

**REQUEST FOR PROPOSALS**

**MARICOPA ASSOCIATION OF GOVERNMENTS (MAG)  
ACTIVITY-BASED TRAVEL MODEL DEVELOPMENT - PHASES 2 & 3**



December 10, 2010

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**PUBLIC NOTICE**

**REQUEST FOR PROPOSALS:**

**ACTIVITY-BASED TRAVEL MODEL DEVELOPMENT - PHASES 2 AND 3**

The Maricopa Association of Governments (MAG) is requesting proposals from qualified consultants for the Activity-Based Travel Model Development - Phases 2 and 3 to complete development and implementation of the activity-based travel forecasting model at MAG. Successful bidders will submit a proposal for both phase 2 and phase 3 as described in this Request for Proposal (RFP). Phase 2 is anticipated to be completed in a maximum of 12 months from the date of notice to proceed at a cost not to exceed \$500,000. The successful respondent in this RFP process may, at MAG's discretion, also be retained to complete Phase 3 of the project which is anticipated to be completed in a maximum of 12 additional months from the notice to proceed at a cost not to exceed \$500,000.

Detailed proposal requirements may be obtained by contacting the MAG Office at the address indicated below or may be downloaded from <http://www.azmag.gov/>, under "RFPs and RFQs". For further information, please submit questions in writing by fax to the attention of Vladimir Livshits at (602) 254-6490, or by e-mail to [vlivshits@azmag.gov](mailto:vlivshits@azmag.gov).

Proposals will be accepted until 2:00 PM Mountain Standard Time on January 13, 2011, at MAG, 302 North 1st Avenue, Suite 300, Phoenix, Arizona 85003.

## **SCOPE OF WORK**

### **Introduction**

The Maricopa Association of Governments is the designated MPO for transportation planning for the metropolitan Phoenix area. MAG is also the designated Air Quality Planning Agency for the region. The MAG membership consists of the 25 incorporated cities and towns within Maricopa County and the contiguous urbanized area, the Gila River Indian Community, the Salt River Pima-Maricopa Indian Community, Fort McDowell Yavapai Nation, Maricopa County, the Arizona Department of Transportation (ADOT), and the Citizens Transportation Oversight Committee (CTOC). ADOT and CTOC serve as ex-officio members for transportation-related issues.

The Maricopa Association of Governments (MAG) is requesting proposals from qualified consultants for the second and third phases of the development of the Activity-Based travel forecasting Model (ABM). This Request for Proposals (RFP) describes the project activities required under the Scope of Services, the consultant selection process for the project, and the proposal requirements.

### **Background**

MAG develops and maintains a set of travel forecasting tools and procedures that ensure adequate support of the regional planning efforts, air quality conformity analysis, and compliance with relevant federal regulations and requirements. The MAG Regional Travel Forecasting Model is the main tool utilized at the agency for the above purposes. The model is a state-of-practice, four-step, trip-based procedure. The procedure utilizes state-of-the-practice methods for trip generation, trip distribution, mode choice, assignment, and feedback loops. The model is implemented in a TransCAD environment with different parts utilizing different programming languages, including GIS-DK, Java, and Fortran.

Even though the current MAG Regional Model is adequate for ongoing planning tasks, it has limitations inherent in any four-step, trip-based model. In light of emerging planning challenges and new forecasting requirements, these limitations are widely debated and scrutinized by the planning and modeling community. A growing number of Metropolitan Planning Organizations (MPOs) around the country and planning agencies around the world recognize the necessity of the development of new generations of the Travel Forecasting Models. Activity-based models will dramatically expand the applicability of the modeling results in order to answer upcoming planning challenges. Some of the models are already fully operational and are being utilized in the metropolitan planning processes, and others are under development.

Development of an ABM is normally a multi-year process that involves a number of phases. MAG has completed first phase of the activity-based model development. The FY 2011 MAG Unified Planning Work Program (UPWP) allocated funding for the two subsequent phases of the development with phase three being the conclusive phase. By advertising these phases of the project and selecting a consultant, MAG does not make any implied or express warranties, guarantees, or promises regarding subsequent project phases, available funding, and/or consultant selection processes and decisions. At MAG's discretion, or as prompted by changes in the MAG UPWP, availability of key consultant's personnel, and/or any other relevant factors, MAG may choose to issue a new procurement for phase three after the second phase of development has been completed, or may delay or cancel the ABM development project.

The ABM will serve as the major travel forecasting tool in the MAG region. The development will ensure that the MAG regional transportation planning process can rely on forecasting tools that will be adequate for new socioeconomic environments and emerging planning challenges. It is recognized that the ABM can eventually play a main role in the regional travel forecasting process. However, MAG plans to continue development of the existing suite of modeling tools that are appropriate for different planning and analytical tasks. The four-step based procedure will continue to serve as the main travel forecasting instrument for the next few years.

The first phase of the ABM development had the following main goals:

- Produce a detailed ABM development work plan, including scope of the development, schedule, and budget estimate as well as methodological approaches to main development issues.

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- Produce the first set of technical deliverables and corresponding documentation as per developed plan and in accordance with the technical requirements for the specific tasks as were outlined in the phase 1 Request for Proposals.

The above goals were achieved during the first phase of the development. The work resulted in a detailed model design and development plan that addressed identified planning needs and requirements for the ABM development, outlined model structure and implementation approaches, and implemented and estimated the first set of Activity-Based Model components. Two main reports describing the first phase deliverables are available on the MAG Web site [at this link](#), under Resource Library. Most of the development and entire implementation of the ABM at MAG have not been scoped for the first phase of the ABM development. The following main goals are established in Phases 2 and 3 for this conclusive step in the MAG ABM development and implementation:

1. Complete development of the MAG ABM, preserving the main functionality outlined in the model development plan, including but not limited to, integration of the special events modeling in the ABM framework, explicit modeling of seasonality in the MAG region, modeling of the intra-household interactions, and introduction of mobility attributes important for the regional transit modeling. MAG does not restrict proposals on the software implementation side or proposed methodological changes to the model design and plan as long as proposers conclusively demonstrate that their approaches enhance behavioral fidelity and functionality, open new application possibilities, or provide any other substantial benefits for the future model applications.
2. Implement the ABM at MAG. Implementation will include complete delivery of all relevant model source code, executables, and documentation. It will involve providing detailed software and hardware recommendations on the model implementation that will be developed in close collaboration with MAG staff, user training, and assistance with model installation.

### **Proposed Tasks**

The consultant should identify tasks for phase 2 and phase 3 separately as part of their proposal. The consultant is encouraged to be creative in developing a sound analytical approach which achieves the goals for this project. The consultant is urged to be as specific as possible when describing the activities that will be performed to support each task. The consultant is also urged to make maximum use of matrices, tables, and drawings in working papers produced for the project to ensure conciseness and clarity and to minimize the amount of text required. In preparing a proposal for consideration by MAG, the consultant will not be required to adhere strictly to the proposed tasks specified below. Additional tasks may be warranted.

#### **Task 1**      **Refine and Finalize the Model Development Plan in Accordance with Technical Recommendations Provided in the Successful Proposal and Accepted by MAG**

If the successful proposal requires changes, improvements and/or refinements to the model development plan that are accepted by MAG project manager, the plan and the model design should be amended accordingly. MAG does not necessarily seek to redo the model design and intends to apply end-products from phase 1 to complete the estimation and calibration. However, all feasible changes that clearly improve modeling capabilities or address other identified deficiencies in the plan and model design will be considered. Throughout the course of this project, inquiry and discussion may result in some revisions to the Scope of Work and Project Schedule. As necessary, the consultant will refine the Scope of Work for this project based upon professional experience and input from MAG. This work will be performed under the general direction of the MAG project manager. The consultant will prepare documentation of any such revision, including a revised labor/dollar allocation and project task cost breakdown within the overall project budget, and submit the revision to MAG for approval.

#### **Task 2**      **Continuing Review of the Technological and Methodological Advances in the Field of ABM Development and Implementation**

The consultant will conduct a review of accumulated experiences, trends, and latest methodological advances in the Activity-Based Model development and applications field and document the results during the project execution time. The main purpose of this task is to identify and follow up on emerging technological and methodological developments if they are

determined to be beneficial for the project purposes. Specific decisions regarding the possible implementation of an identified new technological or methodological element in the MAG ABM will require approval by the MAG project manager. Deliverables of this task will also help MAG staff to identify the next steps in model development, if required.

Task 3                      Complete Estimation and Calibration of the MAG ABM

The consultant will complete the estimation of the MAG ABM utilizing data sets that will be available for the estimation and calibration tasks. A detailed description of the completed estimation tasks and their results are provided in the abovementioned phase 1 deliverables that are available on MAG web site. The main foreseeable data sets include 2008/2009 National Household Travel Survey Add-on data for Arizona, 2010/2011 on-board transit survey data, 2009/2010 special events survey data, new Census Bureau data, and data from other public data sources as the data becomes available. The consultant will provide training for MAG staff in the model estimation and calibration procedures. MAG is open to proposals to split remaining estimation and calibration work between the consultant and MAG staff. Close collaboration and communication with MAG staff during estimation and calibration efforts is required. The consultant will provide MAG with detailed estimation and calibration results, including outputs from statistical software, scripts, programs, and any other products that are necessary for reproducing estimation results and performing quality control on the estimation procedures by MAG staff or independent parties.

Task 4                      Model Validation, Sensitivity, and Reasonableness Testing

The consultant will develop and apply activity-based model validation and testing procedures in close collaboration with MAG staff. MAG will provide detailed traffic counts, speed, transit ridership, and other data sets for validation and testing purposes. The consultant and MAG staff will develop sensitivity and reasonableness testing scenarios in order to validate model behavior.

Task 5                      Model Implementation and Installation at MAG

The consultant will develop hardware and software solutions for the successful implementation and installation of the ABM at MAG. Close collaboration with MAG staff and on-site work will be required for these tasks. The successful proposal should identify specific programming languages and previously developed software products that the consultant is proposing to use for the purposes of ABM implementation. The project budget does not include costs of hardware that might be required in order to run ABM at MAG. The consultant will work with MAG staff till the ABM is successfully installed, fully functional, and running at MAG. Initial forecasts for a number of pre-agreed scenarios will be developed and analyzed in close collaboration with MAG staff in order to test and further validate the ABM.

Task 6                      One-Year Maintenance and Support of the ABM System

The consultant will provide support for the ABM modeling system in order to eliminate errors and deficiencies that were identified through model application and provide ongoing training and guidance to MAG staff for model application purposes. Details of the one-year support service will be established through contractual negotiations of the project scope. This task may include a number of on-site maintenance and support visits that will be determined in the project contract.

**Deliverable Products**

The consultant should identify deliverable products for phase 2 and phase 3 separately as part of their proposal. The products of this project are listed below. Each working paper or technical memo should present information in a succinct manner with extensive use of tables, matrices, and drawings.

1. Refined model development plan and design report that addresses suggestions of the successful proposal accepted by MAG. The report should include a detailed model description and be able to

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- serve as a main model document outlining in detail model structure, all implemented methods, and algorithms, including mathematical formulations and relevant discussions.
2. Technical memo(s) with a review of the latest technological and methodological developments and advancements in the field of ABM development and application with suggested methodological improvements and identified issues. The memo can be incorporated in the model design report as well.
  3. Technical memos outlining the intermediate results of sub-models estimations.
  4. Estimation and Calibration Report with the detailed description of estimation and calibration approaches for the entire model, results, and identified issues.
  5. Electronic files, including all that have been developed as a part of the project effort programs and the scripts that are required to run estimation procedures, results of estimation, formatted data input files, etc.
  6. All executable files and all corresponding source code required to compile, install, and run the model with accompanying software documentation and help files.
  7. Technical memos outlining results of intermediate validations.
  8. Final Validation Report describing detailed results of validation and testing. All final electronic files that have been developed for the purposes of model validation.
  9. Technical memo outlining detailed model implementation and installation plan. The memo should include a detailed list of hardware and software requirements and other resources that are required for model implementation and maintenance.
  10. Fully functional ABM installed at MAG and accepted by the MAG project manager.
  11. Technical memo outlining results of the initial forecasts for a number of pre-agreed scenarios.
  12. One or more on-site training sessions for MAG staff.

**PROPOSAL REQUIREMENTS**

**Project Cost and Schedule**

The estimated time frame for this project is 12 months for each phase of the development from the date of the notice to proceed, with intermediate deliverables due in accordance with the schedule as agreed to between MAG and the consultant(s) at a cost not to exceed \$500,000 for each phase.

Phase 2 is anticipated to be completed in a maximum of 12 months from the date of notice to proceed at a cost not to exceed \$500,000. The successful respondent in this Request for Proposal (RFP) process may, at MAG's discretion, also be retained to complete phase 3 of the project which is anticipated to be completed in a maximum of 12 additional months from the notice to proceed at a cost not to exceed \$500,000. The date of the notice to proceed for phase 2 is anticipated to be in March of 2011.

**Proposal Delivery**

1. Twelve (12) copies of the proposal must be submitted by 2:00 PM Mountain Standard Time on January 13, 2011, to:

Maricopa Association of Governments  
Attention: Vladimir Livshits  
302 North 1st Avenue, Suite 300  
Phoenix, Arizona 85003

Timely receipt of proposals will be determined by the date and time the proposal is received at the above address. Hand delivery is therefore encouraged. No late submissions, facsimile, or electronic submissions will be accepted.

Proposals will be opened publicly and the name of each entity submitting a proposal will be read at 2:05 PM Mountain Standard Time on January 13, 2011, at the MAG Offices, Palo Verde, 302 North 1st Avenue, Suite 200, Phoenix, Arizona 85003.

All material submitted in response to this solicitation becomes the property of MAG and will not be returned. After contract award, the proposals shall be open for public inspection except to the extent that the withholding of information is permitted or required by law. If the offeror designates a portion of its proposal as confidential, it shall isolate and identify in writing the confidential portions in accordance with Arizona Administrative Code R2-7-103; which shall be included in the proposal. Upon receipt of your written notification, MAG will review any portions of the proposal that the proposer considers to be confidential and then make a determination on what should be released. MAG will also notify you in writing of our determination and provide you with an opportunity to respond to our decision prior to releasing the proposal.

2. Any questions regarding this Request for Proposals should be submitted in writing to Vladimir Livshits by fax at (602) 254-6490; or by email at [vlivshits@azmag.gov](mailto:vlivshits@azmag.gov). Responses to questions submitted will be posted on the MAG Web site at [www.azmag.gov](http://www.azmag.gov). Additional information regarding MAG activities, including Committee meeting schedules, may be found on the MAG Web site at [www.azmag.gov](http://www.azmag.gov).
3. A proposer's conference for the project has been scheduled for 2:00 PM Mountain Standard Time on January 5, 2011, at the MAG Office, Ocotillo Room, Suite 200, 302 North 1st Avenue, Phoenix, Arizona. If you wish to receive notes from the proposer's conference and a list of attendees, please contact the MAG project manager.

**Proposal Content**

It is required that the proposal:

1. Be limited to a maximum length of 80 pages, including a cover letter, résumés, and any appendices. The cover letter must be signed by a party authorized to bind the entity submitting the proposal.
2. Be prefaced by a brief statement describing the proposer's organization and outlining its approach to completing the work required by this solicitation. This statement shall illustrate the proposer's overall understanding of the project.
3. Contain a work plan which concisely explains how the consultant will carry out the objectives of the project. In the work plan, the proposer shall describe each project task and proposed approach to the task as clearly and thoroughly as possible.
4. Include a preliminary schedule for the project in bar-chart format. Indicate all work plan tasks and their durations. The schedule shall clearly identify project deliverable dates.
5. Contain a staffing plan for the project. The plan shall include the following in table format:
  - a. A project organization chart, identifying the project manager.
  - b. Names of key project team members and/or subconsultants. Only those personnel who will be working directly on the project should be cited.
  - c. The role and responsibility of each team member.
  - d. Percent effort (time) of each team member for the contract period.
  - e. The role and level of MAG technical staff support, if any.
6. Include résumés for major staff members assigned to the project. These résumés should focus on their experience in this type of project.
7. Each firm submitting a proposal is required to certify that it will comply with, in all respects, the rules of professional conduct set forth in A.C.R.R. R4-30-301 (see Appendix A), which is the official compilation of the Rules of Professional Conduct from the Administrative Rules and Regulations for the State of Arizona.
8. Include proposer's recent experience (last five years) in performing work similar to that anticipated herein. This description shall include the following:
  - a. Date of project.
  - b. Name and address of client organization.
  - c. Name and telephone number of individual in the client organization who is familiar with the project.
  - d. Short description of project.
  - e. Consultant team members involved and their roles.
9. A labor cost allocation budget formatted as noted in Appendix B.
10. All firms proposing on this project will be required to include a "Proposer's Registration Form" (See Appendix C) in the submitted proposal. In addition, a "Proposer's Registration Form" is required to be included for each subcontractor proposed for this project.

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11. The Disadvantaged Business Enterprise (DBE) requirements in the Code of Federal Regulations Title 49, Part 26 will apply to this Contract. See Appendix D, "MAG's Key DBE Regulatory Requirements". A complete copy of MAG's DBE program is available on request.
12. Each firm shall document within its proposal any potential conflicts of interest. A conflict of interest shall be cause for disqualifying a consultant from consideration. A potential conflict of interest includes, but is not limited to:
  - a. Accepting an assignment where duty to the client would conflict with the consultant's personal interest, or interest of another client.
  - b. Performing work for a client or having an interest which conflicts with this contract.
  - c. Employing personnel who worked for MAG or one of its member agencies within the past three years.
  - d. All relationships with MAG and / or any employees of MAG.

MAG will be the final determining body as to whether a conflict of interest exists.

**PROPOSAL EVALUATION AND SELECTION PROCESS**

1. All proposals will be evaluated by an evaluation team consisting of MAG staff and MAG member agency staff. Evaluation criteria include the following:
  - a. Demonstrated understanding of the project through a well-defined work plan consistent with program objectives.
  - b. Clarity of proposal, realistic approach, technical soundness, and enhancements to elements outlined in this Request for Proposals.
  - c. Experience of the project manager and other project personnel in similar studies. Only those personnel assigned to work directly on the project should be cited.
  - d. Proven track record in this area of study. Proposers should identify the principal people who worked on past projects and the amount of time they devoted to the work effort.
  - e. Availability of key personnel throughout the project effort.
  - f. Price, except for the procurement of architectural or engineering (A&E) services.
  - g. Ability and commitment to complete the project within the specified time period, meet all deadlines for submitting associated work products, and ensure quality control.
  - h. Recognition of work priorities and flexibility to deal with change and contingencies.
2. On the basis of the above evaluation criteria, selected firms submitting proposals may be interviewed prior to the selection of a consultant. It is anticipated that firms selected for interviews will be contacted approximately one week prior to the in-person interview date. MAG strongly suggests that the project manager and key members of the consultant team be present at the in-person interview.
3. MAG may conduct discussions with offerors who submit proposals determined to be reasonably susceptible of being selected for award.
4. MAG reserves the right to:
  - a. Cancel this solicitation.
  - b. Reject any and all proposals and re-advertise.
  - c. Select the proposal(s) that, in its judgment, will best meet its needs.
  - d. Negotiate a contract that covers selected parts of a proposal, or a contract that will be interrupted for a period or terminated for lack of funds.

**ADMINISTRATIVE REQUIREMENTS**

1. This Request for Proposals is for a cost-reimbursement plus fixed fee contract.
2. During the course of the project, a monthly progress report is required to be submitted within ten (10) working days after the end of each month until the final report is submitted. Each report shall include a comprehensive narrative of the activities performed during the month, an estimated percent complete for each project task, monthly and cumulative costs by task, activities of any subcontractors, payments to any subcontractors, a discussion of any notable issues or problems being addressed, and a discussion of anticipated activities for the next month (See Appendix E for format).
3. MAG shall retain ten percent (10%) of the contract amount, withheld from each invoice, as final payment until completion of the project to the satisfaction and acceptance of the work. Final payment shall be made after acceptance of the final product and invoice.
4. An audit examination of the consultant's records may be required.
5. The firm that is selected will be required to comply with Titles VI and VII of the Civil Rights Act of 1964. The contractor will comply with Executive Order 11246, entitled Equal Employment Opportunity, as amended by Executive Order 11375 and as supplemented in Department of Labor Regulations (41 CFR Part 60). The contractor will comply with MAG's Disadvantaged Business Enterprise (DBE) program as supplemented in the U.S. Department of Transportation Regulation (USDOT), 49 CFR Part 26. The contractor will also be required to comply with all applicable laws and regulations of the U.S. Department of Transportation.
6. The firm selected will be required to comply with MAG insurance requirements, which may include: Workmen's Compensation, Architects and Engineers Professional Liability insurance, Commercial General Liability insurance, Business Automobile Liability insurance, and Valuable Papers insurance.
7. The firm selected is required to document any potential conflicts of interest during the contract period. A conflict of interest shall be cause for terminating a contract. A potential conflict of interest includes, but is not limited to:
  - a. Accepting an assignment where duty to the client would conflict with the consultant's personal interest, or interest of another client.
  - b. Performing work for a client or having an interest which conflicts with this contract.
  - c. Employing personnel who worked for MAG or one of its member agencies within the past three years.

MAG will be the final determining body as to whether a conflict of interest exists.

## **APPENDIX A**

### **ARIZONA ADMINISTRATIVE CODE R4-30-301**

**ARTICLE 3. REGULATORY PROVISIONS**

R4-30-301. Rules of Professional Conduct

All registrants shall comply with the following rules of professional conduct:

1. A registrant shall not submit any materially false statements or fail to disclose any material facts requested in connection with an application for registration or certification, or in response to a subpoena.
2. A registrant shall not engage in fraud, deceit, misrepresentation or concealment of material facts in advertising, soliciting, or providing professional services to members of the public.
3. A registrant shall not commit bribery of a public servant as proscribed in A.R.S. § 13-2602, commit commercial bribery as proscribed in A.R.S. § 13-2605, or violate any federal statute concerning bribery.
4. A registrant shall comply with state, municipal, and county laws, codes, ordinances, and regulations pertaining to the registrant's area of practice.
5. A registrant shall not violate any state or federal criminal statute involving dishonesty, fraud, misrepresentation, embezzlement, theft, forgery, perjury, bribery, or breach of fiduciary duty, if the violation is reasonably related to the registrant's area of practice.
6. A registrant shall apply the technical knowledge and skill that would be applied by other qualified registrants who practice the same profession in the same area and at the same time.
7. A registrant shall not accept an engagement if the duty to a client or the public would conflict with the registrant's personal interest or the interest of another client without making a full written disclosure of all material facts of the conflict to each person who might be related to or affected by the engagement.
8. A registrant shall not accept compensation for services related to the same engagement from more than one party without making a full written disclosure of all material facts to all parties and obtaining the express written consent of all parties involved.
9. A registrant shall make full disclosure to all parties concerning:
  - a. Any transaction involving payments to any person for the purpose of securing a contract, assignment, or engagement, except payments for actual and substantial technical assistance in preparing the proposal; or
  - b. Any monetary, financial, or beneficial interest the registrant holds in a contracting firm or other entity providing goods or services, other than the registrant's professional services, to a project or engagement.
10. A registrant shall not solicit, receive, or accept compensation from material, equipment, or other product or services suppliers for specifying or endorsing their products, goods or services to any client or other person without full written disclosure to all parties.
11. If a registrant's professional judgment is overruled or not adhered to under circumstances where a serious threat to the public health, safety, or welfare may result, the registrant shall immediately notify the responsible party, appropriate building official, or agency, and the Board of the specific nature of the public threat.

12. If called upon or employed as an arbitrator to interpret contracts, to judge contract performance, or to perform any other arbitration duties, the registrant shall render decisions impartially and without bias to any party.
13. To the extent applicable to the professional engagement, a registrant shall conduct a land survey engagement in accordance with the April 12, 2001 Arizona Professional Lands Surveyors Association (APLS) Arizona Boundary Survey Minimum Standards, as adopted by the Board on June 15, 2001, the provisions of which are incorporated in this subsection by reference and on file with the Office of the Secretary of State. This incorporation by reference does not include any later amendments or editions and is available at the Board's office and APLS at [www.aia.org](http://www.aia.org).
14. A registrant shall comply with any subpoena issued by the Board or its designated administrative law judge.
15. A registrant shall update the registrant's address and telephone number of record with the Board within 30 days of the date of any change.
16. A registrant shall not sign, stamp, or seal any professional documents not prepared by the registrant or a bona fide employee of the registrant.
17. Except as provided in subsections (18) and (19), a registrant shall not accept any professional engagement or assignment outside the registrant's professional registration category unless:
  - a. The registrant is qualified by education, technical knowledge, or experience to perform the work; and
  - b. The work is exempt under A.R.S. § 32-143.
18. A registered professional engineer may accept professional engagements or assignments in branches of engineering other than that branch in which the registrant has demonstrated proficiency by registration but only if the registrant has the education, technical knowledge, or experience to perform such engagements or assignments.
19. Except as otherwise provided by law, a registrant may act as the prime professional for a given project and select collaborating professionals; however, the registrant shall perform only those professional services for which the registrant is qualified by registration to perform and shall seal and sign only the work prepared by the registrant or by the registrant's bona fide employee.
20. A registrant who is designated as a responsible registrant shall be responsible for the firm or corporation. The Board may impose disciplinary action on the responsible registrant for any violation of Board statutes or rules that is committed by a non-registrant employee, firm, or corporation.
21. A registrant shall not enter into a contract for expert witness services on a contingency fee basis or any other arrangement in a disputed matter where the registrant's fee is directly related to the outcome of the dispute.

Amended by final rulemaking at 12 A.A.R. 1609, effective July 1, 2006 (Supp. 06-2).

## **APPENDIX B**

### **LABOR COST ALLOCATION BUDGET**

LABOR COST ALLOCATION BUDGET - SAMPLE

Available in Excel on request

PRIME CONSULTANT		Hours by Personnel and Task Description							
Personnel	Raw Direct Hourly Rate	Task 1 (Task Description)	Task 2 (Task Description)	Task 3 (Task Description)	Task 4 (Task Description)	Total Hours	Total Cost		
Personnel 1	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 2	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 3	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 4	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 5	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 6	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 7	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 8	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 9	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 10	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 11	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 12	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 13	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 14	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 15	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 16	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 17	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 18	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 19	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Personnel 20	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Total Task Hours		0.00	0.00	0.00	0.00	0.00			
Total Task Cost		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
Overhead (or Fringe) Rate (Audited Rate)	1.2500	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
Total Labor with Overhead		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
Fee (10% max rate)	10%	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
<b>Total Labor With Overhead and Fee</b>		\$ -	\$ -	\$ -	\$ -		\$ -		
PRIME CONSULTANT		Directly Reimbursable Expenses							
Reimbursable Expenses		Task 1	Task 2	Task 3	Task 4	Total	Total Cost		
Postage		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
Copying/Printing		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
Travel		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
Local Travel		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
PI Meeting Materials		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
Focus Group Incentives		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
Display Boards		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
Miscellaneous		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
Other (Description)		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
<b>Total Prime Reimbursable Expenses</b>		\$ -	\$ -	\$ -	\$ -		\$ -		
SUBCONSULTANTS		Task Hours							
Personnel	Loaded Hourly Rate	Task 1 (Task Description)	Task 2 (Task Description)	Task 3 (Task Description)	Task 4 (Task Description)	Total Hours	Total Cost		
Subconsultant 1	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Subconsultant 2	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Subconsultant 3	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Subconsultant 4	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
Subconsultant 5	\$0.0000	0.00	0.00	0.00	0.00	0.00	\$0.00		
<b>Total Task Hours</b>		0.00	0.00	0.00	0.00	0.00			
<b>Total Subconsultant Costs</b>		\$ -	\$ -	\$ -	\$ -		\$ -		
TOTAL COST SUMMARY		Task 1 (Task Description)	Task 2 (Task Description)	Task 3 (Task Description)	Task 4 (Task Description)	Total	Total Cost		
<b>Total Labor With Overhead and Fee</b>		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
<b>Total Prime Reimbursable Expenses</b>		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
<b>Total Subconsultant Costs</b>		\$0.00	\$0.00	\$0.00	\$0.00		\$0.00		
<b>GRAND TOTAL</b>		\$ -	\$ -	\$ -	\$ -		\$ -		

## **APPENDIX C**

### **PROPOSER'S REGISTRATION FORM**

**PROPOSER'S REGISTRATION FORM**

All firms proposing as prime contractors or subcontractors on Maricopa Association of Governments (MAG) projects are required to be registered. **Please complete this form and return it with your proposal.**

If you have any questions about this registration form, please call the MAG Fiscal Services Manager, (602) 254-6300.

1. GENERAL INFORMATION:

Name of Firm: \_\_\_\_\_  
 Street Address: \_\_\_\_\_  
 City, State, ZIP \_\_\_\_\_  
 Mailing Address: \_\_\_\_\_  
 City, State, ZIP \_\_\_\_\_  
 Telephone Number \_\_\_\_\_  
 Fax Number: \_\_\_\_\_  
 E-mail address: \_\_\_\_\_  
 Web address: \_\_\_\_\_  
 Year firm was established \_\_\_\_\_

Check all that apply:

Is this firm a prime consultant?  \_\_\_\_\_  
 Is this firm a sub-consultant?  \_\_\_\_\_ Identify specialty: \_\_\_\_\_  
 Is this firm a certified DBE?  \_\_\_\_\_ If so, by whom? \_\_\_\_\_  
 Is this firm currently debarred?  \_\_\_\_\_  
 Is this firm currently the subject of debarment proceeding? \_\_\_\_\_

2. FINANCIAL INFORMATION

Firm's annual gross receipts (average of last 3 years):

\_\_\_\_\_ <\$300,000  
 \_\_\_\_\_ \$300,000 - \$599,999  
 \_\_\_\_\_ \$600,000 - \$999,999  
 \_\_\_\_\_ \$1,000,000 - \$4,999,999  
 \_\_\_\_\_ >\$5,000,000

Information will be maintained as confidential to the extent allowed by federal and state law. The undersigned swears that the above information is correct. Any material misrepresentation may be grounds for terminating any contract which may be awarded and initiating action under federal and state laws concerning false statements.

\_\_\_\_\_  
Name, Title

\_\_\_\_\_  
Date

## **APPENDIX D**

### **MAG'S KEY DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM REQUIREMENTS FOR CONSULTANT CONTRACTS**

## **MAG'S KEY DISADVANTAGED BUSINESS ENTERPRISE (DBE) PROGRAM REQUIREMENTS FOR CONSULTANT CONTRACTS**

**The Disadvantaged Business Enterprise (DBE) requirements in the Code of Federal Regulations Title 49, Part 26 will apply to this contract.** A complete copy of MAG's DBE Program is available by request to MAG's DBE Liaison Officer, at 602/254-6300.

The Consultant will agree to ensure that DBEs, as defined in 49 CFR 26, have the maximum opportunity to participate in the performance of contracts and subcontracts financed in whole or in part with Federal funds provided under this agreement.

### **DBE Participation and Reporting:**

Only DBE firms that are certified by Arizona Unified Certification Program (AZUCP) are eligible to be used for this contract. A list of DBE firms certified by AZUCP is available on the internet at [www.azdbe.org](http://www.azdbe.org). The list will indicate contact information and specialty for each DBE firm, and may be sorted in a variety of ways. However, MAG does not guarantee the accuracy and/or completeness of this information, nor does MAG represent that any licenses or registrations are appropriate for the work to be done.

The Consultant will be required to report monthly on: (1) the utilization of any subcontractors, and (2) any payments made to subcontractors (DBEs and non-DBEs).

### **Requirement for Proposal:**

All firms proposing on this project will be required to include a completed "Proposer's Registration Form" (See Appendix D) with their proposal. In addition, a completed Proposer's Registration Form must be included with the proposal for any subcontractors used on this project.

### **General Requirements for Proposals and Contract:**

All proposers will be required to include the following information in their proposal and contract:

1. A clear and concise description of the work that each DBE will perform
2. The dollar amount of the participation of each DBE firm participating
3. Written documentation of the proposer's commitment to use a DBE subcontractor(s) whose participation it submits to meet a contract goal
4. If the contract goal is not met, evidence of good faith efforts to meet the goal

### **Contractor and Subcontractor Assurance:**

MAG will incorporate into each contract it signs with a Prime Contractor, and require in each subcontract (that a Prime Contractor signs with a Subcontractor), the following assurance:

"The Contractor, Subrecipient or Subcontractor shall not discriminate on the basis of race, color, national origin, or sex in the performance of this contract. The contractor shall carry out applicable requirements of 49 CFR 26 in the award and administration of USDOT-assisted contracts. Failure by the contractor to carry out these requirements is a material breach of this contract, which may result in the termination of this contract or such other remedy as MAG deems appropriate."

### **Prompt Payment Provision:**

"The Prime Contractor will pay Subcontractors for satisfactory performance of contracts no later than fourteen (14) calendar days from the date that the Prime Contractor receives payment from MAG. The Prime Contractor will also return retainage payments to the Subcontractor within fourteen (14) calendar days from the date of satisfactory completion of work."

### **Prime Contractors must:**

1. Provide the Subcontractor with the name, address and phone number of the person to whom all invoices/billings and statements must be sent.
2. Pay Subcontractors and suppliers within fourteen (14) days of receipt of payment from MAG.
3. Stipulate the reason(s) in writing to the Subcontractor or supplier and to MAG for not abiding by the prompt payment provision. Possible reasons include:
  - a. Failure to provide all required documentation
  - b. Unsatisfactory job performance
  - c. Disputed work
  - d. Failure to comply with other material provisions of the contract
  - e. Third-party claims filed or reasonable evidence that a claim will be filed

- f. Reasonable evidence that the contract cannot be completed for the unpaid balance of the contract sum or a reasonable amount for retainage.

**Subcontractors must:**

1. Submit invoices or billing statements to the Prime Contractor's designated contact person in an appropriate format and in a timely manner. The format and the timing of billing statements must be specified in the contract(s) between the Prime Contractor and the Subcontractor(s).
2. Notify MAG in writing of any potential violation of the prompt payment provision.

**MAG will implement appropriate mechanisms to ensure compliance with the requirements of all program participants.** The mechanisms MAG may use include, but are not limited to:

1. MAG will notify Subcontractors (DBE and Non-DBEs) of the Prime Contractor's responsibility for prompt payment and encourage Subcontractors to notify MAG in writing with any possible violations to the prompt payment mechanism.
2. Withholding payment from Prime Contractors who do not comply with the prompt payment provision noted above, where it has been determined by the MAG DBELO that delay of payment to the Subcontractor is not justified.
3. Stopping work on the contract until compliance issues are resolved.
4. Terminating the contract.

**MAG will verify that the work committed to DBEs, at the time of the contract award, is actually performed by DBEs.** This will be accomplished by:

1. Requiring Prime Contractors to report Subcontractor(s) (DBE and Non-DBEs) work performed in each monthly progress report along with an indication of the number of hours worked, any costs incurred and the amounts paid to the DBE(s).
2. Ensuring that DBE participation is credited toward the overall goal or contract goal(s) only when payments **are actually made** to DBE firms.

## **APPENDIX E**

### **PROGRESS REPORT FORMAT**

**(Progress Report Format - SAMPLE)**

(Consultant's Letterhead)  
April 15, 2000

(MAG Project Manager)  
Maricopa Association of Governments  
302 North First Avenue, Suite 300  
Phoenix, Arizona 85003

Re: Progress Report No. 3 and Invoice for the Period of March 2000

*For Each Task, the consultant is to provide the percent of work completed to date, a narrative describing the work accomplished, data obtained, problems encountered, meetings held and reports and/or data produced. It is the responsibility of the consultant to document that the work accomplished for each task during the reporting period is commensurate with the amount of money billed for the task in the invoice.*

*The narrative describing the work accomplished should be of sufficient detail to enable the Project manager to clearly understand the progress on the task during the reporting period. Wherever possible, the consultant should submit along with the progress report appropriate documentation of work accomplished, such as partial or complete draft technical reports or working papers, etc.*

**TASK 1 - DATA COLLECTION**

Percent of Work Completed: 100 percent.

Work Accomplished: A database in both hard copy and electronic format was developed and a methodology for keeping the database current was established.

Data Obtained: Information on the transportation facilities was secured for each of the facilities in the study area. The data included, but was not limited to: name, location, and current and historical traffic levels.

Meetings Held: The following meetings were held in connection with the data collection effort:

March 15, 2000, with the MAG project manager to review data collected for the facilities.

March 21, 2000, with the Advisory Committee to obtain input on the data collection process.

March 23, 2000, with MAG staff to review comments on preliminary database.

March 25, 2000, with the public and special interest groups to obtain input on the distribution of the database.

Reports or Data Produced: A database in electronic format was produced and provided to MAG staff on March 29, 2000.

**TASK 2 - INVENTORY**

Percent of Work Completed: 100 percent.

Work Accomplished: A facilities inventory was completed, and the data obtained in Task 1 were compiled into a Draft Inventory Technical Report for distribution to the Advisory Committee.

Data Obtained: See Task 1.

Meetings Held: The following meetings were held:

March 1, 2000, met with MAG staff to finalize the outline for the Inventory Technical Report.

March 10, 2000, met with the MAG project manager to obtain suggestions on methods for comparing facility information.

Reports or Data Produced: A draft Inventory Technical Report was produced and distributed to members of the Advisory Committee for review and comment.

### **TASK 3 - FORECASTS**

Percent of Work Completed: 100 percent.

Work Accomplished: Forecasts of travel demand on inventoried facilities were prepared for 2000, 2010 and 2020. The forecasts were consistent with County control totals reviewed by the Advisory Committee last month. The forecasts included a breakdown by facility type.

Data Obtained: See Task 1.

Meetings Held: March 21, 2000, met with MAG staff to discuss comments on preliminary forecast results.

Reports or Data Produced: A draft forecasts report was produced and distributed to members of the Advisory Committee for review and comment.

### **TASK 4 - DEMAND/CAPACITY ANALYSIS AND FACILITY REQUIREMENTS**

Percent of Work Completed: 60 percent.

Work Accomplished: An hourly capacity was computed for each of the inventoried facilities using the federal guidance provided by MAG staff.

Data Obtained: See Task 1.

Meetings Held: A meeting was held on March 25, 2000 to discuss the differences between the capacity calculations for this study versus previous studies.

Reports or Data Produced: None. However, a draft set of capacity estimates is enclosed documenting the assumptions and data input used to prepare the estimates.

### **TASK 5- ALTERNATIVES**

Percent of Work Completed: 25 percent.

Work Accomplished: Other regional plans were examined to determine the type of alternatives that were used to meet future demand.

Data Obtained: Regional plans from San Diego, Los Angeles, Denver, Seattle Tucson and Chicago were collected.

Meetings Held: On March 18, 2000, a meeting was held with planners for the Pima Association of Governments to discuss alternatives.

Reports or Data Produced: None.

### **TASK 6 - EVALUATION OF ALTERNATIVES**

Work on this task has not begun.

### **TASK 7 - RECOMMENDATIONS**

Work on this task has not begun.

### **TASK 8 - IMPLEMENTATION**

Work on this task has not begun.

Problems Encountered

Some of the capacity calculations prepared for the study were different from the capacity calculations used in previous studies. These differences were discussed and resolved at a meeting held with MAG staff on March 25, 2000.

Invoice: The enclosed invoice is for the third progress payment of \$17,679.20. The total amount billed to date is \$48,250.00.

Sincerely,

Project Manager Name  
Project Manager Title

Enclosure