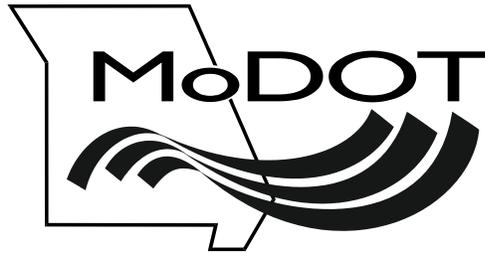


Missouri
Department
of Transportation



Kevin Keith, Interim Director

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August 2, 2010

Dear Research Partner:

The Missouri Highways and Transportation Commission requests proposals from qualified organizations—namely private consultants, universities, and research organizations—to furnish services as described in the following attachment, to be coordinated by the Organizational Results (OR) unit.

Please submit a proposal for project TRyy1102 entitled, “Optimizing Winter/Snow Removal Operations in MoDOT St. Louis District –Includes Outcome Based Evaluation of Operations”. 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 firm.

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 the OR Contract Administrator indicated in the attachment by September 1, 2010. More information about project contracting in general can be found at: www.modot.mo.gov/services/OR/orRFP.htm

Sincerely,

Mara Campbell
Organizational Results Director

Attachment

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 OR Contract Administrator (identified at the end of this document) or:

www.modot.org/services/OR/orTemplates.htm

TRyy1102
Optimizing Winter/Snow Removal Operations in MoDOT St. Louis District –Includes Outcome Based Evaluation of Operations

Project duration: 1 year

Project budget: Not to exceed \$ 75,000.

Background:

The Missouri Department of Transportation (MoDOT) wishes to obtain an outcome based optimization plan for Winter Event/Snow route optimization and evaluation specifically tailored for the MoDOT St. Louis District. It shall include a routing plan and additionally investigate optimum use of materials and equipment. The routing plan must take into account time cycles to clean large freeway interchanges. The plan should also develop performance measures to evaluate the effectiveness of the proposed route optimization of winter operations. Additionally, as important as a routing plan, it should investigate optimum usage of materials and equipment. Recommendations of the plan should be put into effect in the 2010-2011 winter season and evaluated as thoroughly as possible.

Objectives:

Winter road maintenance planning decisions are typically the most intensive operation in the DOT maintenance system. The objective of this project is to develop an optimization-based decision support system to address fleet management issues associated with typical DOT maintenance system operations. The optimization plan should also develop performance measures to evaluate the effectiveness of the proposed route optimization and additionally investigate optimum usage of materials and equipment.

Project Requirements and Deliverables:

The optimization plan should provide the following:

1. A model of routing with fixed buildings; an existing building may be eliminated from snow removal but there are no funds to add any buildings. A list of maintenance building locations is available. However, materials stockpiles (salt, domes, tanks for chemicals, etc.) can be moved to and/or between any of MoDOT's fixed maintenance buildings. A map(s) of the plan will be required showing turn-around or end of cycle locations.
2. The urbanized atmosphere of traffic in the St. Louis District must be taken into account. Time cycles to clean large freeway interchanges, overpasses and ramps must be taken into account in any routing plan.
3. Many kinds of treatments can and are used for snow removal operations that could be optimized.
 - Snow melting materials - salt, chemicals, pre-treatments, pre-wetting, etc.
 - Salt application rates (lb/lane miles) – most effective cycle length for chemical optimization – at what time cycle will the road start to re-freeze with each different application rate
 - Recommendations for miles per truck for rural versus urban roadways
 - Reapplication rates, how often should material be reapplied before road starts to re-freeze
 - Different chemical combinations at rates for optimum use of chemicals (i.e. how much calcium should be applied to salt if prewetting with calcium?)
4. Look at the best utilization of personnel, for example: Look at crew "START times" prior to a storm (NOT shift times). Should crews be called in two hours or an hour before the storm is predicted to hit so the crews can "prep", or should we have crews show up at the exact time the storm is predicted to arrive and "prep" while snow is falling? Which method is optimum for operations and budget?
5. Utilization of different snow equipment, gang plows, belly plows, tow plows and etc. should be looked at for possible optimization. MoDOT Maintenance superintendants are continuously being asked by salesmen to try new devices. Advice on what is worth trying would be helpful to them.
6. How to use blades and what kinds of blades are best to use in the St. Louis District's situations. Are double carbide tipped blades worth the additional costs, should blades be doubled on plows, should anything be put between the blades? Are there different blade options that have produced optimum results?
7. The recommendations and efficiencies made in this study need to be proven for them to be implemented by the District. Therefore an implementation plan with specific performance measures needs to be provided also to test and verify the recommended changes. Outcome based parameters such as the number of miles a truck is driven vs. number of miles with the snow plow down or is spreading salt.

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.

A final report with the Winter Optimization Plan for the St. Louis District is required, with all recommendations and discussion and a separate

- Evaluation Report of Routing Plan (Including map(s) with turn-arounds.)
- Performance Measures to be used to track key operations of the overall Optimization Plan.

Specific Requirements: The following are requirements of the Optimization for Winter Operations in MoDOT St. Louis District –Includes Outcome Based Evaluation of Operations

- a) It is important that this project gets underway quickly so that the researcher can observe how the winter snow and ice operations are presently being performed during the 2010-2011 winter season.
- b) After a routing plan or other efficiency is developed it should be put in place this winter season so it can be initially evaluated.
- c) An implementation plan with specific performance measures needs to be provided also to test and verify the recommended changes on an ongoing basis.

Project Schedule:

The following is an estimate of the project timeline or information on key dates within the project, presuming the project starts October 7, 2010. 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.

Monthly: E-mail and phone communications with MoDOT contacts are required to provide on-going updates of progress.

Last working day of each quarter: Quarterly updates on work accomplished during the quarter are due on or before the last working day of any March, June, September, and December during the course of the project.

December 1, 2010: A routing plan or partial routing plan will be presented so that it can be implemented and evaluated during the 2010-2011 snow removal season. Recommendations on material application rates, combinations, etc. for implementation and evaluation made this season along with blade recommendations for evaluation.

January 3, 2011: Update on any winter events on route(s) being evaluated along with other optimization measures will be presented.

February 1, 2010: Update on any winter events on route(s) being evaluated along with other optimization measures will be presented.

April 1, 2011: A presentation is required. The contractor will present the results, recommendations, and implementation ideas to MoDOT and other stakeholders on the just completed winter operations. Contractor will coordinate location, date, and meeting fees with MoDOT. For stakeholder and agency participants, any travel and lodging fees are to be covered by individual attendees or their firms. MoDOT and stakeholders will provide feedback to the contractor, especially related to implementation.

September 16, 2011: A draft final report is required. One or more revisions should be anticipated. A final report must have the standard documentation form completed and should have sections consistent with the typical research report. Performance measures will be included.

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

September 23, 2011: Review of drafts will be completed. The time between review and next due date is to allow for final changes and formatting.

September 30, 2011: A completed final report due. Additional time between this due date and the end of the contract is to complete any final corrections. Thus, it is important to complete the finals by this due date instead of by the end of the contract.

October 31, 2011: Final invoice is due.

October 31, 2011: Contract ends.

Special Notes:

Project budget is not to exceed \$ 75,000. 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 OR Contract Administrator or the web site: www.modot.org/services/OR/orTemplates.htm

RFP Requirements:

- Proposals must be no more than 12 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 OR 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:
August 2, 2010	MoDOT posts RFP to the website: www.modot.mo.gov/services/OR/orRFP.htm
August 12, 2010	Written comments or questions must be submitted to OR Contract Administrator.
August 23, 2010	MoDOT will post written responses publicly on the website: www.modot.mo.gov/services/OR/orRFP.htm
September 1, 2010	Written proposals must be submitted to OR Contract Administrator.
September 15, 2010	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 OR 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 encouraged. They may be faxed or emailed to the OR Contract Administrator:

Karmen.Stockman@modot.mo.gov

Fax: 573 526-4324

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

Organizational Results Contract Administrator

Missouri Department of Transportation

2217 St. Mary's Boulevard, West

PO Box 270

Jefferson City, MO 65109