

**Missouri Department of Transportation**  
*David B. Nichols, Director*

573.751.2551  
Fax: 573.751.6555  
1.888.ASK MODOT (275.6636)

November 5, 2013

Dear Research Partner:

The Missouri Highways and Transportation Commission requests proposals from qualified organizations—namely private consultants, universities, and research organizations—to furnish professional engineering services as described in the following request for proposal to be coordinated by the Research Unit of the Construction and Materials Division.

Please submit a proposal for project TR201414 entitled, “Evaluation of Resistivity Meters for Concrete Quality Assurance.” Your submittal must include a work plan, the proposed project team and its background, and any related projects now active or recently completed by your organization. The project team must be led by a licensed professional engineer in the state of Missouri and the final report must be sealed, in accordance with the provisions of Chapter 327 RSMo.

The selection committee will use Qualification Based Selection. A “not to exceed” budget amount is included in the RFP to assist with the required scope, but budgets are not to be included with the proposal submissions, and will not be presented to the selection committee.

Please deliver all proposals to my attention in the Research Unit of the Construction and Materials Division as indicated the RFP document by **December 5, 2013**. Electronic submittals are preferred. More information about project contracting in general can be found at: [www.modot.mo.gov/services/OR/orRFP.htm](http://www.modot.mo.gov/services/OR/orRFP.htm).

Sincerely,



Bill Stone  
Research Administrator



Request For Proposals (RFP)  
**Project Specific Requirements:**

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This document contains information and requirements for only this RFP. A “Standard Requirements” document contains additional needs for all research proposals and contracting. Submitters should review both this document and the Standard Requirements document, available from the Construction and Materials Contract Administrator (identified at the end of this document) or:

[www.modot.org/services/OR/orTemplates.htm](http://www.modot.org/services/OR/orTemplates.htm)

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# TR201414

## *Evaluation of Resistivity Meters for Concrete Quality Assurance*

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**Background:**

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As MoDOT moves to performance based specifications, testing permeability of concrete accurately and timely is becoming more important. Ideally, MoDOT would like to specify the permeability and strength requirements of concrete and leave it up to the contractor to develop the mix design. Currently MoDOT determines permeability using the Rapid Chloride Permeability test (AASHTO T277) but it is a laboratory test that would not be practical for field verification. MoDOT would like to explore the use of surface resistivity meters, and its potential for quality assurance.

**Objectives:**

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The objectives of this project are:

- Compare the results from surface resistivity meters and AASHTO T277 utilizing MoDOT mix designs. These mix designs will be provided by MoDOT for the study.
- Develop criteria for acceptance of concrete using a surface resistivity meter with values acceptable for a pavement, bridge decks and substructure elements.
- Develop protocols for using surface resistivity meters as a quality assurance method, and

- Develop a procedure for field use and a short training course for MoDOT inspectors. The research team would not be responsible for providing the training to all inspectors but would be required to train a select group of Construction and Materials staff.

### **Project Requirements and Deliverables:**

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Task descriptions are intended to provide guidance in development of the research. MoDOT is seeking the input of proposers to determine the best strategies to accomplish the research objectives.

Task 1: Literature search on the different resistivity meters and current state of practice using resistivity meters.

Task 2: Develop a list of resistivity meters to test.

Task 3: Do a statistical comparison between the results from the resistivity meter and AASHTTO T277.

Task 4: Develop a final report, procedure for field use and a training course. The final report should include results from the literature search, testing procedure and recommendations for implementation.

Task 5: Develop specifications to be added to Missouri Standard Specifications for Highway Construction and policy information for MoDOT's Engineering Policy Guide (EPG).

<http://epg.modot.org>

**Quarterly Reports:** Quarterly reports should be submitted throughout the project on the last day of March, June, September and December. The quarterly reports are not intended to replace any additional correspondence between the research team and MoDOT needed to keep the project moving.

**Interim Presentation:** An Interim presentation shall be scheduled near the mid-point of the project to update MoDOT on the progress and the direction of the project. This is in addition to the necessary communication between the Principal Investigator(s) and MoDOT contacts throughout the project. The purpose of the interim presentation is to evaluate the progress and determine if any mid-project corrections are necessary.

**Draft Research Report, Procedure for Field Use, and Training Protocol:** A draft of the research report and training course is due to MoDOT 5 weeks prior to the final report and training submission.

**Final Report, Procedure for Field Use, and Training Protocol:** The final report and training protocol will be due approximately one month before the end of the contract. This is to allow all billing to be completed prior to the end of the project.

### **Project Schedule:**

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The following is an estimate of the project timeline or information on key dates within the project, presuming the project starts by January 1, 2014. Proposals need to include a work plan with a proposed timeline. While alternative timelines will be considered, an extension is unlikely. The project timeline will be finalized during the contracting phase.

**January 13, 2014:** A kick off meeting with MoDOT will be scheduled to discuss project requirements and deliverables.

**March 31, 2014:** Quarterly report due

**June 30, 2014:** Quarterly report due.

**July 14, 2014:** Interim Presentation must be done by this date.

**September 31, 2014:** Quarterly report due.

**December 31, 2014:** Quarterly report due.

**January 12, 2015:** Draft Final Report, Procedure for Field Use, and Training Protocol Due. A technical presentation may be requested.

**February 16, 2015:** Final Report, Procedure for Field Use and Training Protocol due.

**March 31, 2015:** Final Invoice due.

(For report templates and a standard form see:  
[www.modot.org/services/OR/orTemplates.htm](http://www.modot.org/services/OR/orTemplates.htm))

### **Special Notes:**

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Project budget is not to exceed \$100,000. A budget is not to be included in the proposal, but will be required for the contract and must be within this limit.

Reporting templates and standard report forms are available from the Construction and Materials Contract Administrator or the web site:  
[www.modot.org/services/OR/orTemplates.htm](http://www.modot.org/services/OR/orTemplates.htm)

### **RFP Requirements:**

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- Proposals must be no more than 10 pages with a font size no less than 11 points. This length limit does not include forms or resumes attached to the proposal.

- The “Standard Requirements” document provides further details and links to the required forms. It is available from the Construction and Materials Contract Administrator or at: [www.modot.org/services/OR/orTemplates.htm](http://www.modot.org/services/OR/orTemplates.htm)
- Proposals will be evaluated by an agency and stakeholder team with knowledge and backgrounds in relevant areas for this project. Selection of the successful proposer will be based on the proposer’s demonstrated knowledge in the required areas, the merit of the proposed methods and approach in achieving the desired goals, the experience and qualifications of the team, the plan for ensuring implementation of results, and the adequacy and availability of team members to complete the work in a timely manner.

#### **RFP Schedule:**

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The following timeline must be met for a proposal to be accepted.

| <b>Date:</b>      | <b>Action:</b>   |
|-------------------|--|
| November 5, 2013  | MoDOT posts RFP to the website:<br><a href="http://www.modot.mo.gov/services/OR/orRFP.htm">www.modot.mo.gov/services/OR/orRFP.htm</a>                            |
| November 19, 2013 | Written comments or questions must be submitted to Construction and Materials Contract Administrator.  |
| November 26, 2013 | MoDOT will post written responses publicly on the website:<br><a href="http://www.modot.mo.gov/services/OR/orRFP.htm">www.modot.mo.gov/services/OR/orRFP.htm</a> |
| December 5, 2013  | Written proposals must be submitted to Construction and Materials Contract Administrator.  |
| December 23, 2013 | MoDOT will notify submitters about project selection, or if needed, about interviews to finalize selection.  |

#### **Contracting Requirements:**

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- The successful team will be required to complete additional documentation and enter into a contract such as a “Standard Research Agreement” or “Task Order.” Applicants should be aware of these additional needs so contracting can proceed in a timely manner.
- Standard contracts, forms, attachment templates and additional information are available from the Construction and Materials Contract Administrator or the web site:  
[www.modot.org/services/OR/orTemplates.htm](http://www.modot.org/services/OR/orTemplates.htm)

### Contact Information:

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Proposals must be either hand delivered by close of business; or faxed, emailed, or mailed by midnight (Central Standard Time) according to time stamp or postmark; on the due date indicated below. Please reference the project title since more than one RFP may be due at one time. **Electronic proposals are preferred.** They may be faxed or emailed to the Construction and Materials Research Administrator:

[William.Stone@modot.mo.gov](mailto:William.Stone@modot.mo.gov)

Fax: 573-522-8416

Proposal packages suitable for duplicating may be submitted by mail or hand delivery to:

Construction and Materials—Research Administrator

Missouri Department of Transportation

1617 Missouri Blvd

PO Box 270

Jefferson City, MO 65109