

April 26, 2023

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 **TR202402** entitled, “**Striping Program**”. 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 **June 14, 2023 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



Background

There is a potential the 11th edition of the Manual on Uniform Traffic Control Devices (MUTCD), when released, will require all edgeline markings to be a minimum of 6" which will be an increase from the current 4" minimum. The Missouri Department of Transportation (MoDOT) applies pavement markings to all 33,500 miles of roadways, applying edgeline markings to any route with an AADT of 400 or greater, far exceeding the MUTCD requirements for pavement marking applications. While MoDOT already uses 6" markings on the 5,500 miles of major highways, increasing the width of edgelines on the 15,500 miles of two-lane roads, currently marked with 4" edgelines, will have a significant impact on MoDOT's striping program. With current staffing and equipment levels (16 striping crews statewide), MoDOT has a fixed capacity to apply approximately 1 million gallons of paint per year. Increasing the width of edgelines from 4" to 6" will increase material usage by 50%, requiring a minimum of one additional stop per day per striper to refill. The average time to refill a striper is 1 hour, reducing striping production by 8 miles per day. This loss of production is estimated to reduce the number of miles MoDOT can stripe during the annual striping season by approximately 12,000 miles. Given MoDOT's maximum capacity to apply pavement markings, and its difficulties to complete its striping program in a normal year, we will have no other choice but to reduce the number of miles striped by over 12,000, most likely eliminating the centerline marking on the 12,500 miles of low volume roadways. While MoDOT understands increasing edgeline width from 4" to 6" has been proven to increase safety, we need information to determine if this direction will have a positive net safety benefit to the State of Missouri, if at the same time we are eliminating centerline markings on our low volume roadways. Overall, we need information to help us determine what direction to take in response to the likely federal rule change that would result in no safety impact or a safety improvement.

With MoDOT's current striping fleet consisting of 16 striping crews, adding additional crews would allow MoDOT to sustain this change, but due to cost and lead time of equipment, along with staffing concerns (shortage), adding additional crews is not a feasible means to meet this requirement if implemented.

Objectives

The objective of this project is to synthesize the supporting research on the following questions:

We know there are safety benefits moving from 4" to 6" stripes for edgelines, but does the research indicate this safety benefit is the same for all AADTs or is the safety benefit related to the volume of traffic on a roadway?

Is there research that tells us the safety impact of removing, or adding, centerline markings MoDOT can use to evaluate the safety impact of not striping our low volume roads?

Are there crash modification factors to predict both above scenarios?

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 (at a minimum monthly)

Missouri Department of Transportation

Specific Requirements Page 2

*Research Unit - Construction and Materials Division
FY2024, RFP TR202402, Striping Program*

communications and coordination with the team. The Research Team will schedule and conduct quarterly project status meetings to review progress for the previous period and anticipated work for the next period. The Research Team will also develop minutes for the kick-off meeting and any other 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 to carry them out.

Task 2: Literature Search

The Research Team will conduct a literature search for research reports that validate 6" edgelines have a safety benefit and the consequences/benefits of centerline stripes.

Task 3: Presentation

The Research Team will compile findings from literature search and present findings to MoDOT along with the referenced reports.

Task 4: Draft Report and Draft Research Summary

The Research Team will develop and submit draft report and draft research summary for MoDOT's review.

Task 5: Final Report and Final Research Summary

The Research Team will submit final report and research summary.

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 a Word documents (unless otherwise instructed). Please refer to **Publication Guidelines** and summary template on the [website](#).

Other Deliverables

Examples include construction reports, interim reports, annual reports, maps, brochures, Include descriptions, criteria, and frequency.

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	Schedule and conduct kickoff meeting. Submit work plan. Kickoff meeting minutes.
2	None (literature search).
3	Present literature findings to MoDOT. Provide MoDOT copies of referenced reports.
4	Draft report, draft research summary.
5	Final report, final research summary.

Project Schedule

The following is an estimate of the project timeline or information on key dates within the project, presuming the project starts **August 2, 2023**. 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. If the Contractor believes the project can be completed sooner, please include a revised schedule with the proposal. 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
8/2/2023	A kick-off 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.
2/1/2024	Present finding of literature. Copies of referenced reports.
4/4/2024	Draft final report, draft summary report are due. The draft documents shall be submitted to MoDOT approximately two months prior to the final report.
6/6/2024	Final report, summary report 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.
7/3/2024	Final invoice due.
7/3/2024	Contract ends.

Special Notes

Project budget is not to exceed **\$125,000**. 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>.

All questions, information, data and/or manual requests regarding any aspect of the RFP details or process for submissions should be submitted to MoDOTResearchRFP@modot.mo.gov by the date and time listed in the "RFP Schedule" section of the RFP. This is the only acceptable method for contact regarding the RFP and contacting MoDOT employees via other methods is prohibited. Not adhering to this rule is cause for disqualification of the proposal.

RFP Requirements

- "Contracting Documents" provide further details and links to the required forms. They are available at <https://www.modot.org/information-researchers>.

- **Contractor’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.
- **Contractor’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, Contractor’s Project Experience, Team Member Experience, Contractor’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 and project schedule); 4) Contractor’s Project Experience; 5) Team Member Experience; and 6) Contractor’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 Contractor will be based on the Contractor’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 Contractor **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 **TR202402, Striping Program** 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 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
4/26/2023	MoDOT posts RFP to the website at https://www.modot.org/research-requests-proposal .
5/10/2023 4:00 PM (Central)	Written comments or questions must be submitted to MoDOTResearchRFP@modot.mo.gov . This is the only acceptable method for contact regarding the RFP and contacting MoDOT employees via other methods is prohibited. Not adhering to this rule is cause for disqualification of the proposal. This includes all requests for information, data, and manuals.
5/24/2023	MoDOT will post written responses publicly on the website at https://www.modot.org/research-requests-proposal .
6/14/2023 10:00 AM (Central)	Written proposals must be submitted to MoDOTResearchRFP@modot.mo.gov . Do not consider your proposal submitted until you receive notification of receipt. A notification should be sent by noon of the same day.
7/12/2023	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 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 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.