

Missouri Department of Transportation
Patrick K. McKenna, Director

1.888.ASK MODOT (275.6636)

October 8, 2020

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 **TR202109** entitled, “**Evaluating Sedimentation Impacts to Freshwater Mussels.**” 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 **November 16, 2020** by **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

Threatened and endangered (T&E) species considerations for Missouri Department of Transportation (MoDOT) and Federal Highway Administration (FHWA) federally funded projects include potential impacts to rare plants, animals, critical habitat, and natural communities (e.g., streams, caves, prairies, karst). Federal laws require FHWA and MoDOT to thoroughly address any potential impacts their projects might have on federally listed T&E species and eliminate or minimize those impacts. The state of Missouri also tracks the status of over 1,000 plant and animal species that are considered rare in the state. Of these, 64 are listed as state endangered (current as of the 2016 Missouri Species of Conservation Concern publication). The state Endangered Species Law and the Missouri Wildlife Code protect state listed species. MoDOT and FHWA projects in Missouri must also address potential impacts to state listed species.

In North America, over 70 percent of all freshwater mussel species are considered to be at risk, and in Missouri roughly half of our known species are of conservation concern. A variety of factors pose a risk to this fauna, including but not limited to damming, pollutants entering water bodies, industrial activities near habitats, water shortages, competition from other species, and so on. While some factors might be considered a primary focus over others, better understanding the habitat concerns and how water conditions from sedimentation, runoff, and other related activities near Missouri streams and rivers affect mussels is vital.

MoDOT, with support from the Missouri Department of Conservation (MDC) and the United States Fish and Wildlife Service (FWS), is undertaking this project to carefully examine impacts to freshwater mussel species in Missouri from sediment and minerals commonly found or disrupted during construction on MoDOT projects, and how to best mitigate those impacts.

Objectives

The objectives of this project are as follows:

- Evaluate the impact of silt, clay and other mineral elements, particularly those particle types associated with transportation-sector construction activities, to freshwater mussels and study the mechanisms for such impacts. The project will focus on acute sedimentation, as could occur during a construction project.
- Examine the effects of increased turbidity on mussel feeding and reproduction.
- Investigate how different types of soils and minerals affect freshwater mussels, including identifying important thresholds of impact for each.
- Evaluate new and existing approaches that could mitigate the impact of various sediments from construction activities to mussels.

Project Requirements

Task 1: Project Management

The Contractor will facilitate a kickoff meeting with MoDOT, MDC and FWS to review the work plan, scope, and schedule; and establish a protocol for regular ongoing communication and coordination with the team. This proposal will serve as the Draft Work Plan, to be discussed in the kickoff meeting. Upon comments received during the meeting and/or in writing, the Contractor will incorporate those comments into a Final Work Plan.

The Contractor will schedule and conduct a quarterly status meeting to review progress for the previous period and anticipated work for the next period. Contractor will also develop minutes for the kickoff meeting and each of the quarterly status meetings.

Task 2: Conduct Literature Review and Survey

The Contractor will begin a literature review to identify the different tribes of freshwater mussels, what Missouri species belong to each tribe, life history strategies of mussels, and any other relevant details or classifying traits that will help distinguish and aid in choosing the most acceptable model organisms in Task 3.

The Contractor will also perform a literature review of recently completed research related to mitigating sediment and turbidity impacts to freshwater mussels. Additionally, the review will look at new and emerging trends in impact mitigation and best management practices (BMPs). This review will aid in understanding potential issues or concerns experienced by other states along with additional concepts to consider during the subsequent tasks of this project.

A survey of State DOTs, Conservation and/or Natural Resources Departments will be conducted, with collaboration from the TAC, to understand standard procedures and BMPs undertaken in other parts of the country to minimize or eliminate impacts to freshwater mussels.

Task 3: Identification of Model Organisms

The Contractor, in collaboration with the Technical Advisory Committee (TAC), will identify the most appropriate mussel species for the study, based on the results found during Task 2 along with research animal availability and other considerations. The species chosen will make up the projects model organisms and will be observed in Task 4 and considered while identifying and evaluating impact mitigation practices during Task 5.

The Offerer's method(s) and suggestions for determining the most appropriate model organisms (i.e., by tribe classifications, life history stages or other method), in order to thoroughly evaluate sedimentation impacts to a diverse selection of freshwater mussel species found in Missouri, should be outlined and explained in the proposal.

It is expected that multiple species will be used in the research to adequately assess a range of relationships between freshwater mussels and sediments. The Offerer should indicate how many different mussel species they anticipate using in the proposal.

Task 4: Laboratory Analysis to Establish Impact Thresholds

The Contractor will explore the following topics, at a minimum, in a controlled laboratory environment:

- The minimum particle loading, indicated by turbidity levels, under which no apparent impacts to freshwater mussels can be observed.
- The differences, with respect to impact to freshwater mussels, among differing particle types, including, but not limited to the following:
 - Silt;
 - Clay (primary types, such as kaolinite, smectite and illite); and,
 - Common byproducts of construction activities (i.e., aggregate fines, etc.).

- Differences between suspended sediments and deposited sediments, with respect to the impact to freshwater mussels.
- Impact levels on various stages of life in freshwater mussels (i.e., juvenile, sub-adult and adult stages).

Please note, this research will specifically aim to evaluate the acute, episodic sediment that could result from construction projects.

The Offerer's considerations for other topics or areas of concern to be explored during this task, along with any other pertinent information related to the laboratory analysis, should be laid out and explained in the proposal.

Task 5: Evaluate Impact Mitigation Practices

The Contractor will evaluate current MoDOT freshwater mussel impact mitigation practices, along with those practices identified during Task 2 that would easily transfer to Missouri and MoDOT operations. Following the evaluation, the Contractor will present viable options, including those found to be endorsed or approved by FWS and MDC, for consideration along with highlighted recommendations for MoDOT to implement.

Methods for classifying, ranking or otherwise determining the most viable and effective options should be detailed in the Offerer's proposal.

Task 6: Develop Report, Research Summary, EPG Revisions and Presentation

The Contractor shall develop a final report detailing the tasks completed during the project, including any and all findings generated during the project's duration. The Contractor shall provide a 1-2 page research summary that states the project objectives, findings and conclusions. The Contractor shall also prepare updated language and the new calculations for entry into relevant sections of MoDOT's Engineering Policy Guide (EPG). A presentation for MoDOT and stakeholders, summarizing important or significant details of the project, will also be provided.

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](#).

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](#).

Final Presentation

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. Kickoff meeting minutes. Draft and final work plans. Quarterly project status meetings.
2	None (Literature Review will affect subsequent tasks, but results need only be conveyed in the Draft/Final Report).
3	Potential model organisms identified (from review performed during Task 2).
4	Laboratory results and observed impact thresholds.
5	None
6	Final report & research summary. Presentation. Final project meeting.

Project Schedule

The following is an estimate of the project timeline or information on key dates within the project, presuming the project starts **January 13, 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
On or before 1/13/2021	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.
3/31/2021	Quarterly Report
6/30/2021	Quarterly Report
9/30/2021	Quarterly Report
12/31/2021	Quarterly Report
3/31/2022	Quarterly Report
6/30/2022	Quarterly Report

Date	Milestone
9/30/2022	Quarterly Report
12/30/2022	Quarterly Report
3/31/2021	Quarterly Report
6/30/2023	Quarterly Report
9/29/2023	Quarterly Report
12/29/2023	Quarterly Report
1/5/2024	Draft report and draft research summary are due. The draft documents shall be submitted to MoDOT approximately two months prior to the final report.
3/8/2024	Final report and final research summary 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. If determined necessary by MoDOT, a final presentation may also be due at this time.
4/8/2024	Final invoice due and contract ends.

Special Notes

Project budget is not to exceed **\$400,000**. 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 TR202109 Evaluating Sedimentation Impacts to Freshwater Mussels 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
10/8/2020	MoDOT posts RFP to the website at https://www.modot.org/research-requests-proposal .
10/26/2020 4:00 PM (CST)	Written comments or questions must be submitted to MoDOTResearchRFP@modot.mo.gov .
11/2/2020	MoDOT will post written responses publicly on the website at https://www.modot.org/research-requests-proposal .
11/16/2020 10:00 AM (CST)	Written proposals must be submitted to MoDOTResearchRFP@modot.mo.gov .
12/1/2020	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 **12:00 PM [noon] (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.