BROAD AGENCY ANNOUNCEMENT

Federal Highway Administration
Office of Acquisition and Grants Management

Research Initiatives in Support of FHWA Next Generation Structural Materials and Systems

04/02/2024

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1 INTRODUCTION AND OVERVIEW

The Federal Highway Administration (FHWA) Office of Infrastructure Research and Development (HRDI) Bridge Engineering Research Team is announcing its intent to solicit white papers and proposals under this Broad Agency Announcement (BAA). This BAA is developed in accordance with FAR 6.102(d)(2) and FAR 35.016. This BAA involves the use of a 5-year Open BAA to quickly and efficiently execute research and development to deliver practical solutions to high priority problems. This strategy will provide FHWA an acquisition tool with the flexibility to solicit white papers and proposals and make awards that meet present and compelling needs.

White papers and proposals will only be solicited and accepted during individual calls. Calls for white papers and proposals will occur periodically throughout the life of the BAA. Each call will identify: (1) specific topic areas; (2) any changes to the standard evaluation criteria or white paper and/or proposal preparation instructions, and; (3) cutoff dates for submissions.

This BAA is an expression of interest only and does not commit the Government to pay any proposal preparation costs. All responsible sources capable of satisfying the Government's needs may submit a proposal. The Government reserves the right to award either contracts, assistance agreements, or other instruments determined to be of benefit to the Government in achieving the goals of this program.

1.1 Background

The FHWA HRDI Bridge Engineering Research Team conducts and directs research efforts in support of the development of testing standards, structural design and construction specifications, and acceptance criteria. The FHWA HRDI Bridge Engineering Research Team leads the development and advancement of next generation structural materials and systems, and provides leadership in the development of standards, specifications, and acceptance criteria to enable their deployment. The work conducted generally enables the advancement of state-of-the-art solutions and positions HRDI as a leader in the deployment of such technologies to maintain or improve the safety, durability, sustainability, and resilience of the Nation’s bridges and highway structures.

The primary purpose of this BAA is to solicit a variety of solutions that will support the strategic objectives of the FHWA Bridge Engineering Research Team program areas: Structural Steel, Structural Concrete, Geotechnical Structures, and Bridge Hydraulics. Projects shall develop next generation technologies and solutions that address FHWA’s current strategic goals and objectives of Safety, Economic Strength and Global Competitiveness, Equity, Climate and Sustainability, Transformation, and Organizational Excellence.

1.1 Legislative Authority

The legislative authority for this BAA is found under 23 U.S.C. 502(b)(3)(C), which states: "The Secretary may carry out research, development, and technology transfer activities related to transportation by making grants to, or entering into contracts and cooperative agreements with one or more of the following: National Academy of Sciences, the American Association of State Highway and Transportation Officials, any Federal laboratory, Federal agency, authority, association, institution, for-profit or nonprofit corporation, organization, foreign country, or any other person."

1.2 Purpose

The purpose of this BAA is to solicit a variety of solutions that will support the strategic objectives of the FHWA Bridge Engineering Research Team and the following program areas:

- Structural Steel
- Structural Concrete
- Geotechnical Structures
- Bridge Hydraulics

Research topics shall develop technologies that address FHWA's current strategic goals and objectives as follows:

- **Safety:** Making our transportation system safer for all people. Advancing a future without transportation-related serious injuries and fatalities.
- **Economic Strength and Global Competitiveness:** Growing an inclusive and sustainable economy. Investing in our transportation system to provide American workers and businesses reliable and efficient access to resources, markets, and good-paying jobs.
- **Equity:** Reducing inequities across our transportation systems and the communities they affect. Supporting and engaging people and communities to promote safe, affordable, accessible, and multimodal access to opportunities and services while reducing transportation related disparities, adverse community impacts, and health effects.
- **Climate and Sustainability:** Tackling the climate crisis by ensuring that transportation plays a central role in the solution. Substantially reduce greenhouse gas emissions and transportation-related pollution and build more resilient and sustainable transportation systems to benefit and protect communities.
- **Transformation:** Designing for the future. Investing in purpose-driven research and innovation to meet the challenge of the present and modernize a transportation system of the future that serves everyone today and in the decades to come.
- **Organizational Excellence:** Strengthen our world-class organization. Advance the Department's mission by establishing policies, processes, and an inclusive and innovative culture to effectively serve communities and responsibly steward the public's resources.

More detail on FHWA's strategic goals and objectives can be found in the most current FHWA Strategic Plan.

2 CONTRACT GUIDELINES

The Offeror shall propose and implement a delivery method consistent with this requirement. If it is determined that the Offeror's performance under the contract is not progressing to the satisfaction of the Government, the Government retains the right to commence a process to modify or end performance. This process will require a 60-day notice and may be used in conjunction with FAR clause 52.242-15, Stop-Work Order.

2.1 Schedule

The open period for BAA white papers and proposals will be defined in each issued call. The FHWA may modify the schedule or research topics. If such changes are made, the call will be amended. This BAA and calls issued thereto will be posted to the www.SAM.gov website. It is the responsibility of the Offeror and interested parties to be aware of BAA calls and amendments by regularly checking the website and registering to receive notifications and updates to this specific BAA.

2.2 Communications Protocol

Any exchanges of information must be consistent with procurement integrity requirements of section 27 of the Office of Federal Procurement Policy Act (41 U.S.C. 423, as amended) (see FAR 3.104). All information exchanges will be conducted through the Contracting Officer. Offerors are advised that any indication of interest, in the affirmative, is not meant to imply nor in any way impart an obligation on the part of the Government that an award will be forthcoming for the offered work or project.

2.3 Points of Contact

All submittals shall be delivered in electronic format (PDF and Excel) to the Contracting Officer's Representative with copy to the Contract Specialist and Contracting Officer, via the e-mail addresses listed below:

Contracting Officer's Representative, Timothy Barrett	Timothy.Barrett@dot.gov
Contract Specialist, Jessica Prutz	Jessica.Prutz@dot.gov
Contracting Officer, Bob Brown	Bob.P.Brown@dot.gov

2.4 Offeror Eligibility

This is an unrestricted BAA. Any responsible source may submit a proposal for consideration, including, but not limited to, States or local governments, or organizations of State or local governments, universities or institutions of higher education, hospitals, non-profit organizations, private individuals, corporations, and businesses or commercial organizations.
All Offerors must be registered in the Federal Government's System for Award Management (SAM) system prior to formal Proposal submission.

2.5 Project Qualification Requirements

This BAA will solicit research projects that address FHWA's current strategic goals and objectives as stated in section 1.2. The FHWA is interested in all research that may maintain or improve the safety, economic strength and global competitiveness, equity, climate and

sustainability, transformation, and organizational excellence of the Nation's bridges and highway structures.

This BAA will not be used to sponsor projects that develop specific products or systems for sale. In the context of the technology readiness levels (TRL) defined in the FHWA's Technology Readiness Level Guidebook, this BAA is designed mainly for development of technology in Levels 3 through 8. However, other Levels will also be considered on a case-by-case basis.

2.6 Program and Project Funding Limits

FHWA will determine if submittals are consistent with the objectives of this BAA and of interest to the Government, and if adequate funding exists. Awards are subject to the availability of funds.

Offerors may propose phased or expanded work or projects beyond the initial or base phase funded at the time of award and FHWA may, at its discretion, provide additional funding for phased or expanded effort. Awards may be of any dollar value, but it is anticipated that most individual awards will have dollar values ranging between $50,000 and $250,000.

Awards resulting from this BAA will be made based on the evaluation results of a two-phased process. The Government reserves the right to fund all, some, one, or none of the proposals submitted; and may elect to fund only part of a submitted proposal. In either case, the Contracting Officer will have the ultimate authority and responsibility to make final scope determinations for selections of proposals that will not be fully funded to ensure the portion selected meets the solicited requirements. In addition, the Government reserves the right to create and maintain a reserve list of proposals for potential funding, if additional funding becomes available.

Offerors considered unresponsive to the Government's requests for information in a timely manner, defined as meeting government deadlines established and communicating with the request, may be removed from further consideration.

2.7 Cost Sharing

Cost sharing by awardee is not mandatory under this BAA.

2.8 Project Selection Process

This BAA selection process is structured as a two-step process. All calls issued under this BAA will utilize this phased approach for the evaluation of project white papers and proposals.

2.8.1 Project White Papers

The first step of the process is the submission and evaluation of project white papers. As detailed in Section 3, the project white paper provides a brief overview of the research effort, including the current state of development, the next steps in the development plan, and rough order magnitude cost and schedule data. Project white papers will be used to gauge applicability of and the Government's interest in the technology research area. All Offerors must first submit a project white paper to be considered for an award.

Project white papers shall be submitted in electronic form via e-mail. FHWA will work to complete project white paper evaluations within 60 days of receipt and will notify the Offeror of final disposition. The final disposition will include a conclusion of FHWA's evaluation of the project white paper and an advisory notice to proceed or not to proceed with submitting a formal Proposal.

2.8.2 Project Proposals

Following project white paper evaluation and discussion, FHWA will send advisory notifications to offerors who should not proceed with Proposal submission; however, offerors who are advised not to proceed may still elect to submit a proposal. Proposals shall be prepared in accordance with the requirements of Section 4. Submissions that are incomplete, materially lacking, or not responsive to the technical requirements of this BAA may be returned unevaluated, or evaluated as is, without further opportunity for revision, at the discretion of the FHWA's evaluation committee.

2.9 Deliverable Requirements

All deliverables developed under this BAA must be compliant with Section 508 of the Rehabilitation Act and shall be improved, modified, or edited to address Government reviews and requirements and remediation. Section 508 requires that all electronic products prepared for the Federal Government be accessible to persons with disabilities, including those with vision, hearing, cognitive, and mobility impairments.

Applicable Standards:

- Appendix A to Part 1194 – Section 508 of the Rehabilitation Act: Application and Scoping Requirements
- Appendix B to Part 1194 – Section 255 of the Communications Act: Application and Scoping Requirements
- Appendix C to Part 1194 – Functional Performance Criteria and Technical Requirements

Section 508 Refresh standards are available at https://www.access-board.gov/ict/.
The Contractor shall adhere to the terms and requirements in FHWA Form 4260 Section 508 Information and Communication Technology (ICT) Conformance Criteria for Section 508 conformance. The Conformance Criteria document does not need to be completed when submitting a deliverable.

All final deliverables shall be user friendly, visually appealing, and self-certified to be Section 508 compliant by the Contractor. Microsoft Word, Microsoft PowerPoint, and Adobe PDF versions of deliverables shall be provided and shall be 508 compliant. The Offeror shall use the Government's publication templates for Microsoft Word and Microsoft PowerPoint deliverables. Government templates are provided upon request.

All results, data, source code, and documentation generated and collected shall be provided as deliverables, including any test data, test equipment data files, and test results obtained and used to provide the contract services and deliverables. All test data deliverables shall be submitted in accordance with the Federal Highway Administration, FHWA InfoMaterials™ Dataset Management, July 2021, Publication No. FHWA-HRT-21-065 (Appendix D).

1. All proposed and final sample data, data formatting, data dictionary and code list to store data generated under this contract must be submitted for COR review and approval.
2. All data collected or generated (from item 1) including metadata and related documentation under this contract must be submitted in the FHWA approved format.
3. All software, analysis tools, source code, and documentation submitted must include all design details, algorithms, processes, flow charts, and/or other materials that will enable the software, analysis tools, and source code to be reproduced or recompiled.

In addition, contractor-developed data, reports, fact sheets, technical flyers (e.g., TechBriefs and Application Notes), brochures, booklets, Web pages, articles, presentations, graphics, other publications, events, and marketing outreach, etc. shall be user friendly, visually appealing, and follow the formatting requirements, editorial style preferences, printing- publishing policies and procedures, and copyright as presented in the Turner-Fairbank Highway Research Center (TFHRC) R&D Communication Reference Guide (CRG) FHWA-HRT-15-058, CRG updates, and Research Publication Development Tools guidance (https://highways.dot.gov/research/publication-tools). Copyrighted materials shall not be used unless permission is obtained and unlimited and irrevocable rights are provided to the Government.

Deliverables shall undergo further FHWA technical review, publication review, Office of Public Affairs review, and Office of Chief Counsel review. Because of these reviews, additional changes may be required and shall be made by the Contractor to create Publication Ready deliverables. The Contractor shall provide the revised draft final deliverables as necessary to reflect required changes and comments provided by these reviews.

2.10 Intellectual Property Rights

Awards will generally contain detailed provisions concerning patent rights, rights in technical data and computer software, data reporting requirements, and other terms and conditions, which shall be negotiated as part of the award process.

Offerors must describe any limitations on any intellectual property (patents, inventions, trade secrets, copyrights, or trademarks) that will impact the Offeror's performance of the contract or impact the Government's subsequent use of any deliverable under the contract. The Offeror must describe the intellectual property in sufficient detail to describe the limitations (data assertions of the Offeror or any subcontractor, potential patent licenses required by the Government, etc.), and to describe why or how the Government can accomplish the stated objectives of this BAA with the limitations described or proposed by the Offeror. This information must be included in the white paper submissions and Proposals.

2.10.1 Patents

Offerors must list any known invention or discovery that is or may be patented that may require the Government to obtain a license should the Offeror's proposal be selected for award. Invention is defined in FAR 27.301 as "any invention or discovery that is or may be patentable or otherwise protectable under title 35 of the U.S. Code, or any variety of plant that is or may be protectable under the Plant Variety Protection Act." If any patent or patent application is owned by the Offeror, the Offeror must provide a statement, in writing, that it either owns or possesses the appropriate licensing rights to the patent or patent application for which the Government may require a license. If an Offeror does not own or have license rights to license the Government for any such patent or patent application, the Offeror must explain how the Government may obtain a license or whether the Offeror plans to obtain these rights on behalf of the Government.

For any patent or patent application listed above, the Offeror must provide the patent number or patent application publication number, a summary of the patent or invention title, and indicate whether the Offeror is the patent owner. See sections 3.2.4 and 4.2.1 below. If a patent or invention is not licensed by the Offeror, identify the licensor. Be advised that no patent or patent application disclosure will be accepted if it is identified in the Data Rights Assertion list described in Section 2.10.2. Rights in patents, patent applications, and invention disclosures are addressed in the patent rights clause to be included in the contract and therefore, no assertion of limited rights in patents or patent applications will be accepted. The list of patents or patent applications of this section must be a separate list from the Data Rights Assertion list described below.

2.10.2 Proprietary Data Restrictions

Offerors are advised that project white papers and/or proposals may contain data the Offeror does not want disclosed to the public for any purpose or used by the Government except for evaluation purposes. If the Offeror wishes to restrict such data, the cover page of all submittal documents must be marked with the following legend, and relevant sheets marked as instructed.

> *This proposal includes data that shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed – in whole or in part – for any purpose other than to evaluate this proposal. However, if a contract is awarded to this Offeror as a result of – or in connection with – the submission of these data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the resulting contract. This restriction does not limit the Government's right to use information contained in these data if they are obtained from another source without restriction. The data subject to this restriction are contained in Sheets [insert numbers or other identification of sheets].*

Each restricted data sheet shall be marked as follows:

> *Use or disclosure of data contained on this sheet is subject to the restriction on the cover page of this document.*

To the extent that such restrictions on proprietary data or information would not interfere with the intent of the Government to make the results of the work and projects awarded under the

BAA available to all interested parties, and if in conformance with the Freedom of Information Act (5 U.S.C. 552, as amended), the Government will honor those preferences.

2.11 Data Rights

The Government shall maintain ownership and unlimited rights to all documents/materials produced under this BAA to include the source code of any software produced. These documents and materials may not be used or sold by the Contractor without written permission from the CO.

2.12 Section 889 Compliance Requirement

All contracts awarded under this BAA must be compliant with Section 899 ("Prohibition on Certain Telecommunications and Video Surveillance Services or Equipment") of Public Law 115-232, also known as the John S. McCain National Defense Authorization Act.

- FAR 52.204-24 Representation Regarding Certain Telecommunications and Video Surveillance Services or Equipment (OCT 2020)

- FAR 52.204-25 Prohibition on Contracting for Certain Telecommunications and Video Surveillance Services or Equipment (AUG 2020)

3 PROJECT WHITE PAPERS

All project white papers must respond to a research topic defined in each BAA call. The FHWA will not evaluate project white papers that do not respond to a listed research topic. In the case of multiple project proposals from a single Offeror, a separate project white paper is required for each project. Full proposals will only be accepted from Offerors who submit white papers; proposals received from Offerors who did not provide a timely white paper submission will be deemed ineligible for award.

Project white papers shall be prepared simply and shall provide a concise description of the proposed research project, organized as defined in the following sections. Project white papers shall be no more than 5 pages in length (excluding cover page and Quad chart), no less than 10-point font, and single-spaced, single-sided letter size pages with 1" margins (minimum). Project white paper submissions should not include promotional brochures, advertisements, taped recordings, or other extraneous material.

3.1 Cover Page

Project white papers shall include a cover page containing the following information:

- Working title of the proposed project;
- BAA Research Topic title and reference Number as specified in each call;
- Names, phone numbers, and mailing and e-mail addresses for the principal technical and contractual points of contact (person or persons authorized to negotiate on behalf of the Offeror and who can contractually obligate the Offeror's organization);
- Any secondary offeror organizations, if any, listed with contact information (project partners);

- Unique Entity Identifier (UEI) from SAM.gov confirming registration for your organization, offerors must be registered prior to submitting a formal Proposal;
- Date of submittal; and
- Proprietary data restrictions, if any (See **Section 2.10.2**)

3.2 Technical Approach

The Technical Approach shall contain the background, scope of work, expected outcomes and impacts, and the Quad chart sections of the project white paper.

3.2.1 Background

In this section, the Offeror shall describe the following:

Objective Statement – Briefly describe the technology proposed for research. Provide a statement(s) that conveys the Offeror's objective for this work and vision of the fully developed technology.

Description of Need – Describe the specific issue intended to be solved or improved by the technology proposed for research and development. Discuss the proposed application to maintain or improve the safety, durability, sustainability, and resilience of the Nation's bridges and highway structures. Estimate the potential for the industry adopting this technology and provide a rationale for this estimate.

Technology Assessment – Briefly explain the maturity of the technology in the context of the technology readiness levels detailed in the FHWA's Technology Readiness Level Guidebook.

Development Framework – Describe the development history of the technology, both within the Offeror's organization and from other sources, as applicable. Discuss the technical, financial, programmatic, or other significant factors that have impacted the development of this technology to date, both positively and negatively.

3.2.2 Scope of Work

The Offeror shall describe the general scope of work planned for this research activity. This section shall describe the major research, synthesis, testing, data collection, and analysis activities in sufficient detail to communicate the breadth of activities proposed. A detailed work breakdown structure is not required. The Offeror shall indicate major progress milestones and associated deliverables as part of this section.

The scope of work shall identify all Offerors and associated stakeholder groups in the major activities of the project and shall indicate the estimated work effort required from each Offeror, expressed as a percentage of the total effort for each activity. In addition, the Offeror shall identify any third-party resource needs that are required during the project. These resources may include Government furnished equipment (GFE).

3.2.3 Expected Outcomes and Impacts

Identify the significant outcomes expected from the project and their impact on the engineering practice and associated safety, durability, and efficiency of the Nation's bridges and highway structures, including short, medium, and long-term effects. Explain how the outcomes of the proposed research will be implemented into practice. The FHWA is seeking innovative ideas for dissemination and technology transfer to practice.

3.2.4 Patented Items

Provide an identification and description of any invention or discovery that is or may be patented to be utilized in the research in the event that the items may need to be specified for use if advanced further or needed by the end user. The definition of *invention* per FAR 27.301, "any invention or discovery that is or may be patentable or otherwise protectable under title 35 of the U.S. Code, or any variety of plant that or may be protectable under the Plant Variety Protection Act".

3.2.5 Quad Chart

Include a Quad chart summarizing the project concept, as per the instructions and example provided in Appendix A.

3.3 Qualifications

The Qualifications section of the project white paper shall introduce the project team, the team's experience, and any unique capabilities.

3.3.1 Project Team

List all key personnel proposed for the project, including personnel from outside the prime Offeror's organization. Organize the team by organization name and briefly describe each person's roles and responsibilities on the project. Provide a short synopsis of each key person's education, experience, and other qualifications applicable to the proposed project. Provide information on the business type (small, large, or disadvantaged) for each Offeror organization.

3.3.2 Experience

Describe the relevant experience of each organization participating in the project. Identify any publicly available and accessible resources that may provide more details regarding this experience, e.g., public web site links to past or current project documents.

3.4 Schedule and Cost Estimate

Provide milestones for the proposed project that include start, finish, and major activity completion times. Express milestone dates as the number of weeks from project start.
Provide a rough order magnitude cost estimate. Provide a breakdown of these costs (percentage) for each organization in the project team.

Provide a funding plan for the project. Identify each funding source and their contribution to the whole, expressed as a percentage. Include all anticipated sources, including Offeror internal sources, government funds, and other Offeror organizations.

4 PROJECT PROPOSALS

Following review, evaluation, and advisory notifications, offerors may submit a formal Proposal for the project. The project proposal builds upon the contents of the project white papers. Additional content and more detailed information are required in the proposal document, as described in the sections that follow.

Proposal documents are subject to the same formatting requirements as the project white papers. There is a 25-page limit for Volume I only, subject to the exceptions described below. There is no page limit for Volume II. Submissions that are incomplete, materially lacking, or not responsive to the technical requirements of this BAA, may be returned unevaluated, or evaluated as is, without further opportunity for revision, at the discretion of the FHWA's evaluation committee.

The proposal shall contain a Cover Page and relevant data organized into 2 Volumes:

- Volume I: Technical Proposal
- Volume II: Cost and Pricing Data

Offerors are advised that the FHWA's evaluation of a project for possible award is based solely on the contents of the Offeror's project proposal and the Offeror's answers to any technical clarification questions, as transmitted through the Contracting Officer. FHWA shall treat all proposals as competitive information and disclose the contents only for the purposes of evaluation.

4.1 Cover Page

Project proposals for each call shall include a cover page containing the following information:

- Working title of the proposed project
- BAA Research Topic title and reference number
- "Project Proposal" written below the project title
- Names, phone numbers, and mailing address and e-mail addresses for the principal technical and contractual points of contact (person or persons authorized to negotiate on behalf of the Offeror and who can contractually obligate the Offeror's organization)
- Secondary Offeror organization listed (project partners) if any
- Unique Entity Identifier (UEI) from SAM.gov confirming registration for your organization, offerors must be registered prior to submitting a formal Proposal;
- Date of submittal
- Proprietary data restrictions, if any (See Section 2.10.2)

4.2 Volume I: Technical Proposal

The Technical Proposal shall contain the following sections:

- Background
- Statement of Work
- Technical Approach
- Project Management Plan
- Capabilities and Experience

- Quad Chart

4.2.1 Background

Offerors shall explain, specifically, how the proposed technology or method enhances the ability to meet the research topic goals; how it could be incorporated into existing infrastructure or operations (to include how major barriers, impediments, or obstacles could be overcome or mitigated); and the interface modifications required to accomplish a demonstration. Explain how its application will bring about an improvement to capital infrastructure, or operating methods, safety and/or performance improvements, as well as correlative benefits to general bridge and highway structure operations. Quantitative support should be provided for assertions made.

Proposals may include a discussion of an optional, future phase or phases of work. Such discussion shall be clearly labeled as an "optional future phase or phases of work." The original phase of work shall meet the program criteria without depending on work described under future phases. If a future phase or phases are included, Offerors must provide the full cost/price estimate for those phases as a separately labeled section in the costs and pricing section of the proposal.

Proposals shall include references to past relevant research describing capabilities, work, and significant accomplishments in areas directly associated with proposed research area or in closely related areas. A bibliography of relevant technical papers and research notes that support the technical concepts and innovative ideas described in this proposal shall be included for technical reference.

Objective Statement: The Offeror must describe the technology proposed for research. Provide a statement(s) that conveys the Offeror's objectives for this work and vision of the fully developed technology.

Description of Need: The Offeror must describe the specific issue intended to be solved or improved by the technology proposed for research and development. Discuss the proposed application to design, construction, or evaluation of bridges and highway structures and associated safety, durability, and/or efficiency improvement in the United States. Discuss the intended stakeholder groups expected to utilize this technology and discuss how each group is expected to leverage this technology to improve safety and operating efficiency. Estimate the potential for the highway bridge and tunnel industry adopting this technology and provide a rationale for this estimate.

Technology Assessment: The Offeror must explain the maturity of the technology in the context of the technology readiness levels. Describe the technology readiness in the context of the bridge and highway structure industry (operations, legal, regulatory, etc.). Describe how the proposed research or technology is technically or scientifically innovative with respect to the research topic description.

Development Framework: The Offeror must describe the development history of the technology, both within the Offeror's organization and from other sources, as applicable. Discuss the technical, financial, programmatic, or other significant factors that have impacted the development of this technology to date, both positively and negatively.

Expected Outcomes and Impact: The Offeror must identify the significant outcomes expected from the project and their impact on the engineering practice and associated safety, durability, and efficiency of the Nation's bridges and highway structures, including short, medium, and long-term effects. Explain how the outcomes of the proposed research will be implemented into practice. The FHWA is seeking innovative ideas for dissemination and technology transfer to practice.

Patented or proprietary items: The Offeror must identify and describe any patented or proprietary items to be utilized in the research as described in Section 2.10.1 and 2.10.2.

4.2.2 Statement of Work

A Statement of Work (SOW) shall be prepared as a separate document and contained within Volume I. There shall be no company-sensitive or proprietary data included in this document. This SOW shall contain the following information:

Work Scope: Describe the work to be accomplished as part of the research project. Include the technology under development, the objectives and goals of the effort, major milestones, and the expected outcomes.

Requirements: Define the work. Separate the work effort into major tasks and subtasks as numbered paragraphs, or in a table. Identify all project reviews, test, demonstrations, and all deliverables resulting from the execution of the project.

Deliverables: All project deliverables should be clearly listed and described.

4.2.3 Technical Approach

Offerors shall provide a narrative description of work to be performed, organized as it is expected to be performed. The technical approach shall include activities designed to integrate the transportation industry into the development effort, either through active participation in the technology development or through demonstration and/or testing support. Describe the steps, tasks, and activities necessary to achieve the desired project results. Identify and describe all deliverables, presentations, demonstrations, tests, and periodic reports. Describe the quality requirements for the project and identify the processes and/or procedures that will be employed to ensure these requirements are satisfied.

The technical approach shall include a risk assessment. Technical, programmatic, market and other risk elements shall be analyzed for their impact on the project. A scoring or ranking scheme shall be developed to quantify potential impacts. Data shall be presented in a probability/impact chart or another suitable format.

4.2.4 Project Management Plan

The proposal shall contain a detailed management plan for the project based upon the following minimum requirements.

Work Breakdown Structure (WBS): Divide the project requirements into tasks and work packages. Hierarchically organize the project work down to the work package level. A table or chart format is preferred. This section counts towards the 25-page limitation requirement.

Project Schedule: Sequence the project activities and identify and estimate resource requirements and activity durations. Present the project schedule as a bar, or Gantt-style chart, including activity relationships (dependencies). Provide a milestone chart for the project illustrating key activities and their expected completion time (weeks from project start). Include intermediate progress reviews, demonstrations or tests, and periodic reporting activities in the schedule. All project deliverables shall be clearly indicated on the project schedule. This section counts towards the 25-page limitation requirement.

Mobilization Plan: In the context of the project schedule, describe the plan to acquire and deploy resources needed for the project, including personnel, facilities, equipment, and other resources, including Government Furnished Equipment (GFE), deemed necessary for project execution. This section counts towards the 25-page limitation requirement.

Organization Chart: Deliver an organization chart for the project illustrating resource roles and reporting relationships. Include all Offeror organizations. Clearly highlight organizations that are participating in cost sharing activities. Identify the type of business (large, small, disadvantaged, or educational) for each Offeror organization. Provide resumes (2-page maximum) for all key personnel on the project. Resumes shall be organized in an appendix to the proposal. Resumes do not count toward the 25-page limit for the proposal.

Subcontracts/Teaming/Cost Sharing Management Plan: Identify and describe the Offeror's plans for subcontracting, teaming, and cost sharing. Clearly identify the roles and responsibilities of all organizations working within the project team, including technical and financial elements. This section counts towards the 25-page limitation requirement.

Testing Plan: Describe the testing requirements, environments, and methods needed to assess or demonstrate the suitability of the technology in highway bridge and structure environment and to demonstrate the success of the proposed project. Cite transportation companies or other highway-related organizations, such as bridge bearing industry suppliers, that have expressed their willingness to permit and/or support such testing or demonstrations. Letters or statements attesting to an outside organization's interest or commitment to permit and/or support testing or demonstrations should be furnished with the proposal as an attachment. Such letters or statements do not count towards the proposal's 25-page limit.

4.2.5 Capabilities and Experience

Identify and describe the capabilities and experience of key personnel and organizations within the project team as these elements relate to the proposed project. Describe any relevant technological and scientific, highway, or other industrial or defense capabilities, experience, and resources (or those of its team members) that will serve to demonstrate its ability to successfully conduct the proposed research or technology advancement project. Describe the team member's (or organization's) familiarity with or position in the transportation community and access to critical resources for the project.

Describe any unique capabilities that the Offeror team possesses that may reduce project risk, reduce project duration, and/or improve project financial performance. Describe these capabilities within the context of the objectives of the BAA and the proposed project's scope of work. This section counts towards the 25-page limitation requirement.

4.2.6 Quad Chart

Include a Quad chart summarizing the project proposal, as per the example and instructions provided in Appendix A. Quad charts shall be submitted electronically. This section counts towards the 25-page limitation requirement.

4.3 Volume II: Cost and Pricing Proposal

4.3.1 General Requirements

The Offeror may propose a Firm Fixed Price, Cost Reimbursement, or a Time and Materials price proposal. Please note that for cost type contracts, the Offeror must have an acceptable accounting system for cost type Government contracts. An Offeror without an approved accounting system should consider submitting a Firm Fixed Price or Time and Material price proposal. The Offeror shall provide Volume II of its formal Proposal organized by the following sections:

1. Cover Page
2. Cost/Price Information
3. Other Financial/Organizational Information
4. Small Business Subcontracting Plan (required for proposals of $750,000 or more)
5. Recommended Pricing Arrangement
6. Patent and Data Rights

Identify each funding source and its contribution to the whole, expressed as a percentage. Include all anticipated sources, including Offeror internal sources, government funds, and other Offeror organizations.

The cost or pricing portion of the proposal should contain a cost/price estimate for the proposed effort to allow for meaningful evaluation and determination of price or cost reasonableness. The cost/price estimate shall account for the entire project, inclusive of that portion of cost/price the applicant or other Offerors would bear in any proposed cost sharing arrangement or other investment of resources, as a means of venture sharing, in lieu of a formal cost sharing

arrangement. The cost/price estimate shall be broken down for each year of the proposed work, and by all years combined.

4.3.2 Cover Page

The cover page for the cost and pricing Proposal must include:

- Working title of the proposed project
- BAA Research Topic title and reference call number
- "Cost/Price Proposal" written below the project title
- Names, phone numbers, mailing address, and e-mail addresses for the principal technical and contractual points of contact (person or persons authorized to negotiate on behalf of the Offeror and who can contractually obligate the Offeror's organization)

4.3.3 Cost/Price Information

Offerors shall provide detailed cost/price information. Offerors shall present cost/price information using the Firm Fixed Price, Cost Reimbursement or Time-and- Materials workbooks in Appendix B – Cost/Price Proposal Models. Offerors' cost/price information shall include the total costs for the proposed period of performance. The detailed cost and price information in the Contract cost/price proposal must also include a separate breakdown of costs by major SOW task areas. Offerors shall use the same task or subtask numbers as described in the SOW submitted in its technical proposal. If necessary, the Government will request additional back-up information, as appropriate.

NOTE: See Section 2.6 for Program and Project Funding Limits.

<u>Firm Fixed Price Proposal</u>

If a firm fixed price proposal is submitted, the Offeror shall submit fixed pricing for each task or subtask, aligning with the structure of the statement of work or other identified milestone payment schedule, and the total price for project. Pricing for each task must be all inclusive of costs associated with the proposal and cannot be adjusted.

<u>Cost Reimbursement Cost Proposal</u>

If the Offeror elects to submit a cost reimbursable proposal, the Offeror shall provide a detailed cost break-down showing all its proposed costs by each major cost category, including (as applicable) direct labor, overhead and/or fringe rates, subcontract costs, general & administrative costs, profit or fee, cost sharing, other direct costs (travel, equipment, etc.), and indirect costs for the proposed effort. For each major cost category, the Offeror's price proposal shall include:

Direct Labor:

- Personnel by name or labor category;
- Number of hours proposed (commercial organizations) or percent of effort (organizations subject to OMB Circulars);
- Hourly unburdened labor rate (commercial organizations) or salary rate and basis (9- or 12-month basis) (organizations subject to OMB Circulars);
- Overhead and/or Fringe Benefits Rates applied; and
- Profit/Fee percentage and amount

Other Direct Costs. Other Direct Costs shall be supported by explanation of estimating factors and other relevant supporting details. For example, travel costs shall be supported by detail on the estimated trips, number of travelers, and associated costs for airfare, per diem, other transportation, etc. A similar level of detail shall be provided for any meeting costs, equipment, duplication/printing charges, and other direct costs.

Indirect Costs. Discuss your proposed rates for all years. Identify the various specific indirect rates and what they are based on (e.g., labor overhead based on direct labor dollars) and how they are applied/calculated. State any differing rate applications (for example if there is a different proposed rate when applied to travel or material purchases than when applied to subcontractor costs). Offerors must provide dollar values as well as percentages. Subcontractor costs should be fully detailed, and the information used by the proposer to analyze the price of the subcontract shall be provided. An SF1411 is not required for this submission of your proposal.

Details of any cost sharing to be undertaken by the Offeror shall also be included in the cost section. Describe the type of funds (cash, in-kind, etc.) and its contribution and relationship in enhancing the proposed effort.

Time and Materials Price Proposal
If the Offeror elects to submit a Time and Materials price proposal, the Offeror shall provide a detailed itemized break-down of all the proposed prices, including fully loaded direct labor hours and rates, the number of hours proposed for each category by the SOW tasks proposed, any proposed subcontractor prices, and all other direct costs (e.g., travel, equipment, etc.).

Assumptions
For all cost/price proposals, the Offeror shall submit, under a separate tab, all (if any) assumptions or conditions upon which the cost/price proposal is based.

4.3.4 Other Financial / Organizational Information

Offerors shall provide the following financial and organizational information in its Volume II – Contract Cost/Price Proposal:

1. Terminated Contracts - List any contract that was terminated for convenience of the Government within the past 3 years, and any contract that was terminated for default within the past 5 years. Briefly explain the circumstances in each instance.
2. A completed copy of the Offeror's Representations and Certifications if the Offeror is not registered and in the System for Award Management with complete and up to date representations and certifications.
3. Conflicts of Interest - The Offerors shall provide a brief statement in its proposal that describes in a concise manner all past, present, or planned organizational, contractual, or other interest(s) that may affect the Offerors' ability to perform the proposed contract in an impartial and objective manner. The Contracting Officer will review the statement and may require additional relevant information from the Offerors. In accordance with FAR Subpart 9.5, all such information, and any other relevant information known to DOT, will be used to determine whether an award to the Offerors may create an actual or potential conflict of interest. If any such conflict of interest is found to exist, the Contracting

Officer may (a) disqualify the Offerors, or (b) determine that it is otherwise in the best interest of the United States to contract with the Offerors and include appropriate provisions to mitigate or avoid such conflict in the contract awarded.

4. If subcontractors and/or individual consultants will be used in carrying out the requirements of this project, the following minimum information concerning the subcontractor or consultant shall be furnished: name, address, and contact information.

4.3.5 Subcontracting Plan

The evaluation of Small Business Subcontracting Plan will be evaluated for those that are selected for award. Proposals submitted from other than small businesses that exceed $750,000 in total value must include a Small Business Subcontracting Plan in accordance with the Federal Acquisition Regulation Part 19.7. Each prime Offeror who is other than a small business shall include within its proposal a complete copy of the prime Offeror's Master Subcontracting Plan, satisfactorily addressing all the administrative requirements set forth in FAR section 52.219-9. The Offeror shall also submit a subcontracting plan in accordance with the instructions/format in Appendix C - Small Business Subcontracting Plan to this BAA. In the event that the Offeror has no such plan, the form shall be submitted with "no plan identified" indicated on the form as applicable and the Offeror shall submit a statement of circumstances supporting that determination. The Small Business Subcontracting Plan will be rated on a pass/fail basis.

4.3.6 Recommended Pricing Arrangement

Offerors shall include a summary of the pricing arrangements (e.g., firm-fixed-price, cost, or time and materials) and include the rationale for their use. However, the FHWA reserves the right to negotiate and award the types of proposals determined most appropriate under the circumstances. If warranted, portions of resulting awards may be segregated into pre-priced options. It is anticipated that most will be contracts with firm fixed price pricing arrangements with milestone payments. It should be noted that cost reimbursable type contractual arrangements are not permissible unless the awardee has an accounting system that has been approved by a Federal cognizant audit agency as adequate to support the determination of costs applicable to the contract. Additionally, the accounting system will be subject to audit and surveillance during the awardee's performance to provide reasonable assurance that efficient methods and effective cost controls are being used.

5 PAST PERFORMANCE

The Government may consider information provided by offerors in their proposal submissions, as well as any other information available to the Government. The Government reserves the right to conduct a determination of contractor's responsibility.

6 EVALUATION AND AWARD PROCESS

The BAA evaluation process shall be conducted in accordance with FAR Subpart 35.016(d)-(e). Offerors will be notified of evaluation results electronically via e-mail. The Government reserves the right to select for award any, all, part, or none of the proposals received in response to this announcement.

It is the policy of the FHWA to treat all proposals as competitive information and to disclose the contents only for the purposes of evaluation. The Government may use selected stakeholder organizations as special resources to provide feedback and input into the evaluation of white papers and proposals. All evaluators reviewing white papers and proposals from this BAA will be required to sign a conflict-of-interest statement and a non-disclosure agreement. By submission of a white paper and/or proposal, the Offeror agrees that proposal information may be disclosed to those selected organizations for the limited purpose stated above.

6.1 Evaluation Methodology

The Government will utilize a phased approach for the evaluation of project white papers and proposals in response to this BAA. The evaluation will consist of two phases. In Phase 1 of the evaluation, the Government will review and assess the technical merit of each Offeror's project white papers. Based on the Phase 1 evaluation results, the Government will divide the evaluated white papers into the following two categories:

i. Category I: Category I white papers are well-conceived, scientifically/technically sound, and pertinent to program goals/objectives. Offerors whose white papers are considered Category I white papers will be encouraged to submit full proposals.
ii. Category II white papers are not technically sound or do not meet agency needs. Offerors submitting white papers in this category are not recommended to submit full proposals, as FHWA does not believe it is likely that the Offeror's full proposal will be selected for an award.

After the white paper evaluation stage is complete, all Offerors will be notified of the official proposal submission dates in the letter notifying them which category their white paper was evaluated as. Additionally, an amendment to the BAA Call will be made to the SAM.gov posting updating the proposal due dates.

In Phase 2 of the evaluation, the Government will review and assess the full merit of the Offeror's formal Proposal. Based on the Phase 2 evaluation results, the Government may select awardee(s). The required conflict of interest statements and non-disclosure agreements will be utilized to mitigate against possible bias in selection decisions. Additional information on the phased evaluation methodology is delineated below.

6.1.1 Phase 1 – Project White Paper Evaluation

Project white papers will first be screened to ensure all the requested information listed within section 3 is contained within the submission. Incomplete white paper submittals will be removed from further evaluation. The project white papers will then be evaluated in accordance with Factor 1 – Technical Merit of the Project White Paper, within the context of available funding, as described in 6.2 Evaluation Factors.

Based on the Phase 1 evaluation results, the Government will send advisory notices to offerors, advising them to proceed or not proceed with a formal Proposal. FHWA may advise offerors to submit formal Proposals for project concepts that are deemed to have technical value to the FHWA's objectives and are found to fit within funding constraints. Project white papers are not evaluated, or considered, as part of the Phase 2 proposal evaluation process and award selection.

6.1.2 Phase 2 – Project Proposal Evaluation

The primary basis for selecting proposals for acceptance shall be technical, importance to agency programs, and funding availability. Cost realism and reasonableness shall also be considered to the extent appropriate.

During Phase 2 of the evaluation, the Government reserves the right to conduct negotiations with Offerors to clarify technical and cost/price details from the proposals. Based on the Phase 2 evaluation results, and in consideration of all applicable Evaluation Factors (listed below), the Government will select Offeror/s for award.

6.2 Evaluation Factors

Factor 1 – Technical Merit of the Project White Paper

The Government will use Factor 1 – Technical Merit of Project White Paper in Phase 1 of the evaluation. The technical merit of the project white papers will be evaluated based on the materials submitted as listed in section 3 of this BAA considering the following elements that are of equal importance:

1. Overall technical value based on defined objectives, demonstrated understanding of problem, feasibility of approach, and work plan.
2. Degree of the potential impact and improvement to the development and advancement of next generation structural materials and systems.
3. Plan for dissemination and technology transfer to practice.
4. Qualifications of the research team to ensure project success.
5. Reasonableness of estimated costs and schedule.

Factor 2 – Technical Merit of the Proposal and Importance to the FHWA Program

The Government will use Factor 2 – Technical Merit of the Proposal in Phase 2 of the evaluation. The technical merit of the Proposal will be evaluated based on the information submitted as listed in section 4 of this BAA considering the following elements that are of equal importance:

1. Degree to which the project outcomes will impact and improve the development and advancement of next generation structural materials and systems.

2. Degree to which the Offeror communicates the background and need, in terms of analytical science, prior development progress, and bridge and highway structure industry application.
3. Degree to which the proposal provides a clear, complete, feasible, and logical technical approach to the work.
4. Completeness of the project management plan in terms of required elements; and the degree to which the Offeror has prepared the project for the execution phase.
5. Degree of experience, credentials, and capability of the project team, including key personnel and team organizational partners, as these elements relate to the project work and influence the project's potential for a successful outcome.

Factor 3 - Availability of Funds
The Government will consider the overall availability of funding for allocations or awards selected under this BAA.

Cost
Cost reasonableness and realism analysis will only be conducted on proposals preliminarily selected for award. Cost will be considered in the ultimate award decision, as the Government may elect not to award to a proposal if the Contracting Officer is unable to determine that the costs are realistic and reasonable.

Small Business Subcontracting Plan
The Small Business Subcontracting Plans, as applicable, will only be evaluated for proposals selected for award and will be evaluated on a "Pass/Fail" basis. Small Business Subcontracting Plans are only required for other than small businesses who submit proposals of $750,000 or more. See Appendix C – Small Business Subcontracting Plan. Small Business Subcontracting Plans that fail the evaluation will be removed from further consideration.

6.3 Awards
As stated in section 6.1.2, the primary basis for selecting proposals for award shall be technical, importance to agency programs, and funding availability. Cost realism and reasonableness shall also be considered to the extent appropriate.

All awards will be subject to the availability of funds. Only the Contracting Officer can legally commit the Government to the expenditure of public funds under the BAA.

6.3.1 Notifications and Negotiations
All Offerors will receive electronic notification via e-mail of the final disposition of their proposal. If selected for award, the Contracting Officer will contact the Offeror with further instructions, including negotiation procedures, if needed.

7 DUE DATES

Questions and white papers must be submitted to the Contract Specialist, Jessica Prutz, at Jessica.Prutz@dot.gov and HCFA-22SRI@dot.gov, by the date and time specified in each call to be considered timely and acceptable. No phone telephone requests will be taken.

7.1 Proposal Due Date

Proposal due dates will be specified in an advisory email sent to Offeror/s after the white paper evaluations.

8 ATTACHMENTS

Appendix A	Quad Chart Instructions with Example
Appendix B	Cost/Price Proposal Models
Appendix C	Small Business Subcontracting Plan
Appendix D	InfoMaterials DataSet Management