

# DTPH56-13-RA-000001

## PIPELINE SAFETY RESEARCH AND DEVELOPMENT

### ANNOUNCEMENT DETAILS

This Research Announcement (RA) # DTPH56-13-RA-000001 seeks white papers on individual projects and consolidated Research and Development (R&D) programs addressing the pipeline safety program areas described below.

Researchers should visit <http://primis.phmsa.dot.gov/rd/> to understand more about the Pipeline and Hazardous Materials Safety Administration's (PHMSA) pipeline research strategy and performance and visit <http://primis.phmsa.dot.gov/matrix/> to review all related current and previous research. The merit review panel will not evaluate any white paper that duplicates current or previous research efforts.

Any questions are to be directed to the PHMSA Office of Acquisition Services as listed in this solicitation. Any questions on solicitation content, issues, or procedures must be submitted via email to Ben Patterson (Contract Specialist) at [ben.patterson@dot.gov](mailto:ben.patterson@dot.gov) with a copy to Mr. Warren Osterberg at [warren.osterberg@dot.gov](mailto:warren.osterberg@dot.gov), on or prior to November 19, 2012. Emails must reference Research Announcement (RA) number DTPH56-13-RA-000001 in the subject line. PHMSA encourages the widest participation, particularly involvement with universities and other academic institutions, as well as with individuals, corporations, non-profit organizations, small and small disadvantaged businesses, and State or local governments, or other entities.

For questions or problems with the Registration or Application of the Web Site, please contact Randy Pearson via email: [rdsupport@cyclac.com](mailto:rdsupport@cyclac.com)

White Papers must be uploaded by 3:00 P.M. EST, November 26, 2012.

### BACKGROUND

The pipeline infrastructure in the United States (U.S.) is the primary means of transporting natural gas and moves the majority of hazardous liquid from production basins and ports to areas of consumption. The importance of energy pipelines to the U.S. economy and our standard of living requires that these assets must be safely maintained and appropriately expanded to sustain demand.

Research must play a larger role in finding the solutions to national, regional and local pipeline operational safety and environmental challenges. Some of these challenges involve having the best technology to efficiently and effectively meet or exceed Federal and State regulatory

requirements. Other challenges are in keeping critical industry consensus standards fresh with the latest knowledge and know-how so that people, property and the environment are protected.

PHMSA and the pipeline industry recognize the role of research in removing mutual challenges and, since 2002 have coordinated and collaborated on more than 187 projects and invested approximately \$69M of PHMSA funding, plus \$76M worth of shared resources.

This research enterprise is having a tangible impact toward developing technology, strengthening consensus standards and creating and promoting general knowledge to decision makers. The following high level summary illustrates some of the performance measures used by PHMSA to indicate progress in addressing pipeline challenges. More performance details are available at PHMSA's Pipeline Safety Research website <http://primis.phmsa.dot.gov/rd/performance.htm>.

- The submission of 16 U.S. Patent applications;
- The commercialization of fourteen technology improvements;
- The submission of 79 papers to public events and journals;
- The public availability of 132 project final reports via the internet; and
- Over 16 million website visits since 2002 with over 939,000 files being downloaded just since 2008.

In July 2012, the Government and Industry Pipeline R&D Forum brought together approximately 215 representatives from Federal, State and foreign government offices along with domestic and foreign natural gas and hazardous liquid pipeline operators. The forum's goals included identifying key challenges facing industry and government, sharing information on current research efforts, and identifying research that can help to meet the challenges.

The Forum further galvanized pipeline research coordination and collaboration by producing a national research agenda reflective of stakeholder consensus on what research should be solicited now to address identified pipeline challenges. Please visit [https://primis.phmsa.dot.gov/rd/mtg\\_071812.htm](https://primis.phmsa.dot.gov/rd/mtg_071812.htm) for more information about this important event and how it crafted the topics solicited in this BAA.

## **RESEARCH AREAS**

The July 2012 Government and Industry Pipeline R&D Forum was very successful in identifying several detailed technical gaps as potential new research projects. The Forum also identified several dozen additional topics of high interest that could be solicited through the PHMSA R&D Program at a later date.

However, resource constraints do not allow the support of each and every research topic identified at R&D Forums. The chosen topics for this RA were determined after carefully reviewing Forum findings and available funding to ensure that possible new research is in line with direction identified in the Pipeline Safety Improvement Act of 2002

(<https://primis.phmsa.dot.gov/rd/psia.htm>) or any other relevant congressional direction for PHMSA's program.

Interested offerors should first visit [https://primis.phmsa.dot.gov/rd/mtg\\_071812.htm](https://primis.phmsa.dot.gov/rd/mtg_071812.htm) to understand how the R&D Forum crafted the topics solicited in this RA. Before submitting, offerors should also visit <http://primis.phmsa.dot.gov/matrix/> to review all related ongoing and prior research. The merit review panels will not evaluate any white paper that duplicates current or recent research efforts or addresses topics not solicited in this RA.

PHMSA anticipates a \$10M base investment to fund awards in the topic areas. Historically, individual project awards have been up to \$1M and consolidated programs up to \$5M. The budget is limited so the scope of any proposed project and timeline must be realistic to our program objectives. Proposed project costs by themselves should not become an exclusive factor in preventing a research award. In such cases, projects should be broken up into phases where the initial phase or two are what you specifically address in your white paper submission and generally address the potential of later phases, subject to the degree of prior success(es) throughout the project.

### **RESEARCH SOUGHT WITH RESOURCE SHARING**

The following Research Award has a resource sharing requirement with a minimum of 30% cash funding coming from any non-federal source. For these research areas, PHMSA will fund up to 70% of the proposed project costs at award. Individual or consolidated white paper submissions are welcome. The resource sharing requirements will be officially conveyed in the letter requesting full proposals if and when a white paper is recommended for further consideration.

### **THREAT PREVENTION**

**Topic 1 - Technology - Subsurface Multi-Utility Asset Location Detection** - Technology improvements are sought to locate or map subsurface non-metallic pipes in any operating environment or soil type. Only handheld or cart based above ground systems are sought which do not require applied current to metallic pipes or tracer wires on non-metallic pipes to supplement the technology's effectiveness. Scope should consider how to reduce operator training requirements while bridging the gap between practice deployment and low application costs. A tolerance must be established for addressing false positives. The timeline to a pre-commercial unit is 1 year.

**Topic 2 - Technology - Horizontal Directional Drilling/Open Trenching Multi-Utility Asset Location Detection** - In recent years, marking and sensing technology advancements were seen in identifying new pipe as it is being installed by directional drilling or open trenching. Gaps in tools exist when attempting to locate other devices (i.e.) within the multi-utility ROW in relationship to placement of the new pipeline before, during and after construction. The technology needs to provide meaningful data in a congested area through various soil conditions

along with change detection in the relationship with other utilities over time. A pre-commercial tool is desired in 3-5 years for development. This effort should also factor a study to assess current technologies within its first year.

**Topic 3 - Knowledge/Standards - Documentation Framework of Pipe Materials Installed in the Ground** - Standard developing and pipeline trade organizations should champion the need to better document safety related and construction specifications for all pipeline types and operating environments. With the increase of international suppliers providing the US industry with new pipe the need for consistent data collection across the industry for future pipeline component standards to be recognized internationally. The gap calls for a Centralized Data Repository that provides for an easy way to input data and overcomes proprietary issues. A framework for this need should be realized in 2-3 years with populating the database in subsequent years. For distribution pipelines the focus would be with existing systems proving the framework for a database that identifies potential and existing threats where operators and regulators could review and research these threats that have resulted in near misses (potential) or actual (existing) failures. A framework for this need should be realized in 1-2 years with populating the database in subsequent years.

## **LEAK DETECTION & MITIGATION**

**Topic 4 - Technology/Knowledge - Reducing False Alarms of Leak Detection Systems** - Technology improvements are sought in the development for primarily onshore natural gas/liquid transmission lines exposed to all operating climates. General knowledge across the industry focused on current technology/algorithm and alarm management/philosophy (human factors) is desired to establish baselines for addressing complementary technologies (voting system philosophy) across transient operations and shut down/start up requirements. Technology deployment is envisioned to enhancement systems ability to cross check while accuracy detecting and increase alarm confidence in real-time while completing self-diagnosis. The time to detection of leaks and time to validate are major factors as applied to different pipeline types, risk tolerances and leak sensitivity requirements (variable thresholds-HCAs). This topic gap is envisioned being fully addressed in a 1-3 year time period.

**Topic 5 - Technology/Knowledge/Standards - Leak Detection for New and Existing Systems** Technology improvements are sought for leak detection systems (LDS) for liquids & natural gas transmission, distribution, & and gas gathering. The application would be for new vs. existing pipelines in all onshore operating environments. All technology developments must address the installation and maintenance costs associated with deploying this system. These are specific consideration factors for each pipeline type:

- Hazardous Liquid Pipelines: Technology development is sought for external LDS (Fiber optic, odor sensing, Atmospheric, acoustic, infrared) that is portable on mobile platforms that can detect Small Leaks – weeper/seepers.

- Natural Gas Pipelines: Technology development is sought for Internal LDS/Computational Modeling (large pipes uses but doesn't cross over to smaller systems not used) that use SCADA to better pinpoint large/rupture leaks (transmission pipeline).
- Hazardous Liquid Upstream Pipelines: Technology development is sought for external LDS on multiphase fluid systems.

Research must address with commentary on the retrofit dilemma on existing pipelines, in-situ field testing on operational pipelines, environmental issues with released product, etc. Solutions into the market have variable timeframes depending on the specific challenges for a given pipeline type.

**Topic 6 - Technology - Smart Leak Detection System Developments** - Technology improvements are sought for pinpointing LDS on liquids & natural gas transmission, distribution, & and gas gathering. Such a project will develop and demonstrate a series of automated robust and miniaturized sensing tools able to operate in the harsh oil and gas environments while aiding in the metering and or providing critical data for future automated valve control strategies. The following are performance requirements for this need:

- Specifics for Leak Detection sensors, health monitoring
  - Miniaturization, robustness in harsh environments (liquid and gas)
  - Completion of nanotechnology into a sensing device, valve control
  - Automation (plug and play, networking, scalable)
  - Clarification of life-cycle costs (capex, opex)
- Specifics for Natural Gas Pipelines
  - Automatic metering addition of LD sensor (real-time monitoring through SCADA) (gas distribution & transmission)
  - New development of sensors & instrumentation

This need is focused on sensor development and not the platforms to deploy. Sensor development and requirements and testing should factor lifecycle considerations of the sensors. This project is seen as a long term phased approach to fully address over a period greater than 3 years with some aspects addressed in shorter timeframes.

## **ANOMALY DETECTION & CHARACTERIZATION**

**Topic 7 - Technology - Improve and Develop ILI to Locate and Size Girth Weld, ERW, and Long Seam Defects Including Cracks as Individual Defects from Inside the Pipe -**

Technology development is sought for improving anomaly detection on piggable/unpiggable carbon steel transmission and distribution pipelines operating at greater than 20% SMYS. The focus is on development and deployment of in-line inspection (ILI) to locate and size girth weld, ERW, and long seam defects including cracks and in pipeline body. The improvement is sought in detection and sizing capability in both weld and pipe body to ultimately achieve inspection standards to detect cracks which would fail 100% SMYS pressure test. Advancement in tools that clearly define performance requirements do not exist as well as acceptance and rejection criteria is also lacking. Solutions to market are needed in 3-5 years.

**Topic 8 - Technology - In the Ditch Validation Methodology for the Determination of Defect Sizing and Probability of Detection (POD)** - Technology improvements are sought on liquid and gas pipelines for hand held and in ditch applications. Threat detection of cracks, corrosion, dents are sought with the ability to size them both in shape and depth for all metallic and non-metallic pipes. The timeframe for solutions to market is 3 to 5 years. The technology must perform with the following considerations:

- In all weather and environmental conditions
- Both in service and out-of-service pipelines
- Meet or exceed current ILI accuracy and detection capabilities
- Include ability to measure complex features
- Need to be applicable to all geometry, morphology types
- Include operator and NDE Vendor participation and acceptance in technology development
- Factor calibration blocks that depict real environments

**Topic 9 - Technology - Improve and Develop ILI Tools to Locate, Size, and Quantify Complex/Interacting Metal Loss Features and Dents** - Technology development is sought for improving anomaly detection on carbon steel transmission and distribution pipelines. Improvements are sought in the development and validation of new ILI tools to improve sizing capability for complex corrosion and interacting defects. Examples of complex defects include but not limited to corrosion in dent, and or distinguish between corrosion and gouging (metal loss type identification). The project team must be able to provide information needed by corrosion assessment methodologies. Applications must include corrosion near/on seam welds and or girth welds along with pipe fittings. Clearly defined performance requirements are also desired. The timeframe for solutions to market is 3 to 5 years.

**Topic 10 - Knowledge - ILI Validation Methodology for Determining the Correct Defect Sizing and Probability of Detection POD** - Technology improvements must be validated in an open and clear method. Government, operators and technology providers require a clear and open methodology and test bed to validate the development of ILI technologies used on liquids or gas pipelines addressing any anomaly type found in the field or an established standardized calibration test loop. The need to validate performance on complex features is an important factor with the participation of operators and technology providers. One major barrier to this need is a standardized calibration test loop. The timeframe for solutions to this need is 3 to 5 years.

**Topic 11 - Technology - Above-ground Detection Tools Including Disbondment and Metal Loss for All Metals Including Cast Iron Graphitization** - Disbonded coatings can result in severe corrosion under field-applied tapes, sleeves, and other susceptible systems. Technology improvements are sought to development and demonstrate new above ground tools capable of detecting disbondment and metal loss found in steel and cast iron: transmission and distribution gas; and liquid lines. Early detection is paramount to prevent severe localized corrosion. An aboveground metal loss detector would be a useful tool for unpiggable systems given current

limited inspection options. The timeframe for solutions to market is 2 to 5 years. The following are some considerations that the technology development must consider:

- Development goal is two separate technologies, one for coating disbondment detection and the other for metal and cast iron graphitic corrosion detection. The two technologies could be combined into one aboveground platform.
- Threat detection goal is to detect metal loss, coating disbondment, coating holidays, and cast iron graphitic corrosion (aka graphitization) – all from aboveground.
- Application to inspect uncased, buried pipelines that have up to 9 feet of soil cover through asphalt, concrete, and other ground covers.
- Misalignment compensation and use of wireless to extend range > 1,000 ft
- Field validation testing required on multiple pipeline/coating configurations (POD sensitivity, false alarms), and incorporation of high-resolution GPS.
- The technology after proven must be included into NACE SP 0502 indirect inspection tool list (such as DVGV) and related sections.
- Commentary should be provided on how to use as part of direct assessment and/or as a stand-alone (other technology) answering required information categories for DOT/PHMSA Other Technology Notification

## **ANOMALY REPAIR & REMEDIATION**

**Topic 12 - Technology/Knowledge - Trenchless Renewal/Rehabilitation Methods for Piping Systems** - Project(s) are sought to validate alternatives replacement programs for transmission, gathering and distribution systems pipeline systems both liquid and natural gas. A project may conduct an engineering assessment study towards the understanding of the liner/host pipe interaction to demonstrate structural equivalence to current requirements towards the repair and remediation of line pipe and appurtenances (valves, fittings, flanges, sleeves, couplings). The study should include unique considerations found in different alternatives to replacement from line pipe and distribution pipe – assessment, methods, and effectiveness. The technology should incorporate these stated considerations and is anticipated into the market by 18-24 months. The below are the line pipe specifics for any project focused on cast iron

- Provide a data summary report illustrating performance indicators, such as leak rates. Has the usage of liners decreased leak frequency compared to un-lined cast iron systems?
- The literary search must factor in prior studies, including related studies from Cornell University and Gas Research Institute, on the effectiveness of liners.
- The scope should include commentary on how liners perform when portions of the host pipe have fully degraded or disappeared (complete circumferential loss, breaks and transverse movement of one side of the pipe, etc).
- Commentary should be included identifying guidance regarding the necessity of and practices for inspections during pipe preparation and before, during, and after liner installation. What enhancements are recommended and is visual assessment enough to

detect cast iron graphitic corrosion (aka graphitization) and other threats? What threats should be assessed and what techniques are necessary?

- Commentary should be included identifying further guidance on best practices when installing liners on cast iron pipe for extended service. Subjects could include standard conditions where liners should or should not be used for long term rehabilitation, surface preparation, threats, standard practices, etc.

## **DESIGN/MATERIALS/WELDING-JOINING/VALVES**

**Topic 13 - General Knowledge, Guidelines/Standards - Advanced Pipeline Sensing (line break detection) Systems** - A project is sought to study more accurate line break detection systems to minimize unintended valve closures. Automatic shut-off valves are often recommended to minimize valve shut-off times after a leak is detected. However, one of the main problems associated with utilizing automatic shut-off valves is unintended valve closures due to inaccurate leak determination. This project will study and identify technologies and systems to minimize false leak alarms.

### **RESEARCH SOUGHT WITHOUT RESOURCE SHARING**

The following research areas will be funded 100% by the Federal Government. . Individual or consolidated white paper submissions are welcome. This funding strategy will be officially conveyed in the letter requesting full proposals if and when a white paper is recommended for further consideration. This letter will also describe requirements for forming a Technical Advisory Panel comprised of 2-3 pipeline operators having assets relevant to the proposed project scope that will be utilized to make technical recommendations to PHMSA about the project execution.

## **LEAK DETECTION & MITIGATION**

**Topic 14 - General Knowledge/Standards - Improving Leak Detection System Design Redundancy & Accuracy** - Pipeline trade organizations and standards developing organizations should champion guidance that addresses the following attributes:

- Commentary on the benefits/drawbacks of LDS for smaller operators
  - A focus on assessing requirements and specifying solutions to all pipeline types
- Creation of a LDS standard methodology similar to Germany (TRFL) (5/6 different LDS) to help avoid confusion in adding redundant systems to cover any applied system limitations (<http://www.pipeline-conference.com/sites/default/files/papers/321%20Geiger.pdf>)
  - Commentary on how to expand API 1130 or creating new standard to address such a methodology
  - Commentary on ability to retrofit & simplifying installation and retrofit

## **ANOMALY DETECTION & CHARACTERIZATION**

**Topic 15 - Knowledge - Improving Models to Consider Complex Loadings, Operational Considerations and Interactive Threats** - Technology based models must be validated in an open and clear method when comparing severity criteria while characterizing anomaly's toward remaining strength predictions. Government, operators and technology providers require a model methodology for crack growth that includes complex operational considerations such as pressure cycles on liquids or gas pipelines, soil characteristics (rocky, wetlands, clay, etc.) and level of Cathodic Protection being used at the pipe surface. The timeframe including model validation for solutions to this need is 3 to 5 years.

## **ANOMALY REPAIR & REMEDIATION**

**Topic 16 - Standards - Threat/Anomaly Mitigation Decision-Making Process** - Improvements are sought to threat/anomaly mitigation via a decision-making processes most relevant to ASME B31.8S, API 1160, other consensus standards. Refined processes are applicable to onshore gathering, transmission and distribution pipelines both liquid and natural gas. Failure predictive models with or without ILI data may benefit through future standards that provide an understanding of interactive anomaly features. Such features as environmental and or cyclic loadings along with the wide range of material properties including interaction with growth rates may provide guidance for repair ranking/scheduling. Results may provide data and information towards fitness for service considerations and future standards. The anticipated timeframe to develop such a process would be 18-24 months to be then forwarded to standard developing organization to identify additional needs and or revised applicable standards.

**Topic 17 - Standards - Repair/Replacement Considerations for Pre-Regulation Pipe** - A project should develop repair/replacement considerations for vintage or pre-regulation onshore pipelines liquid or natural gas. These considerations should be based on current fitness for service proposals such as from INGAA IMCI FFS or standards such as API 579. Considerations that are developed would target incorporation into ASME B31.8, ASME B31.4. The anticipated timeframe to develop such considerations would be 18-24 months to be then forwarded to standard developing organization to identify additional needs and or revised applicable standards.

## **DESIGN/MATERIALS/WELDING-JOINING/VALVES**

**Topic 18 - General Knowledge, Guidelines/Standards - Strain-Based Design and Assessment (SBDA) of Segments of Pipelines with and without Fittings** - While present strain capacity models are relatively advanced, they were developed under laboratory test conditions on only straight pipe. Fittings such as bends, elbows, tees, and valves introduce stress concentrations from geometric changes and wall thickness transitions, and may have a significant effect on strain capacity. This project will study the effects of fittings on strain capacity. Results may lead to the development of industry guidance for strain based design and

construction practices of fittings. This work must factor all prior and current work with SBD funded by PHMSA.

**Topic 19 - General Knowledge, Guidelines/Standards - Interaction of High Longitudinal Strain and Anomalies from Corrosion and Mechanical Damage** - Present assessment methodologies for corrosion and mechanical damage growth rates are based on hoop stress from internal pressure. While these methods are well established, it is unknown how these anomalies would behave under high axial strain, where the axial stress is higher than the hoop stress. Also, while present strain capacity models are relatively advanced, they were developed under laboratory test conditions on straight pipes without any damage. This project will study the behavior of corrosion and mechanical damage anomalies under high axial strain and the effects of these anomalies on strain capacity.

**Topic 20 - General Knowledge, Guidelines/Standards - Effects of Hydrocarbon Permeation on Plastic Pipe Strength and Fusion Performance** - Gas distribution companies have experienced problems joining in-service plastic pipelines carrying hydrocarbon liquids. However, no studies have been performed to determine the severity and how widespread this problem may be on plastic pipelines used in the United States. The results of this study may lead to new or revised consensus standards and increase our understanding of hydrocarbon permeation effects on plastic pipe and the possible effects on pipeline safety.

## **WHITE PAPER REQUIREMENTS**

PHMSA is seeking white papers on individual projects and or consolidated R&D programs addressing the pipeline safety program areas presented in this solicitation.

Submissions under this Research Announcement must produce an output which addresses one or more of these three specific objectives.

1. Collaborative development of new technology;
2. Strengthening of industry consensus standards and or;
3. Generation and promotion of new knowledge.

The research team members should strive to include, where applicable, other relevant government agencies, technology developers, trade organizations, service providers, pipeline operators and, if appropriate, standards development organizations. These measures raise confidence that proposed research will achieve desired objectives and assist the merit review panel in evaluating submissions. White papers should identify what benefit/result the research will have and who is partnering on the project to achieve the desired aim.

A consolidated R&D program white paper from a team's lead organization should identify opportunities for integrated R&D that will involve contributions from several organizations

whose combined expertise will contribute greater efficiency and effectiveness to R&D in the proposed program areas. Double submissions will not be accepted; your white paper must specify either individual or consolidated project(s).

Merit review panels may determine at the full proposal evaluation phase, if consolidated programs should be broken into individual projects. You may not submit individual projects both as an individual project and part of a consolidated program at the white paper phase.

PHMSA believes measuring research results and impacts are paramount to the future sustainability of its Pipeline Safety R&D Program. Researchers must keep this goal in mind when developing white papers and later in full proposals if solicited. The following bullets are recommended guidelines in proposing a project.

- All proposed research must include work scope (if applicable) addressing data generation, quantity, quality, and standardization.
- A new assessment process or technology is creating terabytes of data. Proposed research should clearly address what kind of data is created, who are users of the data, what quality control and assurance of data exist.
- All white papers should identify all Standard Development Organizations and or Government/Industry Organizations to use the data developed under proposed work and where or how it will be presented and maintained.
- White papers should include an approximate cost estimate that includes, if feasible, a workforce and resource sharing breakdown.
- Consolidated R&D Programs require a single white paper submitted by a program team's lead organization and must clearly identify how the projects within the program address the program goal. The project level R&D can be integrated from one or more researchers.
- The consolidated program structure should be presented in a flowchart and the combined expertise must contribute greater efficiency and effectiveness than individual projects to PHMSA R&D objectives in the proposed program areas.
- The merit review panel must clearly understand the consolidated structure to effectively use the consolidated review criteria identified in this solicitation.
- Researchers must assist in identifying specific performance metrics on research addressing technology development. PHMSA and co-sponsors must convey the story of our collaborative R&D to leaders in government and industry to sustain the level of future research. Metrics can be quantitative and qualitative in nature. Some examples of good metrics are illustrating how much better technology is detecting or characterizing defects or in how much time or money is saved.

If a white paper reaches the full proposal stage, the full proposal must include cost sharing contributions in accordance with the guidelines that will be conveyed in full proposal request letters.

Each white paper must include the following contact information: point of contact, organization name and complete street address, organization DUNS number, organization Tax Identification Number (TIN), telephone number, fax number, and email address.

White papers are not to exceed five (5) pages (not including a title page). The information the merit review panel will use to evaluate white papers must be contained within the 5 pages using 1 inch margins all around and 12 point Arial or Times New Roman font. If desired, white papers may include attachments, appendices, and backup materials in addition to the 5 page limit, as just an FYI for reviewers.

PHMSA will consider all applications exceeding the core 5 page (not including a title page) limitation as NON-RESPONSIVE. Non-responsive applications will not be provided to the merit review panel and will be removed from consideration.

## **EVALUATION**

An interested party must address the selection criteria by providing sufficient information and by keeping the entire paper within the five (5) page limit. Specifics on the selection criteria are as follows:

### **1. Relevance to PHMSA's mission and state of understanding.**

Is the proposal relevant to PHMSA's mission of safety and/or environmental protection?

- How well does the proposal describe the challenge and/or state how the approach will resolve the challenge?
- How well does the proposal describe related work done by others, status of any related technology developments or consensus standard revision done by others?

### **2. Soundness of Project or Program design and implementation.**

- How well are project/program goals or objectives defined?
- How well are the scope of work, tasks, and milestones defined?
- How well defined and appropriate are the deliverables?
- How appropriate is the project team size and capabilities to conduct the work?
- How much description and confidence is given illustrating proposed work will not overwhelm the capacity of a project team and a research organization and facilities to satisfactorily meet milestones and deliverables?
- How much knowledge does the offeror utilize from previous private sector or federal projects of a similar scale?
- How well does the offeror utilize known science or engineering principles?
- How likely would this project be successful if awarded?

### 3. Realistic Project or Program costs and schedule.

- How appropriate are costs to address objectives and deliver products within the proposed timeline?
- How appropriate are proposed levels of travel?
- How well is the project schedule defined?
- How appropriate is the schedule matched with the desired deliverable or output?

### 4. Coordination and collaboration of work scopes and deliverables.

- How well does the proposal identify the deliverable type (i.e. technology development or standard development or general knowledge)?
- How well does the proposal identify who would use research results (i.e. end users)?
- How well does the proposal involve end users of the deliverable type into the work scope?
- How appropriate is the technology or knowledge transfer plan?
- How much discussion is provided whether the deliverable or output satisfies a current challenge or are additional tasks necessary before completion of project?
- How well does the proposal identify management of a program area and the capability of the proposing organization to carry out the proposed program?

### 5. Consolidated Program Justification (This criterion will be used during full proposal evaluation of Consolidated Programs only)

- How well does the offeror define program goals and project objectives?
- How well does the offeror justify increased scientific and technical merit under their leadership?
- How well does the offeror articulate technical interrelation between individual projects?

All evaluation factors are of equal importance.

A technical merit review panel will only review white papers that address topics in this solicitation and meet document guidelines. An offeror providing a white paper deemed worthy of further consideration and meeting the criteria of this solicitation may be notified with possible suggestions for minor changes in scope and detailed guidelines for submitting a full proposal for either individual or consolidated proposals but not both.

Upon receipt of full proposals, the merit review panel will again evaluate the proposal against the same review criteria

A white paper only needs to include a "ballpark" cost estimate including work force and resource sharing breakdown (depending on which funding strategy the project is listed under). A full proposal must include detailed resource sharing contribution documentation including cost

analysis and certified letters of commitment from project or program participants. Allowable resource sharing contributions where applicable are cash or in-kind. See 49 CFR 18, Section 18.24, or 49 CFR19, Section 19.23, for details on acceptable cost sharing or matching contributions.

## **SUBMISSION OF WHITE PAPERS**

This FedBizOps notice constitutes the solicitation as contemplated by FAR 6.102(d)(2). A formal Request for Proposal (RFP) or other type of solicitation regarding this announcement will not be issued.

The procedure for submitting a white paper is as follows:

- 1) Only electronic submissions will be accepted; and,
- 2) Prior to submitting a White Paper, each organization must first complete (electronically) a Registration Form <https://primis.phmsa.dot.gov/matrix/RfpInfo.rdm?rfp=41>.

Additional instructions regarding the preparation and electronic submission of the White Papers along with individual questions and answers are available on the website identified above. White Papers must be uploaded by 3:00 P.M. EST, November 26, 2012. Submitted white papers remain the property of PHMSA.

Upon receipt of appropriations, PHMSA anticipates making multiple awards for individual and consolidated research projects. The mechanism for all awards will be fixed price type "Other Transaction Agreements." It is expected that total funding for awards resulting from this RA is estimated to be \$10,000,000. Payments will be made not more often than quarterly and will be based on work completed (and approved by the Government) under the fixed price task. Additional details will be provided in the full proposal request letter.

Any questions are to be directed to the PHMSA Office of Acquisition Services as listed in this solicitation. Any questions on solicitation content, issues, or procedures must be submitted via email to Ben Patterson (Contract Specialist) at [ben.patterson@dot.gov](mailto:ben.patterson@dot.gov) with a copy to Mr. Warren Osterberg (Senior Contracting Officer) at [warren.osterberg@dot.gov](mailto:warren.osterberg@dot.gov), and with DTPH56-13-RA-000001 in the subject line. PHMSA encourages the widest participation, particularly involvement with universities and other academic institutions, as well as with individuals, corporations, non-profit organizations, small and small disadvantaged businesses, and State or local governments or other entities.