



**U.S. Department  
of Transportation**  
Pipeline and  
Hazardous Materials  
Safety Administration  
(PHMSA)

## Notice of Funding Opportunity (NOFO)

### Pipeline Safety Research Competitive Academic Agreement Program (CAAP) Fiscal Year 2023

|                       |                                |
|-----------------------|--------------------------------|
| NOFO Issue Date:      | March 20, 2023                 |
| Question Deadline:    | April 21, 2023, 11:59 p.m. EST |
| Application Due Date: | May 19, 2023, 11:59 p.m. EST   |

Applicants must be registered at [grants.gov](https://www.grants.gov) to apply for the grant. It is highly recommended that applicants begin the registration process as soon as possible to avoid delays in submission. Additionally, applicants must maintain a valid Universal Entity Identifier (UEI) number and an active registration in the System for Award Management (SAM) at [www.SAM.gov](https://www.SAM.gov).

Furthermore, applicants are encouraged to register for an account with FedConnect at [www.fedconnect.net](https://www.fedconnect.net) before applying. FedConnect is a messaging platform where applicants can communicate directly with PHMSA. Your organization's Marketing Partner ID number (MPIN), which can be retrieved from SAM, is required to create an account. For instructions on how to register in FedConnect and how it works, view the *FedConnect: Ready, Set, Go! Tutorial* on the FedConnect home page.

**Assistance Listing (formerly CFDA):** 20.724 Competitive Academic Agreement Program

**PHMSA Notice of Funding Opportunity Number** 693JK323NF0003

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## **Program Summary**

|                             |                                                                                                              |
|-----------------------------|--------------------------------------------------------------------------------------------------------------|
| Federal Agency Name:        | U.S. Department of Transportation (DOT)<br>Pipeline and Hazardous Materials Safety<br>Administration (PHMSA) |
| Funding Opportunity Title:  | “Pipeline Safety Research CAAP – FY 2023”                                                                    |
| Announcement Type:          | Initial Announcement                                                                                         |
| Funding Opportunity Number: | 693JK323NF0003                                                                                               |

### **Dates:**

|                       |                |
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## **MISSION**

The mission of the U.S. Department of Transportation (DOT or Department) is to deliver the world's leading transportation system, serving the American people and economy through the safe, efficient, sustainable, and equitable movement of people and goods. DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA) protects people and the environment by advancing the safe transportation of energy and other hazardous materials that are essential to our daily lives. To do this, PHMSA establishes national policy, sets and enforces standards, educates, and conducts research to prevent incidents. PHMSA also prepares the public and first responders to reduce consequences if an incident does occur. To accomplish this, PHMSA awards grants to states, Tribes, territories, localities, communities, and nonprofits to ensure pipelines operate safely and shipments arrive without incident.

## **SECTION A – PROGRAM DESCRIPTION**

### **Section A. 1: Statement of Purpose**

PHMSA requests applications from nonprofit institutions of higher education for Competitive Academic Agreement Program (CAAP) grant funding to research innovative solutions in three pipeline safety topic areas. CAAP grant funding is subject to the availability of appropriations. PHMSA anticipates awarding up to \$4,000,000 under CAAP in FY 2023, with federal funding not to exceed \$1,000,000 per award. The research to be conducted under CAAP agreements will pursue a set of solutions for known pipeline integrity challenges. PHMSA anticipates the period of performance for each award will be no less than 24 months and will not exceed 36 months.

A strong transportation network is critical to the functioning and growth of the American economy. Our nation depends on the transportation network to move the goods we produce and facilitate the movement of workers who are responsible for that production. When the nation's highways, railways, and ports function well, they connect people to jobs, increase the efficiency of delivering goods, and thereby cut the costs of doing business, reduce the burden of commuting, and improve overall well-being.

Consistent with Executive Order 13985, Advancing Racial Equity and Support for Underserved Communities Through the Federal Government (86 FR 7009), PHMSA is working to advance equity by encouraging the participation and partnership with Minority Serving Institutions (MSIs) in the CAAP.<sup>3</sup> Also, PHMSA will share the publicly posted NOFO directly with MSIs so all are aware of this funding opportunity.

### **Section A.2: Program Authority**

PHMSA's Pipeline Safety Research and Development (R&D) Program was authorized pursuant to Section 12 of the Pipeline Safety Improvement Act of 2002 (Public Law 107-355) to ensure the integrity of pipeline facilities. PHMSA's authority to award grants and enter

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<sup>3</sup> MSI's include Historically Black Colleges and Universities, Asian American and Native American Pacific Islander Servicing Institutions, Tribal Colleges and Universities, and Hispanic-Serving Institutions.

into cooperative agreements in furtherance of the objectives of 49 U.S.C. § 60101, et seq., is codified in 49 U.S.C. § 60117(l).

### **Section A.3-1: Background on PHMSA's Pipeline Safety R&D Program**

Pipeline infrastructure is the primary means of transporting natural gas and the majority of hazardous liquids from production basins and ports to areas of consumption. The importance of energy pipelines to the U.S. economy and our standard of living—as well as the risk posed to health, safety, and the environment—requires that these assets be maintained safely and reliably and, where appropriate, transitioned or expanded to meet our energy demands and contribute to the mitigation of global climate change.

R&D must play a larger role in finding solutions to national, regional, and local pipeline operational safety, reliability, and environmental challenges. Some of these challenges include ensuring that operators have the most suitable technology to efficiently and effectively meet or exceed federal and state regulatory requirements regarding the safety and integrity of pipelines. Other challenges include keeping critical industry consensus standards updated with the latest scientific information and knowledge to be effective and relevant to their purpose of supporting the safe design, construction, operation, maintenance, and repair of pipelines.

The PHMSA Pipeline Safety R&D Program continues to have an impact on developing technology, strengthening consensus standards, and creating and promoting general knowledge to decision makers. More performance details are available on PHMSA's Pipeline Safety R&D Program Web site at <http://primis.phmsa.dot.gov/rd/performance.htm>.

The PHMSA Pipeline Safety R&D Program supports the priorities and objectives of the U.S. DOT RD&T Strategic Plan (FY 2022-2026; <https://www.transportation.gov/rdtstrategicplan>); keeping in mind the US DOT Innovation Principles (<https://www.transportation.gov/priorities/transformation/us-dot-innovation-principles>).

### **Section A. 3-2: Background on the CAAP Initiative**

Section 12 of the Pipeline Safety Improvement Act of 2002 (Public Law 107-355) mandates that DOT and other designated federal agencies must "carry out a program of research, development, demonstration, and standardization to ensure the integrity of pipeline facilities." Specifically, PHMSA's Pipeline Safety R&D Program's mission is to sponsor R&D projects focused on providing near-term solutions that will improve safety, reduce the environmental impact, and enhance the reliability of the nation's pipeline transportation system. The goals and objectives of the CAAP initiative, as discussed below, directly support both this mission and the congressional mandate.

The CAAP initiative is intended to spur innovation by enabling academic research focused on high technical risk and high payoff solutions for many safety challenges. Such research will potentially deliver solutions that can be transferred to PHMSA's Core<sup>4</sup> Research Program for demonstration and deployment. The goal is to validate proof of concept for a

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<sup>4</sup> The Core program is one of three pipeline research programs administered by PHMSA.

thesis or theory along a logical path towards commercialization.

Another goal of the CAAP initiative is to expose undergraduate and graduate research students to subject matter that is common to pipeline safety challenges, encourage them to participate in these subjects, and illustrate how their engineering or technical disciplines are highly sought after in the pipeline field. The ultimate benefit would be to cultivate new talent in all aspects of the pipeline sector.

### **Section A. 3-3: CAAP Performance Goals and Expected Outcomes**

PHMSA's Pipeline Safety R&D Program is requesting projects through the Pipeline Safety Research Competitive Academic Agreement Program (CAAP – CFDA Number 20.724) that will seek to advance its mission through well-researched solutions to known integrity threats. PHMSA will make awards for projects that have clear objectives and foster increased talent in all aspects of pipelining. Section A.4 outlines the performance goals for 2023 CAAP awards.

Program staff will collect data on ongoing projects as outlined by Section F.3 to ensure that projects are on track to meet PHMSA's expectations. PHMSA staff will review data collected for indicators of variances from expected project outcomes. Furthermore, PHMSA staff will also track the number of positions sought by CAAP participants in pipeline engineering positions.

### **Section A. 4: Research Topics**

PHMSA is soliciting applications in three primary R&D focus areas based on topic ideas submitted through our open portal<sup>5</sup> and identified from the November 2022 Liquefied Natural Gas (LNG) R&D Forum. PHMSA seeks applications that focus on research addressing the shared interests of academic researchers, public interest advocates, and pipeline operators regarding pipeline safety and environmental mitigation technology topics with the goal of commercialization.

The research objectives will establish solid scientific and engineering foundations on technology development towards the commercialization effort to promote pipeline safety and associated environmental mitigation. Researchers will be expected to include the PHMSA-regulated industry operators in their work to ensure the research is relevant and commercially viable. It is encouraged that faculties with different academic backgrounds and expertise collaborate among universities and interact with one or more industrial partners to define the research objectives and form virtual industry-university groups. These groups will allow undergraduate and graduate students to participate in the subjects that are critical and highly needed in the pipeline sector.

PHMSA will only consider applications that address technical gaps within the onshore safety program areas listed in this NOFO. Application submissions that are outside of the identified program areas listed below will not be reviewed or considered. The focus areas are

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<sup>5</sup> <https://primis.phmsa.dot.gov/matrix/gapnew.rdm>

intentionally ambitious and broad enough to allow for the acceptance of a wide spectrum of specific applications that strategically support PHMSA's mission of pipeline safety and environmental protection.

Each applicant must address only one of the following primary safety program areas per application submission. Applicants may submit multiple applications. PHMSA intends to make one or more awards for each of the focus topic areas.

### **Topic 1: Novel Bio-Based Inhibitors for the Mitigation of Internal Corrosion in Pipelines**

The use of corrosion inhibitors is a well-known strategy for corrosion prevention of metals. In the pipeline industry, inhibitors have limited applications due to the impact of toxic compounds from the inhibitors on the environment and their effect on products that are transported by pipelines.

Over the past decade, green chemistry has emphasized the importance of protecting the environment and human health in an economically beneficial manner aimed at avoiding toxins and reducing waste. Green inhibitors are biodegradable, ecologically acceptable, and renewable.<sup>6</sup>

In addition to the concern about the toxic effect of inhibitors, the application of inhibitors to mitigate pipeline internal corrosion is also limited due to the compatibility of inhibitors with products transported by the pipeline. Currently, inhibitors are mostly used in liquid crude oil pipelines and less used in other pipelines, such as refined products or natural gas pipelines.

The aim of this solicitation is to investigate future opportunities to apply green inhibitors to mitigate pipeline internal corrosion. The scope of the solicited research should develop and evaluate the bio-based green inhibitors in various pipeline systems, including gathering pipeline systems where internal corrosion risks are often high and difficult to control. Compatibilities of the inhibitors with transported products should be evaluated in the research study. Potential implementation of the inhibitors for various pipelines should be assessed to provide recommendations for properly implementing the developed inhibitors in a pipeline system.

### **Topic 2: Develop Innovative Solutions to Supplement the Current Cathodic Protection Methodologies to Assess the Effectiveness of the Pipeline Cathodic Protection System**

Cathodic Protection (CP) is one of the methodologies utilized to prevent and mitigate pipeline external corrosion. Current regulation requires frequent inspections and field testing to ensure that the CP system is working properly to prevent failure of a pipeline due to external corrosion.

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<sup>6</sup> Green Corrosion Inhibitors from Natural Sources and Biomass Wastes, *Molecules*, Jan., 2019, 24(1): 48  
<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6337343/>

Currently, most CP systems are evaluated by conducting multiple field tests, which are costly and less effective in assessing the performance of a CP system. For example, the field test might be difficult to complete in areas where access to a pipeline is restricted, such as under pavement, highways, rivers, etc. In addition, weather conditions could delay the completion of a field test. Having an alternative method for assessing the CP system and protection level could enhance pipeline integrity management and reduce the risks of pipeline incidents due to external corrosion.

CP simulation and modeling have been developed and implemented in many industries, such as for marine and offshore infrastructures and onshore and underground facilities, to predict how a CP system performs, as well as to facilitate the design of a new CP system. Currently, CP simulation and models are mostly developed for pipeline systems to aid CP system design and predict interference currents. Applying the CP simulation and modeling could help pipeline operators evaluate the effectiveness of CP systems and predict the external corrosion risks of a pipeline while reducing field testing.

The primary goal of this solicitation is to investigate alternative technology solutions to help pipeline operators effectively assess CP systems and the risks of external corrosion due to ineffective CP. The scope of the solicited research should include investigating the areas to further expand the current CP simulation and modeling methodologies, as well as applying or developing advanced remote inspection methods to assess the CP system and predict the risks of external corrosion failure. The developed solutions should address various scenarios, such as soil conditions and movements, seasonal variations, coating types, and pipeline operating conditions, and should also utilize CP history and available CP survey and pipeline inspection data, etc.

### **Topic 3: Evaluation of Passive Thermal Radiation Mitigation Measures at Liquefied Natural Gas (LNG) Facilities**

PHMSA is seeking solutions to reduce the off-site impacts from thermal radiation due to a potential fire (i.e., jet fire, pool fire, and fireball) occurring within an LNG facility. The federal regulations for the siting requirements of LNG facilities at 49 Code of Federal Regulations (CFR) §193.2057 require thermal radiation protection and incorporates by reference section 2.2.3.2 of National Fire Protection Association 59A, 2001 edition (NFPA 59A-2001). While neither Part 193 nor section 2.2.3.2 of NFPA 59A-2001 provide provisions for reducing the heat flux using passive mitigation measures (walls, shrouding, etc.), section 5.3.2.8 of the 2019 edition of NFPA 59A (NFPA 59A-2019) allows for the effects of passive mitigation techniques incorporated into thermal radiation hazard modeling. To determine whether the provision in section 5.3.2.8 of NFPA 59A-2019 could be adopted in future rulemaking, the effectiveness of different passive mitigation measures will be evaluated.

The research solicitation should include a team of experts in hazard modeling who can advise on the research. In addition, the team should review and identify passive mitigation measures commonly used at LNG facilities. The team should also conduct a literature review on materials used for passive mitigation measures and demonstrate the effectiveness of

mitigation measures through case studies, lab testing, or field testing.

This topic was generated from the Working Group #2 – LNG Facility Siting Report Out Summary at the 2022 LNG R&D Forum and Public Meeting.<sup>7</sup>

## **SECTION B – FEDERAL AWARD INFORMATION**

### **Section B. 1: Funding**

PHMSA anticipates awarding up to \$4,000,000 in CAAP funding for FY 2023, with the amount of federal funding not to exceed \$1,000,000 per award. Applicants may submit more than one application, but each individual application must not exceed \$1,000,000 in federal funding requested.

### **Section B. 2: Period of Performance**

PHMSA anticipates a period of performance of between 24 months and 36 months from the date of award for each agreement. Modifications within the scope of the cooperative agreement will be handled between the parties on a case-by-case basis.

### **Section B. 3: Type of Award**

All awards resulting from this announcement will be issued as cooperative agreements. For the purposes of the cooperative agreement, PHMSA's substantial involvement may include assistance with pipeline industry practices, history, data, methods, means, or requirements. PHMSA will advise, educate, coordinate efforts to acquire relevant materials—such as pipe samples—for testing, and provide data and suggestions to aid in the successful completion of the research project. Further, while the collegiate institutions are likely unfamiliar with pipeline industry companies, trade associations, or principal contacts, PHMSA will advise and offer collaborative communication with key pipeline contacts to aid in the successful completion of the research project.

## **SECTION C – ELIGIBILITY INFORMATION**

### **Section C. 1: Eligible Applicants**

Applicants must be nonprofit institutions of higher education located either in the U.S. or a U.S. territory or possession. PHMSA encourages applications from eligible higher education institutions that partner with other higher education institutions, including MSIs. PHMSA will also consider an application from an eligible higher education institution that partners with other eligible recipients, the pipeline industry, and/or with any private organization, so long as the cost of the proposed partnership does not exceed 40 percent of the proposed amount of federal contribution to the project (which may be up to \$1,000,000).

MSIs are encouraged to submit applications on their own and/or in collaboration with others. However, no portion of this requirement will be set aside or reserved exclusively for MSIs.

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<sup>7</sup> <https://primis.phmsa.dot.gov/meetings/MtgHome.mtg?mtg=162>

Applicants should state whether the project is located in a Qualified Opportunity Zone per 26 U.S.C. § 1400Z-1.

### Section C. 2: Cost Sharing

Pursuant to § 22(b)(2)(C)(ii) of the PIPES Act of 2016 (Pub. L. 114–183), there is a mandatory minimum 20 percent cost-sharing requirement for CAAP agreements. The federal government will fund no more than 80 percent of the total cost of each approved project up to \$1,000,000. Firm letters of commitment for resource sharing must be provided with the application. Applications without resource-sharing commitment letters will not be reviewed or considered for award. See Section D.2 for additional information regarding budget/cost applications.

### Section C. 3: Minimum Requirements

The following are minimum requirements that all applicants must meet to be considered. Failure to meet these requirements at any time—whether pre- or post-award—will result in either removal of the application from further consideration or termination of the agreement. The application must include a letter on the submitting institution's letterhead that certifies these minimum requirements are understood and will be met. The letter must be signed by the dean or an authority of an equivalent level for that college, department, or program and must then be inserted as Appendix A for the technical application (the first page of the Appendix).

1. Eligible applicants are nonprofit institutions of higher education located in the U.S. or a U.S. territory or possession.
2. The academic research agreement will be with the institution and not with individual students, faculty, or staff.
3. The research scope must be executed by undergraduate, graduate, and/or Ph.D. research students. Institution faculty/staff should design the scope and oversee student execution of the scope. *Applications that do not propose student involvement will be deemed non-responsive and will be removed from consideration. NOTE: Students must be identified no later than the first quarter of the period of performance.* Institution faculty, staff, and students proposed to be involved with the research agreement must be U.S. citizens, permanent residents, or possess current visas that will allow them to remain in the country long enough to complete the research project. If known, provide the proposed student's resume, curriculum vitae, or biography. Federal funding is solely for allowable costs necessary to execute the scope of the research, such as institution overhead, the procurement of expendables, and any required labor. Purchasing new or existing testing equipment with federal funds will be permitted. Federal funding cannot be used for the construction of new facilities or the refurbishing of existing facilities.
4. Applications must meet the cost-sharing requirements stipulated in Section C.2. Failure to meet the required 20 percent cost-sharing threshold will result in an application being removed from consideration.

## SECTION D – APPLICATION AND SUBMISSION INFORMATION

Failure to comply with the requirements described in this section shall result in an application not being approved. Further, please note that PHMSA’s agreement officers and grant specialists may request additional information pertaining to your application during the application review/evaluation process in order to comply with the DOT’s Guide to Financial Assistance and the requirements of 2 CFR Part 200, Subpart E.

### Section D. 1: Address to Request an Application Package

PHMSA requires applicants for this funding opportunity to apply electronically through grants.gov. Applicants must download the application package associated with this funding opportunity by following the directions provided at grants.gov. To request a hard copy of the application package, please contact:

Dwayne Cross  
 Agreements Officer  
 Acquisition Services Division  
 The Pipeline and Hazardous Materials Safety Administration  
 1200 New Jersey Avenue SE,  
 East Building E22-305  
 Washington, DC 20590  
 E-mail: Dwayne.Cross@dot.gov

If you are hearing-impaired, please contact the FR/TTY at 1-800-877-8339 or e-mail PHMSA-Accessibility@dot.gov.

### Section D. 2: Content and Form of Application Submission

Applicants are required to submit their complete applications through grants.gov. To submit an application, applicants must be registered at grants.gov. Please note that new user registrations for grants.gov can take up to two weeks to complete. For additional questions on how to register, contact grants.gov support.

Additionally, applicants are encouraged to register for an account with FedConnect at: [www.fedconnect.net](http://www.fedconnect.net) before submitting an application. Your organization’s Marketing Partner ID number, which can be retrieved from the System for Award Management (SAM) at [www.SAM.gov](http://www.SAM.gov), is required to create an account. For instructions on how to register with FedConnect and how it works, view the *FedConnect: Ready, Set, Go! Tutorial* on the FedConnect home page.

### Technical Application

In preparing their technical application, applicants must use the technical application template attached to this opportunity, which includes instructions regarding required content and information (Attachment A). Applicants must only apply for funding that can reasonably

be spent within the proposed period of performance.

Technical application requirements are summarized below and described in detail in the provided template. Failure to follow these requirements shall result in the removal of an application from consideration.

1. All information supporting the evaluation criteria must be 20 pages or less, which does not include the Cover Page, the Technical Application Information Page, or the Appendix.
2. The Certification Letter of Minimum Requirements must be the first page in the Appendix.
3. The Appendix may include additional information; however, this information will not be used by reviewers in evaluating the application (except to determine that each applicant has submitted a certification letter regarding minimum requirements; ref: Section C.03).
4. All documents must be formatted as follows: Times New Roman, 12-point font, and 1.15 line and paragraph spacing for the body of the text.
5. Technical applications in the format prescribed by Attachment A must be uploaded to the Project Narrative section of the grants.gov application.

#### **Budget/Cost Application and Budget Narrative**

Applicants must use Standard Form 424A to submit their budget/cost application through grants.gov. The budget should reflect the applicant's best terms, from a cost and technical standpoint, to perform the work. No fee or profit should be proposed, as this is a resource-sharing arrangement.

Additional budgetary information, broken out as described in Subparagraphs A through G below, must provide detailed information on each cost element, consistent with the applicant's cost-accounting system. The amounts requested for each budget category must be justified in a Budget Narrative document and uploaded to the Budget Narrative section of the application. Budget Narratives must address the following items:

1. **Personnel:** List individually all personnel and include for each the requested hours to be funded and the respective compensation rates (salary/wages and fringe benefits).
2. **Fringe Benefits:** Applicants must provide a copy of or a Web link to the university's policy stating the appropriate fringe rates for each labor classification.
3. **Travel:** Proposed travel must be directly related to the performance of the project. In the Budget Narrative, state the reason(s) for travel, the type and duration of the travel, and its relation to the project. Additionally, recipients may anticipate travel requested by PHMSA to present their findings up to once each 12 months of the project. Provide an itemized list of associated travel costs.
4. **Supplies:** Provide an itemized list of proposed supplies. Include individual costs for each item exceeding \$5,000 and the basis of estimating the cost (e.g., vendor quotes, catalog prices, prior invoices, etc.).

5. **Equipment:** Provide an itemized list of proposed equipment. Include individual costs for each item and the basis of estimating the cost (e.g., vendor quotes, catalog prices, prior invoices, etc.)<sup>8</sup>.
6. **Contractual (Consultants/Subcontractors):** List the names of consultants and describe the activities to be performed, the duration of the service, and the compensation involved. Provide the hourly or daily rate along with the basis of the rate. Furnish resumes or similar information regarding qualifications and experience. Provide at least two invoices reflecting hourly or daily rates charged to customers other than the federal government. You must provide a statement signed by the consultant certifying his or her availability and salary. If travel or incidental expenses are to be charged, give the basis for these costs. For proposed subcontractors, provide their total cost per year. Detailed subcontractor costs should appear in the subcontractor's budget explanation. The total cost of consultants and/or subcontractors must not exceed 40 percent of the proposed federal contribution to the project. Contractual agreements must comply with the procurement standards in 2 CFR §§ 200.317-300.326.
7. **Other Direct Costs:** Provide an itemized list with associated costs for any other item proposed as a direct cost that is not included in another category. State the basis for each proposed item.
8. **Indirect Charges:** Provide a copy of or a Web link to the university's negotiated Indirect Rate Agreement. Explain or demonstrate how the total indirect charges were calculated.
9. **Grant Funds, Sources, and Uses of Project Funds:** Project budgets should show how different funding sources will share in each activity and present those data in dollars and percentages. The budget should identify other federal funds, if any, that the applicant intends to use. Funding sources should be grouped into three categories: non-federal, Competitive Academic Agreement Program, and other federal with specific amounts from each funding source. Non-federal contributions may include cash, personnel, equipment, donated goods or services (provided that the market value of the good or service is substantiated by a letter or other form of evidence from the provider of the good or service), and other resources.
10. **Cost Sharing or Matching:** All resource-sharing or matching contributions, including cash and third-party contributions, must meet the criteria in 2 CFR § 200.306. These criteria state that viable resource-sharing or matching contributions are:
  - a. Verifiable from the non-federal entity's records.
  - b. Not included as contributions for any other federal award.
  - c. Necessary and reasonable to accomplish the project or program objectives.
  - d. Allowable under Subpart E – Cost Principles of 2 CFR Part 200.
  - e. Not paid by the federal government under another federal award, except where the federal statute authorizing a program specifically provides that federal funds made

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<sup>8</sup> The development of PHMSA's Research, Development, and Technology Center at the Transportation Technology Center is currently on hold pending the completion of the Pipeline Safety Testing Enhancement Study as required by Section 105 of the Protecting Our Infrastructure of Pipelines and Enhancing Safety Act of 2020 (PIPES Act of 2020). The Center will not be available for CAAP project testing.

available for such a program can be applied to matching or cost-sharing requirements of other federal programs.

- f. Provided for in the approved budget (when required by the federal awarding agency).
- g. In accordance with other provisions of 2 CFR Part 200, as applicable.

### **Standard Forms**

The following forms are found in grants.gov under the FY 2023 CAAP Funding Opportunity and must be completed by the applicant.

1. Standard Form (SF)-424 – Application for Federal Assistance
2. SF-424A – Budget Information
3. Lobbying Form – Certifications Regarding Lobbying
4. Standard Title VI/Non-Discrimination Assurances – Civil Rights Assurances

### **Applicant Attachments**

All required forms must be created by the applicant and uploaded to grants.gov under the FY 2023 Competitive Academic Agreement Program (CAAP) Funding Opportunity. Guidance for submitting the project narrative and budget narrative is listed in the following section:

1. Project Narrative attachment
2. Budget Narrative attachment
3. Indirect Cost Agreement and/or Statement claiming 10 percent de minimis (if applicable)
4. Letters of Support from partner organizations (if applicable)
5. Additional optional attachments (if applicable)

Applications should be well-written and free of mathematical errors in the line-item budget and budget narrative. Program narratives should have clearly identified sections and follow the structure requested in this NOFO. The application forms and templates are available on grants.gov in the “Related Documents” tab with detailed instructions on the application process.

Please also reference Section E to ensure that the application addresses the criteria on which PHMSA will evaluate.

### **Sharing of Application Information**

Except for the information properly marked as described in Section H, the Department may share application information within the Department or with other federal agencies if the Department determines that sharing is relevant to the respective program’s objectives.

### **Standard Title VI/Nondiscrimination Assurances**

Applicants must sign, date, and return with their application the Standard Title VI/Non-Discrimination Assurances specified in Attachment B: Standard Title VI/Non-Discrimination

Assurances. Specifically, applicants must complete and return Attachment B. The completed documents should be submitted as an attachment with the other application materials.

### **Lobbying**

Funds may not be used in direct support of litigation, lobbying, direct advocacy for or against a pipeline construction or expansion project or other pipeline policy matters, or activities associated with regulatory compliance or typical operations and maintenance of pipeline facilities. To be considered for award, each application must include a signed Standard Form of Disclosure of Lobbying Activities.

### **Unmanned Aerial Systems**

Unmanned Aerial Systems (UAS) purchased or acquired for usage in proposed research project must be designed and constructed in the United States. UAS may not be designed, developed, manufactured, or supplied by persons owned by, controlled by, or subject to the jurisdiction or direction of foreign governments.

### **Safety**

Applicants must address how their proposed research project provides substantial safety benefits. If applicable, applicants should include a discussion of how their proposed research project will not negatively impact the overall safety of the traveling public.

### **Equity**

If partnering with an MSI, applicants should describe the role the MSI will play (or the extent of the MSI's participation) in the proposed research project. If applicable, applicants should also describe how their proposed research could generate benefits to underserved communities.

## **Section D.3: Unique Entity Identifier (UEI) and System for Award Management**

Each applicant must be registered in SAM before submitting an application, provide a valid UEI number in its application, and continue to maintain an active SAM registration with current information at all times when it has an active federal award or an application under consideration by PHMSA. PHMSA may not make a grant award to an applicant until the applicant has complied with all applicable UEI and SAM requirements. If an applicant has not fully complied with all applicable UEI and SAM requirements by the time that PHMSA is ready to make a grant award, PHMSA may determine that the applicant is not qualified to receive an award and use that determination as a basis for making an award to another applicant. PHMSA will review an applicant's SAM registration status at [www.sam.gov/portal/public/SAM/](https://www.sam.gov/portal/public/SAM/) to make a responsibility determination.

## **Section D.4: Submission Dates and Times**

Complete applications must be received electronically via grants.gov by 11:59 p.m. EST on May 19, 2023. No late applications will be considered for evaluation. Applicants will receive an automated receipt from grants.gov of the date and time of application submission.

### Section D.5: Funding Restrictions

Construction is not an allowable activity under this announcement. PHMSA will not allow reimbursement of pre-federal award costs.

### Section D.6: Other Submission Requirements

#### Accessing Grant Systems

1. **Grants.gov.** For new users, go to [www.grants.gov/web/grants/applicants.html](http://www.grants.gov/web/grants/applicants.html) or go to the main page at [www.grants.gov/](http://www.grants.gov/) and select “Register.” New user registrations for grants.gov can take up to two weeks to complete. For additional questions on how to register, contact grants.gov support at 1-800-518-4726 or e-mail [support@grants.gov](mailto:support@grants.gov).
2. **FedConnect** Applicants are encouraged to register for an account with FedConnect at [www.fedconnect.net](http://www.fedconnect.net) before applying. Your organization’s Marketing Partner ID Number (MPIN), which can be retrieved from SAM, is required to create an account. For instructions on how to register in FedConnect and how to use the portal, view the *FedConnect: Ready, Set, Go! Tutorial* under the *Need Help?* section on the FedConnect home page. For other technical issues or questions, e-mail [fcsupport@unisonglobal.com](mailto:fcsupport@unisonglobal.com) or call 1-800-899-6665, option 2. The FedConnect Support Center is staffed Monday–Friday 8 a.m.–8 p.m. EST, except federal holidays.

## SECTION E – APPLICATION REVIEW INFORMATION

PHMSA will evaluate applications through administrative, technical, and programmatic reviews based on the evaluation criteria.

### Section E.1: Criteria

PHMSA developed evaluation criteria to rate and select competing applications. Submission of an application is not a guarantee of award. PHMSA may, at its discretion, award a grant based on an application in its entirety, award only portions of a grant based on an application, or not award a grant at all.

#### Merit Criteria

Applications will be evaluated against the following evaluation criteria:

1. The extent to which the applicant’s application meets the research topic area needs.
2. The extent to which the applicant’s proposed research topic solution can be readily implemented or transferred to the Core Research Program for demonstration and deployment.
3. The extent to which the applicant’s application identifies research partnership(s) and subject matter expert involvement, as well as how involved the identified partner(s) will be in the project.

4. The extent to which the applicant's application clearly establishes work scope, tasks, milestones, and estimated project costs that align with project goals and objectives, as well as whether any potential risks have been identified and mitigated.
5. The extent to which the applicant's proposed plan involves students and defines their specific tasks and commitment to the project.
6. Whether the location of the project(s) is a Qualified Opportunity Zone designated pursuant to 26 U.S.C. § 1400Z-1.

These criteria are intended to identify projects that target high technical risk areas, offer well-defined plans, and produce results that are measurable and transferable to further investigations in CAAP or PHMSA's Core Research Program. In addition, PHMSA expects the proposed results of the projects to be factual, unbiased, verifiable, and repeatable to the extent practicable. Applicants should be aware that a grant award will not convey any authority to grant recipients to secure information or cooperation from pipeline operators.

#### Additional Considerations:

1. Safety – PHMSA may consider how the proposed grant funded activities provide substantial safety benefits.
2. Equity – PHMSA may consider the applicant's status as an MSI, commitment to partner with an MSI, or the extent of an MSI partner's involvement in the proposed research project. PHMSA may also consider the extent to which the proposed research could generate benefits to underserved communities. Applicants may find it useful to utilize one of the federal tools to determine disadvantaged community status available at <https://www.transportation.gov/grants/dot-navigator/federal-tools-determine-disadvantaged-community-status>. Applicants are also encouraged to use PHMSA's National Pipeline Mapping System (NPMS) tool (<https://www.npms.phmsa.dot.gov/>), which includes maps of gas transmission pipelines, liquefied natural gas plants, and regulated hazardous liquid pipelines, including those transporting CO<sub>2</sub>.

## **Section E.2: Review and Selection Process**

### **Administrative Review**

PHMSA will conduct an administrative review to ensure the application meets the eligibility criteria outlined in Section C: Eligibility Information. Each application will be reviewed for completeness to ensure it includes all the required elements to qualify for the grant. If the application does not meet the required elements, the application will likely be rejected.

### **Technical Review**

PHMSA will conduct a technical review of the application to assess how the proposed work is to be performed and whether the application is responsive to the applicable program requirements, such as performance measurement, methodology, and technical merit. PHMSA reserves the right to use outside expertise to perform application evaluation.

### **Programmatic Review**

PHMSA will conduct a programmatic review to assess programmatic factors, which are relevant and essential to the process of selecting applications that best achieve the program objectives, in accordance with applicable statutes, regulations, policies, and guidelines. Other programmatic factors may include history of performance, program priorities, and other modal needs, such as rural areas and Qualified Opportunity Zones. The programmatic review will also address the Administration's priorities, as applicable.

### **Ratings Guidelines**

Based on the results from each review, each application will receive one of the following overall ratings:

**Highly Recommended.** The application demonstrates that the NOFO requirements are very well understood, and the approach will likely result in extremely high-quality performance. The application clearly addresses and exceeds requirements with no weaknesses.

The application contains outstanding features that meet or exceed the expectations of the federal government on multiple dimensions. The application scope aligns very well with DOT objectives and priorities. The risk of poor performance is extremely low.

**Recommended.** The application demonstrates that the NOFO requirements are understood, and the approach will likely result in satisfactory performance. The application addresses and meets requirements with some minor but correctable weaknesses. The application demonstrates requisite experience, qualifications, and performance capabilities. The application scope aligns with DOT objectives and priorities. The risk of poor performance is low.

**Acceptable.** The application demonstrates that the NOFO requirements are mostly understood, and the approach will likely result in satisfactory performance for part of the requirements. The applicant addresses some of the requirements, with some weaknesses. The applicant demonstrates some experience, qualifications, and/or performance capabilities. The application partially aligns with DOT objectives and priorities. The risk of poor performance is moderate.

**Not Acceptable.** The application does not meet the NOFO requirements. The application fails to address many requirements. The applicant may be ineligible to apply for the grant. The application could not satisfy critical requirements without a major revision and/or a rewrite of the application or a major redirection effort. The application scope does not align with DOT objectives and priorities. The risk of poor performance is high.

### **Selection Process**

PHMSA will recommend applications for award based on the final overall rating as described above. Final award recommendations will be made by the PHMSA Associate Administrator for the Office of Pipeline Safety after taking into consideration recommendations made during the administrative, technical, and programmatic reviews and how well the applications address PHMSA's safety priorities. The PHMSA Administrator, or designee, will make final award selection recommendations.

### **Section E.3: FAPIIS Review**

Prior to making an award, PHMSA is required to review and consider any information about the applicant that is in the designated integrity and performance system accessible through SAM (currently FAPIIS) (see 41 U.S.C. § 2313). An applicant may review and comment on any information that a federal awarding agency previously entered. PHMSA will consider any comments by the applicant, in addition to the other information in the designated integrity and performance system, in making a judgment about the applicant's integrity, business ethics, and record of performance under federal awards when completing the review of risk posed by applicants as described in 2 CFR § 200.205.

Applicants must maintain an active registration in SAM at [www.SAM.gov](http://www.SAM.gov). The SAM registration number will be utilized by PHMSA to confirm the applicant in the Federal Awardee Performance and Integrity Information System.

## **SECTION F – FEDERAL AWARD ADMINISTRATION INFORMATION**

### **Section F.1: Federal Award Notices**

Following the selection process, PHMSA will contact the selected applicants via e-mail indicating that they have been selected for award. This e-mail will include the financial assistance award, which will incorporate the terms and conditions included in Attachment C to this notice and will require bilateral signatures to be fully executed. PHMSA anticipates awarding the agreements during the fourth quarter of FY 2023.

### **Section F.2: Administrative and National Policy Requirements**

The administration of this award by PHMSA and the recipient will be based on the following federal statutory and regulatory requirements:

1. The recipient must comply with 2 CFR Part 200: Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards.
2. The recipient must comply with 49 CFR Part 20: New Restrictions on Lobbying. 49 CFR Part 20 will be incorporated by reference into any award under this program and is available at [www.gpoaccess.gov/ecfr/](http://www.gpoaccess.gov/ecfr/) by clicking on Title 49 CFR Part 20.
3. The recipient must comply with Civil Rights requirements and Title VI: As a condition of a grant award, grant recipients will demonstrate that the recipient has a plan for

compliance with civil rights obligations and nondiscrimination laws, including Title VI of the Civil Rights Act of 1964 and implementing regulations (49 CFR Part 21); the Americans with Disabilities Act of 1990 (ADA) and Section 504 of the Rehabilitation Act; and all other civil rights requirements and accompanying regulations. This should include a current Title VI plan. DOT's and the applicable Operating Administrations' Offices of Civil Rights will work with awarded grant recipients to ensure full compliance with federal civil rights requirements.

4. The recipient must comply with 49 CFR Part 32: Government-Wide Requirements for Drugfree Workplace (Financial Assistance), which implements the requirements of Public Law 100-690, Title V, Subtitle D: Drug-free Workplace Act of 1988. 49 CFR Part 32 will be incorporated by reference into any award under this program and is available at [www.gpoaccess.gov/ecfr/](http://www.gpoaccess.gov/ecfr/) by clicking on Title 49 CFR Part 32.

### **Section F.3: Reporting**

The following reporting and presentation obligations will apply to each award recipient:

1. Kickoff Meeting will be held at the beginning of the research project.
2. Annual Performance Progress Reports (format/content in accordance with Standard Form for Research Performance Progress Reports) must be submitted via e-mail and uploaded to PHMSA's R&D Management Information System (MIS) no later than 30 days after reporting period ends\*.
3. Quarterly Progress Reports must be submitted via e-mail and uploaded to the MIS no later than 30 days after reporting period ends\*.
4. Research Project Poster must be presented at designated government and/or public event up to one time per year; travel may be necessary.
5. Final Research Report must be submitted via e-mail and uploaded to MIS no later than 90 days prior to agreement expiration. The report will be updated based on PHMSA comments and resubmitted;
6. Closing Presentation must be delivered to a PHMSA-designated audience (typically Web based) no later than 30 days prior to agreement expiration; and
7. Annual Federal Financial Reports (SF-425) must be submitted via e-mail and uploaded to MIS within 90 days after the reporting period ends.
8. Performance and Program Evaluation: As a condition of grant award, grant recipients may be required to participate in an evaluation undertaken by DOT or another agency or partner. The evaluation may take different forms such as an implementation assessment across grant recipients, an impact and/or outcomes analysis of all or selected sites within or across grant recipients, or a benefit/cost analysis or assessment of return on investment. DOT may require applicants to collect data elements to aid the evaluation. As a part of the evaluation and as a condition of award, grant recipients might be required to agree to: (1) make records available to the evaluation contractor or DOT staff; (2) provide access to program records and any other relevant documents to calculate costs and benefits; (3) in the case of an impact analysis, facilitate the access to relevant information

as requested; and/or (4) follow evaluation procedures as specified by the evaluation contractor or DOT staff.

Recipients and subrecipients are also encouraged to incorporate program evaluation including associated data collection activities from the outset of their program design and implementation to meaningfully document and measure their progress towards meeting an agency priority goal(s). Title I of the Foundations for Evidence-Based Policymaking Act of 2018 (Evidence Act), Pub. L. No. 115-435 (2019) urges federal awarding agencies and federal assistance recipients and subrecipients to use program evaluation as a critical tool to learn, improve equitable delivery, and elevate program service and delivery across the program lifecycle. Evaluation means “an assessment using systematic data collection and analysis of one or more programs, policies, and organizations intended to assess their effectiveness and efficiency.” 5 U.S.C. § 311. Credible program evaluation activities are implemented with relevance and utility, rigor, independence and objectivity, transparency, and ethics (OMB Circular A-11, Part 6 Section 290).

For grant recipients receiving an award, evaluation costs are allowable costs (either as direct or indirect), unless prohibited by statute or regulation, and such costs may include the personnel and equipment needed for data infrastructure and expertise in data analysis, performance, and evaluation. (2 CFR Part 200). This paragraph does not authorize pre-award costs and grant recipients must separately obtain PHMSA’s written approval to fund pre-award costs consistent with 2 CFR § 200.458.

\*Note: The reporting period begins on the effective date of the grant.

## **SECTION G – AGENCY CONTACT INFORMATION**

\*All questions related to the content of this funding opportunity MUST be submitted via the Message Center on FedConnect. Please do not send questions via e-mail.

For technical issues or questions related to FedConnect only, please e-mail [fcsupport@unisonglobal.com](mailto:fcsupport@unisonglobal.com). An applicant can submit questions through the portal on their Web site or call 1-800-899-6665, option 2.

### **NOFO-Related Questions**

Dwayne Cross  
 Agreements Officer  
 Acquisition Services Division  
 The Pipeline and Hazardous Materials Safety Administration  
 1200 New Jersey Avenue SE  
 East Building, E22-305  
 Washington, DC 20590  
 E-mail: [Dwayne.Cross@dot.gov](mailto:Dwayne.Cross@dot.gov)

### **Program Contact**

Kandilarya Barakat  
 Research & Development Operations Supervisor

Phone: 202-941-8623

E-mail: [Kandilarya.Barakat@dot.gov](mailto:Kandilarya.Barakat@dot.gov)

For technical issues or questions related to grants.gov only, please e-mail [support@grants.gov](mailto:support@grants.gov) or call 1-800-518-4726.

## SECTION H – OTHER INFORMATION

Given the complexity of some aspects of the application process, technical assistance is available to rural, underserved, inexperienced, or disadvantaged applicants to help with the application process. Please contact the program point of contact listed in Section G for technical assistance.

**Protection of Confidential Business Information** - All information submitted as part of or in support of any application shall use publicly available data or data that can be made public and methodologies that are accepted by industry practice and standards, to the extent possible. If the applicant submits information that the applicant considers to be a trade secret or confidential commercial or financial information, the applicant must provide that information in a separate document, which the applicant may cross-reference from the application narrative or other portions of the application. For the separate document containing confidential information, the applicant must do the following: (1) state on the cover of that document that it “Contains Confidential Business Information (CBI);” (2) mark each page that contains confidential information with “CBI;” (3) highlight or otherwise denote the confidential content on each page; and (4) at the end of the document, explain how disclosure of the confidential information would cause substantial competitive harm. DOT will protect confidential information complying with these requirements to the extent required under applicable law. If DOT receives a Freedom of Information Act (FOIA) request for the information that the applicant has marked in accordance with this section, DOT will follow the procedures described in its FOIA regulations at 49 CFR § 7.29. Only information that is in the separate document, marked in accordance with this section, and ultimately determined to be confidential under § 7.29 will be exempt from disclosure under FOIA.

Information and resources regarding DOT’s discretionary grant programs relevant to disadvantaged communities can be found on DOT’s [Transportation Disadvantaged Census Tracts \(arcgis.com\)](https://www.transportation.gov/arcgis) tool.