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Missouri Department of Transportation  
*Patrick K. McKenna, Director*

1.888.ASK MODOT (275.6636)

January 2, 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 **TR202016** entitled, “**Monitoring Landslide on Route 465 Near Branson.**” 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](mailto:MoDOTResearchRFP@modot.mo.gov) by **February 20, 2020 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](http://www.modot.org)

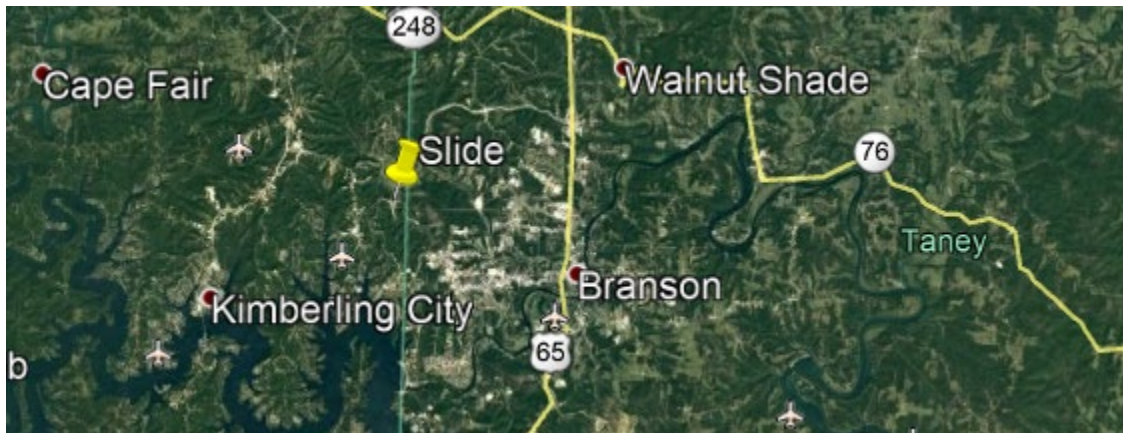
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## Background

Slope movements, including types of landslides and extremely slow soil creep occur throughout the United States and along many state highway systems. A landslide is defined as the movement of a mass of rock, debris, or earth down a slope. Landslides are a type of "mass wasting," which denotes any down-slope movement of soil and rock under the direct influence of gravity. A landslide can be caused by one or more of several factors, of which geological, morphological, physical, and human factors are the most common.

The collection of vital signs of regional landslide information, referred to as monitoring, is not only scientifically useful, but is beneficial for assessment of landslide hazards and risk, which is in turn important for highway operations and planning. Successful prediction of the risk and consequences of landslides depends on knowing the geometry of the slide surface and slip surfaces, as well as the material and hydrological properties. Early warnings against the instability and failures of slopes can help the Missouri Department of Transportation (MoDOT) effectively manage the potential mitigation of the landslide and maintenance of the effected highway.

Currently there is an active slow-moving landslide along Route 465 (Ozark Mountain Highroad), in Stone County near Branson, Missouri. The Contractor will monitor the movements of the landslide for a minimum period of 12 months by mapping the surface and subsurface. If proven effective MoDOT could deploy the selected methods of monitoring to specific "problem areas" around the state where similar situations may arise.



Slide location: West side of Route 465 – (Ozark Mountain Highroad) north of Route 76, Stone County, Missouri.

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## Objectives

The objective of this project is to monitor a slow-moving landslide on Route 465 near Branson, Missouri using remote sensing techniques. The landslide will be monitored for a minimum of 12 months. Valuable information will be gained from monitoring the movements of the slide combined with detailed surface mapping and subsurface profiles.

The results of this study will provide MoDOT with better understandings and methods to predict and lessen the effects of landslides around the state. Preliminary recommendations and guidelines will be established for use in other slope movements along Missouri's highway systems.

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## Project Requirements

### **Task 1: Project Management**

The contractor 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: Consult with MoDOT on Methods for Monitoring Landslide**

The contractor will consult with MoDOT on all proposed methods to be used for monitoring the active landslide on Route 465 near Branson, Missouri. All methods used will need to be approved by MoDOT.

### **Task 3: Identify Type and Physical Measurements of Landslide**

Data from the active landslide will be collected and recorded which includes but is not limited to:

- Background of the slide
- Site condition
- Type of slide
- Physical measurements of slide
- Geologic materials involved
- External factors that may affect accuracy or implementation of monitoring systems

Note: For any on-site task to be completed, MoDOT will provide traffic control if needed.

### **Task 4: Real-Time Monitoring of Active Landslide**

After approval of methods to be used and data collection, the movements will be monitored on the active landslide. Deliverables from this project will include but are not limited to:

- Measure and evaluate movements of the landslide
- Monitoring of the slides triggers and causes
- Correlation of weather and movement
- Assessment of hazards and risk
- Predicted long-term movements of the slide as well as potential impact to Route 465
- Create Preliminary guidelines for use on other sites

### **Task 5: Conduct Analysis of Methods Used to Monitor Landslide**

Conduct an economic analysis comparing all methods used based on:

- Accuracy
- Cost of systems

- User friendliness
- Maintenance of system
- Feasibility

## **Task 6: Delivery of Final Report, Research Summary and Guidelines for Use**

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### **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.

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## 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, 2020**. 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
4/8/2020	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.
3/25/2021	Interim presentation must be done by this date.
11/24/2021	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.
1/25/2022	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.
3/25/2022	Final invoice due.
3/25/2022	Contract ends.

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## Special Notes

Project budget is not to exceed **\$150,000**. 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>.

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## 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.

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## RFP Schedule

This document constitutes an RFP from qualified organizations to conduct the **TR202016 “Monitoring Landslide on Route 465 Near Branson”** 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
1/2/2020	MoDOT posts RFP to the website at <a href="https://www.modot.org/research-requests-proposal">https://www.modot.org/research-requests-proposal</a> .
1/23/2020 4:00 PM (CST)	Written comments or questions must be submitted to <a href="mailto:MoDOTResearchRFP@modot.mo.gov">MoDOTResearchRFP@modot.mo.gov</a> .
2/6/2020	MoDOT will post written responses publicly on the website at <a href="https://www.modot.org/research-requests-proposal">https://www.modot.org/research-requests-proposal</a> .
2/20/2020 10:00 AM (CST)	Written proposals must be submitted to <a href="mailto:MoDOTResearchRFP@modot.mo.gov">MoDOTResearchRFP@modot.mo.gov</a> .
3/5/2020	MoDOT will notify submitters about project selection, or if needed about interviews to finalize selection.

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## 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>.

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## 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](mailto: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](mailto:MoDOTResearchRFP@modot.mo.gov) as soon as possible. Your submission should not be considered received until you have received your email confirmation.