
							ZZ	Out of the Country
356	357	Numeric	Right	I2	OTYPE	Origin Type of Location	1	Residential
							2	Automotive Dealer/Repair
							3	Bank/Financial Institution (Unknown)
							4	Barber/Beauty/Nail Salon (Unknown)
							5	Bookstore/Library/Newsstand (Unknown)
							6	Construction Site
							7	Convenience/Drug Store (Unknown)
							8	Daycare Facility/Preschool/Nursery School
							9	Gas Station
							10	Government/Municipal/City Offices
							11	Grocery
							12	Hotel/Motel/Other Lodging Facility
							13	Indoor Recreation (Unknown)
							14	Industrial Site
							15	Medical Facility/Hospital
							16	Movie Theater/Theatre/Concert Venue/Sports Arena (Unknown)
							17	Museum/Zoo/Historic Site
							18	Office Building
							19	Outdoor Recreation
							20	Religious - Church Synagogue/Houses of Worship
							21	Restaurant/Fast Food/Bar & Grill (Unknown)
							22	School - K-12
							23	School - College/University/Technical/Vocational
							24	Shopping Mall/Department Store (Unknown)
							25	Transportation Terminal (airport, train, bus)
							26	Bank/Financial Institution (Enclosed Mall)
							27	Bank/Financial Institution (Standalone or Strip Mall)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							28	Barber/Beauty/Nail Salon (Enclosed Mall)
							29	Barber/Beauty/Nail Salon (Standalone or Strip Mall)
							30	Bookstore/Library/Newsstand (Enclosed Mall)
							31	Bookstore/Library/Newsstand (Standalone or Strip Mall)
							32	Convenience/Drug Store (Enclosed Mall)
							33	Convenience/Drug Store (Standalone or Strip Mall)
							34	Indoor Recreation (Enclosed Mall)
							35	Indoor Recreation (Standalone or Strip Mall)
							36	Movie Theater/Theatre/Concert Venue/Sports Arena (Enclosed Mall)
							37	Movie Theater/Theatre/Concert Venue/Sports Arena (Standalone or Strip Mall)
							38	Restaurant/Fast Food/Bar & Grill (Enclosed Mall)
							39	Restaurant/Fast Food/Bar & Grill (Standalone or Strip Mall)
							40	Shopping Mall/Department Store (Enclosed Mall)
							41	Shopping Mall/Department Store (Standalone or Strip Mall)
							42	Senior Care (Assisted Living/Retirement Communities/Nursing Homes etc.)
							43	Retail (Retail Shops/Unspecified Sales)
							44	Agriculture (Farms/Dairy, Egg Production etc.)
							45	Other Academic (Unspecified Teaching/School Administration/Dance Classes/Karate Classes etc.)
							46	Animal Care/Control (Veterinary/Boarding/Grooming/Supplies etc.)
							47	Military
							48	Non-Profit
							49	Cemeteries
							50	Utilities (Gas/Electric/Water/Waste Disposal etc.)
							51	Indoor Work (Non-Industrial Labor/Small Production)

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
								Commercial Services
							52	(Shipping/Packaging/Plumbing/Tailoring etc.)
							96	Other
							98	Don't Know
							99	Refused
358	397	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	Origin Zip Code	Text	Text
							99998	Don't Know
							99999	Refused
348	355	Alphanum	Left	A8	OZONE	Origin TAZ	Text	Text
							88888888	Unknown Zone
1027	1028	Numeric	Right	I2	PARK	Pay for Parking	1	Yes
							2	No
							98	Don't Know
							99	Refused
1029	1036	Alphanum	Left	F8.2	PARKAMT	Amount Paid for Parking	0.01-9000.99	Valid Range
1037	1038	Numeric	Right	I2	PARKRATE	Parking Rate	1	Hourly
							2	Daily
							3	Monthly
							4	Annually
							5	Bi-Weekly
							6	Per Semester
							7	One-Time Rate
							8	Quarterly
							9	Meter
							96	Other
							98	Don't Know
							99	Refused
949	950	Numeric	Right	I2	PAY6	Pay for Taxi/Shuttle	1	Yes
							2	No
							98	Don't Know
							99	Refused
951	958	Alphanum	Left	F8.2	PAY6AMT	Amount Paid for Taxi/Shuttle	0.01-9000.99	Valid Range
959	960	Numeric	Right	I2	PAY7	Pay for Dial-A-Ride	1	Yes
							2	No
							3	Used Transit Pass
							98	Don't Know
							99	Refused
961	968	Alphanum	Left	F8.2	PAY7AMT	Amount Paid for Dial-A-Ride	0.01-9000.99	Valid Range
969	670	Numeric	Right	I2	PAY8	Pay for Train	1	Yes

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							2	No
							98	Don't Know
							99	Refused
971	978	Alphanum	Left	F8.2	PAY8AMT	Amount Paid for Train	0.01-9000.99	Valid Range
979	980	Numeric	Right	I2	PAY9	Pay for Public Bus	1	Yes
							2	No
							3	Used Bus or Transit Pass
							98	Don't Know
							99	Refused
981	988	Alphanum	Left	F8.2	PAY9AMT	Amount Paid for Public Bus	0.01-9000.99	Valid Range
9	10	Numeric	Right	I2	PERNUM	Person Number	1	Person 1
							2	Person 2
							3	Person 3
							4	Person 4
							5	Person 5
							6	Person 6
							7	Person 7
							8	Person 8
							9	Person 9
							10	Person 10
							11	Person 11
							12	Person 12
							13	Person 13
							14	Person 14
							15	Person 15
13	22	Alphanum	Left	A10	PHONENO	Phone Number	Value	Value
1039	1098	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	3	Trip Record
1106	1107	Numeric	Right	I2	RLGTRP	Reason Long Trip Length	1	Weather (rain or snow)
							2	Construction
							3	An Accident
							4	Traffic Congestion
							96	Other
							98	Don't Know
							99	Refused
1497	1498	Numeric	Right	I2	STATUS	Status of HH	1	Household removed, they are in data cells with qota closed
							2	Household agreed upon to remove (no trips)
							3	Part of the 79 from MDOT to remove
							4	Household 20% or more non-geocodable

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							5	Household with 25% or less non-geocodable
406	407	Numeric	Right	I2	TRAV	Did Respondent Leave Location	1	Yes - Traveled From Origin Location
							2	No - Stayed at Origin Location til End of 48-hours
11	12	Numeric	Right	I2	TRIPNUM	Trip Number	0-99	Valid Range
989	990	Numeric	Right	I2	TRSDP	Driver or Passenger	1	Driver
							2	Passenger
							98	Don't Know
							99	Refused
811	812	Numeric	Right	I2	TRSTYPE1	1st Type of Transportation Used	1	Car, Van, Truck
813	814	Numeric	Right	I2	TRSTYPE2	2nd Type of Transportation Used	2	Motorcycle
815	816	Numeric	Right	I2	TRSTYPE3	3rd Type of Transportation Used	3	Bicycle/Moped
							4	Walk
							5	School Bus
							6	Taxi/Shuttle
							7	Dial-A-Ride
							8	Train
							9	Public Bus
							10	Private Bus
							11	Boat/Ferry Boat/Kayak
							12	Skateboard/Scooter
							13	Airplane
							14	Tractor
							15	Golf Cart
							16	Ambulance
							17	ATV
							18	Funeral Home Limousine
							19	Rollerblades/Rollerskates
							20	Baby Stroller/Stroller
							21	Wheel Chair/Power Chair
							22	Snowmobile
							96	Other
							98	Don't Know
817	856	Alphanum	Left	A40	TRSTYPOS	Other Type of Transportation Used	Text	Text
993	994	Numeric	Right	I2	VHNUM	Number of Household Members in Vehicle	0	0 - None
							1	1 household member
							2	2 household members
							3	3 household members
							4	4 household members
							5	5 household members

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							6	6 or more household members
							98	Don't Know
							99	Refused
991	992	Numeric	Right	I2	VTNUM	Number of Additional People in Vehicle	0	0 - Alone
							1	1 person
							2	2 people
							3	3 people
							4	4 people
							5	5 people
							6	6 or more people
							98	Don't Know
							99	Refused
995	996	Numeric	Right	I2	WHOACC1	1st Household Member in Vehicle	1	Person 1
997	998	Numeric	Right	I2	WHOACC2	2nd Household Member in Vehicle	2	Person 2
999	1000	Numeric	Right	I2	WHOACC3	3rd Household Member in Vehicle	3	Person 3
1001	1002	Numeric	Right	I2	WHOACC4	4th Household Member in Vehicle	4	Person 4
1003	1004	Numeric	Right	I2	WHOACC5	5th Household Member in Vehicle	5	Person 5
1005	1006	Numeric	Right	I2	WHOACC6	6th Household Member in Vehicle	6	Person 6
1007	1008	Numeric	Right	I2	WHOACC7	7th Household Member in Vehicle	7	Person 7
1009	1010	Numeric	Right	I2	WHOACC8	8th Household Member in Vehicle	8	Person 8
1011	1012	Numeric	Right	I2	WHOACC9	9th Household Member in Vehicle	9	Person 9
1013	1014	Numeric	Right	I2	WHOACC10	10th Household Member in Vehicle	10	Person 10
1015	1016	Numeric	Right	I2	WHOACC11	11th Household Member in Vehicle	11	Person 11
1017	1018	Numeric	Right	I2	WHOACC12	12th Household Member in Vehicle	12	Person 12
1019	1020	Numeric	Right	I2	WHOACC13	13th Household Member in Vehicle	13	Person 13
1021	1022	Numeric	Right	I2	WHOACC14	14th Household Member in Vehicle	14	Person 14
1023	1024	Numeric	Right	I2	WHOACC15	15th Household Member in Vehicle	15	Person 15
408	606	Alphanum	Left	A199	WHYNO	Reason for No Travel	Text	Text
607	805	Alphanum	Left	A199	WRKHM	Paid Work at Home Time Periods	Text	Text

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
336	341	Numeric	Right	I6	DELIV	Interim Delivery	2000	2000 Household Delivery
							4000	4000 Household Delivery
							6000	6000 Household Delivery
							8000	8000 Household Delivery
							10000	10000 Household Delivery
							12000	12000 Household Delivery
							14280	14280 Household Delivery
65	66	Numeric	Right	I2	DWEEK	Departure Day of the Week	1	Monday
							2	Tuesday
							3	Wednesday
							4	Thursday
							5	Friday
							6	Saturday
							7	Sunday
							98	Don't Know
							99	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	4th Type of Transportation Used	4	Walk
							5	School Bus
							6	Taxi/Shuttle
							7	Public Bus
							8	Train
							9	Airplane
							10	Boat
							11	Charter Bus
							12	Snow Mobile
							13	Subway
							14	Golf Cart
							15	Horse Drawn Carriage/Horse
							16	ATV
							17	Church Bus
							18	Motorhome
							19	Tour Bus
							20	Tram/Sky Lift
							21	Trolley
							22	Four Wheeler Quad/Four Wheeler

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							23	RV (Recreational Vehicle)
							24	Wheelchair
							96	Other
							97	None
							98	Don't Know
							99	Refused
179	228	Alphanum	Left	A50	FMODEOS	Other Transportation Used at Location	Text	Text
63	64	Alphanum	Left	A2	FSTATE	Long Distance State	Text	Text
							ZZ	Out of the Country or Unknown
321	335	Alphanum	Left	A15	LGEOLVL	Long Distance Geocoding Level	Text	Text
306	320	Alphanum	Left	A15	LGEORSL	Long Distance Geocoding Result	Text	Text
296	305	Alphanum	Left	F10.6	LLATI	Long Distance Latitude	Value	Value
							000.000000	Unknown Latitude
285	295	Alphanum	Left	F10.6	LLONG	Long Distance Longitude	Value	Value
							000.000000	Unknown Longitude
11	12	Numeric	Right	I2	LDTRIP	Long Distance Trip Number	1-99	Valid Range
9	10	Numeric	Right	I2	PERNUM	Person Number	1	Person 1
							2	Person 2
							3	Person 3
							4	Person 4
							5	Person 5
							6	Person 6
							7	Person 7
							8	Person 8
							9	Person 9
							10	Person 10
							11	Person 11
							12	Person 12
							13	Person 13
							14	Person 14
							15	Person 15
13	22	Alphanum	Left	A10	PHONENO	Phone Number	Value	Value
283	284	Numeric	Right	I2	Q12MTH	Number of Times in Last 12 Months	1-90	Valid Range
							98	Don't Know
							99	Refused
281	282	Numeric	Right	I2	Q3MTH	Number of Times in Last 3 Months	1-90	Valid Range
							98	Don't Know
							99	Refused
3	8	Numeric	Right	I6	QNO	Sample Number	Value	Value

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
67	68	Numeric	Right	I2	REASON	Primary Reason for Trip	1	Work/Business
							2	School-related
							3	Vacation
							4	Social
							5	Sightseeing
							6	Recreation
							7	Entertainment
							8	Shopping
							9	Family/Personal Reasons
							10	Religious
							11	Medical
							98	Don't Know
							99	Refused
1	2	Numeric	Right	I2	RECTYP	Record Type	4	Long Distance Trip Record
279	280	Numeric	Right	I2	RWEEK	Return Day of the Week	1	Monday
							2	Tuesday
							3	Wednesday
							4	Thursday
							5	Friday
							6	Saturday
							7	Sunday
							98	Don't Know
							99	Refused
348	349	Numeric	Right	I2	STATUS	Status of HH	1	Household removed, they are in data cells with qota closed
							2	Household agreed upon to remove (no trips)
							3	Part of the 79 from MDOT to remove
							4	Household 20% or more non-geocodable
							5	Household with 25% or less non-geocodable
342	347	Numeric	Right	I6	TAZ	TAZ	Value	Value
69	70	Numeric	Right	I2	TRTYP	Transportation to Reach Location	1	Car, Van, Truck
							2	Motorcycle
							3	Bicycle/Moped
							4	Walk
							5	School Bus
							6	Taxi/Shuttle
							7	Public Bus

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							8	Train
							9	Airplane
							10	Boat
							11	Charter Bus
							12	Snow Mobile
							13	Subway
							14	Golf Cart
							15	Horse Drawn Carriage/Horse
							16	ATV
							17	Church Bus
							18	Motorhome
							19	Tour Bus
							20	Tram/Sky Lift
							21	Trolley
							22	Four Wheeler Quad/Four Wheeler
							23	RV (Recreational Vehicle)
							96	Other
							98	Don't Know
							99	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
86	91	Numeric	Right	I6	DELIV	Interim Deilvery	2000	2000 Household Delivery
							4000	4000 Household Delivery
							6000	6000 Household Delivery
							8000	8000 Household Delivery
							10000	10000 Household Delivery
							12000	12000 Household Delivery
							14280	14280 Household Delivery
11	20	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	5	Visitor Person Record
23	25	Numeric	Right	I3	VAGE	Visitor Age	0-115	Valid Range
							998	Don't Know
							999	Refused
28	29	Numeric	Right	I2	VAGE18	Visitor Age Above/Below 18	1	18 or older
							2	Under 18
							98	Don't Know
							99	Refused
26	27	Numeric	Right	I2	VAGERNG	Visitor Age Range	1	Under 5
							2	5 to 15
							3	16 to 17
							4	18 to 24
							5	25 to 34
							6	35 to 44
							7	45 to 54
							8	55 to 64
							9	65 to 74
							10	75 to 84
							11	85 and over
							98	Don't Know
							99	Refused
82	83	Numeric	Right	I2	VDCOMP	Visitor Completed Diary	1	Yes
							2	No
							3	Did not receive materials
							98	Don't Know
							99	Refused
84	85	Numeric	Right	I2	VDHAVE	Using Completed Diary for Visitor	1	Yes
							2	No
							3	Not Applicable
21	22	Numeric	Right	I2	VGENDER	Visitor Gender	1	Male
							2	Female
							99	Refused

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
36	75	Alphanum	Left	A40	VINDOS	Other Visitor Industry	Text	Text
34	35	Numeric	Right	I2	VINDUST	Visitor Industry	1	Agriculture, Forestry, Fishing and Hunting
							2	Mining
							3	Utilities
							4	Construction
							5	Manufacturing
							6	Wholesale Trade
							7	Retail Trade
							8	Transportation and Warehousing
							9	Information
							10	Finance and Insurance
							11	Real Estate, Rental/Leasing
							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
							26	Church
							27	Marketing/Advertising
							28	Charity/Charitable Organizations
							29	Self-Employed/Owns Business
							96	Other
							98	Don't Know
							99	Refused
9	10	Numeric	Right	I2	VISNUM	Visitor Number	1	Visitor 1
							2	Visitor 2
							3	Visitor 3
							4	Visitor 4
							5	Visitor 5
							6	Visitor 6
							7	Visitor 7

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							8	Visitor 8
32	33	Numeric	Right	I2	VNOWK	Visitor Not Working Status	1	Looking for Work
							2	Not Looking for Work
							98	Don't Know
							99	Refused
78	79	Numeric	Right	I2	VPROXY	Visitor Proxy Status	1	Respondent
							2	Proxy
							3	Mailed Diary
							4	Internet
80	81	Numeric	Right	I2	VPROXYNM	Person Providing Proxy	1	Person 1
							2	Person 2
							3	Person 3
							4	Person 4
							5	Person 5
							6	Person 6
							7	Person 7
							8	Person 8
							9	Person 9
							10	Person 10
							11	Person 11
							12	Person 12
							13	Person 13
							14	Person 14
							15	Person 15
76	77	Numeric	Right	I2	VVEHICLE	Visitor Vehicle Status	1	Used Own Vehicle
							2	Rented A Vehicle
							3	Borrowed Household Vehicle
							4	Borrowed Other Vehicle
							5	No Vehicle Access
							98	Don't Know
							99	Refused
30	31	Numeric	Right	I2	VWRKR	Visitor Working Status	1	Full-Time Worker
							2	Part-Time Worker
							3	Unpaid Worker or Volunteer
							4	Not Working
							5	Not Applicable (Too Young)
							98	Don't Know
							99	Refused

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
398	399	Numeric	Right	I2	ACT1	Primary Activity at Origin Location	1	Home - Paid Work
400	401	Numeric	Right	I2	ACT2	2nd Activity at Origin Location	2	Home - Other
402	403	Numeric	Right	I2	ACT3	3rd Activity at Origin Location	3	Work
404	405	Numeric	Right	I2	ACT4	4th Activity at Origin Location	4	Attend Childcare
							5	Attend School
							6	Attend College
							7	Eat Out
							8	Personal Business
							9	Everyday Shopping
							10	Major Shopping
							11	Religious/Community
							12	Social
							13	Recreation - Participate
							14	Recreation - Watch
							15	Accompany Another Person
							16	Pick-Up/Drop-Off Passenger
							17	Turn Around
1103	1103	Numeric	Right	I1	ADAY	Time of Arrival - Day 1/Day 2	1	Day 1
							2	Day 2
							3	Day 3
1099	1102	Numeric	Right	I4	ATIME	Time of Arrival - Hour/Minute	Value	Value
909	948	Alphanum	Left	A40	BUSOS	Other Bus Provider Used	Text	Text
863	864	Numeric	Right	I2	BUS1	1st Type of Bus Provider Used	1	Adrian Dial-A-Ride
865	866	Numeric	Right	I2	BUS2	2nd Type of Bus Provider Used	2	Allegan County Transportation
867	868	Numeric	Right	I2	BUS3	3rd Type of Bus Provider Used	3	Alma Dial-A-Ride
							4	City Of Alpena Dial-A-Ride
							5	Altran Transit Authority (Alger County)
							6	Ann Arbor Transportation Authority (AATA)
							7	Antrim County Transportation (ACT)
							8	Arenac Dial-A-Ride
							9	Barry County Transit
							10	Battle Creek Transit
							11	Bay Area Transportation Authority (BATA)
							12	Bay Metro Transportation Authority (BMTA)
							13	Belding Dial-A-Ride
							14	Berrien Bus (Berrien County Public Transportation)
							15	Big Rapids Dial-A-Ride
							16	Blue Water Area Transportation Commission (BWATC)
							17	Branch Area Transit Authority

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

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							53	Ludington Mass Transportation Authority (LMTA)
							54	Macatawa Area Express - MAX
							55	Manistee County Transportation
							56	Marquette County Transit Authority (MARQTRAN)
							57	City of Marshall Dial-A-Ride
							58	Mecosta County Area Transit
							59	Midland County Connection
							60	City of Midland Dial-A-Ride
							61	City of Milan Public Transportation (MPT)
							62	Muskegon Area Transit System (MATS)
							63	Niles Dial-A-Ride
							64	Ogemaw County Public Transportation (OCPT)
							65	Ontonagon County Public Transit
							66	Osceola County Area Transit
							67	Otsego County Bus System
							68	Rosco Mini Bus System (Roscommon)
							69	Saginaw Transit System (Saginaw Transit Authority Regional Services)
							70	Sanilac Transportation Corporation (STC)
							71	City of Sault Sainte Marie
							72	Schoolcraft County Public Transportation
							73	Shiawassee Area Transportation Agency
							74	SMART aka SEMTA (Suburban Mobility Authority For Regional Transportation)
							75	Thumb Area Transit (TAT) - Huron Transit Corporation
							76	Twin Cities Area Transportation Authority (TCATA)
							77	Van Buren Public Transit
							78	Yates Township Transportation System
							79	Blue Lakes Charter
							80	DASH
							81	Hope
							82	University of Michigan
							84	MASS
							85	MTA
							96	Other
							98	Don't Know
							99	Refused

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
1483	1484	Numeric	Right	I2	DACT1	Primary Activity at Destination	1	Home - Paid Work
1485	1486	Numeric	Right	I2	DACT2	2nd Activity at Destination	2	Home - Other
1487	1488	Numeric	Right	I2	DACT3	3rd Activity at Destination	3	Work
1489	1490	Numeric	Right	I2	DACT4	4th Activity at Destination	4	Attend Childcare
							5	Attend School
							6	Attend College
							7	Eat Out
							8	Personal Business
							9	Everyday Shopping
							10	Major Shopping
							11	Religious/Community
							12	Social
							13	Recreation - Participate
							14	Recreation - Watch
							15	Accompany Another Person
							16	Pick-Up/Drop-Off Passenger
							17	Turn Around
1228	1287	Alphanum	Left	A60	DADDR	Geocoded Destination Address	Text	Text
857	858	Numeric	Right	I2	DAR1	1st Type of Dial-A-Ride Provider Used	1-99	See BUS1 - BUS3
859	860	Numeric	Right	I2	DAR2	2nd Type of Dial-A-Ride Provider Used	1-99	See BUS1 - BUS3
861	862	Numeric	Right	I2	DAR3	3rd Type of Dial-A-Ride Provider Used	1-99	See BUS1 - BUS3
869	908	Alphanum	Left	A40	DAROS	Other Dial-A-Ride Provider Used	Text	Text
1288	1327	Alphanum	Left	A40	DCITY	Destination City	Text	Text
810	810	Numeric	Right	I1	DDAY	Time of Departure - Day 1/Day 2	1	Day 1
							2	Day 2
							3	Day 3
1491	1496	Numeric	Right	I6	DELIV	Interim Delivery	2000	2000 Household Delivery
							4000	4000 Household Delivery
							6000	6000 Household Delivery
							8000	8000 Household Delivery
							10000	10000 Household Delivery
							12000	12000 Household Delivery
							14280	14280 Household Delivery
1108	1167	Alphanum	Left	A60	DEST	Destination of Trip	Text	Text
1431	1432	Numeric	Right	I2	DGEOLVL	Destination Geocoding Level	1	Framework Street-Level
							2	MapMarker Street-Level
							3	Framework Intersection-Level
							4	MapMarker Intersection-Level

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							5	TAZ Level
							6	Non-Geocodable
							7	Ohio
							8	Illinois
							9	Wisconsin
							10	Indiana
							11	Canada
							12	Other (CITYFILE)
1416	1430	Alphanum	Left	A15	DGEORSL	Destination Geocoding Result	Text	Text
1406	1415	Alphanum	Left	F10.6	DLATI	Destination Latitude	Value	Value
							000.000000	Unknown Latitude
1395	1405	Alphanum	Left	F10.6	DLONG	Destination Longitude	Value	Value
							000.000000	Unknown Longitude
1328	1329	Alphanum	Left	A2	DSTATE	Destination State	Text	Text
							ZZ	Out of the Country
806	809	Numeric	Right	I4	DTIME	Time of Departure - Hour/Minute	Value	Value
1441	1442	Numeric	Right	I2	DTYPE	Destination Type of Location	1	Residential
							2	Automotive Dealer/Repair
							3	Bank/Financial Institution (Unknown)
							4	Barber/Beauty/Nail Salon (Unknown)
							5	Bookstore/Library/Newsstand (Unknown)
							6	Construction Site
							7	Convenience/Drug Store (Unknown)
							8	Daycare Facility
							9	Gas Station
							10	Government/Municipal/City Offices
							11	Grocery
							12	Hotel/Motel/Other Lodging Facility
							13	Indoor Recreation (Unknown)
							14	Industrial Site
							15	Medical Facility/Hospital
							16	Movie Theater/Theatre/Concert Venue/Sports Arena (Unknown)
							17	Museum/Zoo/Historic Site
							18	Office Building
							19	Outdoor Recreation
							20	Religious - Church Synagogue/Houses of Worship
							21	Restaurant/Fast Food/Bar & Grill (Unknown)
							22	School - K-12

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							23	School - College/University/Technical/Vocational
							24	Shopping Mall/Department Store (Unknown)
							25	Transportation Terminal (airport, train, bus)
							26	Bank/Financial Institution (Enclosed Mall)
							27	Bank/Financial Institution (Standalone or Strip Mall)
							28	Barber/Beauty/Nail Salon (Enclosed Mall)
							29	Barber/Beauty/Nail Salon (Standalone or Strip Mall)
							30	Bookstore/Library/Newsstand (Enclosed Mall)
							31	Bookstore/Library/Newsstand (Standalone or Strip Mall)
							32	Convenience/Drug Store (Enclosed Mall)
							33	Convenience/Drug Store (Standalone or Strip Mall)
							34	Indoor Recreation (Enclosed Mall)
							35	Indoor Recreation (Standalone or Strip Mall)
							36	Movie Theater/Theatre/Concert Venue/Sports Arena (Enclosed Mall)
							37	Movie Theater/Theatre/Concert Venue/Sports Arena (Standalone or Strip Mall)
							38	Restaurant/Fast Food/Bar & Grill (Enclosed Mall)
							39	Restaurant/Fast Food/Bar & Grill (Standalone or Strip Mall)
							40	Shopping Mall/Department Store (Enclosed Mall)
							41	Shopping Mall/Department Store (Standalone or Strip Mall)
							96	Other
							98	Don't Know
							99	Refused
1443	1482	Alphanum	Left	A40	DTYPEOS	Other Type of Destination Location	Text	Text
1335	1394	Alphanum	Left	A60	DXSTS	Destination Cross Streets	Text	Text
1330	1334	Alphanum	Left	A5	DZIP	Destination Zip Code	Text	Text
							99998	Don't Know
							99999	Refused
1433	1440	Alphanum	Left	A8	DZONE	Destination TAZ	Text	Text
							88888	Unknown Zone

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
1025	1026	Numeric	Right	I2	HHV	Household Vehicle Used for Trip	1	Yes
							2	No
							98	Don't Know
							99	Refused
1104	1105	Numeric	Right	I2	LGTRP	Trip Length Longer than Usual	1	Yes
							2	No
							98	Don't Know
							99	Refused
143	202	Alphanum	Left	A60	OADDR	Geocoded Origin Address	Text	Text
203	242	Alphanum	Left	A40	OCITY	Origin City	Text	Text
1168	1227	Alphanum	Left	A60	ODADDR	Original Destination Address	Text	Text
346	347	Numeric	Right	I2	OGEOLVL	Origin Geocoding Level	1	Framework Street-Level
							2	MapMarker Street-Level
							3	Framework Intersection-Level
							4	MapMarker Intersection-Level
							5	TAZ Level
							6	Non-Geocodable
							7	Ohio
							8	Illinois
							9	Wisconsin
							10	Indiana
							11	Canada
							12	Other
331	345	Alphanum	Left	A15	OGEORSL	Origin Geocoding Result	Text	Text
321	330	Alphanum	Left	F10.6	OLATI	Origin Latitude	Value	Value
							000.000000	Unknown Latitude
310	320	Alphanum	Left	F10.6	OLONG	Origin Longitude	Value	Value
							000.000000	Unknown Longitude
83	142	Alphanum	Left	A60	OOADDR	Original Origin Address	Text	Text
23	82	Alphanum	Left	A60	ORIGIN	Origin of Trip	Text	Text
243	244	Alphanum	Left	A2	OSTATE	Origin State	Text	Text
							ZZ	Out of the Country
356	357	Numeric	Right	I2	OTYPE	Origin Type of Location	1	Residential
							2	Automotive Dealer/Repair
							3	Bank/Financial Institution (Unknown)
							4	Barber/Beauty/Nail Salon (Unknown)
							5	Bookstore/Library/Newsstand (Unknown)
							6	Construction Site
							7	Convenience/Drug Store (Unknown)
							8	Daycare Facility
							9	Gas Station

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

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							40	Shopping Mall/Department Store (Enclosed Mall)
							41	Shopping Mall/Department Store (Standalone or Strip Mall)
							96	Other
							98	Don't Know
							99	Refused
358	397	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	Origin Zip Code	Text	Text
							99998	Don't Know
							99999	Refused
348	355	Alphanum	Left	A8	OZONE	Origin TAZ	Text	Text
							88888	Unknown Zone
1027	1028	Numeric	Right	I2	PARK	Pay for Parking	1	Yes
							2	No
							98	Don't Know
							99	Refused
1029	1036	Alphanum	Left	F8.2	PARKAMT	Amount Paid for Parking	0.01-9000.99	Valid Range
1037	1038	Numeric	Right	I2	PARKRATE	Parking Rate	1	Hourly
							2	Daily
							3	Monthly
							4	Annually
							5	Bi-Weekly
							6	Per Semester
							7	One-Time Rate
							8	Quarterly
							96	Other
							98	Don't Know
							99	Refused
949	950	Numeric	Right	I2	PAY6	Pay for Taxi/Shuttle	1	Yes
							2	No
							98	Don't Know
							99	Refused
951	958	Alphanum	Left	F8.2	PAY6AMT	Amount Paid for Trip	0.01-9000.99	Valid Range
959	960	Numeric	Right	I2	PAY7	Pay for Taxi/Shuttle	1	Yes
							2	No
							98	Don't Know
							99	Refused
961	968	Alphanum	Left	F8.2	PAY7AMT	Amount Paid for Trip	0.01-9000.99	Valid Range
969	970	Numeric	Right	I2	PAY8	Pay for Taxi/Shuttle	1	Yes

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							2	No
							98	Don't Know
							99	Refused
971	978	Alphanum	Left	F8.2	PAY8AMT	Amount Paid for Trip	0.01-9000.99	Valid Range
979	980	Numeric	Right	I2	PAY9	Pay for Taxi/Shuttle	1	Yes
							2	No
							98	Don't Know
							99	Refused
981	988	Alphanum	Left	F8.2	PAY9AMT	Amount Paid for Trip	0.01-9000.99	Valid Range
13	22	Alphanum	Left	A10	PHONENO	Phone Number	Value	Value
1039	1098	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
1106	1107	Numeric	Right	I2	RLGTRP	Reason Long Trip Length	1	Weather (rain or snow)
							2	Construction
							3	An Accident
							4	Traffic Congestion
							96	Other
							98	Don't Know
							99	Refused
406	407	Numeric	Right	I2	TRAV	Did Respondent Leave Location	1	Yes - Traveled From Origin Location
							2	No - Stayed at Origin Location til End of 48-hours
11	12	Numeric	Right	I2	TRIPNUM	Trip Number	0-99	Valid Range
989	990	Numeric	Right	I2	TRSDP	Driver or Passenger	1	Driver
							2	Passenger
							98	Don't Know
							99	Refused
811	812	Numeric	Right	I2	TRSTYPE1	1st Type of Transportation Used	1	Car, Van, Truck
813	814	Numeric	Right	I2	TRSTYPE2	2nd Type of Transportation Used	2	Motorcycle/Moped
815	816	Numeric	Right	I2	TRSTYPE3	3rd Type of Transportation Used	3	Bicycle
							4	Walk
							5	School Bus
							6	Taxi/Shuttle
							7	Dial-A-Ride
							8	Train
							9	Public Bus
							10	Private Bus
							11	Boat/Ferry Boat/Kayak
							12	Skateboard/Scooter
							13	Airplane

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
							14	Tractor
							15	Golf Cart
							16	Ambulance
							17	ATV
							18	Funeral Home Limousine
							19	Rollerblades/Rollerskates
							20	Horseback
							21	Motorhome
							96	Other
							98	Don't Know
							99	Refused
817	856	Alphanum	Left	A40	TRSTYPOS	Other Type of Transportation Used	Text	Text
993	994	Numeric	Right	I2	VHNUM	Number fo HH Members in Vehicle	0	0 - Alone
							1	1 person
							2	2 people
							3	3 people
							4	4 people
							5	5 people
							6	6 or more people
							98	Don't Know
							99	Refused
9	10	Numeric	Right	I2	VISNUM	Visitor Number	1	Visitor 1
							2	Visitor 2
							3	Visitor 3
							4	Visitor 4
							5	Visitor 5
							6	Visitor 6
							7	Visitor 7
							8	Visitor 8
991	992	Numeric	Right	I2	VTNUM	Number of Additional People in Vehicle	0	0 - Alone
							1	1 person
							2	2 people
							3	3 people
							4	4 people
							5	5 people
							6	6 or more people
							98	Don't Know
							99	Refused
607	805	Alphanum	Left	A199	WRKHM	Paid Work at Home Time Periods	Text	Text

Begin	End	Type	Justify	Format	Variable Name	Variable Label	Response Category	Response Category Description
995	996	Numeric	Right	I2	WHOACC1	1st HH Member in Vehicle	1	Person 1
997	998	Numeric	Right	I2	WHOACC2	2nd HH Member in Vehicle	1	Person 2
999	1000	Numeric	Right	I2	WHOACC3	3rd HH Member in Vehicle	1	Person 3
1001	1002	Numeric	Right	I2	WHOACC4	4th HH Member in Vehicle	1	Person 4
1003	1004	Numeric	Right	I2	WHOACC5	5th HH Member in Vehicle	1	Person 5
1005	1006	Numeric	Right	I2	WHOACC6	6th HH Member in Vehicle	1	Person 6
1007	1008	Numeric	Right	I2	WHOACC7	7th HH Member in Vehicle	1	Person 7
1009	1010	Numeric	Right	I2	WHOACC8	8th HH Member in Vehicle	1	Person 8
1011	1012	Numeric	Right	I2	WHOACC9	9th HH Member in Vehicle	1	Person 9
1013	1014	Numeric	Right	I2	WHOACC10	10th HH Member in Vehicle	1	Person 10
1015	1016	Numeric	Right	I2	WHOACC11	11th HH Member in Vehicle	1	Person 11
1017	1018	Numeric	Right	I2	WHOACC12	12th HH Member in Vehicle	1	Person 12
1019	1020	Numeric	Right	I2	WHOACC13	13th HH Member in Vehicle	1	Person 13
1021	1022	Numeric	Right	I2	WHOACC14	14th HH Member in Vehicle	1	Person 14
1023	1024	Numeric	Right	I2	WHOACC15	15th HH Member in Vehicle	1	Person 15
408	606	Alphanum	Left	A199	WHYNO	Reason for No Travel	Text	Text