



**IDAHO TRANSPORTATION DEPARTMENT – DIVISION OF HIGHWAYS
GEOTECHNICAL ASSET MANAGEMENT FOR ROCK SLOPES AND ROCKFALL RISK ASSESSMENT RESEARCH PROJECT
REQUEST FOR PROPOSAL**

GENERAL INFORMATION, SUBMISSION OF PROPOSAL, EVALUATIONS, AND AWARD

SECTION 1 - GENERAL INFORMATION

1.1 Purpose

The Idaho Transportation Department (ITD), is seeking the services of qualified industry experienced researchers for a statewide geotechnical assessment of rock slopes throughout Idaho’s highway system. Researchers will develop a standardized system to rate rock slopes, assess stability and characterize rockfall risk. In addition, this research project will develop a geodatabase that can be integrated with existing ITD data systems and will assist in slope management, generate custom reports and maps, provide a means to track events, show the location and relative risk of characterized slopes, and record proposed and implemented mitigation strategies. As part of the study, researchers will be expected deliver a report with the rockfall risk assessment methodology as well as training resources for use of the methodology, maintaining the database, and for report and map generation.

1.2 Background

Idaho’s current rockfall management efforts vary among ITD Districts in the state and rely on subjective input like individual experience and institutional knowledge. The lack of standardization leads to challenges with risk assessment, project prioritization, and reactionary project implementation rather than mitigation planning and application of preventive measures. To improve safety and to more efficiently implement mitigation projects, research is needed to develop and execute a standardized system to manage rock slopes, assess risks associated with rock fall hazards, and to establish a clear means of documenting and communicating the locations of hazards along Idaho’s highway network.

1.3 Funding

The use of SPR funds must comply with 23 CFR 420.121(j)

SECTION 2 – SCOPE OF WORK AND DELIVERABLES

2.1 Goal

The desired outcomes of this project are three-fold. First, to enhance safety on Idaho’s highways through the development of a standardized system to rate slope stability and rockfall risk. Second, prioritize slope stabilization projects through a consistent evaluation of the slopes and development of a database for streamlined production of custom reports and GIS mapping. Lastly, implement research by providing and testing a training program on the slope rating system, data entry and management, and production of reports and maps.

More specifically, the goals of the research project are to: 1) develop standardized system to manage rock slope assets, rate slopes, and assess individual rock slope stability risks based on current research, best practices, and industry needs, 2) conduct a geotechnical assessment and inventory rock slopes to assess stability, identify critical areas, and characterize rockfall risk on Idaho’s Interstates, United States Highways and State Highways, 3) develop and populate an updatable geodatabase to store rock slope inventory information with the ability to produce reports and custom maps,

4) provide planning-level slope stabilization recommendations, and 5) provide ITD staff with training and training materials to support future maintenance and use of the rock slope asset management system and database by ITD staff.

2.2 Tasks

A list of tasks is detailed below. In addition to the tasks that follow, researchers and ITD project manager are expected to maintain regular contact as needed. Consistent communication is required to make certain that tasks can be effectively accomplished in accordance with the project timeline, and to ensure that issues or setbacks can be promptly addressed if they arise.

Task 1: Project Kick Off Meeting

Host and conduct a meeting at start of project with ITD Project Manager (PM), Technical Advisory Committee (TAC), and Research Program staff to discuss:

- a) Project tasks and deliverables
- b) Project schedules and timelines
- c) Data and information needs
- d) Data management plan
- e) Staff responsibilities and assignments (as applicable)
- f) Proposed schedule for project meetings
- g) Communication plan and expectations

Task 2: Literature Review

Perform a literature review and provide a summary of best practices for rock slope asset management, stability, risk assessment and characterization. The review should include a survey of rating systems used by leading states and should evaluate the state of practice in comparison to ITD. The literature review summary should be presented to the project team when it is completed and will comprise a chapter in the final report.

Task 3: Compile Data and Review Current ITD Rating Systems

Gather existing rock fall data, rock slope inventory, hazard ratings, and mitigation projects in Idaho from ITD and other sources. Review and assess ITD's current rockfall hazard rating methods and criteria. Identify challenges and improvement opportunities in ITD's existing data and rock slope hazard rating systems.

Task 4: Develop and Refine Standardized Rock Slope Asset Management Assessment System

Use the results of Task 3 to define and validate a modernized approach for rating rock slopes in Idaho that can be uniformly applied throughout the state by multi-disciplinary staff in all ITD District Offices. This should include development of a standard methodology for collecting and recording rock slope stability and risk rating criteria.

The outcomes of Tasks 3 and 4 will be presented in an in-person or virtual meeting with the TAC and Research Program staff. The ITD project team will provide feedback to ensure results are comprehensive and adequate, and the consultant will incorporate any feedback for subsequent analysis, if necessary.

Task 5: Develop Centralized Digital Rock Slope Geodatabase

Create a geotechnical asset management (GAM) database system to store and assist with analysis of rock slope assessments and generate custom maps and reports. The database will be compatible with existing ITD data and asset management systems to allow for regular updating as new rockfall and assessment data becomes available. This will require coordination with 1) ITD GIS staff to ensure format and data storage is compatible with ITD's [iPLAN system](#), and 2) ITD Geotechnical Staff to ensure all necessary data fields are included and that the system can be used to identify priorities for mitigation.

Task 6: Conduct Slope Assessments

A major component of this study is for the researchers to conduct field assessments of rock slopes along ITD-managed highways using the hazard rating system developed through this research. ITD is responsible for approximately 5,000 centerline miles of Interstate, federal, and state highways. Rock slopes and rock fall potential are associated with as much as 1,940 centerline miles of the system, and researchers will be expected to perform field assessments and hazard ratings for a substantial portion of these rock slopes, including all high priority areas and corridors. Documented rockfall locations and callouts are displayed in the ArcGIS online web application at the following link:

<https://iplan.maps.arcgis.com/home/webmap/viewer.html?webmap=331fdb90bf3a4d2ebe5e22f6c13261cf>. Please note that the data displayed in the map at this link will be updated between posting of this RFP and mid-January, so it is advised that interested proposers revisit the link periodically.

Prior to conducting the field assessments, researchers will develop a field data collection plan. The plan should prioritize rock slopes and corridors for assessment using input from ITD staff and should consider such elements as potential impacts to public safety, local commerce, freight mobility, and criticality of the current slope conditions, among other factors. Researchers will incorporate data gathered from the field assessments and hazard ratings into the database developed in Task 5.

Task 7: Develop Training Materials and Provide Training to ITD Staff

Develop guidance/training materials to assist ITD geotechnical staff and consultants in performing future field assessments of rock slopes and applying the hazard rating system developed through this research. Select a minimum of one on-site assessment per District with ITD District and statewide staff to provide training on use of the updated rating system and data collection techniques.

In addition, develop training materials for use and maintenance of the GAM database, including data management strategy, method overview and step-by-step instructions. Deliver training to potential end-users. Researchers will refine the training materials using feedback from training participants.

Task 8: Develop Implementation and Mitigation Strategy

Use outcomes of Tasks 2-7 to provide recommendations for future data collection and identify mitigation opportunities for critical slopes and high-priority corridors.

Task 9: Prepare and Present Final Report

The consultant will prepare and present a written report that must be reviewed by a qualified peer reviewer. The final report will be developed and written by the consultant team with input and guidance from the ITD PM. The final report will cover all aspects of the project and will summarize information and data found in reports and products created during the preceding project tasks. The information summarized in the report will be presented to the project team after the consultant has provided an initial draft of the final report, allowing at least two weeks for review of the draft. The final report document will incorporate feedback and address any concerns identified by ITD during initial review of the draft report. The final report must also follow [ITD Style Manual for Research Reports](#) and formatting requirements as described in deliverables listed below. The Style Manual and Research Report Template can be downloaded from the [ITD Research Program website](#) by selecting the “Resources for Researchers” section from the menu.

The results of this report will be presented in an in-person or virtual meeting with the project team and Research Program staff. The project team will provide feedback to ensure analysis is comprehensive and adequate, and the consultant will incorporate any feedback for subsequent analysis, if necessary.

2.3 Deliverables

The following deliverables are required for this project:

Deliverable 1: The Contractor must initiate a project kick-off meeting, via video or teleconference, with ITD’s PM within ten (10) business days after contract award date and provide meeting minutes within seven (7) days following the kick-off meeting.

Deliverable 2: The Contractor must provide working papers and technical documents documenting the research performed, methods used, and the resulting findings for Tasks 2-8 outlined in Section 2.2 above.

Deliverable 3: The Contractor must host and conduct monthly project status meetings with ITD’s PM via video or teleconference. These meetings are designed to cover the progress of all working papers or technical documents being written. Meeting minutes must be taken and supplied to the ITD PM within seven (7) days after the meeting.

Deliverable 4: The Contractor must provide ITD’s PM with monthly project summary reports, using the ITD Form 0771: <https://apps.itd.idaho.gov/Apps/FormFinder2DMZ/>.

Deliverable 5: The Contractor must meet with ITD PM before drafting and presenting the final report, to discuss project findings, conclusions, and recommendations. Meeting minutes must be taken and supplied to the ITD PM within seven (7) days after the meeting.

Deliverable 6: The Contractor must produce and deliver a draft and final rock slope asset management risk assessment and slope rating system, with a dataset generated through an analysis of all slopes on the highway network statewide, to the extent practicable, and draft and final ArcGIS compatible geodatabase.

Deliverable 7: The Contractor must develop training program materials and deliver training promote standardization of future slope assessments and integration with centralized database. Trainings will 1) instruct ITD staff to conduct slope assessment and rating using the updated hazard rating system, and 2) guide use and maintenance of the database to store data, perform analysis, and generate custom reports and maps

Deliverable 7: The Contractor must provide a final report that includes a summary of the literature review and slope management best practices, slope risk assessment criteria, and a prioritized list of statewide slopes and their risk for rockfall, including recommendations for mitigation projects and strategies.

Report shall be developed using ITD’s Research Report Template and must be consistent with ITD’s Research Program Report Process and Style Guide available in the Resources for Research section found at: <https://itd.idaho.gov//alt-programs/?target=research-program&target=research-program> . The Contractor must host and conduct a presentation, via video or teleconference, with ITD’s Project Manager (PM) to discuss the final findings and recommendations.

- a) Draft final report – A written report is required for each ITD-supported research project. The draft report must be prepared using ITD’s Research Report template. The style guide and template are available in the “Resources for Researchers” section of the Research program website.
- b) Final report – The final report should be professionally done and comparable in quality to a published journal article or dissertation. The report must be written to be understandable to both the technical staff involved in the project (e.g., engineers, planners) and other likely readers (e.g., department management, board members, legislators).

SECTION 3 – SUBMISSION RESPONSE

3.1 Submission Contact

Proposals must be submitted electronically to the following:

Name: Ned Parrish, Research Program Manager

Email: research@itd.idaho.gov

3.2 Submission Response Deadline

Contractor response must be submitted no later than **February 10, 2023 by 5:00 PM (MST)**. Submissions must be submitted to the Submission Contact listed above in order for your submission to be evaluated.

3.3 Inquiries

Questions regarding this request must be submitted to the Submission Contact listed above. Questions must be submitted no later than **January 13, 2023 by 5:00 PM (MST)**.

Responses to all questions will be compiled into one (1) list once the questions submission date has expired. Questions and responses will be posted on the Research Program webpage along with other solicitation information within ten (10) business days of the deadline for submitting questions.

3.4 Response Content

Response must be submitted as a PDF, not to exceed ten (10) pages (excluding resumes for proposed team members) and must be organized to include the following:

- 1 Cover Page - must Include the following information:
 - a) Project Title (Geotechnical Asset Management for Rock Slopes and Rockfall Risk Assessment)

- b) "Submitted by" section including name, institution, address, phone, fax #, and e-mail address
 - c) "Submitted to" section indicating the proposal is being submitted to the Idaho Transportation Department, Research Program
 - d) Proposal Date
- 2 Business Information - Provide a profile of your business, university department or research center, including business history, description of current service area, and customer base. Provide current contact information for a minimum of three (3) references from customers who have received the same or similar service for previous projects relating to similar work.
 - 3 Problem Statement - Concisely express your understanding of the problem(s) presented in this solicitation. Do not just restate language in the research request, but instead articulate your own understanding of, and insight into, the problem(s).
 - 4 Research Approach/Work Plan - Describe the work that will be performed to complete the tasks and deliverables. Include each of the tasks listed in **Section 2 – Scope of Work and Deliverables** and describe in detail how each task will be performed. Identify any additional tasks you feel are needed and explain any deviations from the tasks required by ITD. Identify any obstacles you see to achieving the objectives and how you would propose overcoming them.

The research plan should be complete and logically organized. It should clearly articulate the researcher’s approach to the problem and how the work done will contribute to accomplishment of the project tasks and deliverables. The response should include discussion of applicable principles and theories, the type and range of data needed, the data analysis methods to be employed, and how possible recommendations will be identified and develop
 - 5 Research History - Explain types of research performed, and provide samples if allowed and not confidential, with same or similar to the scope of this project. This may include previous publications as attachments or links to web-hosted documents.
 - 6 Project Management and Communications Approach - Describe project management strategy including steps that will be used to 1) monitor project schedule and budget, and 2) ensure that regular communication occurs with ITD’s PM throughout the project. Include your company’s escalation process, with points of contact, in the event ITD will need to escalate concerns during the contract.
 - 7 Schedule - Identify the estimated start and completion dates for the project, as well as the completion dates for each task and deliverable. Each proposal should include a Gantt chart depicting the schedule for completing each task and deliverable. The schedule must indicate the number of months allocated to each task and deliverable.

Be sure to build sufficient time into your time schedule to complete the work outlined in your proposal. It is very important to ITD’s Research Program that projects be completed on time. **No time extensions will be allowed unless mutually agreed upon by all parties in writing. The project must be complete within thirty-six (36) months from the award date of the contract; this includes the kick-off meeting.**

Example of a schedule below:

Task	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
1 Literature Review	■			■			■					
2 Field Survey		■	■	■								
3 Lab Study			■	■	■							
4 Develop Database						■	■					
5 Develop Recommendations						■	■					
6 Prepare Draft Final Report							■	■				
7 Peer Review of Draft Report								■				
8 Editorial Review of Draft Report								■				
9 Make Peer Review/Editorial Changes and Submit to ITD									■			
10 ITD Initial Review of Report Draft										■		
11 Revise Draft and Resubmit for Final Review											■	
12 Make Any Final Changes and Submit Final Report												■

- 8 Staffing - Include the following information:
- Identify all members of the proposed research team and describe their role in the project.
 - Explain how team members' past academic, professional, and research experience relate to the work they will perform.
 - Provide information about other commitments the principal investigator(s) and research team will have during the project. This information must be sufficiently detailed to allow assessment of the researchers' experience, projects completed, and ability to complete the work within the required time schedule.
 - Identify the individuals who will perform quality control work on the project, including:
 - An independent peer reviewer with sufficient expertise to assess the adequacy of the work performed and the conclusions reached by the project team, and
 - A report editor responsible for ensuring project reports are clearly and concisely written and are prepared in accordance with ITD Research Program guidelines.
 - Provide a detailed breakdown of each team member's involvement in each task and deliverable.

Example of a detailed breakdown below:

Name Of Person	Role in Study	Hourly Rate	Task (Hours)												Total
			1	2	3	4	5	6	7	8	9	10	11	12	
Researcher A	Principal Investigator	\$ 75.00	10	40		40	40	40			20	20	10	10	230
Researcher B	Co-Principal Investigator	\$ 60.00	10		40	40	40	40			20	20	10	10	230
Subcontractor A	Statistical Analysis	\$ 35.00	25	200		100	40	100			40	20	10	10	545
Subcontractor B	Role description	\$ 50.00	25		200	100	40	100			40	20	10	10	545
Peer Reviewer	Technical Review	\$ 50.00								40					40
Report Editor	Report Editing	\$ 25.00									40				40
Etc.	Role description	\$ 25.00	10						10						30
Total Hours			80	240	240	280	160	290	40	40	120	80	40	50	1660

- 9 Required ITD Involvement - Describe any assistance required from ITD, such as:
- Data collection
 - Access to ITD records or databases
- 10 Budget - Provide a quote of the costs for the work outlined in your proposal using the format provided in the table below. **The total cost for the project must not exceed \$500,000.** This is ITD's estimate of the level of funding necessary to complete the work. Contractor should set the scope and depth of the study accordingly.

Example of a quote:

	Hourly Rate	Benefit Percentage	Task Number												Total
			1	2	3	4	5	6	7	8	9	10	11	12	
Salaries and Benefits															
	Researcher A														
	Researcher B														
	Researcher C														
	Editor														
	Etc.														
	Total Salaries and Benefits:														
Other Costs															
	Flights														
	Parking														
	Rental Car														
	Rental Car Gas														
	Meals														
	Lodging														
	Lodging Tax														
	Subcontractor Expenses														
	Peer Review Costs														
	Materials and Supplies														
	Other Direct Expenses														
	Total Other Costs:														
	Total Direct Costs:														
Percent															
Overhead:	Applied to direct labor at:														
Fixed Fee:	Applied to overhead and director labor at:														
Total Budget:															

SECTION 4 – PROPOSAL REVIEW AND SELECTION

4.1 Response Evaluation

Proposals will be evaluated by ITD technical review team comprised of staff knowledgeable in the background and content of the project topic. Selection will be made in consideration of general criteria based on the vendor’s response to the Scope of Work and as follows:

- a) The expertise, and technical capabilities of team members to perform the proposed work, resources including any specialized services available to perform the work within the specified project timeline, and record of past performance, including references, quality of work, and contract administration
- b) The research approach and methodology detailed in the proposal to meet the project tasks and deliverables
- c) Proposed project management and communications approach
- d) Thorough budget and cost estimate that is within project budget constraint

Evaluation criteria will be weighted as shown below:

Evaluation Criteria	Weight
Experience and Qualifications	35%
Proposed Research Approach	35%
Project Management and Communications Strategy	10%
Budget and Cost Estimate	20%
Total	100%

The scores from the technical evaluation will be summed and the proposals will be ranked according their total scores. Technical reviewers are required to refrain from discussing proposals with other review team members prior to determination of final score. The contract will be awarded to the responsive and responsible proposer with the highest score.

Proposal review is expected to take approximately two weeks following the date of the submission deadline. The technical review team expects that proposers will be notified of selection for this project no later than **March 1, 2023**.

ITD reserves the right to reject any and all proposals submitted. It may negotiate with the proposer to address specific weaknesses in the proposal submitted.

SECTION 5 – AWARD

5.1 ITD Contract Award Agreements

The result of this request will be awarded as a Professional Service Agreement (PSA) if a private consultant is selected or as a Memorandum of Agreement (MOA) if the contract is awarded to a public university.

5.2 Term

The resulting Contract shall commence on the date of the final signature provided by the Submission Contact listed above. The anticipated term of this contract will be for thirty-six (36) months unless extended by mutual agreement between the parties or terminated earlier, in writing, in accordance with the PSA or MOA.

SECTION 6 – TERMS AND CONDITIONS

6.1 State of Idaho Standard Contract Terms and Conditions

For terms and conditions including insurance requirements, please see [State of Idaho Standard Contract Terms and Conditions](#). Any requested modifications to the Standard Contract Terms and Conditions should be identified in the proposal.

6.2 Insurance

Within 5 days of notification of award (or such other time as designated by the Purchasing Activity), the apparent successful Bidder or Offeror will provide certificates of insurance required herein and will maintain the insurance during the life of the Contract. There are no provisions for exceptions to this requirement. Failure to provide the certificates of

insurance within the five (5) business day period may be cause for your Bid or Proposal to be declared non-responsive or for your Contract to be cancelled. **(Attachment 1 – Insurance Requirements)**

6.3 Administrative Fees

Administrative fee detailed in [State of Idaho Standard Contract Terms and Conditions](#) does not apply under the resulting contract agreement.

Attachment 1 – Insurance Requirements

Within 5 days of notification of award (or such other time as designated by the Purchasing Activity), the apparent successful Bidder or Offeror will provide certificates of insurance required herein and will maintain the insurance during the life of the Contract. There are no provisions for exceptions to this requirement. Failure to provide the certificates of insurance within the 5 business day period may be cause for your Bid or Proposal to be declared non-responsive or for your Contract to be cancelled.

Contractor shall carry liability and property damage insurance that will protect it and the State of Idaho from claims for damages for bodily injury, including accidental death, as well as for claims for property damages, which may arise from operations under the Contract whether such operations be by themselves or by anyone directly or indirectly employed by either of them

Contractor shall not commence work under the Contract until it obtains all insurance required under this provision and furnishes a certificate or other form showing proof of current coverage to the State. All insurance policies and certificates must be signed copies. After work commences, the Contractor will keep in force all required insurance until the Contract is terminated.

1. Commercial General and Umbrella Liability Insurance. Contractor shall maintain Commercial General Liability (CGL) and, if necessary, Commercial Umbrella insurance with a limit of not less than \$1,000,000 each occurrence. If such CGL insurance contains a general aggregate limit, it shall apply separately to the Contract.
2. CGL insurance shall be written on ISO occurrence form CG 00 01 (or a substitute form providing equivalent coverage) and shall cover liability arising from premises, operations, independent contractors, products-completed operations, personal and advertising injury, and liability assumed under an insured contract (including the tort liability of another assumed in a business contract).
3. Commercial Automobile and Commercial Umbrella Liability Insurance. Contractor shall maintain Commercial Automobile Liability and, if necessary, Commercial Umbrella Liability insurance with a limit of not less than \$1,000,000 each accident. Such insurance shall cover liability arising out of any auto (including owned, hired, and non-owned autos).
4. Bidder or Offeror may request a waiver from providing Commercial Automobile and Commercial Umbrella Liability Insurance in its Bid or Proposal if the Bidder or Offeror will not use any owned, hired or non-owned vehicles to conduct business under the Contract, if it is awarded the Contract, and the State of Idaho will consider the request. If the Bidder or Offeror submits a request to waive the provision of Commercial Automobile and Commercial Umbrella Liability Insurance after the due date and time for receipt of Bids or Proposals, the State of Idaho may not consider the request.
5. Workers Compensation Insurance and Employer's Liability. Contractor shall maintain workers compensation and employer's liability. The employer's liability shall have limits not less than \$500,000 each accident for bodily insurance by accident or \$500,000 each employee for bodily injury by disease.
6. Contractor must provide either a certificate of workers compensation insurance issued by a surety licensed to write workers compensation insurance in the State of Idaho, as evidence that the Contractor has in effect a current Idaho workers compensation insurance policy, or an extraterritorial certificate approved by the Idaho Industrial Commission from a state that has a current reciprocity agreement with the Idaho Industrial Commission.
7. State of Idaho as Additional Insured: The liability insurance coverage required for performance of the Contract shall include the State of Idaho, the (agency) and its divisions, officers and employees as additional insured, but only with respect to the Contractor's activities to be performed under the Contract.

8. The Contractor must provide proof of the State of Idaho, the (agency) and its divisions, officers and employees being additional insured by providing endorsements to the liability insurance policies showing the State of Idaho, the (agency) and its divisions, officers and employees as additional insured. The endorsements must also show the policy numbers and the policy effective dates.
9. If a liability insurance policy provides for automatically endorsing additional insured when required by contract, then, in that case, the Contractor must provide proof of the State of Idaho, the (agency) and its divisions, officers and employees being additional insured by providing copies of the policy pages that clearly identify the blanket endorsement.
10. Notice of Cancellation or Change: Contractor shall ensure that should any of the above described policies be cancelled before the expiration date thereof, or if there is a material change, potential exhaustion of aggregate limits or intent not to renew insurance coverage(s), that written notice will be delivered to the Division of Purchasing (if the Contract was issued by the Division) or to the Purchasing Activity (contracting state agency) in accordance with the policy provisions.
11. Contractor shall further ensure that all policies of insurance are endorsed to read that any failure to comply with the reporting provisions of this insurance, except for the potential exhaustion of aggregate limits, shall not affect the coverage(s) provided to the State of Idaho, and its divisions, officers and employees.
12. Acceptable Insurers and Deductibles: Insurance coverage required under the Contract shall be obtained from insurers rated A-VII or better in the latest Bests Rating Guide and in good standing and authorized to transact business in Idaho. The Contractor shall be financially responsible for all deductibles, self-insured retention's and/or self-insurance included hereunder. The coverage provided by such policy will be primary to any coverage of the State on or related to the Contract and shall provide that the insurance afforded applies separately to each insured against whom a claim is made, except with respect to the limitation of liability.
13. Waiver of Subrogation: All policies shall contain waivers of subrogation. The Contractor waives all rights against the State and its officers, employees, and agents for recovery of damages to the extent these damages are covered by the required policies. Policies may contain deductibles but such deductibles will not be deducted from any damages due to the State.