



105 West Capitol Avenue
P.O. Box 270
Jefferson City, Missouri 65102

Missouri Department of Transportation
Patrick K. McKenna, Director

1.888.ASK MODOT (275.6636)

January 7, 2021

Dear Research Partner:

The Missouri Highways and Transportation Commission requests proposals from qualified organizations—namely private consultants, universities, and research organizations—to furnish professional 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 **TR202115** entitled, “**Effectiveness of Speed Management Methods in Work Zones.**” 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 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 submit all proposals to MoDOTResearchRFP@modot.mo.gov by **February 25, 2021 10:00 AM (CST)**. More information about project contracting in general can be found at <https://www.modot.org/information-researchers> under RFP documents.

Sincerely,

Jen Harper
Research Director



Our mission is to provide a world-class transportation system that is safe, innovative, reliable and dedicated to a prosperous Missouri.

www.modot.org

Background

With limited funding and a deteriorating transportation system, the Missouri Department of Transportation (MoDOT) is focusing more of its resources on preservation and maintenance. Because of this, more work is being done in traffic, meaning more possible conflicts between motorists and workers, as well as more possible delays for motorists. MoDOT is committed to providing safe and efficient movement of both motorized and non-motorized traffic through or around temporary traffic control work zones and providing protection for workers and equipment located within those work zones. MoDOT focuses its resources to emphasize roadway visibility and speed management in temporary traffic control work zones and traffic flow through those work zones. Speed management in work zones is a major factor for improving safety for workers and the traveling public. The department utilizes multiple tools for speed management in work zones including signage, speed trailers, red/blue lights for contractors, and law enforcement presence. The goal of this project is to examine the effectiveness of speed management tools and enforcement methods (passive and active) used in work zones to reduce the risk of work zone crashes.

Objectives

The objective of this project is to examine the most common strategies and techniques used to manage speeds in work zones. Evaluate the effectiveness of the speed management methods currently used by MoDOT along with investigating effective methods used by other DOT's by means of a literature search. The outcome of this project will help guide MoDOT in the improvement of safety and efficiency in work zones.

Researchers will evaluate speed management tools with the use of:

- Literature searches
- Simulator studies
- Observing driver behavior in live work zones

Speed management tools used in work zones to be evaluated for effectiveness and/or comparison study done include; but are not limited to:

- Use of speed trailers, with and without red/blue lights
- Effectiveness of speed trailers at night vs. day
- Effectiveness of red/blue lights on vehicles or equipment used by contractors
 - The use of red/blue lights in work zones shall follow all regulations. (RSMO 307.175, section 2c)
- Law enforcement presence in a work zone (passive enforcement and active)
- Law enforcement presence (passive enforcement and active) vs. speed trailers
- Effectiveness over time of speed trailers and law enforcement presence in a work zone over a two-week period
 - Note if reds/blues were used during this two-week period

- Note the difference in the amount of time each method is active, the amount of time active at the work zone should be equivalent for an acceptable comparison of speed trailers and law enforcement presence

Project Requirements

Task 1: Project Management

The research team will facilitate a kick-off meeting with MoDOT to review the work plan, scope and schedule; and establish a protocol for regular ongoing communications and coordination with the team. The contractor will also develop minutes for the kick-off meeting and any status meetings that may be held during the project.

The finalized work plan will detail implementation of the following tasks as well as the resources and schedule required to carry them out.

Task 2: Research and Literature Review

The researchers shall perform a literature search of past research on speed management techniques along with examining current effective methods used by other state DOT's in work zones.

MoDOT would also be interested in a literature review of any studies on the psychological reasons people speed in work zones.

Task 3: Evaluate Speed Management Methods

The research team will evaluate the effectiveness of speed management methods currently used by MoDOT.

- Speed management tools used in work zones to be evaluated for effectiveness and/or comparison study done include; but are not limited to: Use of speed trailers, with and without red/blue lights
- Effectiveness of speed trailers at night vs. day
- Effectiveness of red/blue lights on vehicles or equipment used by contractors
 - The use of red/blue lights in work zones shall follow all regulations. (RSMO 307.175, section 2c)
- Law enforcement presence in a work zone (passive enforcement and active)
- Law enforcement presence (passive enforcement and active) vs. speed trailers
- Effectiveness over time of speed trailers and law enforcement presence in a work zone over a two-week period
 - Note if reds/blues were used during this two-week period
 - Note the difference in the amount of time each method is active, the amount of time active at the work zone should be equivalent for an acceptable comparison of speed trailers and law enforcement presence

The evaluation process will involve task 3a and 3b.

- **Task 3a: Evaluate Speed Management Methods Using Simulators**

A work zone simulation will be used for evaluations of the effectiveness of speed management methods used in work zones. The intent of this task is to compare the different techniques. The research team should provide in their proposal the number of different management techniques they propose to examine through the simulator based on the scope of the project.

- **Task 3b: Evaluate Speed Management Methods by Observing Driver Behavior in Work Zones**

An evaluation will be done by observing driver behavior along with traffic speed impacts, on site at active work zones. The researchers must coordinate with MoDOT personnel on selecting appropriate work zones for evaluation. The intent of this task it to see if behavior changes as drivers become used to seeing the speed management devices in the same work zone over time. The research team should provide in their proposal the number of different work zones they plan to evaluate.

Task 4: Develop Draft Report and Research Summary

A draft final synthesis 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.

Task 5: Delivery of Final Report and Research Summary

A completed final synthesis report and summary are due. It is important to complete any corrections to the final report by this due date.

Project Deliverables

For templates and forms for reports and plans, visit <https://www.modot.org/information-researchers>.

Email Communications

E-mail and phone communications between the Principal Investigator(s) and MoDOT contacts as necessary are required to provide on-going updates of progress throughout the project

Data Management Plan

The plan is a formal document that describes the data that is acquired, created or produced during the project, specifies who owns it and who can access it as well as information on how it will be described, managed, analyzed, stored, shared and preserved during and after the project is over. Please refer to templates on the [website](#).

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. Please refer to template on the [website](#).

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. The purpose of the interim presentation is to evaluate the progress and determine if any mid-project corrections are necessary.

Draft Final Report and Research Summary

These drafts should be final products except for revisions based on MoDOT's review. A final report must include a completed Technical Report Documentation page. Please refer to **Publication Guidelines** and summary template on the [website](#).

Final Report and Final Research Summary

After MoDOT's review is complete and documents have been edited to MoDOT's satisfaction, final documents should be submitted as Word documents (unless otherwise instructed). Please refer to **Publication Guidelines** and summary template on the [website](#).

Final Presentation

May be required. The contractor will present the results, recommendations, and implementation ideas to MoDOT and other stakeholders. The 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.

Task-Specific Deliverables

Task	Deliverables
1	Facilitate a kick-off meeting Develop minutes for the kick-off meeting Finalized work plan
2	Perform a literature search
3	Evaluate the effectiveness of speed management methods Work zone simulation Observing driver behavior in active work zone
4	Draft final synthesis report and summary
5	Final synthesis report and summary

Project Schedule

The following is an estimate of the project timeline or information on key dates within the project, presuming the project starts **March 25, 2021**. Proposals need to include a work plan with a proposed timeline. For a sample of a work plan template, see link below. Changes to our estimated project timeline below will be considered, however, timeline extensions cannot be guaranteed. The project timeline will be discussed and finalized during the kickoff meeting.

For report templates and forms, visit <https://www.modot.org/information-researchers>.

Date	Milestone
4/1/2021	A kickoff meeting with MoDOT will be scheduled to discuss project requirements and deliverables. The dates of key milestones and deliverables will be determined from this meeting.
12/15/2021	Interim presentation must be done by this date.
7/25/2022	Draft final report, draft summary report, other deliverables are due. The draft documents shall be submitted to MoDOT approximately two months prior to the final report.
9/25/2022	Final report, summary report, presentations, other deliverables are due. The final documents shall 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.
10/25/2022	Final invoice due.
10/25/2022	Contract ends.

Special Notes

Project budget is not to exceed **\$200,000**. A budget is not to be included in the proposal, but will be required for the contract and must be within this limit. For a sample Budget template, report templates and forms, see <https://www.modot.org/information-researchers>.

RFP Requirements

- “Contracting Documents” provide further details and links to the required forms. They are available at <https://www.modot.org/information-researchers>.
 - **Organization’s Project Experience:** The proposal must clearly identify the Organization’s experience in offering the services requested in this RFP during the past three (3) years. The description should include a list of the agencies which your organization has served during this time period or currently serves. Please

highlight any work you have done with other state agencies or local governments.

- **Team Member Experience:** Please list all team members (including subcontractors) proposed to work on the project. Attach licenses, certifications and resumes for key personnel.
- **Organization's Client References:** Proposals should indicate the name, title, and telephone number of at least three clients within the past three years.
- Proposals must be no more than **10** pages in length with a font size no less than 11 points. This length limit **does not include** the Proposal Submission Form, Organization's Project Experience, Team Member Experience, Organization's Client References and optional cover letter (if included, one page maximum).
- Proposals must be submitted as one combined PDF document. The submission should **only include the required documents** organized in the following order: 1) Proposal Submission Form; 2) Cover Letter (Optional; 1 page maximum); 3) Body of Proposal (including work plan); 4) Organization's Project Experience; 5) Team Member Experience; and 6) Organization's Client References.
- The Offeror must respond to this RFP by submitting all the information required herein for its proposal to be evaluated and considered for award. Failure to submit all the required information shall be deemed sufficient cause for disqualification of a proposal from consideration.
- Proposals will be evaluated by an agency and stakeholder team with knowledge and backgrounds in relevant areas for this project. Selection of the successful Offeror will be based on the Offeror'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.
 - Correct proposal submission is one of the evaluation criteria. If submission instructions in this section are not followed, the **Offeror risks an automatic 10 point deduction (out of 100 total points)** when points are awarded during the Proposal Evaluation Process.

RFP Schedule

This document constitutes an RFP from qualified organizations to conduct the **TR202115 "Effectiveness of Speed Management Methods in Work Zones"** study for the MHTC and Missouri Department of Transportation (MoDOT). MHTC reserves the right to reject any and all proposals for any reason whatsoever.

The following RFP Schedule of Events represents MoDOT's best estimate of the schedule that shall be followed. The time of day for the following events shall be between 7:30 am and 4:00 pm, Central Standard Time unless otherwise noted. MoDOT reserves the right at its sole discretion to expand this schedule, as it deems necessary, without any notification except for the deadline date for submitting a proposal. Time is of the essence for responding to the RFP within the submission deadlines.

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

Date	Action
1/7/2021	MoDOT posts RFP to the website at https://www.modot.org/research-requests-proposal .
1/28/2021 4:00 PM (CST)	Written comments or questions must be submitted to MoDOTResearchRFP@modot.mo.gov .
2/11/2021	MoDOT will post written responses publicly on the website at https://www.modot.org/research-requests-proposal .
2/25/2021 10:00 AM (CST)	Written proposals must be submitted to MoDOTResearchRFP@modot.mo.gov .
3/11/2021	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.

As part of the eAgreements process, MoDOT uses an electronic signature tool, DocuSign, for signing agreements electronically. All parties of the agreement must agree to sign electronically in order to utilize the electronic signature option. If your proposal is selected, you will be informed about how to obtain your credentials for electronic signatures (including how to become a MoDOT vendor if you are not already).

Standard contracts, forms, attachment templates and additional information are available from the website at <https://www.modot.org/information-researchers>.

Proposal Submission

Submission Deadline

Proposals must be emailed by **10:00 AM (Central Standard Time)** according to email time stamp by the submission date in the RFP Schedule to the Research Director's attention (Jen Harper) at: MoDOTResearchRFP@modot.mo.gov. Please reference the project title since more than one RFP may be due at one time. Electronic proposals are required.

Submission Confirmation

You will receive an email confirmation after your proposal has been received. If you do not receive such a confirmation by **12noon (Central Standard Time)** on the day of the deadline,

please contact us at MoDOTResearchRFP@modot.mo.gov as soon as possible. Your submission should not be considered received until you have received your email confirmation.