MoDOT

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Missouri Department of Transportation
David B. Nichols, Director

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September 22, 2014

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 TR201509 entitled, "Evaluation of Erosion Control Blanket Properties and Test Criteria." 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 **October 17, 2014.** Questions regarding the RFP may be sent to Andy Hanks at andrew.hanks@modot.mo.gov or 573-526-4325. More information about project contracting in general can be found at: www.modot.mo.gov/services/OR/orRFP.htm.

Sincerely,

Bill Stone

Bill Stone
Research Administrator

Request For Proposals (RFP)
Project Specific Requirements:

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

TR201509
Evaluation of Erosion Control Blanket Properties and Test Criteria

Background:

MoDOT has traditionally allowed the use of Erosion Control Blankets (ECB) that have passed testing by Texas A&M's Texas Transportation Institute Lab (TTI) however, vendors of successful erosion control products are deterred from this testing due to the rising costs to not only be tested but to remain on the TTI's approved list. In addition these high testing costs, a long waiting list to be tested at TTI has limited MoDOT's options for ECB. Plus, the tests performed at TTI are non-standard and so large scale that most labs could not replicate them. For this reason MoDOT currently allows any reasonable ECB product to be used on its jobsites. MoDOT has created a guide called the Storm Water Pollution Prevention Plan (SWPPP) to help determine if an erosion control blanket is appropriate along with other erosion control measures. Even with the SWPPP, determining which ECB is appropriate is difficult since there are such a wide variety of available products. This has led to ECB failures which resulted in both environmental impacts and increased project costs for remediation, re-grading, and additional seeding. If one of these products fails to perform then it can be rejected from future use. This rejection process can be difficult as there are rain events powerful enough in areas with poor soil conditions where even good ECB will fail.

MoDOT needs a specification that lists properties from standard tests that can be economically accomplished at independent labs. These properties need to be relevant for soil retention and the germination of vegetation while lasting long enough to make it through a construction season but will degrade beyond that period to prevent it from becoming a

maintenance issue during future mowing operations. The acceptable ranges of these properties should be tailored to the most typical Missouri soils. A matrix tool to determine appropriate ECB based on project soil conditions and slope and other factors would be beneficial. MoDOT also recognizes the importance of performance criteria which would be beneficial for grading ECBs at the end of the project to determine if they should not be allowed on future MoDOT construction jobs.

Objectives:

The objectives of this project are:

- Develop specifications for ECB's for properties that are most necessary for their successful use on MoDOT projects from standard tests that can be economically accomplished at independent labs.
- Develop a guide, tool, or matrix to help select appropriate ECB options on MoDOT projects.
- Develop performance criteria and protocols for determining ECB failures that warrant prohibiting their future use on MoDOT projects and a proper means of documentation to record this failure.
- Develop a short training course for construction inspectors and possibly contractors to teach how to determine appropriate ECB and determine and document ECB failures.
    - Researchers are not expected to teach this course, but developing course material and training MoDOT personnel and potentially Missouri Local Technical Assistance Program (LTAP http://mltrc.mst.edu/moltaphome/aboutus/nltapprogram/) staff on this course material will be expected.

Project Requirements and Deliverables:

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 of erosion control requirements and regulations set by the Environmental Protection Agency (EPA) and Missouri Department of Natural Resources (MoDNR), existing ECB standard tests, current standards and specifications for approval of ECB, and common surface soil types for Missouri construction projects.

Task 2: Develop a list of various standard tests, various ECBs with a proven history of success, and common Missouri construction soil types.

Task 3: Test various product samples in labs and/or in the field to determine their effectiveness and measureable properties.

Task 4: Based on rules and regulations set by the EPA and MoDNR, develop a draft ECB specification for appropriate product approval, a draft ECB selection matrix tool for various common Missouri soil types and slopes, and draft performance measures for consistent success and failure documentation of ECB's along with recommendations for what warrants removal from the approved products list.

Task 4: Use draft performance measures to document the success of various ECB's used on a MoDOT construction site as a proof of concept and compare results to properties listed in draft ECB specification.

Task 5: Develop a short course including materials such as a PowerPoint presentation and/or a booklet which can be utilized by MoDOT staff and LTAP staff to teach the basics learned from this project such as proper ECB selection, installation considerations, and failure assessment.

Task 6: Develop a final report. The final report should include results from the literature search, standard testing procedures, performance measures, and justification for set limits.

Task 7: Develop specifications to be added to Missouri Standard Specifications for Highway Construction and policy information for MoDOT's Engineering Policy Guide (EPG) including but not limited to an ECB matrix tool and ECB performance measures. 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: A draft of the research report and training course is due to MoDOT 1 month prior to the final report.

Final Report, Specification, Matrix Tool, and Performance Measures: The final report, specification, matrix tool, and performance measures 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:

The following is an estimate of the project timeline or information on key dates within the project, presuming the project starts by December 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.

December 8, 2014: A kick off meeting with MoDOT will be scheduled to discuss project requirements and deliverables.

December 31, 2014: Quarterly report due

March 31, 2015: Quarterly report due.

June 30, 2015: Quarterly report due.

July 31, 2015: Interim Presentation must be done by this date.

September 31, 2015: Quarterly report due.

December 31, 2015: Draft Final Report, Draft Specifications, Draft Matrix Tool, and Draft Performance Measures Due. A technical presentation may be requested.

January 31, 2016: Final Report, Specification, Matrix Tool, and Performance Measures due.

February 28, 2016: Final Invoice due.

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

Special Notes:

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.

Based on the results of this project it is possible to have future phases of this research project for development of tests, specifications, and failure criteria of various other erosion control devices and practices.

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

RFP Requirements:

- 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

- 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:

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

Date:	**Action:**
September 22, 2014	MoDOT posts RFP to the website: www.modot.mo.gov/services/OR/orRFP.htm
October 3, 2014	Written comments or questions must be submitted to Andrew Hanks at andrew.hanks@modot.mo.gov or 573-526-4325
October 10, 2014	MoDOT will post written responses publicly on the website: www.modot.mo.gov/services/OR/orRFP.htm
October 17, 2014	Written proposals must be submitted to Construction and Materials Contract Administrator.
October 31, 2014	MoDOT will notify submitters about project selection, or if needed, about interviews to finalize selection.

Contracting Requirements:

- 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

Contact Information:

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
Fax: 573-526-0558

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