



## REQUEST FOR PROPOSALS

### TRAVEL DEMAND MODEL EXPANSION & DATA ANALYTICS

DATE ISSUED:	December 22, 2016
DEADLINE FOR PRE-BID QUESTIONS:	January 17, 2017
PRE-BID MEETING (IF REQUESTED):	January 23, 2017
SUBMISSION DEADLINE AND TIME:	January 31, 2017 by 4:00pm EST
CONTACT INFORMATION:	Michiana Area Council of Governments 227 W. Jefferson Blvd. 1120 County-City Building South Bend, Indiana 46601 macogdir@macog.com

# TABLE OF CONTENTS

- 1.0 Introduction .....3**
  - 1.1 Background.....3
  - 1.2 Project Overview .....4
- 2.0 Preliminary Work Plan.....5**
  - 2.1 Basic Scope of Services .....5
  - 2.2 Tasks for Immediate Service Needs in 2017.....5
  - 2.3 Additional Task-Based (On-Call) Technical Support Services .....9
- 3.0 Instructions for Complete Proposals.....11**
  - 3.1 RFP Deadline ..... 11
  - 3.2 Requirements and Forms ..... 11
  - 3.3 Pre-Bid Meeting Request ..... 11
  - 3.4 Proposal Delivery Procedures ..... 11
  - 3.5 Withdrawal of Proposal ..... 12
  - 3.6 Proposal Opening Procedures ..... 12
  - 3.7 Evaluation Form for Ranking ..... 12
  - 3.8 Reserved Rights ..... 12
- Evaluation Sheet .....13**
- 4.0 Instructions For Complete Proposals.....14**
  - 4.1 General..... 14
  - 4.2 Letter of Transmittal ..... 14
  - 4.3 Table of Contents ..... 14
  - 4.4 Executive Summary of the Scope of Work..... 14
  - 4.5 Personnel Resumes ..... 14
  - 4.6 Attachment A ..... 14
  - 4.7 Attachment B ..... 14
  - 4.8 Attachment C ..... 14
- Attachment A – Proposal Form.....15**
- Attachment B – Cost Proposal Form Template .....20**
- Attachment C – Project Schedule Template .....21**

# 1.0 INTRODUCTION

## 1.1 BACKGROUND

The Michiana Area Council of Governments (MACOG) is a regional, metropolitan and rural planning organization established to foster cooperative, coordinated and comprehensive planning activities, located in South Bend, Indiana. The MACOG region represents four counties (Elkhart, Kosciusko, Marshall and St. Joseph) and seven cities (Elkhart, Goshen, Mishawaka, Nappanee, Plymouth, South Bend and Warsaw) in Indiana. MACOG coordinates planning efforts to maximize benefits to the respective communities. In addition, MACOG provides regional transportation planning services for both rural and urban communities within its jurisdiction. MACOG is involved in various community development programs, both in the planning and implementation stages.

MACOG's Travel Demand Model (TDM) is a hybrid model using Caliper's TransCAD software for transportation modeling as well as a custom land use model, HELPViz. ArcGIS Desktop is used for both pre-processing and post-processing data for the travel demand model as needed. The hybrid model design blends aspects of traditional four-step models and activity-based models. The model can be described as trip-based, as it produces aggregate trip table matrices of trips between origins and destinations rather than disaggregate records detailing individual travelers' activities. However, it can also be described as tour-based since the travel patterns predicted can be mathematically proven to be consistent with tours and all travel is segmented within the model by types of tours, eliminating the non-home-based trips problematic in traditional four-step models.

Unlike traditional four-step models which are entirely aggregate and activity-based models which are entirely disaggregated, the hybrid model includes both aggregate and disaggregate component models. Despite the inclusion of disaggregate choice models, there are no random number draws or Monte Carlo simulations included in the TDM. As a result, MACOG's model results are reproducible, unlike the results of activity-based or other simulation models. Any difference between two model runs is directly attributable to differences in their inputs as with traditional trip-based models. Whereas, in simulation models, multiple model runs are necessary when comparing alternatives to ensure that the difference between model runs results from differences in the alternative inputs rather than from differences in the random numbers drawn for each run.

The following links provide additional background on the hybrid travel demand model and calibration of the models using the regions extensive classification-based traffic count database:

- [\*From Academia to Application: Results from Calibration and Validation of First Hybrid Accessibility-Based Model\*](#) – This is on the original Knoxville model that MACOG's hybrid travel demand model is based on and is the best overview of hybrid travel demand models.
- [\*Hierarchical Ordering of Nests in a Joint Mode and Destination Choice Model\*](#) – Focuses on the mode choice models used in MACOG's hybrid travel demand model.
- [\*Enhanced Destination Choice Models Incorporating Agglomeration Related to Trip Chaining While Controlling for Spatial Competition\*](#) – Specifically focused on the type of destination choice models used in the hybrid travel demand model.

- [\*Simultaneous Travel Model Estimation from Survey Data and Traffic Counts\*](#) – Focuses on how the regional traffic count database was used to estimate MACOG’s regional travel demand model.
- [\*A Trip-based Travel Demand Framework Consistent with Tours and Stop Interaction\*](#) – A dissertation on hybrid travel demand models from the creator of MACOG’s hybrid travel demand model, provided for additional reference.

## 1.2 PROJECT OVERVIEW

MACOG is seeking proposals from qualified firms and/or individuals capable of providing professional consultant services for the provision of (on-call) technical support as well as for enhancements, expansions, and data analytics with the existing travel demand model. These services will assist MACOG in the development of the 2045 Transportation Plan. Details on the scope of work can be found in Section 2.0 Preliminary Work Plan. MACOG is seeking firms and/or individuals whose combination of experience and expertise will provide timely, high quality professional services.

MACOG plans to contract with one (1) or more firms to assist with the project. It is the intention of MACOG to select a qualified, experienced company as a work-for-hire vendor that will produce and deliver quality products and all source codes at a fair and reasonable price in a timely fashion. Proposals will be accepted from individuals, firms or other collaborative arrangements. If a collaborative arrangement is proposed, one firm or individual shall be identified as the lead agent. It will be the responsibility of the primary Contractor to manage or enforce compliance and scheduled deliverables of any partners or sub-contractors selected by the Contractor firm. All products developed will become the property of MACOG.

The proposed contract time is for twenty-four (24) months with an option to extend the contract for up to twelve (12) additional months.

This process will be funded through the MACOG utilizing federal funds from US Department of Transportation. MACOG staff will assist and facilitate the development and completion of this project.

## 2.0 PRELIMINARY WORK PLAN

### 2.1 BASIC SCOPE OF SERVICES

MACOG is requesting qualifications from firms and/or individuals professionally certified to perform and are capable of providing multimodal travel demand modeling, a variety of transportation data collection services, air quality modeling and other special transportation planning, studies and/or activities to support the development of the region's multimodal transportation system as the agency prepares for the needs of the 2045 regional transportation plan update.

MACOG is seeking proposals from qualified firms and/or individuals capable of providing professional consultant services for immediate modeling services needed in calendar year 2017 and the provision of (on-call) technical support. The proposed contract time is for twenty-four (24) months with an option to extend the contract for up to twelve (12) additional months.

Proposals must describe if and how the firm or individual plans to integrate this work plan into or complement the existing travel demand model.

### 2.2 TASKS FOR IMMEDIATE SERVICE NEEDS IN 2017

The following projects are immediate services needed for transportation planning purposes within the MACOG Region. The final implementation of the travel demand model projects as laid out in this section should be completed no later than September 20, 2017. The work will involve tasks including but not limited to:

#### **Task 1 – Expansion of the Model into Niles, Michigan and Surrounding Areas**

The Michiana Area Council of Governments (MACOG), in coordination with the Michigan Department of Transportation (MDOT) and the Southwest Michigan Planning Commission (SWMPC) are working jointly on an expansion of MACOG's existing regional travel demand model into Niles, Michigan. The following map is provided for reference.



In order to advance modeling capabilities in the region, the MPOs and MDOT are expanding MACOG's regional travel demand model into the Niles Area Transportation Study area to improve forecasts of future growth and development, travel demand, traffic flow, transit ridership, and pedestrian and bicycle usage.

The organizations are seeking assistance from travel demand modeling experts to make improvements to the current hybrid travel demand model and to prepare it for use in testing and evaluating scenarios for the region's 2045 Metropolitan Transportation Plans. The MPOs and MDOT are planning to migrate to Caliper's TransCAD v7.0 for the travel demand model, which includes transit mode choice. Expansion of the travel demand model is anticipated to consist of the following activities:

- Process the Expanded Transportation Network
- Add Traffic Analysis Zones (TAZ) and Adjust Centroid Connectors as Necessary
- Post-Process the 2015 Socioeconomic Data Compiled by MDOT as Needed
- Update Scripts and Externals Used to Run the Travel Demand Model

MACOG will be the primary point of contact for this task and will monitor and assess progress of the work product produced by the consultant. All final approvals for all documents and work products generated as a result of this contract will be made by MACOG in consultation with MDOT and SWMPC. MACOG staff will coordinate activities with MDOT and SWMPC. This task is funded through a collaborative arrangement between MACOG, SWMPC, and MDOT.

Proposals should assume that MACOG in coordination with MDOT and SWMPC will provide all input data for the expanded models including routable TransCAD networks with traffic counts and required link attributes (such as number of lanes and posted speed), the location of traffic signals, parcels with land use data when available, and zones with employment data. MACOG's HELPViz land use model will not be included in the Niles portion of the travel demand model at this time.

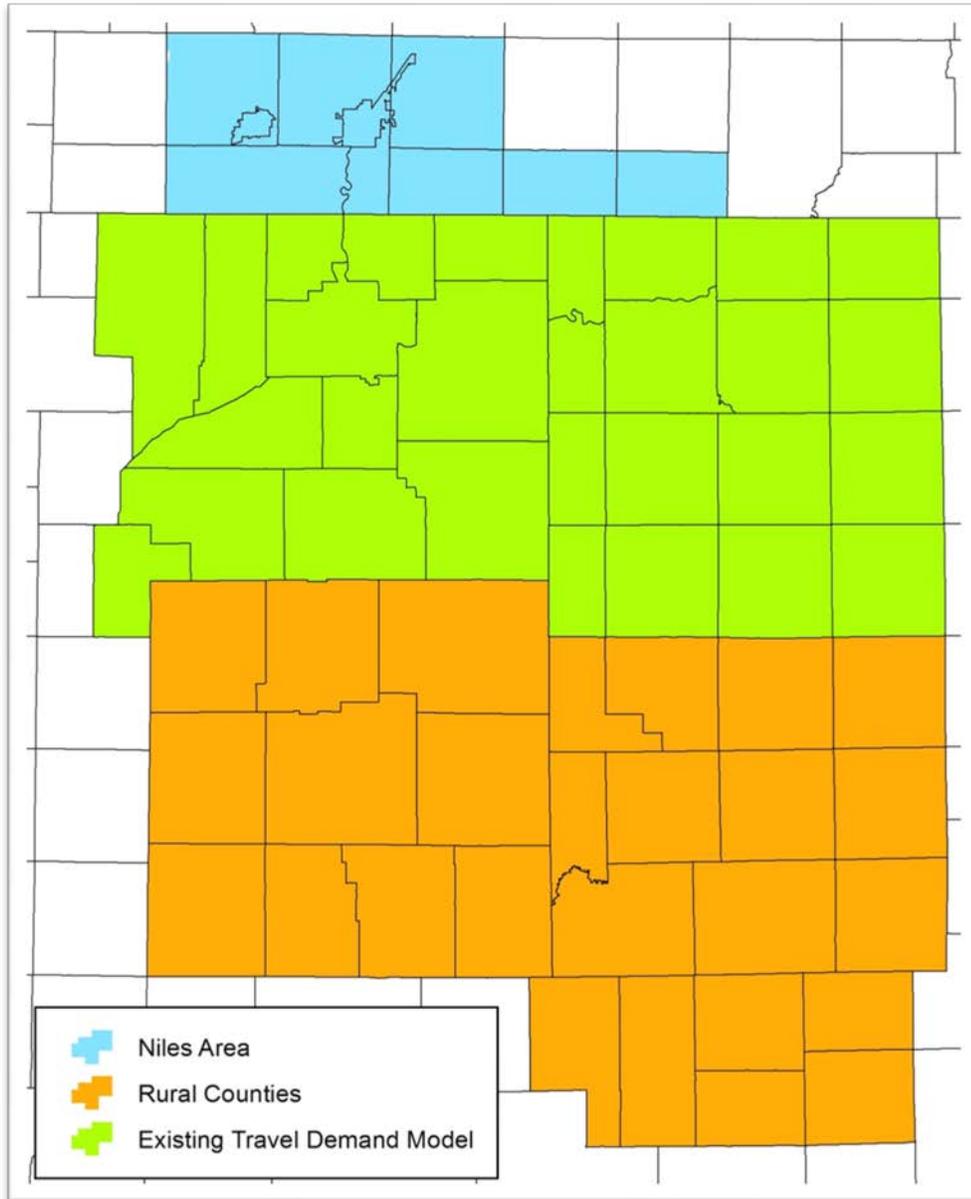
A small number of hours should be allocated for assisting and providing advice to MPO and MDOT staff in the development of this data and the review of it.

## **Task 2 – Expansion of the Model into Kosciusko and Marshall Counties**

MACOG is seeking assistance from travel demand modeling experts to make improvements to the current hybrid travel demand model and to prepare it for use to improve forecasts of future growth and development, travel demand, traffic flow, and walking and bicycle usage in the rural counties of Kosciusko and Marshall. Expansion of the travel demand model is anticipated to consist of the following activities:

- Process the Expanded Transportation Network
- Add Traffic Analysis Zones (TAZ) and Adjust Centroid Connectors as Necessary
- Compile and Update 2015 Socioeconomic Data for the Region
- Update Scripts and Externals Used to Run the Travel Demand Model

Please see the below map for reference.



Proposals should assume that MACOG will provide all input data for the expanded models including routable TransCAD networks with traffic counts and required link attributes (such as number of lanes and posted speed), the location of traffic signals, parcels with land use data, and zones with employment data.

### **Task 3A – Bluetooth/Wireless Origin-Destination Data for Model Calibration of the Niles Area Travel Study Region**

Rather than completing a new household travel survey for the expanded travel demand model, MACOG is considering the use of Bluetooth/wireless origin-destination data to supplement the

regions available travel surveys. As part of this task, Bluetooth/wireless origin-destination data would be purchased for the Niles Area Transportation Study area. The data would then be re-expanded based on the regional traffic count database (rather than relying on a more limited Census based expansion) and code would be implemented to use the data as a pivot point for forecasting.

Task 3A will include the procurement of Bluetooth/wireless O-D data for the Niles Area Transportation Study portion of the expanded travel demand model to supplement recent household survey data for the Niles, Michigan area, to be provided by MDOT.

### **Task 3B – Bluetooth/Wireless Origin-Destination Data for Model Calibration of the MACOG Region**

As with Task 3A, MACOG is considering the use of Bluetooth/wireless origin-destination data to supplement the regions available travel surveys. As part of this task, Bluetooth/wireless origin-destination data would be purchased for MACOG's four county region. The data would then be re-expanded based on the regional traffic count database (rather than relying on a more limited Census based expansion) and code would be implemented to use the data as a pivot point for forecasting.

Task 3B will include the procurement of Bluetooth/wireless O-D data for MACOG's four county region and combining the data with the existing 2014 household and university surveys completed for the Elkhart and St. Joseph County portion of the travel demand model.

### **Task 4A – (Re-) Validation of the Travel Demand Model for the Niles Area**

Once the travel demand model has been expanded into the Niles Area Transportation Study area, Kosciusko County, and Marshall County and the necessary updates to the scripts and services used to run the travel demand model have been completed, the entire model should be (re-) validated as necessary to ensure its forecasts remain reasonable and dependable. The final work product should also include a technical memorandum to document the calibration and validation of the expanded models as a supplement to existing model documentation. User Guides for the travel demand model should reflect any changes resulting from migrating to TransCAD 7.0 from TransCAD 6.0.

Task 4A will include the necessary costs for validation of the Niles Area as well as generation of the necessary documentation for the calibration of the model.

### **Task 4B – (Re-) Validation of the Travel Demand Model for the MACOG Area**

Once the travel demand model has been expanded into the Niles Area Transportation Study area, Kosciusko County, and Marshall County and the necessary updates to the scripts and services used to run the travel demand model have been completed, the entire model should be (re-) validated as necessary to ensure its forecasts remain reasonable and dependable. The final work product should also include a technical memorandum to document the calibration and validation of the expanded models as a supplement to existing model documentation. User Guides for the travel demand model should reflect any changes resulting from migrating to TransCAD 7.0 from TransCAD 6.0.

Task 4B will include the necessary costs for validation of the four county region of MACOG as well as generation of the necessary documentation for the calibration of the model.

## 2.3 ADDITIONAL TASK-BASED (ON-CALL) TECHNICAL SUPPORT SERVICES

The following projects may be included as part of the (on-call) technical support for enhancements to the travel demand model and data analytical services for transportation planning purposes within the MACOG Region. The work may vary based on the project and will be identified on an as needed basis. The work may involve tasks including but not limited to:

### **Task 1 – Expansion of the HELPViz Land Use Model**

Relying on the parameters already calibrated for St. Joseph and Elkhart Counties, in combination with parcel-based land use maps generated using 2002 and 2011 aerial photography, MACOG may expand the HELPViz land use model to the four-counties in the MACOG planning region and possibly the Niles Area Transportation Study area. The expanded land use model would continue to operate in conjunction with the travel demand model for forecasting and distributing future growth within the region. Static, traffic analysis zones outside of the four counties would be provided by MACOG.

It is unknown if this would produce reasonable results or if recalibration of the HELPViz Land Use Model would be necessary, possibly adding variables to account for the more rural character of the new counties. Proposals should breakout the costs of recalibrating the land use model from this task, which may or may not be required.

- Estimate Build-out Capacities
- Adjust Code and Validate Model Results
- Re-calibrate w/ Historic Data

### **Task 2 – Regional Freight Modeling**

MACOG desires to have a better understanding of freight flows and travel patterns in and through the region. First there is a need to gather and analyze current and/or historical freight movement data. The selected vendor will procure and process GPS trace data which provides truck travel patterns. This data should be available for use in a variety of ways including the estimation of new trip or tour-based truck models. The most basic application is to use data for pivoting. In this task, the selected vendor would purchase, process, expand, and calibrate truck GPS data and adapt the existing truck model in the MACOG hybrid model to pivot off of base year truck travel patterns.

### **Task 3 – Pedestrian and Bicycle Modeling**

The existing hybrid model already predicts walk and bike activity regionally for residents at the level of their home zone. However, it does not specify the origin and destination of walk/bike trips or assign them to sidewalks, paths, and other infrastructure. This enhancement would take advantage of recent research on walking and bike route choice improvements to San Diego's activity-based model to make the model's estimates of walking and biking activity sensitive to bicycle and pedestrian infrastructure improvements as well as provide rough forecasts of bicycle and pedestrian traffic at the facility level.

The new model would take into account various factors in bicycle and pedestrian route choice including elevation gain, street crossings, and the presence of mode specific facilities such as sidewalks, bike lanes, and special paths. Analysts could test new investments including separated paths, cycle tracks, bike boulevards, bike paths, bike lanes and bike routes.

#### **Task 4 – Integrated Travel and Health Impact Model**

The Integrated Travel and Health Impact Model (ITHIM), originally developed in the UK and since applied throughout California, can provide detailed analysis on health benefits and risks by disease category using the unit of disability adjusted life year (DALY) for alternative scenarios in the MACOG region. In this way the health benefits of active transportation can be quantified for use as a performance measure to support planning.

Under this task, the selected vendor will develop the necessary data and calibrate the ITHIM model for the planning area. Scripts would also be written to process hybrid model results for input into ITHIM. The option for a one-day training session should also be given to introduce planning staff to the ITHIM model, its capabilities, and limitations.

#### **Task 5 – Enhanced Travel Post-Processor**

A “dashboard” spreadsheet will be developed to take the results of the post-processors and produce template graphs, charts, and tables that include comparisons between scenarios and the impacts of individual projects. The existing basic traffic post-processor will be enhanced to generate a wider range of information from travel model runs, e.g., levels of walking and biking, maps of transit-using households, etc. The final list of performance measures to be included would be developed in coordination with MACOG, respecting the limits of the task budget.

#### **Task 6 – Accessibility Post-Processor**

Accessibility can provide a better understanding regarding the performance of transportation networks, especially in an urban environment. This post-processor would produce a host of performance measures quantifying the ability of various populations to access important destinations such as hospitals, colleges and universities, shopping and eating opportunities, job opportunities, etc. The results of the post-processor will be summarized in a standard report. The post-processor will also produce a zonal level output file which can be used for map creation in TransCAD and other GIS software packages. The version of the tool budgeted here will include estimates of access by car, transit, bike and walk modes.

## 3.0 INSTRUCTIONS FOR COMPLETE PROPOSALS

### 3.1 RFP DEADLINE

The deadline for this RFP is January 31, 2017, no later than 4:00pm Eastern.

### 3.2 REQUIREMENTS AND FORMS

Each firm must submit four (4) copies and an electronic copy of their proposals in accordance to section *3.1 RFP Deadline*. Proposals must include all supporting data/materials that describe or display other qualifications or unique skills a firm may possess that are relevant to this project. Supporting materials shall be submitted with four (4) copies. Section *4.0 Instructions for Complete Proposals* describes a complete proposal package and all necessary documents to be considered. Failure to submit a complete proposal or changing any of the attachments provided will result in disqualification of the proposal. All attachments must be completed and signed to be considered for an award.

### 3.3 PRE-BID MEETING REQUEST

A pre-bid meeting for the purpose of clarifying and answering questions on the RFP will be offered, if requested. The deadline to request a pre-bid meeting is January 17, 2017 at 4:00pm Eastern. If a firm wants to request a pre-bid meeting they must formally submit a letter or email before the aforementioned date. If MACOG does not receive a request for a pre-bid meeting by the deadline of January 17, 2017, then no pre-bid meeting will be held. If a meeting is requested in writing the meeting will be held on January 23, 2017, at the MACOG office.

All firms will be informed of the January 23, 2017 meeting, location and time, if requested. Firms must submit all questions (whether a meeting is requested or not) no later than October January 17, 2017, by e-mail to [macogdir@macog.com](mailto:macogdir@macog.com) Attention: Travel Demand Model RFP. Responses to written questions or discussions at a requested meeting will be answered and responses forwarded to all firms no later than January 24th, via e-mail. In the case of any discrepancy between an answer given at the pre-bid meeting and that confirmed in writing, the answer given in writing by way of an additional notification shall prevail.

Non-attendance at the pre-bid meeting or a decision not to raise any questions in relation to the pre-bid meeting will not be a cause for disqualification of a firm and/or individual. Firms shall not rely on oral statements. Oral statements will not be binding. Please do not call the MACOG office to request information. Only questions sent to [macogdir@macog.com](mailto:macogdir@macog.com) will receive a response.

### 3.4 PROPOSAL DELIVERY PROCEDURES

Sealed proposals shall be delivered, to the address below, no later than 4:00pm Eastern on January 31, 2017, to the MACOG office.

Michiana Area Council of Governments  
Attention: Travel Demand Model RFP  
227 W. Jefferson Blvd  
1120 County-City Building  
South Bend, Indiana 46601

Sealed envelopes shall be clearly labeled " Travel Demand Model RFP" with the following information: Vendor's name and address. Once a proposal is received by MACOG it will be time and date stamped. Proposals received after the specified deadline and time will not be considered. Additionally, MACOG will not consider any proposal submitted via fax, email, or verbally.

### 3.5 WITHDRAWAL OF PROPOSAL

A written request for the withdrawal of a proposal may be granted if the request is received by MACOG prior to the specified time of award.

### 3.6 PROPOSAL OPENING PROCEDURES

The opening of all proposals shall commence immediately after the stated delivery date and time at the MACOG office. The proposals shall be taken under review at that time.

### 3.7 EVALUATION FORM FOR RANKING

An evaluation committee will review and rank the proposals based on the criteria outlined, see the *Evaluation Sheet*. The review and ranking will be done individually and without consultation with other members of the evaluation committee. The evaluation committee will consist of three persons who will individually review each proposal based on the criteria for this RFP. If necessary, MACOG reserves the right to create a short list of the top three proposals based on the Evaluation Committee scores from the Evaluation Sheet and then conduct interviews with these firms. A recommendation for award will be made to the MACOG Executive Director. The Executive Director will make a final recommendation to MACOG's procurement liaison. The award recommendations may be accepted or rejected by this person. All firms will be notified by mail regarding the award.

### 3.8 RESERVED RIGHTS

MACOG reserves the right, at any time and for any reason, to cancel this RFP, to reject any or all proposals, or to accept an alternate proposal. MACOG reserves the right to develop criteria for each bid package. MACOG reserves the right to waive any immaterial defect in any proposal. MACOG may seek clarification from a firm at any time and failure to respond promptly is cause for rejection.

**EVALUATION SHEET**  
***FOR INTERNAL USE - COMPANIES DO NOT COMPLETE***

COMPANY NAME: \_\_\_\_\_

**GUIDELINES FOR COMPANY SELECTION**

**YES / NO**      **Are all items requested in the proposal package provided? If not, do not complete the rest of this form.**

**0-15 Pts** \_\_\_\_\_ **Costs** – Evaluation for the project cost. 15 points awarded to lowest, second lowest gets 10 points, third lowest 5 points.

**0-30 Pts** \_\_\_\_\_ **Specialized Work Experience** – Specialized experience in the type of work to be performed, specifically including previous work with large/regional groups to develop travel demand models and implement the processing of trip making data.

**0-15 Pts** \_\_\_\_\_ **Technical Expertise** – Qualifications and experience of key team members assigned to the project.

**0-20 Pts** \_\_\_\_\_ **Time Frame** – starting availability, completion within tentative schedule, provides a detailed timeline of project tasks

**0-10 Pts** \_\_\_\_\_ **Project Understanding and Approach** – A demonstrated understanding of the project scope, approach and methodology.

**0-10 Pts** \_\_\_\_\_ **Past Performance** – Examples of previous work that references provide satisfaction in services they received. Three satisfactory references is worth 10 points, two references 5 points, one reference 2 points, and no satisfactory references is worth 0 points.

\_\_\_\_\_ **Total Points** – 100 possible points

COMMENTS: \_\_\_\_\_

---

---

---

---

---

---

---

---

*Note: No bias or special consideration is given to vendors based on geographic locality during this procurement.*

## 4.0 INSTRUCTIONS FOR COMPLETE PROPOSALS

### 4.1 GENERAL

Each firm must submit four (4) copies and an electronic copy of their proposals in accordance to Section 3.1 *RFP Deadline*. Failure to submit a complete proposal or changing any of the provided attachments may result in disqualification of the proposal. The content and sequence to be considered a complete proposal shall be as follows:

### 4.2 LETTER OF TRANSMITTAL

Include your firm's basic understanding of the work to be performed. In addition, clearly articulate why your firm believes it to be the best qualified to perform the services requested.

### 4.3 TABLE OF CONTENTS

Include a clear identification of the material by section and by page number.

### 4.4 EXECUTIVE SUMMARY OF THE SCOPE OF WORK

Respondents must provide an overview of the major features of the RFP submission. Include any suggestions, conclusions, recommendations or assumptions the respondent believes are significant to the understanding of the RFP. Respondent should take this opportunity to comment on the sequencing and description of the tasks and/or the time frame for completion of the tasks.

### 4.5 PERSONNEL RESUMES

Include resumes of all key personnel you would be assigning to this project.

### 4.6 ATTACHMENT A

Attachment A is the Proposal Form and is required. All pages of the Proposal Form must be completed. Please make sure to sign Attachment A. Please feel free to include any additional attachments to support information documented in Attachment A.

### 4.7 ATTACHMENT B

Attachment B is the Cost Proposal Form Template. Firms may utilize Attachment B to outline the cost of the proposal or may attach necessary information to support the information requested in Attachment B.

### 4.8 ATTACHMENT C

Attachment C is the Schedule Proposal Form Template. Firms may utilize Attachment C to outline the proposed schedule of the proposal or may attach necessary information to support the information requested in Attachment C. Assume a start date of February 8, 2017 when preparing the schedule. The final implementation of the travel demand model as laid out in section 2.2 *Tasks for Immediate Service Needs in 2017* should be completed no later than September 20, 2017.

**ATTACHMENT A – PROPOSAL FORM**  
***PLEASE NOTE: ALL PAGES OF ATTACHMENT ARE REQUIRED***

**1. Company Details**

Company Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Company Address: \_\_\_\_\_

E-mail Address: \_\_\_\_\_ Phone: \_\_\_\_\_

Company website: \_\_\_\_\_

Is the development of travel demand models, activity based models, and travel surveys the Company's primary service? If no, please explain.

YES \_\_\_\_\_ NO \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**2. Please provide three (3) customer references.**

Each reference must have completed a travel demand model project using TransCAD with your Company within the last two years. References that have no knowledge of your company's expertise with TransCAD or activity-based models, references that refuse to answer questions or provide information, or references that cannot be reached after three attempts, will not be considered as having met the satisfactory reference requirement.

Company Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone: \_\_\_\_\_

Dates of Project: \_\_\_\_\_

Describe Service: \_\_\_\_\_

\_\_\_\_\_

Company Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone: \_\_\_\_\_

Dates of Project: \_\_\_\_\_

Describe Service: \_\_\_\_\_

\_\_\_\_\_

Company Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Telephone: \_\_\_\_\_

Dates of Project: \_\_\_\_\_

Describe Service: \_\_\_\_\_

\_\_\_\_\_

**3. Describe specific plans how you will manage, control and supervise the project in order to ensure satisfactory provision of services.**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_



**7. How many hybrid or activity-based models have you implemented:**

- a. In areas of 250,000 to 500,000 population: \_\_\_\_\_
- b. In areas with multiple central business districts: \_\_\_\_\_

**8. Describe any and all software/hardware requirements not covered in your company cost estimated that will be required to make the project function. Vendor is responsible for all costs not listed in the proposal but required for the successful completion of the project unless otherwise amended through a change of the project scope.**

---

---

---

---

---

---

---

---

---

---

**9. Please provide information regarding the Company's specialized experience in the type of work to be performed, specifically including previous work with large/regional groups to develop travel demand models and implement the processing of trip making data.**

---

---

---

---

---

---

---

---

---

---

**10. Please answer “Yes” or “No” to every item in the following sections.**

***Travel Demand Modeling Experience***

<b>TransCAD Software</b> – Company has previous experience developing and implementing travel demand models using Caliper’s TransCAD Transportation Planning Software.	YES	NO
<b>GISDK Programming</b> – Staff assigned to the project will be experienced with the proprietary GISDK programming language implemented for TransCAD.	YES	NO
<b>Activity Based Modeling</b> – Company has prior experience with implementing an activity based model in coordination with the TransCAD Transportation Planning Software.	YES	NO

***Origin-Destination Experience***

<b>Origin-Destination Survey Calibration</b> – Company has experience with calibrating travel demand models to origin-destination surveys.	YES	NO
<b>Bluetooth/Wireless</b> – Company has experience working with Bluetooth/wireless data for calibrating travel demand models.	YES	NO

***Modeling Experience***

<b>Model Feedback Loop</b> – Company has worked with travel demand models with iterative feedback loops to capture the effects of trip linkage.	YES	NO
<b>Destination Choice vs. Gravity Models</b> – Company has experience with both destination choice and gravity model trip distribution methods.	YES	NO
<b>Modal Choice</b> – Company has experience with modeling transit in areas with multiple bus systems and low ridership.	YES	NO
<b>Freight Modeling</b> – Company has experience in developing freight models and integrating them with travel demand models.	YES	NO

**Authorized Representative’s Signature:**

\_\_\_\_\_

Date: \_\_\_\_\_

## ATTACHMENT B – COST PROPOSAL FORM TEMPLATE

*Please Note: The following template is a guideline for the Cost Proposal section of the submitted bid. Vendor is responsible for organizing and grouping the tasks and sub-tasks as needed for their proposal. MACOG reserves the right to waive award of any sub-tasks for any reason.*

### Tasks for Immediate Service Needs in 2017

#### *Task 1 – Expansion of the Model into Niles, Michigan and Surrounding Areas*

	Hours	Cost
Activity 1A – Process the Expanded Transportation Network...		
Activity 1B – Add Traffic Analysis Zones...		
Activity 1C – Post-Process 2015 Socioeconomic Data...		

#### *Task 2 – Expansion of the Model into Kosciusko and Marshall Counties*

	Hours	Cost
Activity 2A – ...		
Activity 2B – ...		
Activity 2C – ...		

#### *Task 3 – ...*

	Hours	Cost
Activity 3A – ...		
Activity 3B – ...		
Activity 3C – ...		

### Additional Task-Based (On-Call) Technical Support Services

#### *Task 1 – Expansion of HELPViz Land Use Model*

	Hours	Cost
Activity 1A – ...		
Activity 1B – ...		
Activity 1C – ...		

#### *Task 2 – ...*

## ATTACHMENT C – PROJECT SCHEDULE TEMPLATE

*Please Note: The following template is a guideline for the Project Schedule section of the submitted bid. Tasks and sub-tasks should match the groupings on the cost proposal form. Assume a start date of February 8, 2017 when preparing the schedule. The final implementation of the travel demand model as laid out in Section 2.2 should be completed no later than September 20, 2017.*

### Tasks for Immediate Service Needs in 2017

***Task 1 – Expansion of the Model into Niles, Michigan and Surrounding Areas***

	Start Date	End Date
Activity 1A – Provide MACOG staff assistance ...		
Activity 1B – Implement and configure...		
Activity 1C – Model calibration and validation.		

***Task 2 – ...***

	Start Date	End Date
Activity 2A – ...		
Activity 2B – ...		
Activity 2C – ...		

***Task 3 – ...***

	Start Date	End Date
Activity 3A – ...		
Activity 3B – ...		
Activity 3C – ...		