Michigan Department
Of Transportation
5100B (05/13)

CHECKLIST TO DESIGNATE AREAS OF EVALUATION FOR REQUESTS FOR PROPOSAL (RFP)

	REQUISITION NUMBER	DUE DATE	TIME DUE
	1487	5/19/2014	Noon EST
MDOT PROJECT MANAGER Karen Faussett and Don Mayle	JOB NUMBER (JN) N/A	CONTROL SECTION (CS) N/A	

DESCRIPTION
MI Travel Counts III Statewide Household Travel Survey and SEMCOG Travel Counts 2015 Household Travel Survey

MDOT PROJECT MANAGER: Check all items to be included in RFP WHITE = REQUIRED ** = OPTIONAL Check the appropriate Tier in the box below			**CONSULTANT:** Provide only checked items below in proposal
☐ **TIER 1 ($50,000 - $150,000)**	☐ **TIER II ($150,000-$1,000,000)**	☑ **TIER III (>$1,000,000)**	
☐	☐	☐	Understanding of Service **
☐	☐	☐	*Innovations*
☐	☐	☐	Organizational Chart
☐	☐	☐	Qualifications of Team
Not required as part of Official RFP	Not required as part of Official RFP	☐	Quality Assurance/Quality Control **
☐	☐	☐	**Location:** The percentage of work performed in Michigan will be used for all selections unless the project is for on-site p=inspection or survey activities, then location should be scored using the distance from the consultant office to the on-site inspection or survey activity.
N/A	N/A	☐	Presentation **
N/A	N/A	☐	Technical Proposal (if Presentation is required)
3 pages (MDOT Forms not counted) **(No Resumes)**	7 pages (MDOT Forms not counted)	14 pages (MDOT forms not counted)	Total maximum pages for RFP **not including key personnel resumes.** Resumes limited to 2 pages per key staff personnel.

PROPOSAL AND BID SHEET EMAIL ADDRESS – mdot-rfp-response@michigan.gov

GENERAL INFORMATION

Any questions relative to the scope of services must be submitted by e-mail to the MDOT Project Manager. Questions must be received by the Project Manager at least five (5) working days prior to the due date and time specified above. All questions and answers will be placed on the MDOT website as soon as possible after receipt of the questions, and at least three (3) days prior to the RFP due date deadline. The names of vendors submitting questions will not be disclosed.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

MDOT FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION

5100D – Request for Proposal Cover Sheet
5100J – Consultant Data and Signature Sheet (Required only for firms not currently prequalified with MDOT)

(These forms are not included in the proposal maximum page count.)

REQUEST FOR PROPOSAL

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is interested in providing services, please indicate your interest by submitting a Proposal, Proposal/Bid Sheet or Bid Sheet as indicated below. The documents must be submitted in accordance with the latest (Consultant/Vendor Selection Guidelines for Services Contracts" and "Guideline for Completing a Low Bid Sheet(S)*, if a low bid is involved as part of the selection process. **Reference Guidelines are available on MDOT's website under Doing Business > Vendor/Consultant Services >Vendor/Consultant Selections.**

RFP SPECIFIC INFORMATION

☐ ENGINEERING SERVICES ☑ BUREAU OF TRANSPORTATION PLANNING ☐ OTHER

THE SERVICE WAS POSTED ON THE ANTICIPATED QUARTERLY REQUESTS FOR PROPOSALS

☐ NO ☑ YES DATED April 1, 2014 THROUGH June 30, 2014

☐ **Prequalified Services** – See the attached Scope of Services for required Prequalification Classifications.

☑ **Non-Prequalified Services** – If selected, the vendor must make sure that current financial information, including labor rates, overhead computations, and financial statements, if overhead is not audited, is on file with MDOT's Office of Commission Audits. This information must be on file for the prime vendor and all sub vendors so that the contract will not be delayed. **Form 5100J is required with Proposal for firms not currently prequalified with MDOT**

☐ **Qualifications Based Selection** – Use Consultant/Vendor Selection Guidelines

For all Qualifications Based Selections, the selection team will review the information submitted and will select the firm considered most qualified to perform the services based on the proposals. The selected firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

For a cost plus fixed fee contract, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

☐ **Qualification Based Selection / Low Bid** – Use Consultant/Vendor Selection Guidelines. See Bid Sheet instructions for additional information.

For Qualification Review/Low Bid selections, the selection team will review the proposals submitted. The vendor that has met established qualification threshold and with the lowest bid will be selected.

☑ **Best Value** – Use Consultant/Vendor Selection Guidelines, See Bid Sheet Instructions below for additional information. The bid amount is a component of the total proposal score, not the determining factor of the selection.

☐ **Low Bid** (no qualifications review required – no proposal required.) See Bid Sheet Instructions below for additional instructions.

BID SHEET INSTRUCTIONS

Bid Sheet(s) must be submitted in accordance with the "Guidelines for Completing a Low Bid Sheet(s)* (available on MDOT's website). Bid Sheet(s) are located at the end of the Scope of Services. Submit bid sheet(s) with the proposal, to the email address: mdot-rfp-response@michigan.gov. Failure to comply with this procedure may result in your bid being rejected from consideration.

PARTNERSHIP CHARTER AGREEMENT

MDOT and ACEC created a Partnership Charter Agreement which establishes guidelines to assist MDOT and Consultants in successful partnering. Both the Consultant and MDOT Project Manager are reminded to review the **ACEC-MDOT Partnership Charter Agreement** and are asked to follow all communications, issues resolution and other procedures and guidance's contained therein.

NOTIFICATION
MANDATORY ELECTRONIC SUBMITTAL

Proposals submitted for this project must be submitted electronically.

The following are changes to the Proposal Submittal Requirements:

- Eliminated the Following Requirements:
  - Safety Program
  - Communication Plan
  - Past Performance as *a separate section*
  - Separate section for DBE Statement of Goals. Include information in Qualification of Team section.

- Implemented the Following Changes:
  - All proposals require an Organization Chart.
  - Resumes must be a maximum of two pages.
  - Only Key (lead) staff resumes may be submitted.
  - **The standard page limit for the MTC III proposal has been waived, however, the size of the proposal is limited by the 5 megabytes file size limit.**
  - Forms 5100D, 5100I, and 5100G combined – 5100D.
  - Forms 5100B and 5100H combined – 5100B.
  - RFPs will be posted weekly on Monday.

The following are Requirements for Electronic Submittals:

- Proposals must be prepared using the most current guidelines.
- Proposals must be bookmarked to clearly identify the proposal sections (see below).
- For any section not required per the RFP, the bookmark must be edited to include "N/A" after the bookmark title.
  Example: Understanding of Service – N/A
- Proposals must be assembled and saved as a single PDF file.
- PDF file must be 5 megabytes or smaller.
- PDF file must be submitted via e-mail to MDOT-RFP-Response@michigan.gov .
  - MDOT's requisition number and company name must be included in the subject line of the e-mail. The PDF shall be named using the following format:
    - Requisition#XXX_Company Name.PDF
- MDOT will not accept multiple submittals.
  - Proposals must be *received* by MDOT on or before the due date and time specified in each RFP.

Submittals that do not comply with these requirements may be determined unresponsive.

Consultants will receive an e-mail reply/notification from MDOT when the proposal is received. Please retain a copy of this e-mail as proof that the proposal was received on time. **Consultants are responsible for ensuring that MDOT receives the proposal on time.**

****Contact Contract Services Division immediately at 517-373-4680 if you do not receive an auto response.****

Required Bookmarking Format:

Innovations and improvements will be part of the description of service for each task in the "Understanding of Service" section of the proposal and will not be bookmarked separately. The following Required Bookmarking Format will be used:

I. Request for Proposal Cover Sheet Form 5100D
    A. Consultant Data and Signature Sheet, Form 5100J (if applicable)
II. Understanding of Service
III. Qualifications of Team
    A. Structure of Project Team
        1. Role of Firms
        2. Role of Key Personnel
    B. Organization Chart
    C. Location
IV. Quality Assurance / Quality Control Plan
V. Resumes of Key Staff
VI. Pricing Documents/Bid Sheet

Michigan Department of Transportation

SCOPE OF SERVICE
FOR
PLANNING SERVICES

Project Description:

The consultant will conduct MI Travel Counts III (MTC III), a statewide household travel survey in Michigan. For MTC III, MDOT would like to survey 14,100 households statewide. The Southeast Michigan Council of Governments (SEMCOG), the MPO for Detroit, also will be purchasing approximately 6,880 additional surveys from the selected consultant. This selection process will serve both MDOT and SEMCOG selection requirements. SEMCOG will contract separately with the selected consultant.

Additional Information:

Please submit questions on the RFP by e-mail to MDOT project managers Karen Faussett (faussettk@michigan.gov) **and** Don Mayle (mayled@michigan.gov) following the instructions in the General Information section of form 5100B.

In addition to responding to e-mail questions, MDOT will host a pre-proposal webinar on May 6, 2014 at 1:00 pm EDT where consultants can ask questions and get clarification on the RFP. Instructions for joining the webinar will be posted on the MDOT website at least two days prior to the webinar. A recording of the webinar will be posted on the MDOT website by May 8, 2014.

Consultants with proposals that score 100 points or greater will be invited to make an in-person presentation. These presentations will be scheduled on June 25, 26, or 27, 2014. Selected consultants will be contacted June 12, 2014 to schedule the presentations.

At least 40% of work by dollar value of service must be done by the prime consultant.

Anticipated Service Start Date: October 1, 2014

Anticipated Service Completion Date: August 1, 2016

MDOT Project Managers:

Karen Faussett, Statewide Model Specialist
Bureau of Transportation Planning
425 W. Ottawa Street
P.O. Box 30050
Lansing, MI 48909
517-335-2956
Faussettk@michigan.gov

Don Mayle, Senior Transportation Planner
Bureau of Transportation Planning
425 W. Ottawa Street
P.O. Box 30050
Lansing, MI 48909
517-335-2954
Mayled@michigan.gov

SEMCOG Project Manager:

Thomas Bruff, Group Leader, Plan and Policy Development Group
Southeast Michigan Council of Governments
1001 Woodward Avenue, Suite 1400
Detroit, MI 48226-1904
313-324-3340
bruff@semcog.org

Consultant Qualification Requirements

The consultant will demonstrate that the team assigned to this project has expertise to perform the tasks listed in the scope of services including but not limited to:

a) Household travel survey methods and techniques
    a. Sample design
    b. Household data collection
    c. Geo-coding
    d. Data weighting
    e. Quality assurance and quality control
b) Public awareness and public relations
c) Traditional trip-based four-step travel demand modeling and activity-based modeling
d) Post-processing and integration of GPS and diary survey data
e) Writing technical documents.

The consultant will provide resumes of all key team members that will work on the MTC III project.

The consultant will provide relevant examples of work similar to the tasks described in this scope that have been completed by the team members who will be assigned to the MTC III contract.

The consultant will provide a list of three references from similar projects completed by the proposed project manager and team members who will be assigned to the MTC III contract. These references will be contacted. Information regarding the project manager's and team members' experience in working with key personnel listed in the proposal will be used in scoring relevant past performance.

Consultant Responsibilities:

The consultant will submit all required forms and adhere to MDOT proposal submission protocol listed on MDOT Form 5100B and the Notification Mandatory Electronic Submittal section of this RFP.

Proposal costs are required to be completed using MDOTs "Priced Proposal Blank Template" spreadsheet which can be found on the MDOT website under Doing Business > Vendor/Consultant Services > Vendor/Consultant Contracts. Instructions are included in the spreadsheet. A sample of a completed priced proposal spreadsheet and a PDF of a completed

priced proposal are also in the same location. In the "INFO" tab of the priced proposal spreadsheet under "Master Task List," the consultant should replace the first 32 "PPMS Task Code" and "PPMS Task Description" rows with the task numbers and descriptions from the MDOT and SEMCOG Scope of Work (Tasks 1-22, with tasks 3 and 14 broken out). The consultant should also complete the summary bid sheets shown here on pages 7 and 8.

Scoring Criteria:

Understanding of Services: 30 Points

The proposal will be evaluated on the level of understanding of the scope of services as presented in this RFP. Consultants also will be evaluated on their approach to achieving the goals of the project, the comprehensiveness and cohesiveness of the proposed approach, and the techniques to be used within the framework of household travel surveys. The detailed description of the proposed approach or methodology for accomplishing each task and subtask will be part of the Understanding of Services score. Allocation of time and staff hours on specific tasks also will be evaluated. Any innovations or alterations to work items that are suggested by the consultant in the proposed scope of services will also be considered in scoring the Understanding of Services.

Qualifications of Team: 20 Points

Professional personnel will be evaluated on their ability to meet the terms of the RFP relative to having the qualifications needed to successfully complete the project. The scoring for qualifications of team will be based on the following information:

- Structure of the Project Team (Personnel and Roles) – Describe the structure of the project team including the roles of all the key personnel and sub-consultants. For each sub-consultant, describe their role in service and include the percent of the named role the sub-consultant is expected to provide.
- Staff experience – Provide resumes for each of the key staff of the prime and sub-consultants. The format is shown in the Consultant Vendor Selection Guidelines. The resumes are limited to two pages. Scoring will be based on education and overall experience of professional personnel assigned to the project, as specified in the proposal, including sub-consultants, as stated in their attached resumes. Professional personnel who work on the project must be the same individuals identified in the proposal.

Relevant Past Performance: 20 Points

The proposals will be evaluated on specific prior experience and work applicable to this scope of services. MDOT will review relevant MDOT performance evaluations for the past 10 years for prime and sub-consultants who are being proposed. References provided by the consultant also will be contacted. Their review of performance of the key personnel listed in the proposal will be utilized in scoring relevant past performance. Proposing consultants or sub-consultants with no prior experience with MDOT will be scored solely on review of references contacted for relevant past performances.

Quality Assurance/Control: 10 Points

The proposal will be evaluated on a plan to ensure quality control and assurance for the project's data collection, documentation, and data cleaning. This includes but is not limited to methods to

ensure quality in data analysis, data checks, data delivery, data consistency, post processing, document version control, web tools, public awareness materials, and quality of writing in documentation and reports.

Location: 5 Points

This section will be scored for all solicitations. The consultant selection criteria will include a consideration of the percentage of contracted work that will be performed in Michigan. The following criteria will be used:

95 - 100% 5 points
80 - 94% 4 points
50 - 79% 3 points
25 - 49% 2 points
10 - 24% 1 point
Less than 10% 0 points

Price: 35 Points

Completed bid sheet is required: The cost estimate will be evaluated using the following equation: [Low Bid/Bid] x 35 = Points.

Presentation: 20 Points

All consultants that score 100 points or greater out of the 120 points possible of the aforementioned criteria will be invited to make an in-person presentation to the selection team. The points for the presentation will be added to the total score.

Total points possible before presentation	120
Presentation points	20
Total points	140

Consultant Payment - Milestone:

Compensation for this project shall be on a milestone basis. Compensation shall be divided into payments for the completion of a portion of the services (deliverables). The Consultant will submit appropriate milestones in their proposal. The final milestones will be agreed upon as part of the project work and management plan.

All billings and supporting documentation for services must be directed to the department and follow the current guidelines at the time of invoicing. Beginning May 1, 2014, MDOT will be requiring the use of standardized invoicing forms for all consultants submitting their first invoice for MDOT projects. By August 1, 2014, all invoices must be submitted to MDOT using the new standardized invoicing forms. Failure to do so will result in delay in payment until such time as the required forms are submitted to MDOT. More information can be found on the MDOT website under Doing Business > Vendor/Consultant Services. The latest information on invoicing will be posted there as it becomes available.

Payment to the consultant for services rendered shall not exceed the maximum amount unless an increase is approved in accordance with the contract with the consultant. Typically, billings must be submitted within 60 days after the completion of services for the current billing. The final billing must be received within 60 days of the completion of services. Refer to the contract for specific contract terms.

CONSULTANT BID SHEET—MILESTONE/LUMP SUM

This bid sheet is required with the response to the Request for Proposal (RFP). All entries on this page must be handwritten in ink or computer generated. Compensation for this project shall be on a Lump Sum basis.

Priced proposal costs are required in accordance with MDOT's Priced Proposal Guidelines, which can be found on the MDOT web page under Vendor/Consultant Services. Payment to the Consultant for services rendered shall not exceed the total bid price.

Note: MDOT reserves the right to reject any or all bids.

PROJECT DESCRIPTION: MI Travel Counts III (MTC III) - a statewide household travel survey to support the statewide passenger and all urban travel demand models in Michigan. SEMCOG Travel Counts 2015 (STC15) – a SEMCOG area household travel survey in coordination with MTC III to support the SEMCOG travel demand model development. Tasks and deliverables are described in the scope of work section, pages 10-41.

MDOT DELIVERABLE(S)	TOTAL BID PRICE
Task 1	
Task 2	
Task 3a	
Task 3b	
Task 3c	
Task 3d	
Task 3e	
Task 3f	
Task 4	
Task 5	
Task 6	
Task 7	
Task 8	
Task 9	
Task 10	
Task 11	

Deliverable(s), all tasks to be completed under the MDOT contract.

TOTAL MDOT BID PRICE: $_____
(All deliverables of the MDOT contract)

SEMCOG DELIVERABLE(S)	TOTAL BID PRICE
Task 12	
Task 13	
Task 14a	
Task 14b	
Task 14c	
Task 14d	
Task 14e	
Task 14f	
Task 15	
Task 16	
Task 17	
Task 18	
Task 19	
Task 20	
Task 21	
Task 22	

Deliverable(s), all tasks to be completed under the SEMCOG contract.

TOTAL SEMCOG BID PRICE: $_____
(All deliverables of the SEMCOG contract)

Deliverable(s), all tasks to be completed under the MDOT and SEMCOG contract.

TOTAL BID PRICE: $_____
(All deliverables for MDOT and SEMCOG contracts)

Legal Business Name:	
Consultant's Authorized Legal Signer:	
Consultant's Address:	

Project Summary
This RFP provides interested consultants with specific information to prepare and submit proposals for a statewide household travel survey in Michigan. This survey, MI Travel Counts III (MTC III), will provide the Michigan Department of Transportation (MDOT) and the Metropolitan Planning Organizations (MPOs) with the household travel information necessary to develop or update the statewide passenger model, six Transportation Management Area (TMA) models, and eight Small Urban Model Area (SUMA) models. It will update the travel data collected during MI Travel Counts (MTC I), conducted in 2004-2005, and will be the basis for the travel demand models for the next 10 years at a minimum.

For MTC III, MDOT would like to survey 14,100 households statewide. The Southeast Michigan Council of Governments (SEMCOG), the MPO for Detroit, also will be purchasing approximately 6,880 additional surveys from the selected consultant. **This selection process will serve both MDOT and SEMCOG selection requirements.** This RFP begins with the MDOT background and scope of work followed by SEMCOG's background and scope of work. The additional surveys in the SEMCOG area will utilize the MDOT methods and materials unless otherwise noted in the SEMCOG scope of work. As a result, the SEMCOG scope of work contains only items that differ from, or are in addition to, the MDOT scope of work. SEMCOG will contract separately with the selected consultant.

MDOT

Background
MDOT is responsible for the development, maintenance, and application of the statewide passenger travel demand model and eight SUMA travel demand models as well as coordinating with the six TMAs in their model development. In 2004-2005, MDOT conducted its first statewide household travel survey, MTC I, to support the development of all travel demand models in the state. The survey and its sampling areas were developed to provide Michigan-specific and area-specific information to develop both the urban and statewide models.

The state was divided into seven sampling areas and households within each area were stratified by household size, workers, and autos available. Cells were combined based on an "auto sufficiency" design. Forty-eight hours of travel data and retrospective long-distance travel data was collected from each member of participating households and any overnight guests. Each sampling area had a target of 2,040 completed households, for a total of more than 14,000 households statewide.

The MTC I data has been used in the State Long-Range Transportation Plan, the MDOT statewide passenger model, and all SUMA and TMA travel demand models.

After the completion of MTC I, the Michigan economy continued to decline, gas prices fluctuated drastically, and travel decreased statewide. As reported by MDOT permanent traffic recorder data, traffic declined by 4% (2.2 billion vehicle miles) from 2004 to 2007. This decrease in travel, and the desire to determine if household travel had changed due to the downturn in the economy, prompted the MTC II survey in 2009. For MTC II, 24 hours of travel data were collected from approximately 2,000 households that participated in MTC I. The MTC II

sampling plan combined cells based on MTC I travel characteristics and reduced the number of household surveys required to 280 households per sampling area. The MTC II survey data was compared to MTC I, and showed slight changes to discretionary and long-distance travel but indicated that household travel was essentially unchanged.

All MTC I and MTC II documentation including final reports and appendices (MTC I Final Report and MTC II Methodology Report) can be found at www.michigan.gov/mitravelcounts.

MDOT Scope of Work

Introduction

For MTC III, it is proposed that the state be divided into 16 sampling areas and that households be stratified by four household sizes and four income groups. The sample sizes (per area) range from 650 households to 1,650 households for a total of 14,100 statewide. The sample areas and sizes are listed in Table 1 on page 5.

The majority of households will complete only a travel diary while a 10-15% subsample of households will complete a GPS survey. For travel diary households, 24 hours of travel information and long distance retrospective travel information will be collected Monday-Thursday from each household member when school is in session. A minimum of three days of travel information and the long-distance retrospective travel will be collected from GPS households.

The work in MTC III will build upon the work done for MTC I and II; instruments and procedures from the two previous studies will be reviewed and improved based on MDOT and consultant input and will take advantage of technological improvements and lessons learned from previous MTC surveys and studies conducted in other areas.

The public perception of the study is critical. The consultant (and/or sub-consultant) will work cooperatively with the MDOT Office of Communications to develop and implement a public relations plan that will include news releases, social media, correspondence with state and local officials, videos, and a website. The consultant will be responsible for all public awareness material preparation for review by MDOT Communications staff.

The existing survey instruments and procedures will be reviewed and revised for MTC III and tested in a pilot survey. Revisions will be made to instruments and procedures before fielding the full survey.

Data quality is also crucial to the success of the project. Data checking and geocoding procedures from MTC I and II will be reviewed and revised as necessary. As data is checked, it will be delivered to MDOT in interim data sets so that MDOT can perform checks on manageable portions of data while surveying continues and provide any necessary feedback.

The consultant will write a final project report documenting all aspects of the project and will write a separate *Travel Characteristics Technical Report*, a supporting document for the State Long-Range Transportation Plan.

Each task in this scope is written to provide a general description of how the survey should be conducted and offers enough guidance to understand the intent, expectations, and requirements. This scope should be viewed as a statement of the minimum requirements for accomplishing the effort and prospective consultants are encouraged to suggest improvements to the proposed process. Consultants also are encouraged to include statements identifying any additional products, meetings, or recommendations that may benefit the project, along with appropriate justifications.

MDOT Tasks

Task 1 – Project Work and Management Plan

All proposals shall include a draft project work and management plan. The plan should address, in detail, management of the project, each task and subtask, the project schedule (including proposed in-person meetings and teleconferences), personnel assignments and hours, and quality control measures.

The consultant will provide quality control/quality assurance (QA/QC) on all products before providing them to MDOT and allow ample time in the schedule for QA/QC to be completed. The consultant will ensure that documents provided to MDOT have been appropriately reviewed and edited, so that MDOT is reviewing only content, not grammar. The plan also will specifically describe how activities will be coordinated with the MDOT project managers. In addition, the schedule included in the proposal should show how the following schedule concerns can or cannot be met:

- The consultant will begin work on October 1, 2014.
- Travel days will be Monday-Thursday when school is in session.
- A pilot test will be conducted before the main survey.
- Main survey will begin in the spring of 2015 and continue no later than the first week of June 2015.
- Following the summer break, surveying will resume the day after Labor Day through the end of 2015.
- Travel days will not be assigned on holidays or during spring break. The consultant will work with MDOT to determine the final schedule of travel days.
- The contract will conclude no later than August 1, 2016.

If the consultant believes the schedule constraints cannot be met or that there are other scheduling parameters that should be considered in certain areas, the consultant should explain why in the proposal and recommend a schedule that will meet all project requirements.

Within five days of the contract award and authorization to proceed, the selected consultant will meet with the MDOT project managers and other project participants to review the draft project work and management plan to identify any revisions and clarifications. The draft project work and management plan will be updated from the version in the proposal based on information received in the interim and will be provided to MDOT for review two days before this initial project meeting. Within 10days of the meeting, the consultant will complete the revisions to the work program and forward to MDOT for approval.

At the initial meeting, the team also will discuss methods for progress reporting, makeup of project teams, coordination with MPOs, and procedures for documenting project decisions.

During the project, the consultant will be responsible for developing meeting agendas, presentation materials, and the recording and distribution of meeting minutes. All meeting materials will be provided in advance. The project work and management plan will specify when meeting materials and minutes will be provided to MDOT.

The consultant will keep a record of significant events that may affect the outcome of the project. Any technical problems that may jeopardize the quality of the survey will be reported immediately to MDOT. In addition, the consultant will back up project computer files on a daily basis.

Because much of this project is time-sensitive, the consultant will establish a weekly schedule for standing teleconferences with the MDOT project managers.

MDOT will work with the consultant to schedule all meetings and review documents in the agreed amount of time specified in the project work and management plan.

Meetings:

- One meeting in Lansing, MI with MDOT project managers and others.
- Teleconferences will be scheduled as necessary.

Deliverables:

1. Draft project work and management plan
2. Final project work and management plan
3. Meeting agendas, presentation materials, and minutes
4. Record of significant project events
5. Weekly standing teleconference

Task 2 – Sample Design

As in MTC I, data from MTC III will be used to develop trip generation and trip distribution parameters for all urban travel demand models and the statewide passenger model. After using the MTC I data to build travel demand models in the TMA and SUMA areas, MDOT staff determined that for MTC III, a more disaggregate sampling approach should be taken. For reference, the MTC I sampling plan can be found in Appendix 1 of the MTC I Final Report and the MTC II sampling plan can be found in Appendix P of the MTC II Methodology Report.

MDOT's proposed MTC III sample plan is outlined below and is detailed in Attachment A. The consultant will review this proposed sample plan and suggest any revisions or improvements to the plan that would result in a better sample in their proposal. If the consultant believes that significant changes are required or anticipates that certain cells may not be able to be filled, it should be noted and explained in the proposal and potential budget implications should be identified. The consultant also will address if the need exists to collapse cells and the possible

methodology for doing so. Additionally, if the consultant recommends a change in stratification variables, those variables are to have a 100% response.

For MTC III, the state will be divided into 16 sample areas. Four sample areas (*SEMCOG minus Washtenaw County (WATS)*, *Southern Michigan Rural*, *Northern Michigan Rural*, and *Small Cities*) are specifically for the statewide passenger model. The remaining twelve sample areas are for the urban area models but will also be used in the statewide passenger model. Sample sizes range from 650 to 1,650 households per sample area.

Two MDOT sample areas, *SEMCOG minus WATS* and *WATS*, are in the counties covered by SEMCOG. The surveys conducted for MDOT in those two sample areas are to utilize the instruments developed by SEMCOG in Task 15.

A listing of the 16 sample areas and their sample sizes can be found in Table 1.

Table 1

Sample Area	Housing Units (occupied)[3]	Sample Size[4]	% Total Housing Units (occupied)
Statewide Model			
Southeast Michigan Council of Governments (SEMCOG) minus Washtenaw County (WATS)[1]	1,707,565	1,650	0.10%
Southern Michigan Rural	386,208	1,200	0.31%
Northern Michigan Rural	306,995	1,200	0.39%
Small Cities	130,357	1,000	0.77%
Urban Model Areas			
Grand Valley Metropolitan Council (GVMC)	263,361	1,000	0.38%
Tri-County Regional Planning Commission (TCRPC)	183,589	800	0.44%
Genesee County Metropolitan Planning Commission (GCMPC)	169,202	800	0.47%
Great Lakes Bay Region (GLBR)	157,051	800	0.51%
Washtenaw Area Transportation Study (WATS)	137,193	800	0.58%
Kalamazoo Area Transportation Study (KATS)	110,760	800	0.72%
West Michigan Metropolitan Transportation Planning Program (WestPlan)	86,600	650	0.75%
Jackson Area Comprehensive Transportation Study (JACTS)	60,771	650	1.07%
Twin Cities Area Transportation Study (TwinCATS) and Niles/Buchanan/Cass Area Transportation Study (NATS)[2]	57,322	800	1.40%
Macatawa Area Coordinating Council (MACC)	43,752	650	1.49%
Battle Creek Area Transportation Study (BCATS)	37,849	650	1.72%
Traverse City (TVC)	33,933	650	1.92%
Totals	**3,872,508**	**14,100**	0.36%

[1] The SEMCOG minus WATS sample size is based upon the Statewide Model needs

[2] Combined: a minimum number of samples will be taken in each model area to ensure that specific trip length parameters can be calculated for each of the model areas

[3] Source: 2010 Decennial Census

[4] Source: MDOT Sample Size Determination Analysis

In each sample area, households will be stratified based on four household sizes and four income groups. A map of the sample areas, a description of the municipalities in each sample area, tables of the total and percent households by size and income by sample area, and tables of the number of households to be surveyed by household size and income (or cell) are included in Attachment A.

Households in MTC I and II were stratified by size, vehicles, and workers. MDOT decided to change to the household size by income stratification because income can be used as an indicator for vehicle ownership and households with higher incomes may make more discretionary trips than less wealthy households with the same vehicle ownership. However, MDOT is concerned with non-response for the income question. In MTC I, income non-response was approximately 4%. Since it will now be a stratification variable, MDOT desires 100% response for income. The consultant will outline their proposed method to obtain an income response and to address any bias that may result.

MDOT anticipates that the consultant will use an address-based sample frame for this survey. In the proposal the consultant will discuss the proposed address-based sample source and the pros and cons of that source.

If MDOT and the consultant agree that significant changes to the proposed sample plan are necessary, the consultant will prepare a revised sampling plan as part of the task, allowing MDOT adequate time for review. If no changes are needed, MDOT expects the consultant to obtain the number of complete households by cell as identified in Table D for each sample area (pages C-1 through C-16) in Attachment A. Additionally, if no changes are made to the proposed sample plan, the consultant will summarize the plan in a draft and final sample plan to demonstrate their understanding of the plan similar to what would be done for a revised sampling plan.

Within the sample plan, the consultant will discuss sample selection and monitoring. This section of the sample plan will discuss how the sample is obtained and monitored, response rates and sample disposition, how a "quality" sample will be ensured, and any potential corrective actions.

How the "hard to fill" cells are handled is critical to the success of MTC III. In the proposal, the consultant will provide initial thoughts and justification on how to best reach these households (which include but are not limited to low income, young, zero vehicle, and transit using households) and ensure participation in the project. For this task, the consultant will develop a plan outlining the methods that will be used in the study to obtain participation from the "hard to reach" households.

MDOT does not believe that the state's non-English speaking population warrants offering instruments in English, Spanish, and Arabic statewide. However, there are a few areas in southeast Michigan that have large Spanish and Arabic-speaking populations. As part of identifying the "hard to reach" populations, the consultant will describe the steps that will be implemented to obtain participation from these non-English speaking households.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Draft sample plan
2. Final sample plan
3. Plan for "hard to fill" cells

Task 3 – Data Collection Methodology
The objective of this task is to outline the specific manner in which the MTC III household travel survey will be conducted.

A good respondent experience is very important to MDOT. The consultant and MDOT will develop and implement a public awareness plan to increase knowledge and legitimacy of the project. MDOT also is interested in implementing public awareness activities that will make the survey process more enticing to respondents.

MDOT would like to maintain consistency in survey methodology and data items between MTC III and the previous two surveys as much as possible, while allowing for improvements in procedures and technology. The previous survey procedures and instruments should be used as a starting point for MTC III. **All documentation for MTC I and MTC II can be found at www.michigan.gov/mitravelcounts**.

For MTC III, the majority of households will complete a travel diary while a 10-15% subsample of households will complete a GPS survey. For travel diary households, 24 hours of travel information and long distance retrospective travel information will be collected Monday-Thursday from each household member when school is in session (it should be noted that 48 hours of travel data was collected in MTC I and 24 hours was collected in MTC II. MDOT would like 24 hours of travel data collected in the diary portion of MTC III). A minimum of three days of travel information and the long distance retrospective travel will be collected from GPS households.

MDOT would like an address-based sample frame used for recruitment and to take advantage of improvements in technology to include recruitment by phone or Web and explore including Quick Response (QR) codes on pre-recruitment letters to make participating easier. The consultant will allow retrieval by phone, Web, or mail and will have on-the-fly geocoding included in both phone and Web retrieval to help verify trip information.

The budget allows for approximately a 10-15% GPS sub-sample using a mail-out/mail-back of GPS units. **MDOT encourages the consultant to propose and justify innovative cost-saving methods for the GPS subsample that may increase the number of GPS households completed, particularly the potential use of smart phone applications for the collection of GPS travel data.**

MDOT would like to make the best use of the GPS data as possible. The GPS data should be seamlessly integrated into the diary data and meaningful GPS correction factors will be developed. In addition, a comprehensive set of GPS data files shall be developed.

Overall, Task 3 will document the method by which the survey will be conducted and will guide the development of the instruments in Task 4. Task 3 is divided into the following parts:

- Task 3a – Develop a public awareness plan
- Task 3b – Review MTC I and II data items and determination of MTC III data items
- Task 3c – Develop diary survey methodology, including incentive plan

- Task 3d – Develop GPS survey methodology, including incentive plan
- Task 3e – Develop diary/GPS data integration and GPS correction plan
- Task 3f – Develop Data Coding and Quality Control Procedures

Task 3 Meetings

- One meeting in Lansing to cover all of Task 3
- Teleconferences as necessary

Task 3a – Develop Public Awareness Plan

The public perception of the study is critical. A member (or members) of the consultant team, with experience in public relations for government agencies, will work cooperatively with the MDOT Office of Communications to develop and implement a public awareness plan that will include news releases, social media, correspondence with state and local officials, videos, and populating the project website (hosted by the consultant and also used for recruitment and retrieval). The consultant will be responsible for all public awareness material preparation for review by MDOT Communications. The material will mostly be disseminated by the MDOT Office of Communications through established news media and social media channels.

The public awareness plan will increase public knowledge, the legitimacy of the project, and explain the purpose and need for the survey, including the benefits to the transportation planning process in Michigan. The complete public awareness program will be coordinated with and approved by the MDOT Office of Communications and the MDOT project managers.

Making the survey a pleasant experience for all participants while increasing participation from "hard to reach" populations is also part of the public awareness plan. In the proposal, the consultant shall provide a brief explanation on how public awareness could be used to increase participation from "hard to reach" populations and how the public awareness activities can help to make the survey a desirable activity for participants.

For reference, the MTC I Public Awareness Plan can be found in Appendix 18 of the MTC I Final Report. MDOT does not expect the consultant to replicate the MTC I plan for MTC III as technology and social media have evolved significantly since 2005, but it can still provide guidance for the effort. Any suggestions the consultant may have to improve upon what was done for MTC I and what is identified above, based on previous experiences, are desired.

Deliverables:

1. Draft Public Awareness Plan
2. Final Public Awareness Plan
3. Implementation of activities identified in Public Awareness Plan

Task 3b – Review of MTC I and II data items and determination of MTC III data items

The consultant will collect all data that was previously collected in MTC I and II unless otherwise agreed to by MDOT and the consultant, with the exceptions that only 24 hours of travel data will be collected from diary households and that visitor travel will not be collected.

The consultant will work with MDOT staff to review the data that was collected in MTC I and II

and determine if any item is no longer necessary and identify any additional items, while considering negative effects upon respondent burden. The consultant also will review the long-distance retrospective component of the survey and identify any improvements to the collection methodology and long distance trip definition based on current practice.

The consultant will develop coding for any new variables and will develop a codebook for MTC III as a whole. Times are to be reported in military format and data files are to be provided to MDOT in DBF format.

MDOT realizes that there will be slight differences in instruments and the number of data items between the MDOT and SEMCOG surveys. Data for households in the *SEMCOG minus WATS* and *WATS* sample areas, which will use the SEMCOG instruments, will be provided to MDOT in the same format as the other MDOT sample areas.

For reference, consult the codebook for MTC I (Appendix 24 of the MTC I Final Report). The codebook for MTC II is Appendix Q of the MTC II Methodology Report.

The consultant will develop the draft and final versions of a data memo with a codebook that identifies all data to be collected in the survey, the source of the data (i.e., recruit, retrieval, etc.), and the data file in which it will be contained for both diary and GPS data files.

Deliverables:

1. Draft data memo with codebook
2. Final data memo with codebook

Task 3c – Develop Diary Survey Methodology, including incentive plan

The consultant will develop a Diary Survey Methodology that will document specifically how the diary portion of the survey will be conducted. This includes, but is not limited to:

- **Sample management** – How will the address-based sample be allotted throughout the sample areas? How often will new sample be generated? How will "hard to fill" cells be dealt with?

- **Recruitment** – Letterhead will be provided by MDOT to the consultant to print and mail out the pre-recruitment letters. Once a household receives a pre-recruitment letter, how long will the consultant allow before attempting another contact? For unmatched households, will there be a second attempt to recruit either by post card or another letter? In addition to providing a website URL for recruitment, is it possible to include QR codes on the pre-recruitment letter? What questions will be asked during recruitment vs. retrieval?

- **Assembling and mailing of survey materials** – How long before the travel day will the survey materials be mailed to the household? What will the mailing contain? What type of postage will be used?

- **Pre- and post-travel day follow-up** – Will there be a reminder call or text to the household before the travel day? If the household does not participate in a phone or on-line retrieval the day after the travel day, what are the follow-up actions?

- **Retrieval** – When will retrieval calls begin? How many retrieval call attempts will be made? How long after mailed diaries are received will the data be entered?

- **Interviewer training** – The consultant will specify how interviewers will be trained in preparation for the survey.

- **Incentive Plan** – MDOT realizes that it is becoming more difficult to get people to agree to a survey and that incentives will be necessary for the successful completion of the project. However, it is important that we be good stewards of the department's financial resources and incentives be implemented thoughtfully. With that in mind, the consultant will propose an initial diary incentive plan in the proposal. The consultant will create a revised incentive plan in this task which must be approved by MDOT management before surveying.

- **Project Website –** The consultant will maintain a project website. The website will be used for web recruitment and retrieval. It will also serve to legitimize the study and will contain the project information and FAQs (also serving the public awareness activities outlined in Task 2e). In the proposal, the consultant will provide their initial perspective of the website including its role, look and feel, and functionality. In this task, the consultant will describe the contents, look and feel, and functionality of the website. The completed website will be a deliverable in Task 4.

The consultant is encouraged to include any items that are not listed above that are important to the diary survey methodology in the Diary Survey Methodology.

Deliverables:

1. Draft Diary Survey Methodology, including Draft Incentive Plan
2. Final Diary Survey Methodology, including Final Incentive Plan

Task 3d – Develop GPS Survey Methodology, including Incentive Plan

The consultant will document the procedures for implementing the GPS components of the household travel survey. For the elements that are the same for the GPS households as the diary households, the consultant can refer to the procedures for the diary households.

MDOT's previous travel surveys did not have GPS components. MDOT would like to include a GPS component for MTC III to take advantage of GPS's improved accuracy for trip reporting and to examine the variability in daily trip making. The budget allows for approximately a 10-15% GPS subsample using a mail-out/mail-back of the GPS units. **MDOT encourages the consultant to propose and justify innovative cost-saving methods for the GPS sub-sample that may increase the number of GPS participants, particularly the potential use of smart phone applications for the collection of GPS travel data.** In the proposal, along with the methodology, the consultant will specifically state the number or percentage of households they

are proposing for the GPS subsample. The consultant also will relate their previous experience conducting GPS household travel surveys and indicate the type of GPS receivers and/or smart phone applications that are proposed to be utilized in MTC III. All costs for GPS receivers will be borne by the consultant.

The consultant also will propose whether GPS households complete a travel diary or prompted recall survey in addition to carrying the GPS units or if the GPS households will solely carry GPS units and any implications that recommendation may have on data quality.

The consultant will develop a plan that will describe the following items (but not limited to):

- GPS household selection
- Mailing of GPS materials
- GPS material return

As with the diary survey, the consultant will propose an initial incentive plan for GPS households in the proposal. The consultant will create a revised GPS incentive plan in this task, which will have to be approved by MDOT management before surveying.

Deliverables:

1. Draft GPS Survey Methodology, including Draft Incentive Plan
2. Final GPS Survey Methodology, including Final Incentive Plan

Task 3e – Develop diary/GPS data integration and GPS correction factor plan

While GPS travel survey data provides advantages as far as accuracy of the reported data and knowledge of the travel route and speed, there are challenges in integrating the diary data with the GPS data and developing correction factors from the GPS data to adjust the diary data.

It is MDOT's desire to have the GPS travel data integrated into the diary data files as if it were diary data and to also have data files of only GPS data. The consultant shall discuss preliminary thoughts on the process in the proposal and will develop a diary/GPS data integration plan in this task.

In researching GPS correction factors, MDOT has found that the process in other areas has ranged from a simple factoring of the diary trips to very complicated statistical procedures. In the proposal, the consultant shall discus preliminary thoughts on a method to adjust overall diary data based on the GPS survey data. In this task the consultant will develop a GPS correction factor plan to be implemented following data collection and checking. After the GPS correction factors have been implemented in Task 8, the consultant shall write a memo detailing the process and outcome.

Deliverables:

1. Draft diary/GPS data integration plan
2. Final diary/GPS data integration plan
3. Draft GPS correction factor plan
4. Final GPS correction factor plan
5. GPS correction factor outcome memo

Task 3f – Develop Data Coding and Quality Control and Geocoding Procedures
The consultant will be responsible for providing a data set that accurately and clearly reflects the responses provided by participants. The consultant is expected to provide all household and person records in the final data set, including both complete and incomplete households.

A cornerstone of success in the previous MTC studies was the thorough data checking performed by the prime consultant and a sub-consultant. The consultant will review the MI Travel Counts Data Coding and Quality Control Manual (Appendix 23 of the MI Travel Counts Final Report) and develop a Data Coding and Quality Control Manual for MTC III. It is anticipated that all of the data checks from MTC I will be performed for MTC III unless a change is justified by the consultant. The consultant also will recommend additional data checks as applicable.

The consultant will develop the checks that are to be conducted specifically for the GPS households which will be included in the Data Coding and Quality Control Manual. In addition, the manual shall explain the method for creating trips from GPS data files. As MDOT has no experience with GPS studies, it is expected that the explanation of the GPS checks and data manipulation will be sufficiently detailed.

The definition of a complete household is discussed under *"4. Quality Control Procedures"* on page 17 of the MTC I Data Coding and Quality Control Manual. In addition, a household will be considered incomplete if more than 25% of its locations are non-geocodable.

The geocoding of trip locations is a very important part of conducting a household travel survey and it is often very difficult to obtain the accuracy desired. The consultant should provide a detailed explanation of their proposed geocoding process in the proposal.

With improvements in mapping technology since MTC I and II, MDOT realizes that the geocoding procedures developed for the previous surveys may not be completely applicable. However, the geocoding percentages below are still required. The consultant will describe how their "on-the-fly" geocoding process works and the proposed procedure for dealing with non-geocodable locations briefly in the proposal and thoroughly in the Geocoding Manual.

Geocoding requirements:

- All geocoded points will be provided in longitude and latitude.
- For points geocoded to longitude and latitude, the hierarchy of preferred spatial scales is 1) physical street address, then 2) nearest intersection.
- The following targets are to be met:
    - 99% or more of home addresses will be geocoded to longitude and latitude.
    - 95% or more of all school and work locations will be geocoded to longitude and latitude.
    - 90% or more of other stops/locations will be geocoded to longitude and latitude.
- Offsets are to be a maximum of 25 feet.
- For locations that are not automatically geocoded, the consultant will develop a process for online and map checks to manually geocode those locations.

- Only after the manual geocoding options are exhausted will the location be deemed non-geocodable.
- A household will be considered incomplete if 25% or more of its locations are non-geocodable.

The Geocoding and Trip Time Checks in Section 6 of the MI Travel Counts Geocoding Manual (pages 12-16 of Appendix 22 of the MTC I Final Report) were very useful in MTC I and II. MDOT wishes to have the same checks completed in MTC III. In the proposal, the consultant will list and describe how they would conduct those checks considering the improvements in technology since MTC I and II and thoroughly describe the checks in the Geocoding Manual.

The consultant will document all geocoding procedures and checks in the Geocoding Manual.

Meetings:
- Teleconferences as necessary

Deliverables:
1. Draft Data Coding and Quality Control Manual
2. Final Data Coding and Quality Control Manual
3. Draft Geocoding Manual
4. Final Geocoding Manual

Task 4 – Initial Instrument Design
In this task the consultant will design the initial version of all survey instruments to be used in a pilot survey based on the methodologies identified in Task 3. The consultant can begin with the MTC I and II instruments which can be found in the MTC I Final Report Appendices and MTC II Methodology Report Appendices. MDOT will provide the consultant with electronic versions of all previous instruments. The consultant will design initial versions of any instrument that was not used in the previous MDOT surveys (GPS-related instruments).

Items to be designed include, but are not limited to:
- Pre-Recruitment Letter
- Diary Cover Letter
- Travel Diary
- Reminder Call/Text Script
- Recruitment Script
- Retrieval Script
- Retrieval Postcard
- 1-800 Line Greeting
- Voicemail Message
- Project Website
- Web Recruitment
- Web Retrieval
- GPS Cover Letter/Instructions
- GPS Retrieval Reminders
- Interviewer Training Manual

The consultant will provide MDOT with draft initial instruments for MDOT review. The consultant will modify the draft initial instruments based on MDOT comments.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Draft Initial Instruments
2. Final Initial Instruments

Task 5 – Pilot Survey

Before conducting the full study, the consultant will conduct a pilot survey. The pilot survey will cover the entire survey process to evaluate the methods, process, and instruments. The pilot survey will include a complete evaluation of the full survey process including, but not limited to, sample generation, pre-recruitment letter, telephone and Web recruitment, diary and GPS material mail-out, reminder call, GPS procedures, Web and CATI retrieval, data entry, trip geocoding, edit checking, and weekly and interim data reports.

The consultant will conduct a pilot survey of 250 completed diary households, plus the agreed to percentage of completed GPS households using the initial version of all program instruments developed in Task 4. These households will be selected at random from each sampling area and should be equally divided among the 16 sampling areas.

The pilot survey will be used to examine the quality of the instruments, check participation rates, verify the adequacy of scripts and the website for recruitment and retrieval, and to identify methods to deal with "hard to fill" cells. The pilot also will be used to test geocoding programs and procedures, the data checking process, final file structure, and to familiarize the interviewers with the procedures.

The consultant shall prepare a step-by-step report of the pilot survey by element, instrument, and data item along with recommendations to improve the process and instruments. The consultant will present the pilot survey report and the recommendations to MDOT via an in-person meeting in Lansing.

The pilot survey data files will be provided to MDOT following the completion of the pilot survey, at which point MDOT will review the report and data and approve, disapprove, or modify the recommended changes. These changes will be incorporated into the final survey instruments and procedures in Task 6.

The pilot survey data will be compiled in the data format agreed to by MDOT and the consultant in Task 3b.

At MDOT's discretion, the pilot survey households may count towards the final sample if materials do not substantially change as a result of the pilot survey.

Meetings:

- One meeting in Lansing
- Teleconferences as necessary

Deliverables:

1. Draft pilot survey data, results, and evaluation report with recommended changes
2. Final pilot survey data, results, and evaluation report with recommended changes

Task 6 – Final Instrument and Procedure Design

Based on the results of the pilot survey, the consultant will design the final version of all survey instruments and procedures developed in Tasks 2, 3, and 4. The consultant also will prepare a memo summarizing the modifications that were made and identifying the instruments and procedures that did not change. MDOT will review all revised materials and provide comments if necessary. MDOT will approve the final survey materials and instruments before they are used in the surveying.

Deliverables:

1. Memo summarizing modifications to procedures and instruments and listing procedures and instruments that did not change.
2. Final versions of all procedures and instruments developed in Tasks 2, 3, and 4.

Task 7 – Full Survey Implementation

The consultant will conduct the MTC III travel survey, collecting household and person information, 24 hours of travel data, and long distance retrospective travel information from diary participants. The consultant will also collect household data, person data, a minimum of three days of travel data, and long distance retrospective travel information from GPS households.

The consultant will follow the procedures and use the instruments finalized in Task 6. The consultant will collect data from a sufficient number of households to produce 14,100 complete households statewide as shown in Table D for each sample area (pages C-1 through C-16) in Attachment A. Travel days will be Mondays through Thursdays and when school is in session based on the agreed to dates designated in the work plan in Task 1.

Data for households in the *SEMCOG minus WATS* and *WATS* sample areas will be collected using the SEMCOG instruments developed in Task 15. Any difference in data collection costs that result from additional questions in the SEMCOG survey for the 2,450 MDOT households in the *SEMCOG minus WATS* and *WATS* sample areas will be detailed in SEMCOG's Task 18.

Weekly written reports will be required during the surveying periods. Weekly reports will include a status report of: recruitment and participation rates, sample disposition, data validity, a table showing recruited households, completed households and remaining households for all cells, number of contacts via the 1-800 phone number, status of geocoding, zero-trip households, incentive usage, and any necessary corrective actions. The consultant will provide weekly reports to MDOT by the close of business on Monday for the previous week.

The response or completion rate reporting shall conform to the standards established by the Council of American Survey Research Organizations. The consultant will provide MDOT with an outline of the weekly reports before producing the first report.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Weekly report outline
2. Weekly reports

Task 8 – Data Deliveries

The consultant will provide three interim data sets and one final data set to MDOT, based on the codebook developed in Task 3b and in DBF format. The interim data sets will be provided for both the diary and GPS households after the completion of the following household milestones and will be cumulative:

- 2,000 households.
- All complete households through the spring survey period.
- All households completed through the first 3,000 complete households of the fall survey period.
- The final data set (14,100 complete households) will be provided at the end of the data collection period (before the completion of the final report).

Before each data set is provided to MDOT, the consultant will complete all data checks and geocoding as outlined in the Data Coding and Quality Control and Geocoding Manuals. Each data set shall be provided in the format specified in Task 3b. GPS data shall be integrated into the diary data based on the diary/GPS data integration plan developed in Task 3e. Separate GPS data files will also be provided. The GPS Correction Factor Plan adjustments shall be implemented in the final data set only. Data for households in the *SEMCOG minus WATS* and the *WATS* sample areas will be provided in the same file format as the remainder of the MDOT households.

An Interim Report will accompany each data set. See Appendix 27, Interim Report Example, of the MTC I Final Report for an example. Before completing the first Interim Report, the consultant will provide an outline to MDOT to review and will prepare each Interim Report based on the approved outline.

MDOT will review each data set and the consultant will respond to any problems found in the data review and incorporate any necessary changes into the next data set to be delivered.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Interim Report outline
2. 2,000 completed household data set and Interim Report 1
3. End of spring surveying data set and Interim Report 2
4. First 3,000 complete fall household data set and Interim Report 3
5. 14,100 completed household data set and Interim Report 4

Task 9 – Data Weighting

In this task, the consultant will develop and apply a weighting plan that will compensate for bias in the data and will expand the sample to be representative of households by sample area. The weighting scheme for this survey is necessarily related to how the survey design and the sampling plan are devised.

For descriptive statistics, the desired design will entail sophisticated and complex post-stratification weights using sound statistical methods. Sampling weights will be based on geographic and other stratification variables. Population proportions used to generate weighting and expansion factors will be based on Census 2010 and/or 5-year American Community Survey data. The consultant will also calculate the resulting confidence intervals and percent error on the final complete households.

A draft and final weighting plan will be developed in conjunction with the sample plan at the onset of the project and will be implemented following data cleaning.

Deliverables:

1. Draft weighting plan
2. Final weighting plan
3. Final weighting and expansion factors

Task 10 – MTC III Final Project Report

The consultant will prepare a Final Project Report documenting project preparation, methodology, implementation, summary statistics, results, and lessons learned. The report should detail the project development, implementation, and changes made during the project, while also being a compendium of material used for the project. Specifically, the report should be of the same general format and content as the MTC I Final Report, without comparisons to the NHTS and including outcomes of the GPS component of the survey and a summarization of key GPS findings. The consultant will work with MDOT to determine the outline of the report.

Tables, charts and/or graphs should be used wherever applicable to improve the clarity of the information being presented.

Each of the two drafts of the report will be provided electronically; MDOT will have two weeks from the date of receipt to review and comment on each draft. The consultant will incorporate MDOT comments into the report and provide it to MDOT by the date specified in the work plan.

Following acceptance of the final report, the Word and PDF versions, 10 bound, double-sided paper copies, and 20 CDs of the MTC III Final Project Report will be prepared and delivered to MDOT.

Meetings:

- Teleconferences as necessary

Deliverables:

1. MTC III Final Project Report Outline
2. Draft MTC III Final Project Report
3. Second Draft MTC III Final Project Report
4. MTC III Final Project Report
5. 10 Copies of Final Project Report
6. 20 CDs of the Final Project Report

Task 11 – Michigan Travel Characteristics Technical Report and Michigan Highlights Document

As part of the 2030 State Long-Range Transportation Plan (MI Transportation Plan) MDOT, with consultant assistance, produced an extensive Travel Characteristics Technical Report based on data from MTC I. Task 11 is the creation of a new Travel Characteristics Technical Report based on the MTC III data that will be included in the 2040 State Long-Range Transportation Plan.

The Travel Characteristics Technical Report will answer the questions:

- Who travels in Michigan?
- Why people travel in Michigan?
- How people travel in Michigan?
- When people travel in Michigan?
- Where people travel in Michigan?
- Who, how, why, and where do people travel for long distance trips?
- How have travel characteristics changed from the original report?

These questions will be answered using the MTC III data and other supplemental sources as needed. Comparisons to the original report will require aggregation of data since the sampling regions are different in MTC I and MTC III.

At a minimum, this new report will be an update, with additional sections based on new data sources (GPS), changed sampling regions, and other modifications, of the original Travel Characteristics Technical Report (http://www.michigan.gov/documents/MDOT_TravCharTR_Final20060804_167340_7.pdf).

The consultant will be responsible for completing all data analysis and writing the report. The use of tables, charts, or graphs is encouraged to expand the clarity of the information being presented.

The Michigan Travel Characteristics Technical Report will be a technical document. A

"Michigan Highlights Document" also will be created as part of this task. The "Highlights Document" will be **public-friendly** and an engaging read for a non-technical audience. The document should be a narrative story of travel in Michigan using high points and interesting facts from the Michigan Travel Characteristics Technical Report. "Michigan Highlights Document" is a working title; the actual document name will be determined during development.

The consultant is encouraged to suggest improvements to the documents.

The consultant will work with MDOT staff to develop a detailed outline and analysis plan to determine the exact content of the Technical Report and Highlights Document.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Michigan Travel Characteristics Technical Report Outline and analysis plan
2. Second Draft Michigan Travel Characteristics Technical Report Outline and analysis plan
3. Draft Michigan Travel Characteristics Technical Report
4. Second Draft Michigan Travel Characteristics Technical Report
5. Final Michigan Travel Characteristics Technical Report
6. "Michigan Highlights Document" Outline
7. Draft "Michigan Highlights Document"
8. Second Draft "Michigan Highlights Document"
9. Final "Michigan Highlights Document"

SEMCOG

Introduction

In 2005, SEMCOG conducted a regional travel survey, SEMCOG Travel Counts 2005 (STC05), in tandem with the MDOT MTC I household survey. A similar statewide household travel survey is being developed for 2014 and 2015, the MTC III. For MTC III, MDOT plans to survey approximately 14,100 households statewide, including 2,450 in the SEMCOG area.

For SEMCOG Travel Counts 2015 (STC15), SEMCOG, the Metropolitan Planning Organization (MPO) for Detroit and southeast Michigan, is funding approximately 6,880 additional surveys from the selected consultant. This RFP provides interested consultants with specific information to prepare and submit proposals for the STC15 regional household travel survey in Southeast Michigan.

The proposed survey, SEMCOG Travel Counts 2015 (STC15), will be used to improve forecasts by updating SEMCOG's aggregate 4-step trip-based model (TBM), as well as developing a disaggregate activity-based model (ABM). The data also will be used to improve Environmental Justice Analysis supplemented by 2010 Census data, and American Community Survey data. In addition, the survey data will be used for various planning and engineering activities.

This selection process will serve both MDOT and SEMCOG selection requirements. The additional surveys in the SEMCOG area will utilize the MDOT methods and materials unless otherwise noted in this SEMCOG component of the scope of work. As a result, the SEMCOG scope of work contains only items that differ from, or are in addition to, the MDOT scope of work. SEMCOG will contract separately with the selected consultant.

The majority of the MDOT and SEMCOG tasks will be done concurrently and will require coordination and cooperation between MDOT, SEMCOG, and the selected consultant. It is important to keep in mind that the data from MTC III and STC15, especially where they overlap, must fill the needs of both agencies. Though MDOT and SEMCOG will have separate contracts with the selected consultant, the work should be viewed as one coordinated effort. If the consultant believes that there will be difficulties in coordinating or combining one or more aspects of the two survey efforts it should be discussed in the proposal along with any potential solutions. This scope should be viewed as a statement of the minimum requirements for accomplishing the effort and prospective consultants are encouraged to suggest improvements to the proposed process. Consultants also are encouraged to include statements identifying any additional products, meetings, or recommendations that may benefit the project, along with appropriate justifications.

To maintain survey consistency, the selected consultant will use the following documents as reference for this project:

1. 2005 SEMCOG Travel Counts: Household Data Collection Program Final Report (http://www.semcog.org/uploadedFiles/Programs_and_Projects/Transportation/Travel_Forecast/2004-2005SEMCOGHouseholdTravelDataCollectionreport%20.pdf)
2. 2005 SEMCOG Travel Counts: Household Data Collection Program Appendices (available upon request)

SEMCOG Scope of Work

Task 12 – Project Work and Management Plan

All proposals shall include a draft project work and management plan. The SEMCOG project work and management plan will be coordinated with the MDOT project work and management plan.

The plan should address, in detail, management of the project, each task and subtask, the project schedule (including proposed in-person meetings and teleconferences), personnel assignments and hours, and quality control measures.

The consultant will provide quality control/quality assurance (QA/QC) on all products before providing them to SEMCOG and will allow ample time in the schedule for QA/QC to be completed. The consultant will ensure that documents provided to SEMCOG have been appropriately reviewed and edited so that SEMCOG is reviewing only content, not grammar. The plan will also specifically describe how activities will be coordinated with the SEMCOG project managers. In addition, the schedule included in the proposal should show how the following schedule concerns can or cannot be met:

- The consultant will begin work on October 1, 2014.
- A pilot test will be conducted before the main survey.
- Main survey will begin in the spring of 2015 and continue no later than the first week of June 2015.
- Following the summer break, surveying will resume the day after Labor Day through the end of 2015.
- Travel days will not be assigned on holidays or during spring break. The consultant will work with SEMCOG to determine the final schedule of travel days.
- The contract will conclude by August 1, 2016.

If the consultant believes these schedule constraints cannot be met or there are other scheduling parameters that should be considered in certain areas, the consultant should explain why in the proposal and recommend a schedule that will meet all project requirements.

Within five days of the contract award and authorization to proceed, the selected consultant will hold an initial project meeting with the SEMCOG project manager and other project participants to review the draft project work and management plan to identify any revisions and clarifications. The draft project work and management plan will be updated from the version in the proposal based on information received in the interim and will be provided to SEMCOG for review two days before the initial meeting. Within 10 days following the initial project meeting, the consultant will complete the revisions to the work program and forward to SEMCOG for approval.

At the initial meeting, the team will also discuss methods for progress reporting, make-up of project teams, and procedures for documenting project decisions.

During the project, the consultant will be responsible for developing meeting agendas, presentation materials, and the recording and distribution of meeting minutes. All meeting materials will be provided in advance. The project work and management plan will specify when meeting materials and minutes will be provided to SEMCOG.

The consultant will keep a record of significant events that may affect the outcome of the project. Any technical problems that may jeopardize the quality of the survey will be immediately reported to SEMCOG. In addition, the consultant will back up project computer files on a daily basis.

Because much of this project is time-sensitive, the consultant will establish a weekly schedule for standing teleconferences with the SEMCOG project managers.

SEMCOG will work with the consultant to schedule all meetings and review documents in the agreed amount of time specified in the project work and management plan.

Meetings:

- One joint meeting in Lansing, MI with MDOT and SEMCOG project managers and others.
- Teleconferences will be scheduled as necessary.

Deliverables:

1. Draft project work and management plan
2. Final project work and management plan
3. Meeting agendas, presentation materials, and minutes
4. Record of significant project events
5. Weekly standing teleconference

Task 13- SEMCOG Sample Design

As noted, SEMCOG is the designated MPO for the Detroit metro area. The SEMCOG area is a seven-county region including Wayne, Oakland, Macomb, Washtenaw, Monroe, St. Clair, and Livingston counties.

For travel survey purposes, Wayne County is divided into two units, the City of Detroit and the remainder of Wayne County. Similar to STC05, a total of eight sampling areas will be used in developing a sample plan for this survey.

Data from STC15 will be used to develop both trip-based and activity-based demand forecast models. Based on previous survey experience in both previous household surveys in 2005 and 1993 and several onboard transit surveys, certain households are more difficult to identify and/or survey than others. Therefore, special attention should be given to low-income and hard to reach households and transit-using households to avoid underrepresentation.

The consultant will submit a sampling plan using the SEMCOG 2005 household survey sampling plan as a reference (Section 4a of the SEMCOG Travel Counts Final Report). The sampling plan will also consider possible null cell situations when a four dimensional Iterative Proportional Fitting (IPF) process is used for sample expansion.

As displayed in Table 2, eight sample areas are proposed for the SEMCOG portion of the survey. A total of 9,330 households will be surveyed in the SEMCOG area. SEMCOG will fund 6,880 households and MDOT will fund 2,450 households. The 2,450 MDOT households in the SEMCOG area include the 1,650 household *SEMCOG minus WATS* sample area and the 800 household *WATS* sample area as shown in Table 1. It is anticipated that the MDOT funded households from the *SEMCOG minus WATS* sample area will be proportionally distributed across the SEMCOG sampling areas and will follow the sampling plan outlined in Attachment C-1. For Washtenaw County, all 800 samples will follow the *WATS* sampling plan outlined in Attachment C-9. For the counties in SEMCOG area with less than 100,000 households, a minimum of 650 samples will be collected. This is consistent with MDOT recommendations.

Because SEMCOG is including the 2,450 MDOT households in its sampling target and because MDOT has specific sampling targets for its two sampling areas in SEMCOG, the consultant will propose a method by which both the SEMCOG and MDOT sampling goals can be met.

Similar to the STC05, the SEMCOG funded households will be stratified by vehicle ownership, household size, and number of workers. However, the consultant may alter this 3D stratification scheme, such as with income quartiles, to suit both trip based and activity based model development needs. While income is not a part of the stratification in the SEMCOG proposed

sample frame, SEMCOG expects the consultant to monitor income distribution closely while doing the survey.

Table 2: SEMCOG Proposed Sample Plan

SEMCOG Area	Total Households (ACS 2006-10)	SEMCOG Proposed %	SEMCOG Proposed Samples	MDOT Funded	SEMCOG Funded	Final Collected
Detroit	269,445	0.43%	1,170	260	910	1,170
W Wayne	433,304	0.43%	1,880	420	1,460	1,880
Oakland	483,698	0.43%	2,090	470	1,620	2,090
Macomb	331,667	0.43%	1,440	320	1,120	1,440
Washtenaw	137,193	0.50%	690	800		800
Monroe	58,230	1.12%	650	60	590	650
St Clair	63,841	1.02%	650	60	590	650
Livingston	67,380	0.96%	650	60	590	650
Total SEMCOG	**1,844,758**	**0.50%**	**9,220**	**2,450**	**6,880**	**9,330**

For the MDOT samples, a two-dimensional stratification is proposed: income and household size. For household income, a 100% response is required for all 2,450 MDOT-funded samples.

Following the SEMCOG practice in STC05, the income response rate for this survey is relaxed to 95% for all SEMCOG funded samples. Sampling will be coordinated such that the cell requirements are met for both MDOT and SEMCOG surveys.

An activity-based model (ABM) uses far more survey information than the trip-based model, so the sample monitoring during the data collection becomes even more important. The consultant will use its survey experiences from other large cities with ABM applications, and present control measures that will fit the needs for ABM.

Based on SEMCOG's experience from the 2005 travel survey, hard-to-reach households (such as low income households, households with limited vehicle availability, transit use households, and renters) should be monitored closely. In the proposal, the consultant will provide initial thoughts and justification on how to best reach these households and ensure statistical representation of these households. For this task, the consultant will develop a plan outlining the methods that will be utilized in the study to obtain participation from the "hard to reach" households.

As a reference, SEMCOG will provide county level demographics to the consultant based on 2006-2010 ACS data, and the statistics will be adjusted to a 2010 base year.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Draft sample plan
2. Final sample plan
3. Plan for hard to fill cells

Task 14 – SEMCOG Data Collection Methodology

SEMCOG would like to maintain consistency in survey methodology and data items between its 2015 and 2005 travel surveys, while allowing for improvements in procedures and technology especially for the purpose of TBM and ABM development.

The majority of households will complete a travel diary while a 10-15% subsample of households will complete a GPS survey. For travel diary households, 24 hours of travel information and long-distance retrospective travel information will be collected.

In STC05, the survey days were Tuesday through Thursday, and the MTC III is proposing a Monday through Thursday data collection period. For SEMCOG's portion of the samples, the consultant will provide analysis and recommendations on survey days to see whether Tuesday-Thursday collection or Monday-Friday collection would make more sense based on SEMCOG modeling needs and other large metro area practices. For GPS-surveyed households, the consultant will provide guidance and suggestions on the duration of collection period based on its experiences from large metropolitan area applications. The 2,450 MDOT households in the SEMCOG area will follow the procedures developed for all MDOT households. If the consultant suggests different collection days for the SEMCOG-funded surveys, the consultant will include a plan to integrate the data so that both SEMCOG's and MDOT's needs are met.

SEMCOG would like an address-based sample frame used for recruitment and to take advantage of improvements in technology to include recruitment by phone or Web and explore including Quick Response (QR) codes on pre-recruitment letters to make participating easier. The consultant will allow retrieval by phone, Web, or mail and will have on-the-fly geocoding included in both phone and Web retrieval to help verify trip information.

SEMCOG encourages the consultant to propose and justify innovative cost-saving methods for the GPS subsample that may increase the number of GPS households completed, particularly the potential use of smart phone applications for the collection of GPS travel data. The GPS data should be seamlessly integrated into the diary data and meaningful GPS correction factors will be developed. In addition, a comprehensive set of GPS data files shall be developed.

Overall, Task 14 will document the method by which the survey will be conducted and will guide the development of the instruments in Task 15. Task 14 is divided into the following parts:

- Task 14a – Develop Public Awareness Plan
- Task 14b – Review SEMCOG STC05 data items and MTC III data items to determine SEMCOG Travel Counts data items
- Task 14c – Develop diary survey methodology, including incentive plan

- Task 14d – Develop GPS survey methodology, including incentive plan
- Task 14e – Develop diary/GPS data integration and GPS correction plan
- Task 14f – Develop Data Coding and Quality Control Procedures

Task 14a – Develop Public Awareness Plan
MDOT will be conducting a significant amount of public awareness statewide based on the plan developed in Task 3a. The consultant will coordinate with MDOT and SEMCOG to develop a plan for any additional activities or changes in materials that are suitable for the SEMCOG sampling area. This plan may include distinct or additional public awareness due to differences in project branding and characteristics of the population (i.e., non-English speaking or expected lower response rates). It is important to both MDOT and SEMCOG that while the extra effort in SEMCOG is acknowledged, the public is not confused with different program titles. It is assumed that any difference in branding will include MI Travel Counts in the title such as "MI Travel Counts in Southeast Michigan." This task should be viewed as an extension of Task 3a rather than a separate plan.

Deliverables:
1. Draft SEMCOG Public Awareness Plan
2. Final SEMCOG Public Awareness Plan
3. Implementation of activities in SEMCOG Public Awareness Plan

Task 14b – Review STC05 travel survey data items and MTC III data items to determine SEMCOG Travel Counts data items
The consultant will review the STC05 and MTC III data items and will work with SEMCOG to determine data items for STC15. Most of the data items will be the same as STC05. However, some of the responses/choices to the data items may be different. For example, the previous residence location questions from the last survey are not required for STC15. SEMCOG will work with the consultant to discuss the need for any additional questions and/or choices to ensure the survey's success.

Coordination of data items between MDOT and SEMCOG is crucial because the SEMCOG instrument will be used for MDOT-funded surveys in the SEMCOG area that will be used in the development of the statewide passenger model. At a minimum, the SEMCOG data items must include all of the data items used for MDOT so that there is consistency in the data among all MDOT sample areas.

SEMCOG is developing its next version of the regional employment forecast. The new forecast will not only include traditional wage and salaried positions, but self-employed jobs as well. With these changes, the projected total employment in 2010 will increase from approximately 1.7 million to about 2.5 million. In order to properly model the changes, additional data is needed to include travel such as service vehicle trips and deliveries produced by the self-employed.

In order to capture self-employed trip making, for the travel diary, in addition to the usual questions about full-day travel, the following data items/questions need to be discussed. The Consultant is expected to make suggestions based on his/her experiences and practices.

Additionally any implications of including these questions for the MDOT households in the SEMCOG area need to be identified.

- Number of household members in travel party
- Whether the trip was made for non-goods delivery commercial movement, such as mid-day work-related meeting, service visit (electricians, plumbers, etc.), sales call etc.
- Whether the trip was made for goods-movement – including trucks to/from garages and distribution centers and deliveries

The consultant will develop coding for any changed variables and will develop a codebook for the STC15 data. Times are to be reported in military format and data files are to be provided to SEMCOG in DBF format.

For reference, the codebook for the 2005 SEMCOG survey is in 2005 SEMCOG Travel Counts: Household Data Collection Program Appendices. A copy is available upon request.

Deliverables:

1. Draft data memo with codebook
2. Final data memo with codebook

Task 14c – Develop diary survey methodology, including incentive plan

Concurrent with the development of the diary survey methodology for the MDOT survey, the consultant will work with SEMCOG staff to identify any potential differences in methodology.

The consultant will begin with the diary incentive plan developed for MDOT, and make any modifications necessary to account for characteristics specific to the SEMCOG area (i.e., expected lower response rate in Detroit).

There are also areas of concentrated of non-English speaking populations in the SEMCOG area. The consultant will propose the best method to obtain participation from those populations based on previous experience.

Deliverables:

1. Draft Diary Survey Methodology, including Draft Incentive Plan
2. Final Diary Survey Methodology, including Final Incentive Plan

Task 14d – Develop GPS survey methodology, including incentive plan

Similar to the MTCIII proposal, SEMCOG needs about 10-15% households surveyed with GPS. For the duration of GPS data collection, MDOT suggests a three day collection period. SEMCOG would like the Consultant to provide its recommendations on the GPS collection duration for SEMCOG samples. For GPS survey methodology, the recommendation will be based on modeling needs, cost, post data processing efforts, and other large metropolitan area practices. The MDOT households in the SEMCOG area will follow the MDOT GPS methodology developed in Task 3d.

SEMCOG encourages the consultant to propose and justify innovative cost-saving methods for the GPS subsample that may increase the number of GPS households completed, particularly the

potential use of smartphone applications for the collection of GPS travel data. The GPS data should be seamlessly integrated into the diary data and meaningful GPS correction factors will be developed. In addition, a comprehensive set of GPS data files shall be developed.

Deliverables:

1. Draft GPS Survey Methodology, including Draft Incentive Plan
2. Final GPS Survey Methodology, including Final Incentive Plan

Task 14e – Develop diary/GPS data integration and GPS correction plan

SEMCOG staff will work with MDOT and consultant staff as the diary/GPS data integration and GPS correction plans are being developed in Task 3e.

After the GPS correction factors have been implemented in Task 18, the consultant shall write a memo detailing the process and outcome for the SEMCOG households.

Deliverables:

1. GPS correction factor outcome memo

Task 14f – Develop Data Coding and Quality Control and Geocoding Procedures

SEMCOG staff will work cooperatively with MDOT and consultant staff to develop the data coding and quality control and geocoding procedures in Task 3f. The data coding and quality control and geocoding procedures for the SEMCOG households will be the same as for the MDOT households with the following exceptions:

- For geocoding of non-GPS samples, SEMCOG will provide the consultant with a GIS point dataset containing approximately 2 million individual address points for the Southeast Michigan region. All non-GPS samples should be geocoded against this dataset, using a "Single Field" Address Locator Style. The consultant will be responsible for first attempting to translate non-address locations, such as the names of individual establishments or institutional locations, (e.g. COSTCO in Livonia) into a geocodable address, before any geocoding takes place. If a location cannot be geocoded to the SEMCOG provided address points, the record should be flagged as such and the consultant should then attempt to geocode the location according to the MDOT requested standards. If the location can still not be geocoded, it should be flagged as such and left to SEMCOG staff to locate.
- SEMCOG expects no less than 80% of non-GPS sample locations, with 100% in household locations to be geocoded to the provided address points, and any remaining locations successfully geocoded to the alternative street centerline dataset.
- SEMCOG also would like the consultant to develop a tour check, flagging those tours that do not close.

Task 15 – SEMCOG Instrument Design

In this task, the consultant will design the initial version of all survey instruments to be used in a pilot survey based on the methodologies identified in Task 14. The consultant can begin with the STC05 instruments found in the STC05 Final Report Appendices. SEMCOG will provide the consultant with electronic versions of all previous instruments. The consultant will design initial

versions of any instrument that was not used in the previous SEMCOG surveys (e.g., GPS-related instruments.)

The consultant will coordinate this task with the MDOT instrument development in Task 4 such that all data items collected for the MDOT survey are included in the SEMCOG survey. Aside from a few different data items, the SEMCOG survey instruments should align as closely as possible with the MDOT instruments.

In the SEMCOG area, the project will be known as something slightly different than MI Travel Counts. As a result, modifications will be needed for most MTC III instruments to accommodate the different name and sponsorship. The consultant should recommend if a separate website will be required for the SEMCOG survey.

Data collected for all 9,330 samples in the SEMCOG area (6,880 SEMCOG-funded plus 2,450 MDOT-funded households) will utilize the survey instruments developed for the SEMCOG survey.

As in Task 4, the items to be designed for the SEMCOG survey include, but are not limited to:

- Pre-Recruitment Letter
- Diary Cover Letter
- Travel Diary
- Reminder Call/Text Script
- Recruitment Script
- Retrieval Script
- Retrieval Postcard
- 1-800 Line Greeting
- Voicemail Message
- Project Website
- Web recruitment
- Web retrieval
- GPS Cover Letter/Instructions
- GPS Retrieval Reminders
- Interviewer Training Manual

The consultant, with input from SEMCOG, will design a survey instrument and any programming of questionnaires for use in the data collection technologies proposed by the consultant.

The consultant will provide SEMCOG with draft initial instruments for SEMCOG review. The consultant will modify the draft initial instruments based on SEMCOG comments.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Draft Initial Instruments
2. Final Initial Instruments

Task 16 – Pilot Survey
In the SEMCOG area, in addition to the samples assigned from the MDOT pilot, 75-100 sample households should be surveyed to verify survey instrument design feasibility. Particular attention should be paid to those households that are typically underrepresented. The consultant will allocate the samples strategically based on its prior experiences and input from SEMCOG.

The consultant shall prepare a step-by-step report of the pilot survey by element, instrument, and data item along with recommendations to improve the process and instruments. The consultant will also analyze the participation of non-English speaking households. The consultant will present the pilot survey report and the recommendations to SEMCOG via an in-person meeting.

The pilot survey data files will be provided to SEMCOG following the completion of the pilot survey, at which point SEMCOG will review the report and data and approve, disapprove, or modify the recommended changes. These changes will be incorporated into the final survey instruments and procedures in Task 17.

The pilot survey data will be compiled in the data format agreed to by SEMCOG and the consultant in Task 14b.

At SEMCOG's discretion, the pilot survey households may count towards the final sample if materials do not substantially change as a result of the pilot test.

Meetings:
- One MDOT and SEMCOG joint meeting in Lansing
- Teleconferences as necessary

Deliverables:
1. Draft pilot survey data, results, and evaluation report with recommended changes
2. Final pilot survey data, results, and evaluation report with recommended changes

Task 17 – Final Instrument and Procedure Design
Based on the results of the pilot survey, the consultant will design the final version of all survey instruments and procedures developed in Tasks 13, 14, and 15. The consultant also will prepare a memo summarizing the modifications that were made and identifying the instruments and procedures that did not change. SEMCOG will review all revised materials and provide comments if necessary. SEMCOG will approve the final survey materials and instruments before their use in the surveying.

Deliverables:
1 Memo summarizing modifications to procedures and instruments and listing procedures and instruments that did not change
2 Final versions of all procedures and instruments developed in Tasks 13, 14, and 15.

Task 18 – Full Survey Implementation
The consultant will conduct the SEMCOG travel survey, collecting household and person information, 24 hours of travel data, and long-distance retrospective travel information from

diary participants. The consultant also will collect household data, person data, travel data, and long-distance retrospective travel information from GPS households.

The consultant will follow the procedures and use the instruments finalized in Task 17. The consultant will collect data from a sufficient number of households to produce 9,330 complete households in the SEMCOG area (6,880 SEMCOG households and 2,450 MDOT households) as shown in Table 2. Travel days will be based on the agreed to dates designated in the work plan in Task 12.

Weekly written reports will be required during the surveying periods. Weekly reports will include a status report of: recruitment and participation rates, sample disposition, data validity, a table showing recruited households, completed households and remaining households for all cells, number of contacts via the 1-800 phone number, status of geocoding, zero-trip households, incentive usage, and any necessary corrective actions. The consultant will provide weekly reports to SEMCOG by the close of business on Monday for the previous week.

The response or completion rate reporting shall conform to the standards established by the Council of American Survey Research Organizations. The consultant will provide SEMCOG with an outline of the weekly reports before producing the first report.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Weekly report outline
2. Weekly reports

Task 19 – Data Deliveries

The consultant will provide three interim data sets and one final data set to SEMCOG based on the codebook developed in Task 14b and in DBF format. The interim data sets will be provided for both the diary and GPS households after the completion of the following household milestones and will be cumulative:

- 1,500 households.
- All complete households through the spring survey period.
- All households completed through the first 2,000 complete households of the fall survey period.
- The final data set (9,330 complete households) will be provided at the end of the data collection period (before the completion of the final report).

Before each data set is provided to SEMCOG, the consultant will complete all data checks and geocoding as outlined in the Data Coding and Quality Control and Geocoding Manuals. Each data set shall be provided in the format specified in Task 14b. GPS data shall be integrated into the diary data based on the diary/GPS data integration plan developed in Task 14e. Separate GPS data files will also be provided. The GPS Correction Factor Plan adjustments shall be

implemented in the final data set only. The SEMCOG data sets will include both the SEMCOG funded and MDOT funded households (in the *SEMCOG minus WATS* and *WATS* sample areas).

An Interim Report will accompany each data set. See Appendix 17, Interim Report Example, of the SEMCOG Travel Counts Final Report for an example. Before completing the first Interim Report, the consultant will provide an outline to SEMCOG to review and will prepare each Interim Report based on the approved outline.

SEMCOG will review each data set and the consultant will respond to any problems found in the data review and incorporate any necessary changes into the next data set to be delivered.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Interim Report outline
2. 1,500 completed household data set and Interim Report 1
3. End of spring surveying data set and Interim Report 2
4. First 2,000 complete fall household data set and Interim Report 3
5. Minimum of 9,330 completed household data set and Interim Report 4

Task 20 – Data Weighting

In this task, the consultant will develop and apply a weighting plan that will compensate for bias in the data and will expand the sample to be representative of households by sample area. The weighting scheme for this survey is necessarily related to how the survey design and the sampling plan are devised.

For descriptive statistics, the desired design will entail sophisticated and complex post-stratification weights using sound statistical methods. For SEMCOG data weighting, it should accommodate a minimum of 4 dimensional IPF following the Sample Design Task. The consultant should be aware of this and monitor the collection process closely to minimize zero sample cells.

For weighting benchmarks, SEMCOG will provide a stratified demographic data set to the consultant based on 2006-2010 ACS, and the statistics will be adjusted to a 2010 base year. A draft and final weighting plan will be developed in conjunction with the sample plan at the onset of the project and will be implemented following data cleaning.

Deliverables:

1. Draft weighting plan
2. Final weighting plan
3. Final weighting and expansion factors

Task 21 – Final Project Report

The consultant will prepare a Final Project Report documenting project preparation, methodology, implementation, summary statistics, results, and lessons learned. The report should

detail the project development, implementation, and changes made during the project, while also being a compendium of material used in the project. Specifically, the report should be similar to the SEMCOG Travel Counts Final Report. Additionally, the consultant should report on the outcome of the GPS component of the survey and summarize key GPS findings. The consultant will work with SEMCOG to determine the outline of the report.

Tables, charts and/or graphs should be used wherever applicable to improve the clarity of the information being presented.

Similar to MDOT MTC III requirements, the consultant will electronically provide two drafts of the report to SEMCOG, at which time SEMCOG shall have two weeks from the date of receipt to review and comment on each draft. The consultant will incorporate SEMCOG comments into the final report and provide it to SEMCOG by the date specified in the work plan.

Following acceptance of the final report, the Word and PDF versions, 10 bound, double-sided paper copies, and two electronic files (on CD or other storage device) of the Final Project Report will be prepared and delivered to SEMCOG.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Final Project Report Outline
2. Draft Final Project Report
3. Second Draft Final Project Report
4. Final Project Report
5. 10 Copies of Final Project Report
6. 2 CDs of the Final Project Report

Task 22- Travel Characteristics Technical Report and Highlights Document

The first portion of this task is the creation of a Travel Characteristics Technical Report based on the STC15. The consultant will coordinate the development of the report with the MDOT Travel Characteristics Report in Task 11.

It will answer the questions, such as:

- Who travels in the SEMCOG area?
- Why people travel in the SEMCOG area?
- How people travel in SEMCOG?
- When people travel in SEMCOG?
- Where people travel in SEMCOG?
- For long distance travel: who, how, why, where?

These questions will be answered based on STC15 data and other supplemental sources as needed. The document will be summarized by region, county, and the City of Detroit.

The consultant will be responsible for completing all data analysis and writing the report. The

consultant will provide SEMCOG with an outline of the document prior to beginning work. The use of tables, charts, or graphs is encouraged to expand the clarity of the information being presented.

The Travel Characteristics Technical Report will be a technical document. A Highlights Document will also be part of this task. The Highlights Document will be **public-friendly** and an engaging read for a non-technical audience.

Meetings:

- Teleconferences as necessary

Deliverables:

1. Travel Characteristics Technical Report Outline and analysis plan
2. Draft Travel Characteristics Technical Report
3. Final Travel Characteristics Technical Report
4. Highlights Document Outline
5. Draft Highlights Document
6. Final Highlights Document

ATTACHMENT A – *MTC III SAMPLING PLAN*

MDOT has identified 16 regions (four for the statewide model and 12 for the urban models) in Michigan from which to generate a sample of households to be surveyed for their travel behavior. Ideally, when conducting such a survey, an independent sample would be collected for each of these 16 regions in the state. However, due to budget constraints, it is not possible for MDOT to conduct a survey of that magnitude. As a result, MDOT developed a proposed sample plan that attempts to get as close to that ideal sample as possible without having to collect data from many thousands of additional households.

MDOT believes that the proposed sample size for each sampling area is sufficient to calculate overall trip rates and trip length values specific to each sample area. The sample sizes in the statewide model sample areas are sufficient to calculate trip rates and lengths for all purposes for the statewide passenger travel demand model. Data from the urban model areas may need to be combined to calculate trip rates for certain trip purposes, but there is an adequate sample size to determine overall trip rates for each individual urban model area. This will allow MDOT staff to perform data analysis after the survey is conducted, to determine if model areas can or cannot be combined relative to trip characteristics. This is preferable to trying to identify similar groupings of areas prior to the survey without adequate trip based data.

The following paragraphs explain the steps undertaken to develop the proposed sample plan:

The sample planning took into consideration three key factors: 1) each urban area requires an adequate sample size to calculate trip lengths and distribution factors, 2) a minimum sample of 500 households is needed in each area to provide for proper validation of transferability, and 3) trip rates are more easily transferable than trip lengths.

MDOT staff then applied the method for developing sample sizes as presented in the "Travel Survey Manual" (Cambridge Systematics, TMIP, 1996). Using the MTC I dataset for the SUMAs and the TMAs, it was determined that the minimum sample size based on a stratified sample design using the total household trip rate (defined as Day 1, un-weighted, motorized, all trip purposes) for SUMAs was 621 and for TMAs was 516 at a 90% confidence level with a +/- 5% confidence interval. An assessment of sample size for a simple random sample based on various TMA and SUMA trip rate and trip length variables also was performed. The largest of the identified values, 650 households, was used as the base for each of the sample areas.

MDOT staff also assumed that the larger the area, the more diversity there will be in trip making. Therefore, the number of households in each sample area was considered and natural breaks in the number of households per sample area were used to increase the sample size in a step-wise manner.

One of MDOT's objectives was to sample each urban model area individually and to maintain the statewide sample areas outside of the urban areas from MTC I. The exceptions to this are listed below:

- In analyzing MTC I data it was found that the travel characteristics from the *Upper Peninsula Rural* and *Northern Lower Peninsula Rural* sample areas were not significantly different, so they are combined into one sample area for MTC III.

- The analysis for the *SEMCOG minus WATS* sample area was done based on the needs for the statewide model.

- SEMCOG includes the Washtenaw Area Transportation Study (WATS) area in its model; however WATS also develops its own model. Therefore, for MTC III, WATS is treated as its own sample area with 800 samples. Because of the overlap of SEMCOG and WATS, any of the samples taken in the WATS model area can also be applied to the SEMCOG model. The *SEMCOG minus WATS* sample area is the six remaining SEMCOG counties.

- Benton Harbor-St. Joseph and Niles were merged into one model area for the last model development cycle. They are currently being separated into two models and should be two separate sample areas. However, due to the small number of households in Niles, we felt that it would be difficult to obtain data from 650 households. So, Benton Harbor-St. Joseph and Niles were kept as one sample area but the number of samples was increased to 800 so that trip lengths can be calculated for each model area.

The proposed sample areas and sample sizes are shown in Table 1. Households will be stratified based on four (4) household sizes and four (4) income groups. Household sizes include 1-person, 2-person, 3-person, and 4+ persons. Household income groups include < $25,000, $25,000-$49,999, $50,000-$74,999, and > $75,000.

TABLE 1

Sample Area	Housing Units (occupied)[3]	Sample Size[4]	% Total Housing Units (occupied)
Statewide Model			
Southeast Michigan Council of Governments (SEMCOG) minus Washtenaw County (WATS)[1]	1,707,565	1,650	0.10%
Southern Michigan Rural	386,208	1,200	0.31%
Northern Michigan Rural	306,995	1,200	0.39%
Small Cities	130,357	1,000	0.77%
Urban Model Areas			
Grand Valley Metropolitan Council (GVMC)	263,361	1,000	0.38%
Tri-County Regional Planning Commission (TCRPC)	183,589	800	0.44%
Genesee County Metropolitan Planning Commission (GCMPC)	169,202	800	0.47%
Great Lakes Bay Region (GLBR)	157,051	800	0.51%
Washtenaw Area Transportation Study (WATS)	137,193	800	0.58%
Kalamazoo Area Transportation Study (KATS)	110,760	800	0.72%
West Michigan Metropolitan Transportation Planning Program (WestPlan)	86,600	650	0.75%
Jackson Area Comprehensive Transportation Study (JACTS)	60,771	650	1.07%
Twin Cities Area Transportation Study (TwinCATS) and Niles/Buchanan/Cass Area Transportation Study (NATS)[2]	57,322	800	1.40%
Macatawa Area Coordinating Council (MACC)	43,752	650	1.49%
Battle Creek Area Transportation Study (BCATS)	37,849	650	1.72%
Traverse City (TVC)	33,933	650	1.92%
Totals	**3,872,508**	**14,100**	0.36%

[1] The SEMCOG minus WATS sample size is based upon the Statewide Model needs

[2] Combined: a minimum number of samples will be taken in each model area to ensure that specific trip length parameters can be calculated for each of the model areas

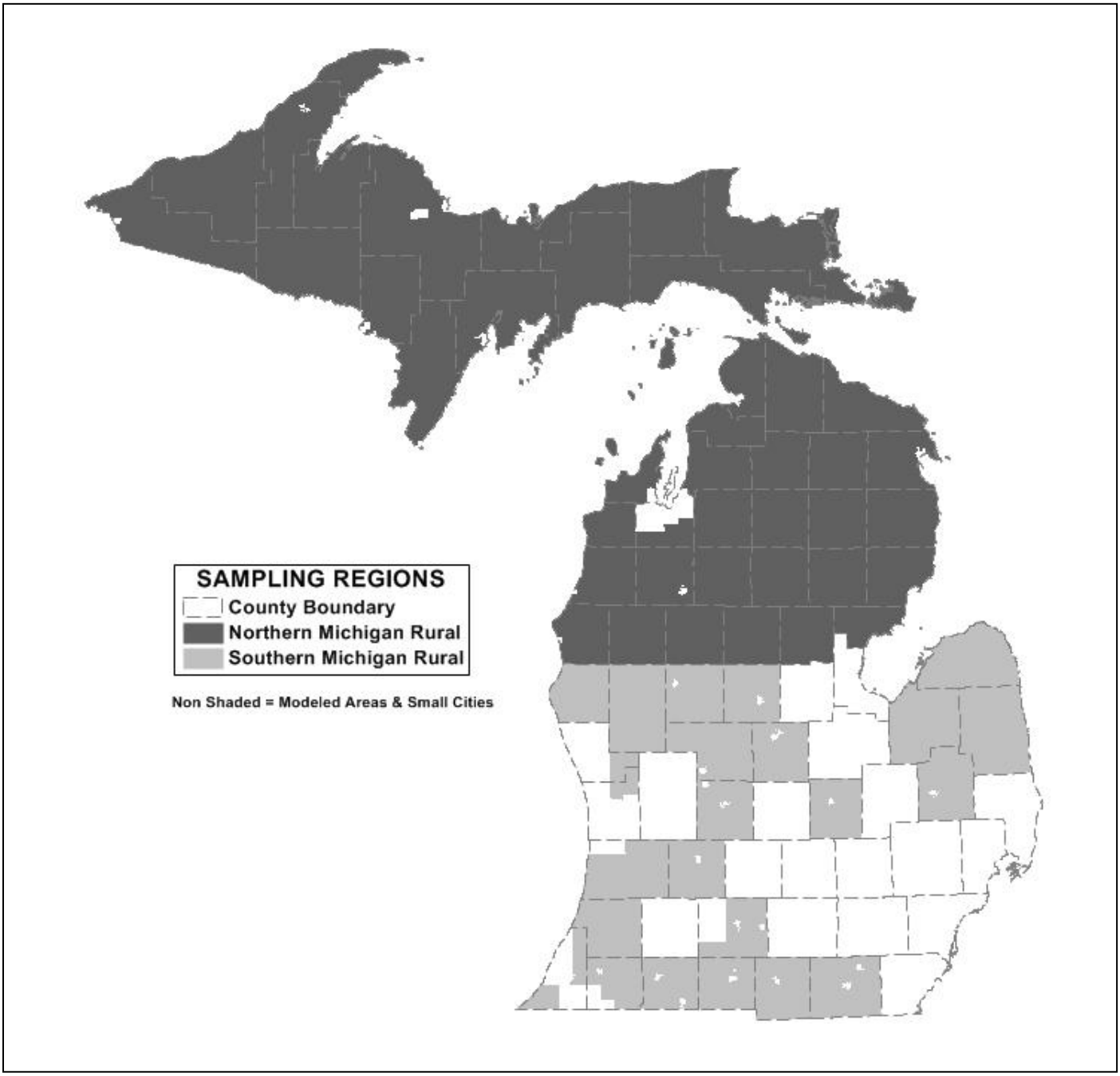
[3] Source: 2010 Decennial Census

[4] Source: MDOT Sample Size Determination Analysis

Maps of each sample area are included as Attachment A-1 to A-4. Attachment B-1 to B-5 defines the municipalities and corresponding occupied housing units for each sample area.

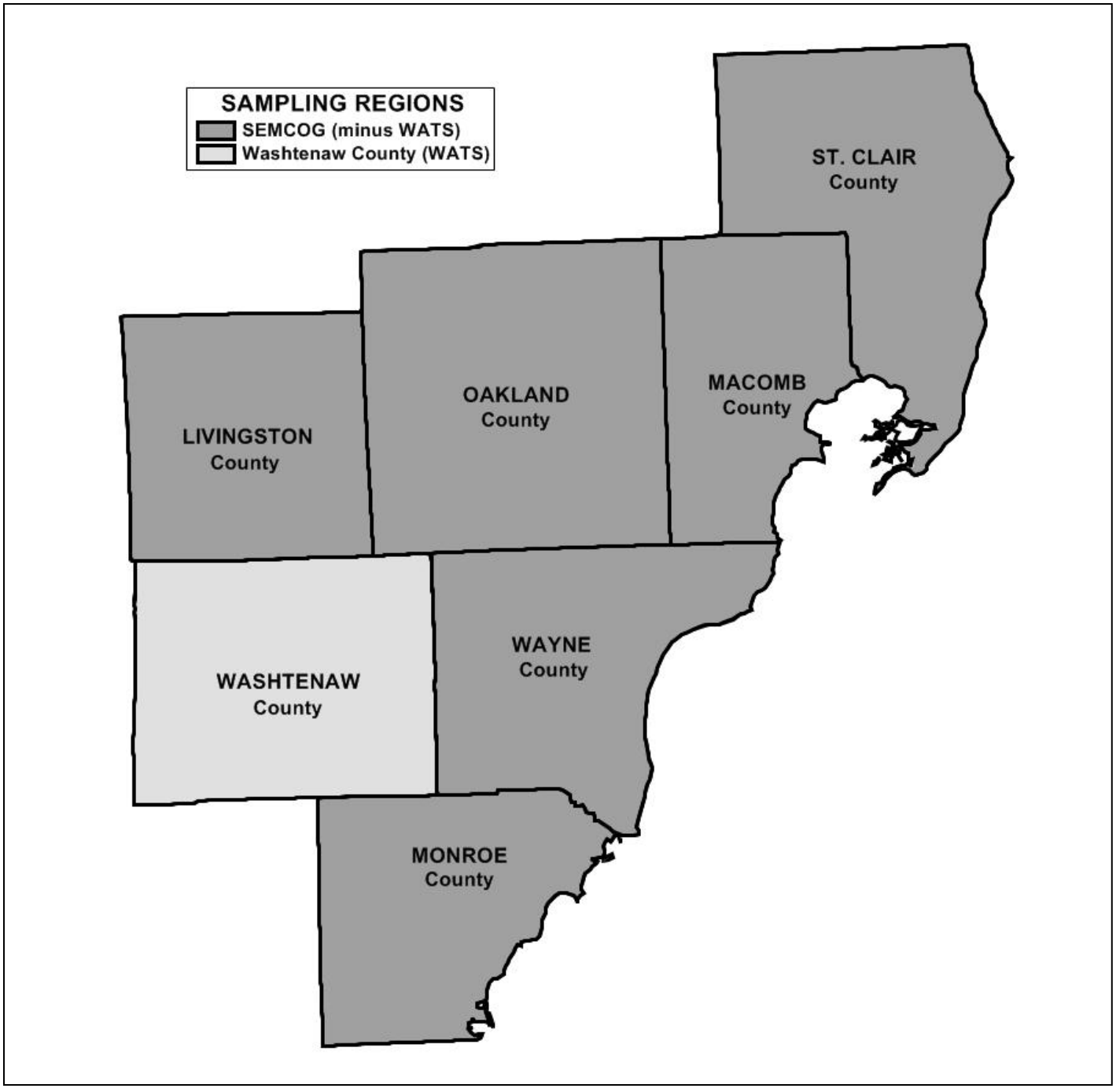
The cell targets for each sample area (shown in Table D in Attachment C-1 to C-16) were developed by first obtaining the 2006-2010 CTPP/ACS data by household size and income (Table A in Attachments C-1 to C-16), calculating the percent distribution of households by size and income by cell (Table B in Attachments C-1 to C-16), applying the percent distribution by cell to 2010 Census household totals (shown in Table C in Attachments C-1 to C-16), and multiplying the percent distribution by the region sample size.

ATTACHMENT A-1: NORTHERN & SOUTHERN MICHIGAN RURAL

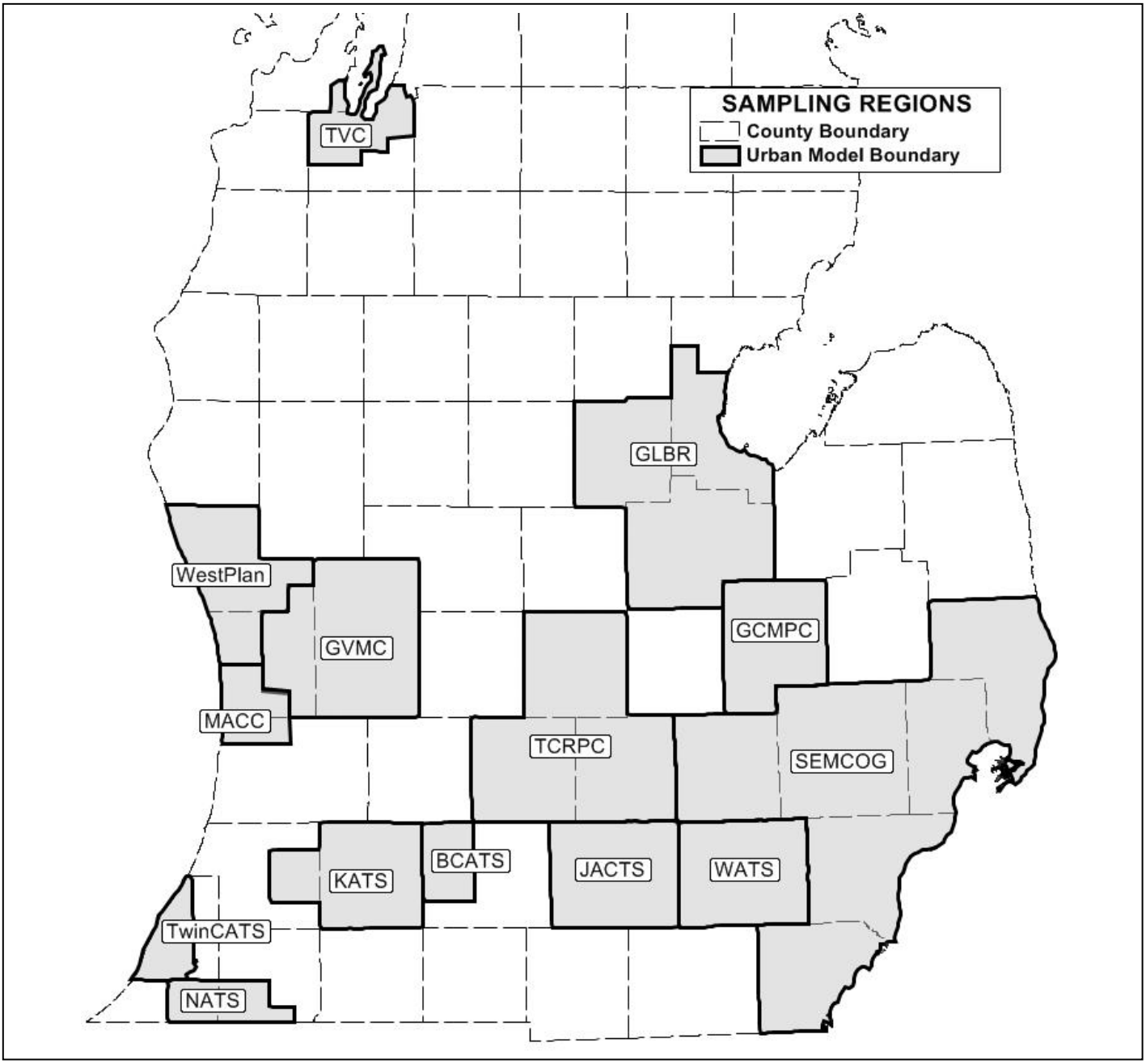


ATTACHMENT A-2: SMALL CITIES

ATTACHMENT A-3: SEMCOG & WASHTENAW COUNTY (WATS)



ATTACHMENT A-4: URBAN MODEL AREAS



ATTACHMENT B-1 (*SEMCOG minus Washtenaw County*)

SAMPLING AREA DEFINITION – URBAN MODEL AREA

2010 DECENNIAL CENSUS HOUSING UNITS

Detroit Area (Six County Region)[1]	Description	Housing Units (occupied)
Southeast Michigan Council of Governments (SEMCOG) minus Washtenaw County	Livingston County	67,380
	Macomb County	331,667
	Monroe County	58,230
	Oakland County	483,698
	St. Clair County	63,841
	Wayne County	702,749
SEMCOG Totals		**1,707,565**

[1] excludes Washtenaw County covered by the WATS TMA

ATTACHMENT B-2 (*Southern Michigan Rural*)

SAMPLING AREA DEFINITION – RURAL REGIONS by COUNTY excluding URBAN MODEL AREAS & SMALL CITIES
2010 DECENNIAL CENSUS HOUSING UNITS

County	Description	Housing Units (occupied)
Allegan County	All of County, except MACC	34,935
Barry County	All of County, except Hastings City	19,641
Berrien County	All of County, except TwinCATS & NATS	14,314
Branch County	All of County, except Coldwater City	12,164
Calhoun County	All of County, except BCATS and Albion & Marshall Cities	10,152
Cass County	All of County, except NATS and Dowagiac City	9,685
Gratiot County	All of County, except Alma & St. Louis Cities	9,893
Hillsdale County	All of County, except Hillsdale City	14,822
Huron County	All of County	14,348
Ionia County	All of County, except Belding & Ionia Cities	17,555
Isabella County	All of County, except Mt. Pleasant City	17,210
Lapeer County	All of County, except Lapeer City	29,330
Lenawee County	All of County, except Adrian & Tecumseh Cities	26,079
Mecosta County	All of County, except Big Rapids City	12,771
Montcalm County	All of County, except Greenville City	19,968
Newaygo County	All of County	18,406
Oceana County	All of County	10,174
St. Joseph County	All of County, except Sturgis & Three Rivers Cities	16,108
Sanilac County	All of County	17,132
Shiawassee County	All of County, except Owosso City	21,153
Tuscola County	All of County	21,590
Van Buren County	All of County, except KATS	18,778
Southern Michigan Rural Totals		**386,208**

ATTACHMENT B-3 (*Northern Michigan Rural*)

SAMPLING AREA DEFINITION – RURAL REGIONS by COUNTY excluding URBAN MODEL AREAS & SMALL CITIES
2010 DECENNIAL CENSUS HOUSING UNITS

County	Description	Housing Units (occupied)
Alcona County	All of County	5,089
Alger County	All of County	3,898
Alpena County	All of County, except Alpena City	8,057
Antrim County	All of County	9,890
Arenac County	All of County	6,701
Baraga County	All of County	3,444
Benzie County	All of County	7,298
Charlevoix County	All of County	10,882
Cheboygan County	All of County	11,133
Chippewa County	All of County, except Sault Ste. Marie City	8,334
Clare County	All of County	12,966
Crawford County	All of County	6,016
Delta County	All of County, except Escanaba City	10,370
Dickinson County	All of County, except Iron Mountain & Kingsford Cities	5,773
Emmet County	All of County, except Petoskey City	11,063
Gladwin County	All of County	10,753
Gogebic County	All of County, except Ironwood City	4,517
Grand Traverse County	All of County, except TVC	3,374
Houghton County	All of County, except Hancock & Houghton Cities	9,970
Iosco County	All of County	11,757
Iron County	All of County	5,577
Kalkaska County	All of County	6,962
Keweenaw County	All of County	1,013
Lake County	All of County	5,158
Leelanau County	All of County, except TVC	7,276
Luce County	All of County	2,412
Mackinac County	All of County	5,024
Manistee County	All of County, except Manistee City	7,492
Marquette County	All of County, except Ishpeming, Marquette & Negaunee Cities	14,453
Mason County	All of County, except Ludington City	8,391
Menominee County	All of County, except Menominee City	6,487
Missaukee County	All of County	5,843
Montmorency County	All of County	4,416
Ogemaw County	All of County	9,283
Ontonagon County	All of County	3,258
Osceola County	All of County	9,222
Oscoda County	All of County	3,772
Otsego County	All of County	9,756
Presque Isle County	All of County	5,982
Roscommon County	All of County	11,433
Schoolcraft County	All of County	3,759
Wexford County	All of County, except Cadillac City	8,741
Northern Michigan Rural Totals	**621,037**	**306,995**

ATTACHMENT B-4 (*Small Cities*)

SAMPLING AREA DEFINITION – CITIES with POPULATION 5,000 to 50,000 OUTSIDE URBAN MODEL AREAS
2010 DECENNIAL CENSUS HOUSING UNITS

Small City	County	Housing Units (occupied)
Alpena City	Alpena	4,734
Hastings City	Barry	2,910
Coldwater City	Branch	4,255
Albion City	Calhoun	2,923
Marshall City	Calhoun	3,092
Dowagiac City	Cass	2,337
Sault Ste. Marie City	Chippewa	5,995
Escanaba City	Delta	5,622
Iron Mountain City	Dickinson	3,362
Kingsford City	Dickinson	2,224
Petoskey City	Emmet	2,538
Ironwood City	Gogebic	2,520
Alma City	Gratiot	3,468
St. Louis City	Gratiot	1,491
Hillsdale City	Hillsdale	2,970
Hancock City	Houghton	1,882
Houghton City	Houghton	2,380
Belding City	Ionia	2,161
Ionia City	Ionia	2,428
Mount Pleasant City	Isabella	8,376
Lapeer City	Lapeer	3,446
Adrian City	Lenawee	7,831
Tecumseh City	Lenawee	3,604
Manistee City	Manistee	2,816
Ishpeming City	Marquette	2,824
Marquette City	Marquette	8,321
Negaunee City	Marquette	1,940
Ludington City	Mason	3,549
Big Rapids City	Mecosta	3,330
Menominee City	Menominee	3,987
Greenville City	Montcalm	3,464
Sturgis City	St. Joseph	4,088
Three Rivers City	St. Joseph	3,048
Owosso City	Shiawassee	6,161
Cadillac City	Wexford	4,280
Small City Totals		**130,357**

ATTACHMENT B-5 (*TMAs and SUMAs*)

SAMPLING AREA DEFINITION – URBAN MODEL AREAS

2010 DECENNIAL CENSUS HOUSING UNITS

Urban Model Areas	Description	Housing Units (occupied)
Grand Valley Metropolitan Council (GVMC)	Kent County; Part of Ottawa County {Allendale Charter Township, Blendon Township, Chester Township, Georgetown Charter Township, Jamestown Charter Township, Polkton Charter Township, Tallmadge Charter Township, Wright Township, Coopersville City, Hudsonville City}	263,361
Tri-County Regional Planning Commission (TCRPC)	Clinton County; Eaton County; Ingham County; Part of Shiawassee County {Part of Woodhull Township}	183,589
Genesee County Metropolitan Planning Commission (GCMPC)	Genesee County	169,202
Great Lakes Bay Region (GLBR)	Bay County; Midland County; Saginaw County	157,051
Washtenaw Area Transportation Study (WATS)	Washtenaw County	137,193
Kalamazoo Area Transportation Study (KATS)	Kalamazoo County; Part of Van Buren County {Almena Township, Antwerp Township, Paw Paw Township, & Waverly Township}	110,760
West Michigan Metropolitan Transportation Planning Program (WestPlan)	Muskegon County; Part of Ottawa County {Crockery Township, Grand Haven Charter Township, Robinson Township, Spring Lake Township, Ferrysburg City, Grand Haven City}	86,600
Jackson Area Comprehensive Transportation Study (JACTS)	Jackson County	60,771
Twin Cities Area Transportation Study (TwinCATS)[1]	Part of Berrien County {Baroda Township, Benton Charter Township, Hagar Township, Lake Charter Township, Lincoln Charter Township, Oronoko Charter Township, Royalton Township, Sodus Township, St. Joseph Charter Township, Benton Harbor City, Bridgman City, St. Joseph City}	33,981
Niles/Buchanan/Cass Area Transportation Study (NATS)[1]	Part of Berrien County {Bertrand Township, Buchanan Township, Niles Township, Buchanan City, Niles City (pt)}; Part of Cass County {Howard Township, Jefferson Township, Mason Township, Milton Township, Ontwa Township, Niles City (pt)}	23,341
Macatawa Area Coordinating Council (MACC)	Part of Allegan County {Fillmore Township, Laketown Township, Overisel Township, Holland City (pt)}; Part of Ottawa County {Holland Charter Township, Olive Township, Park Township, Port Sheldon Township, Zeeland Charter Township, Holland City (pt), Zeeland City}	43,752
Battle Creek Area Transportation Study (BCATS)	Part of Calhoun County {Bedford Charter Township, Emmett Charter Township, Leroy Township, Newton Township, Pennfield Charter Township, Battle Creek City, Springfield City}	37,849
Traverse City (TVC)	Part of Grand Traverse County {Acme Township, Blair Township, East Bay Township, Garfield Charter Township, Green Lake Township, Long Lake Township, Peninsula Township, Whitewater Township, Traverse City City (pt)}; Part of Leelanau County {Elmwood Charter Township, Traverse City City (pt)}	33,933
Urban Model Area Totals		**1,341,383**

[1]Combined: a minimum number of samples will be taken in each model area to ensure that specific trip length parameters can be calculated for each of the model areas

ATTACHMENT C-1: SEMCOG <u>minus</u> WASHTENAW COUNTY (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	219,365	86,655	41,235	51,670	*398,925*
$25,000 - $49,999	151,925	140,425	51,445	65,680	*409,475*
$50,000 - $74,999	73,290	112,275	51,210	69,825	*306,600*
$75,000+	53,185	197,445	118,265	208,590	*577,485*
TOTAL HHS	*497,765*	*536,800*	*262,155*	*395,765*	***1,692,485***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	13.0%	5.1%	2.4%	3.1%	*23.6%*
$25,000 - $49,999	9.0%	8.3%	3.0%	3.9%	*24.2%*
$50,000 - $74,999	4.3%	6.6%	3.0%	4.1%	*18.1%*
$75,000+	3.1%	11.7%	7.0%	12.3%	*34.1%*
TOTAL HHS	*29.4%*	*31.7%*	*15.5%*	*23.4%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	221,320	87,427	41,602	52,130	*402,479*
$25,000 - $49,999	153,279	141,676	51,903	66,265	*413,123*
$50,000 - $74,999	73,943	113,275	51,666	70,447	*309,332*
$75,000+	53,659	199,204	119,319	210,449	*582,630*
TOTAL HHS	*502,200*	*541,583*	*264,491*	*399,291*	***1,707,565***

D: Sample Cell Targets (Region Sample Size = 1,650)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	214	84	40	50	*389*
$25,000 - $49,999	148	137	50	64	*399*
$50,000 - $74,999	71	109	50	68	*299*
$75,000+	52	192	115	203	*563*
TOTAL HHS	*485*	*523*	*256*	*386*	***1,650***

ATTACHMENT C-2: SOUTHERN MICHIGAN RURAL (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	48,475	27,497	9,624	11,734	*97,330*
$25,000 - $49,999	28,550	51,655	14,926	22,146	*117,277*
$50,000 - $74,999	9,330	36,807	14,964	24,288	*85,389*
$75,000+	4,849	38,084	19,600	36,246	*98,779*
TOTAL HHS	*91,204*	*154,043*	*59,114*	*94,414*	***398,775***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	12.2%	6.9%	2.4%	2.9%	*24.4%*
$25,000 - $49,999	7.2%	13.0%	3.7%	5.6%	*29.4%*
$50,000 - $74,999	2.3%	9.2%	3.8%	6.1%	*21.4%*
$75,000+	1.2%	9.6%	4.9%	9.1%	*24.8%*
TOTAL HHS	*22.9%*	*38.6%*	*14.8%*	*23.7%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	46,947	26,630	9,321	11,364	*94,263*
$25,000 - $49,999	27,650	50,027	14,456	21,448	*113,581*
$50,000 - $74,999	9,036	35,647	14,492	23,523	*82,698*
$75,000+	4,696	36,884	18,982	35,104	*95,666*
TOTAL HHS	*88,330*	*149,188*	*57,251*	*91,439*	***386,208***

D: Sample Cell Targets (Region Sample Size = 1,200)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	146	83	29	35	*293*
$25,000 - $49,999	86	155	45	67	*353*
$50,000 - $74,999	28	111	45	73	*257*
$75,000+	15	115	59	109	*297*
TOTAL HHS	*274*	*464*	*178*	*284*	***1,200***

ATTACHMENT C-3: NORTHERN MICHIGAN RURAL (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	48,689	25,571	7,424	8,065	*89,749*
$25,000 - $49,999	23,147	46,629	11,391	14,999	*96,166*
$50,000 - $74,999	7,126	29,098	10,041	13,813	*60,078*
$75,000+	3,198	26,803	11,229	18,289	*59,519*
TOTAL HHS	*82,160*	*128,101*	*40,085*	*55,166*	***305,512***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	15.9%	8.4%	2.4%	2.6%	*29.4%*
$25,000 - $49,999	7.6%	15.3%	3.7%	4.9%	*31.5%*
$50,000 - $74,999	2.3%	9.5%	3.3%	4.5%	*19.7%*
$75,000+	1.0%	8.8%	3.7%	6.0%	*19.5%*
TOTAL HHS	*26.9%*	*41.9%*	*13.1%*	*18.1%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	48,925	25,695	7,460	8,104	*90,185*
$25,000 - $49,999	23,259	46,855	11,446	15,072	*96,633*
$50,000 - $74,999	7,161	29,239	10,090	13,880	*60,370*
$75,000+	3,214	26,933	11,284	18,378	*59,808*
TOTAL HHS	*82,559*	*128,723*	*40,280*	*55,434*	***306,995***

D: Sample Cell Targets (Region Sample Size = 1,200)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	191	100	29	32	*353*
$25,000 - $49,999	91	183	45	59	*378*
$50,000 - $74,999	28	114	39	54	*236*
$75,000+	13	105	44	72	*234*
TOTAL HHS	*323*	*503*	*157*	*217*	***1,200***

ATTACHMENT C-4: SMALL CITIES (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	28,640	12,095	4,829	5,015	*50,579*
$25,000 - $49,999	12,015	13,930	5,159	6,095	*37,199*
$50,000 - $74,999	3,765	9,125	4,325	5,315	*22,530*
$75,000+	1,379	8,429	4,878	7,474	*22,160*
TOTAL HHS	*45,799*	*43,579*	*19,191*	*23,899*	***132,468***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	21.6%	9.1%	3.6%	3.8%	*38.2%*
$25,000 - $49,999	9.1%	10.5%	3.9%	4.6%	*28.1%*
$50,000 - $74,999	2.8%	6.9%	3.3%	4.0%	*17.0%*
$75,000+	1.0%	6.4%	3.7%	5.6%	*16.7%*
TOTAL HHS	*34.6%*	*32.9%*	*14.5%*	*18.0%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	28,184	11,902	4,752	4,935	*49,773*
$25,000 - $49,999	11,824	13,708	5,077	5,998	*36,606*
$50,000 - $74,999	3,705	8,980	4,256	5,230	*22,171*
$75,000+	1,357	8,295	4,800	7,355	*21,807*
TOTAL HHS	*45,069*	*42,885*	*18,885*	*23,518*	***130,357***

D: Sample Cell Targets (Region Sample Size = 1,000)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	216	91	36	38	*382*
$25,000 - $49,999	91	105	39	46	*281*
$50,000 - $74,999	28	69	33	40	*170*
$75,000+	10	64	37	56	*167*
TOTAL HHS	*346*	*329*	*145*	*180*	***1,000***

ATTACHMENT C-5: GVMC (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	30,622	13,773	6,426	7,805	*58,626*
$25,000 - $49,999	22,198	25,518	9,116	12,789	*69,621*
$50,000 - $74,999	8,601	19,458	9,180	15,974	*53,213*
$75,000+	4,414	27,399	16,115	32,290	*80,218*
TOTAL HHS	*65,835*	*86,148*	*40,837*	*68,858*	***261,678***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	11.7%	5.3%	2.5%	3.0%	*22.4%*
$25,000 - $49,999	8.5%	9.8%	3.5%	4.9%	*26.6%*
$50,000 - $74,999	3.3%	7.4%	3.5%	6.1%	*20.3%*
$75,000+	1.7%	10.5%	6.2%	12.3%	*30.7%*
TOTAL HHS	*25.2%*	*32.9%*	*15.6%*	*26.3%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	30,819	13,861	6,467	7,855	*59,002*
$25,000 - $49,999	22,341	25,682	9,175	12,871	*70,069*
$50,000 - $74,999	8,657	19,583	9,239	16,077	*53,556*
$75,000+	4,442	27,575	16,219	32,498	*80,734*
TOTAL HHS	*66,259*	*86,701*	*41,100*	*69,301*	***263,361***

D: Sample Cell Targets (Region Sample Size = 1,000)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	117	53	25	30	*225*
$25,000 - $49,999	85	97	35	49	*266*
$50,000 - $74,999	33	74	35	61	*203*
$75,000+	17	105	61	123	*306*
TOTAL HHS	*252*	*329*	*156*	*263*	***1,000***

ATTACHMENT C-6: TCRPC (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	23,890	10,866	5,377	4,194	*44,327*
$25,000 - $49,999	16,190	16,412	5,642	6,693	*44,937*
$50,000 - $74,999	8,530	13,748	5,830	8,158	*36,266*
$75,000+	4,093	21,442	11,057	17,848	*54,440*
TOTAL HHS	*52,703*	*62,468*	*27,906*	*36,893*	***179,970***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	13.3%	6.0%	3.0%	2.3%	*24.6%*
$25,000 - $49,999	9.0%	9.1%	3.1%	3.7%	*25.0%*
$50,000 - $74,999	4.7%	7.6%	3.2%	4.5%	*20.2%*
$75,000+	2.3%	11.9%	6.1%	9.9%	*30.2%*
TOTAL HHS	*29.3%*	*34.7%*	*15.5%*	*20.5%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	24,370	11,085	5,485	4,278	*45,218*
$25,000 - $49,999	16,515	16,742	5,756	6,828	*45,841*
$50,000 - $74,999	8,702	14,025	5,947	8,322	*36,996*
$75,000+	4,175	21,873	11,279	18,207	*55,534*
TOTAL HHS	*53,762*	*63,725*	*28,467*	*37,635*	***183,589***

D: Sample Cell Targets (Region Sample Size = 800)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	106	48	24	19	*197*
$25,000 - $49,999	72	73	25	30	*200*
$50,000 - $74,999	38	61	26	37	*162*
$75,000+	18	95	49	79	*241*
TOTAL HHS	*234*	*277*	*124*	*165*	***800***

ATTACHMENT C-7: GCMPC (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	24,362	10,792	6,114	6,133	*47,401*
$25,000 - $49,999	16,331	17,956	5,807	7,358	*47,452*
$50,000 - $74,999	6,034	12,413	5,711	7,400	*31,558*
$75,000+	3,404	15,266	9,008	14,799	*42,477*
TOTAL HHS	*50,131*	*56,427*	*26,640*	*35,690*	***168,888***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	14.4%	6.4%	3.6%	3.6%	*28.1%*
$25,000 - $49,999	9.7%	10.6%	3.4%	4.4%	*28.1%*
$50,000 - $74,999	3.6%	7.3%	3.4%	4.4%	*18.7%*
$75,000+	2.0%	9.0%	5.3%	8.8%	*25.2%*
TOTAL HHS	*29.7%*	*33.4%*	*15.8%*	*21.1%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	24,407	10,812	6,126	6,144	*47,489*
$25,000 - $49,999	16,361	17,989	5,818	7,372	*47,540*
$50,000 - $74,999	6,045	12,436	5,722	7,414	*31,617*
$75,000+	3,410	15,294	9,025	14,827	*42,556*
TOTAL HHS	*50,223*	*56,531*	*26,691*	*35,757*	***169,202***

D: Sample Cell Targets (Region Sample Size = 800)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	115	51	29	29	224
$25,000 - $49,999	77	85	28	35	225
$50,000 - $74,999	29	59	27	35	150
$75,000+	16	72	43	70	201
TOTAL HHS	*237*	*267*	*127*	*169*	***800***

ATTACHMENT C-8: GLBR (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	22,362	10,628	4,759	4,073	*41,822*
$25,000 - $49,999	12,769	18,327	5,889	6,062	*43,047*
$50,000 - $74,999	4,993	12,156	5,229	7,059	*29,437*
$75,000+	2,459	14,697	8,180	14,701	*40,037*
TOTAL HHS	*42,583*	*55,808*	*24,057*	*31,895*	***154,343***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	14.5%	6.9%	3.1%	2.6%	*27.1%*
$25,000 - $49,999	8.3%	11.9%	3.8%	3.9%	*27.9%*
$50,000 - $74,999	3.2%	7.9%	3.4%	4.6%	*19.1%*
$75,000+	1.6%	9.5%	5.3%	9.5%	*25.9%*
TOTAL HHS	*27.6%*	*36.2%*	*15.6%*	*20.7%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	22,754	10,814	4,843	4,144	*42,555*
$25,000 - $49,999	12,993	18,649	5,992	6,168	*43,802*
$50,000 - $74,999	5,081	12,369	5,321	7,183	*29,954*
$75,000+	2,502	14,955	8,324	14,959	*40,740*
TOTAL HHS	*43,330*	*56,787*	*24,480*	*32,454*	***157,051***

D: Sample Cell Targets (Region Sample Size = 800)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	116	55	25	21	*217*
$25,000 - $49,999	66	95	31	31	*223*
$50,000 - $74,999	26	63	27	37	*153*
$75,000+	13	76	42	76	*207*
TOTAL HHS	*221*	*289*	*125*	*165*	***800***

ATTACHMENT C-9: WATS (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	16,135	7,115	2,765	2,515	*28,530*
$25,000 - $49,999	12,560	10,155	2,955	3,420	*29,090*
$50,000 - $74,999	6,370	9,185	3,510	4,310	*23,375*
$75,000+	5,670	19,545	11,160	16,785	*53,160*
TOTAL HHS	*40,735*	*46,000*	*20,390*	*27,030*	***134,155***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	12.0%	5.3%	2.1%	1.9%	*21.3%*
$25,000 - $49,999	9.4%	7.6%	2.2%	2.5%	*21.7%*
$50,000 - $74,999	4.7%	6.8%	2.6%	3.2%	*17.4%*
$75,000+	4.2%	14.6%	8.3%	12.5%	*39.6%*
TOTAL HHS	*30.4%*	*34.3%*	*15.2%*	*20.1%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	16,500	7,276	2,828	2,572	*29,176*
$25,000 - $49,999	12,844	10,385	3,022	3,497	*29,749*
$50,000 - $74,999	6,514	9,393	3,589	4,408	*23,904*
$75,000+	5,798	19,988	11,413	17,165	*54,364*
TOTAL HHS	*41,657*	*47,042*	*20,852*	*27,642*	***137,193***

D: Sample Cell Targets (Region Sample Size = 800)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	96	42	16	15	*170*
$25,000 - $49,999	75	61	18	20	*173*
$50,000 - $74,999	38	55	21	26	*139*
$75,000+	34	117	67	100	*317*
TOTAL HHS	*243*	*274*	*122*	*161*	***800***

ATTACHMENT C-10: KATS (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	16,410	7,377	3,326	3,247	*30,360*
$25,000 - $49,999	10,015	10,620	3,576	4,061	*28,272*
$50,000 - $74,999	3,457	7,945	3,524	4,658	*19,584*
$75,000+	2,368	11,572	6,233	10,784	*30,957*
TOTAL HHS	*32,250*	*37,514*	*16,659*	*22,750*	***109,173***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	15.0%	6.8%	3.0%	3.0%	*27.8%*
$25,000 - $49,999	9.2%	9.7%	3.3%	3.7%	*25.9%*
$50,000 - $74,999	3.2%	7.3%	3.2%	4.3%	*17.9%*
$75,000+	2.2%	10.6%	5.7%	9.9%	*28.4%*
TOTAL HHS	*29.5%*	*34.4%*	*15.3%*	*20.8%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	16,649	7,484	3,374	3,294	*30,801*
$25,000 - $49,999	10,161	10,774	3,628	4,120	*28,683*
$50,000 - $74,999	3,507	8,061	3,575	4,726	*19,869*
$75,000+	2,402	11,740	6,324	10,941	*31,407*
TOTAL HHS	*32,719*	*38,059*	*16,901*	*23,081*	***110,760***

D: Sample Cell Targets (Region Sample Size = 800)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	121	54	24	24	*223*
$25,000 - $49,999	73	78	26	30	*207*
$50,000 - $74,999	25	58	26	34	*143*
$75,000+	17	85	46	79	*227*
TOTAL HHS	*236*	*275*	*122*	*167*	***800***

ATTACHMENT C-11: WestPlan (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	12,755	6,187	2,504	2,702	*24,148*
$25,000 - $49,999	6,817	9,953	3,541	4,297	*24,608*
$50,000 - $74,999	2,267	6,800	3,205	4,665	*16,937*
$75,000+	1,017	8,204	3,872	7,652	*20,745*
TOTAL HHS	*22,856*	*31,144*	*13,122*	*19,316*	***86,438***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	14.8%	7.2%	2.9%	3.1%	*27.9%*
$25,000 - $49,999	7.9%	11.5%	4.1%	5.0%	*28.5%*
$50,000 - $74,999	2.6%	7.9%	3.7%	5.4%	*19.6%*
$75,000+	1.2%	9.5%	4.5%	8.9%	*24.0%*
TOTAL HHS	*26.4%*	*36.0%*	*15.2%*	*22.3%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	12,779	6,198	2,509	2,707	*24,193*
$25,000 - $49,999	6,830	9,972	3,548	4,305	*24,655*
$50,000 - $74,999	2,271	6,813	3,211	4,674	*16,969*
$75,000+	1,019	8,219	3,879	7,666	*20,783*
TOTAL HHS	*22,899*	*31,202*	*13,147*	*19,352*	***86,600***

D: Sample Cell Targets (Region Sample Size = 650)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	96	47	19	20	*182*
$25,000 - $49,999	51	75	27	32	*185*
$50,000 - $74,999	17	51	24	35	*127*
$75,000+	8	61	29	58	*156*
TOTAL HHS	*172*	*235*	*99*	*145*	***650***

ATTACHMENT C-12: JACTS (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	8,581	3,698	1,481	2,205	*15,965*
$25,000 - $49,999	4,693	7,003	2,265	2,528	*16,489*
$50,000 - $74,999	1,643	5,166	2,168	3,131	*12,108*
$75,000+	1,117	5,932	3,200	5,664	*15,913*
TOTAL HHS	*16,034*	*21,799*	*9,114*	*13,528*	***60,475***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	14.2%	6.1%	2.4%	3.6%	*26.4%*
$25,000 - $49,999	7.8%	11.6%	3.7%	4.2%	*27.3%*
$50,000 - $74,999	2.7%	8.5%	3.6%	5.2%	*20.0%*
$75,000+	1.8%	9.8%	5.3%	9.4%	*26.3%*
TOTAL HHS	*26.5%*	*36.0%*	*15.1%*	*22.4%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	8,623	3,716	1,488	2,216	*16,043*
$25,000 - $49,999	4,716	7,038	2,276	2,540	*16,570*
$50,000 - $74,999	1,651	5,191	2,179	3,146	*12,167*
$75,000+	1,122	5,961	3,216	5,692	*15,991*
TOTAL HHS	*16,112*	*21,906*	*9,159*	*13,594*	***60,771***

D: Sample Cell Targets (Region Sample Size = 650)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	92	40	16	24	*172*
$25,000 - $49,999	50	75	24	27	*176*
$50,000 - $74,999	18	56	23	34	*131*
$75,000+	12	64	34	61	*171*
TOTAL HHS	*172*	*235*	*97*	*146*	***650***

ATTACHMENT C-13a: TwinCATS (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	6,265	2,697	976	932	*10,870*
$25,000 - $49,999	2,931	3,251	1,184	1,222	*8,588*
$50,000 - $74,999	1,018	2,403	856	1,537	*5,814*
$75,000+	705	3,864	1,812	3,137	*9,518*
TOTAL HHS	*10,919*	*12,215*	*4,828*	*6,828*	***34,790***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	18.0%	7.8%	2.8%	2.7%	*31.2%*
$25,000 - $49,999	8.4%	9.3%	3.4%	3.5%	*24.7%*
$50,000 - $74,999	2.9%	6.9%	2.5%	4.4%	*16.7%*
$75,000+	2.0%	11.1%	5.2%	9.0%	*27.4%*
TOTAL HHS	*31.4%*	*35.1%*	*13.9%*	*19.6%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	6,119	2,635	953	910	*10,617*
$25,000 - $49,999	2,863	3,175	1,156	1,194	*8,388*
$50,000 - $74,999	994	2,347	837	1,501	*5,679*
$75,000+	689	3,774	1,770	3,064	*9,297*
TOTAL HHS	*10,665*	*11,931*	*4,716*	*6,669*	***33,981***

Note: Attachment C-13a is provided here for information only. The sample to be collected for the survey will be for the combined area as shown in Attachment C-13c.

ATTACHMENT C-13b: NATS (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	3,406	1,582	609	629	*6,226*
$25,000 - $49,999	1,622	2,575	761	1,381	*6,339*
$50,000 - $74,999	436	1,809	784	1,405	*4,434*
$75,000+	223	2,204	1,055	1,934	*5,416*
TOTAL HHS	*5,687*	*8,170*	*3,209*	*5,349*	***22,415***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	15.2%	7.1%	2.7%	2.8%	*27.8%*
$25,000 - $49,999	7.2%	11.5%	3.4%	6.2%	*28.3%*
$50,000 - $74,999	1.9%	8.1%	3.5%	6.3%	*19.8%*
$75,000+	1.0%	9.8%	4.7%	8.6%	*24.2%*
TOTAL HHS	*25.4%*	*36.4%*	*14.3%*	*23.9%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	3,547	1,647	634	655	*6,483*
$25,000 - $49,999	1,689	2,682	792	1,438	*6,601*
$50,000 - $74,999	454	1,884	816	1,463	*4,617*
$75,000+	232	2,295	1,099	2,014	*5,640*
TOTAL HHS	*5,922*	*8,508*	*3,341*	*5,570*	***23,341***

Note: Attachment C-13b is provided here for information only. The sample to be collected for the survey will be for the combined area as shown in Attachment C-13c.

ATTACHMENT C-13c: TwinCATS and NATS Combined (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	9,671	4,279	1,585	1,561	*17,096*
$25,000 - $49,999	4,553	5,826	1,945	2,603	*14,927*
$50,000 - $74,999	1,454	4,212	1,640	2,942	*10,248*
$75,000+	928	6,068	2,867	5,071	*14,934*
TOTAL HHS	*16,606*	*20,385*	*8,037*	*12,177*	***57,205***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	16.9%	7.5%	2.8%	2.7%	*29.9%*
$25,000 - $49,999	8.0%	10.2%	3.4%	4.6%	*26.1%*
$50,000 - $74,999	2.5%	7.4%	2.9%	5.1%	*17.9%*
$75,000+	1.6%	10.6%	5.0%	8.9%	*26.1%*
TOTAL HHS	*29.0%*	*35.6%*	*14.0%*	*21.3%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	9,666	4,282	1,587	1,565	*17,100*
$25,000 - $49,999	4,552	5,857	1,948	2,632	*14,989*
$50,000 - $74,999	1,448	4,231	1,653	2,964	*10,296*
$75,000+	921	6,069	2,869	5,078	*14,937*
TOTAL HHS	*16,587*	*20,439*	*8,057*	*12,239*	***57,322***

D: Sample Cell Targets (Region Sample Size = 800)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	135	60	22	22	*239*
$25,000 - $49,999	64	82	27	36	*209*
$50,000 - $74,999	20	59	23	41	*143*
$75,000+	13	85	40	71	*209*
TOTAL HHS	*232*	*286*	*112*	*170*	***800***

ATTACHMENT C-14: MACC (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	4,240	2,073	844	1,061	*8,218*
$25,000 - $49,999	3,400	4,660	1,474	2,936	*12,470*
$50,000 - $74,999	1,204	3,390	1,863	3,183	*9,640*
$75,000+	588	4,682	2,399	5,605	*13,274*
TOTAL HHS	*9,432*	*14,805*	*6,580*	*12,785*	***43,602***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	9.7%	4.8%	1.9%	2.4%	*18.8%*
$25,000 - $49,999	7.8%	10.7%	3.4%	6.7%	*28.6%*
$50,000 - $74,999	2.8%	7.8%	4.3%	7.3%	*22.1%*
$75,000+	1.3%	10.7%	5.5%	12.9%	*30.4%*
TOTAL HHS	*21.6%*	*34.0%*	*15.1%*	*29.3%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	4,255	2,080	847	1,065	*8,247*
$25,000 - $49,999	3,412	4,676	1,479	2,946	*12,513*
$50,000 - $74,999	1,208	3,402	1,869	3,194	*9,673*
$75,000+	590	4,698	2,407	5,624	*13,319*
TOTAL HHS	*9,465*	*14,856*	*6,602*	*12,829*	***43,752***

D: Sample Cell Targets (Region Sample Size = 650)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	63	31	12	16	*122*
$25,000 - $49,999	51	69	22	44	*186*
$50,000 - $74,999	18	51	28	47	*144*
$75,000+	9	70	35	84	*198*
TOTAL HHS	*141*	*221*	*97*	*191*	***650***

ATTACHMENT C-15: BCATS (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	6,062	2,361	1,276	1,056	*10,755*
$25,000 - $49,999	3,368	4,128	1,575	1,846	*10,917*
$50,000 - $74,999	1,219	2,798	1,301	1,718	*7,036*
$75,000+	728	3,326	1,703	3,009	*8,766*
TOTAL HHS	*11,377*	*12,613*	*5,855*	*7,629*	***37,474***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	16.2%	6.3%	3.4%	2.8%	*28.7%*
$25,000 - $49,999	9.0%	11.0%	4.2%	4.9%	*29.1%*
$50,000 - $74,999	3.3%	7.5%	3.5%	4.6%	*18.8%*
$75,000+	1.9%	8.9%	4.5%	8.0%	*23.4%*
TOTAL HHS	*30.4%*	*33.7%*	*15.6%*	*20.4%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	6,123	2,385	1,289	1,067	*10,864*
$25,000 - $49,999	3,402	4,169	1,591	1,864	*11,026*
$50,000 - $74,999	1,231	2,826	1,314	1,735	*7,106*
$75,000+	735	3,359	1,720	3,039	*8,853*
TOTAL HHS	*11,491*	*12,739*	*5,914*	*7,705*	***37,849***

D: Sample Cell Targets (Region Sample Size = 650)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	105	41	22	18	*186*
$25,000 - $49,999	58	72	27	32	*189*
$50,000 - $74,999	21	48	23	30	*122*
$75,000+	13	58	30	52	*153*
TOTAL HHS	*197*	*219*	*102*	*132*	***650***

ATTACHMENT C-16: TVC (Household Size x Household Income)

A: 2006-2010 CTPP/ACS, Table A112208C - HH size by HH income in the past 12 months (2010$)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	4,140	1,628	609	323	*6,700*
$25,000 - $49,999	3,111	4,134	923	1,258	*9,426*
$50,000 - $74,999	1,360	3,305	968	1,657	*7,290*
$75,000+	693	4,445	1,737	3,287	*10,162*
TOTAL HHS	*9,304*	*13,512*	*4,237*	*6,525*	***33,578***

B: % Distribution of 2006-2010 CTPP/ACS Region HHs

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	12.3%	4.8%	1.8%	1.0%	*20.0%*
$25,000 - $49,999	9.3%	12.3%	2.7%	3.7%	*28.1%*
$50,000 - $74,999	4.1%	9.8%	2.9%	4.9%	*21.7%*
$75,000+	2.1%	13.2%	5.2%	9.8%	*30.3%*
TOTAL HHS	*27.7%*	*40.2%*	*12.6%*	*19.4%*	***100.0%***

C: Census 2010 HHs (based on CTPP/ACS 06-10 % distribution)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	4,184	1,645	616	326	*6,771*
$25,000 - $49,999	3,144	4,178	933	1,271	*9,526*
$50,000 - $74,999	1,374	3,340	978	1,675	*7,367*
$75,000+	700	4,492	1,755	3,322	*10,269*
TOTAL HHS	*9,402*	*13,655*	*4,282*	*6,594*	***33,933***

D: Sample Cell Targets (Region Sample Size = 650)

	1-person	2-person	3-person	4+ persons	TOT HH
< $25,000	80	32	12	6	*130*
$25,000 - $49,999	60	80	18	24	*182*
$50,000 - $74,999	26	64	19	32	*141*
$75,000+	13	86	34	64	*197*
TOTAL HHS	*179*	*262*	*83*	*126*	***650***