

***Federal Funding Opportunity
Request for Applications (RFA)***

Executive Summary

Federal Agency Name: U.S. Department of Transportation
Federal Highway Administration
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Funding Opportunity Title: ***“Performance Related Testing and Analysis of Asphalt Binders, Mixtures, and Pavements – Phase II”***

Announcement Type: This is the initial announcement of this funding opportunity.

Funding Opportunity Number: ***RFA Number DTFH61-08-RA-00006***

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Dates: RFA Issue Date is April 11, 2008
Application Due Date is May 15, 2008

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TABLE OF CONTENTS

<u>Section Title</u>	<u>Page</u>
SECTION I - FUNDING OPPORTUNITY DESCRIPTION	3
SECTION II - AWARD INFORMATION	13
SECTION III - ELIGIBILITY INFORMATION	14
SECTION IV - APPLICATION AND SUBMISSION INFORMATION	18
SECTION V - APPLICATION REVIEW INFORMATION	22
SECTION VI - AWARD ADMINISTRATION INFORMATION	25
SECTION VII - AGENCY CONTACT	36

SECTION I – FUNDING OPPORTUNITY DESCRIPTION

A. STATEMENT OF PURPOSE

The Federal Highway Administration (FHWA) hereby requests applications to result in the award of one cooperative agreement for “Performance Related Testing and Analysis of Asphalt Binders, Mixtures, and Pavements – Phase II.”

B. LEGISLATIVE AUTHORITY

The legislative authority to award a cooperative agreement for this effort is found in United States Code Title 23 – Highways, Section 503, Technology Deployment. Per Section 503(a)(7)(A), “Under the program, the Secretary may make grants to, and enter into **cooperative agreements** and contracts with, States, other Federal agencies, universities, and colleges, private sectors entities, and nonprofit organizations to pay the Federal share of the cost of research, development, and technology transfer activities concerning innovative materials.”

Section 5101(b) of the SAFETEA-LU states that “Funds authorized to be appropriated by subsection (a) shall be available for obligation in the same manner as if such funds were apportioned under chapter 1 of title 23, United States Code; except that the Federal Share of the cost of a project or activity carried out using such funds shall be 50 percent, unless other wise expressly provided by this Act (including the amendments made by this Act) or otherwise determined by the Secretary, and such funds shall remain available until expended and shall not be transferable.”

C. OBJECTIVES

The purpose of this cooperative agreement is to stimulate the development and deployment of cost effective and innovative asphalt materials and practices and newly-developed engineering design criteria and standards. In addition, this effort will advance the knowledge and state of practice for pavement evaluation technologies to improve pavement performance and extend pavement life. The deliverables from this cooperative effort will be disseminated to the Federal and State Departments of Transportation (DOTs), local highway agencies, and the asphalt industry for their use and implementation.

D. STATEMENT OF WORK

BACKGROUND

A primary goal of FHWA is to improve the understanding of materials, such as asphalt binder and aggregate, used to construct asphalt pavements and develop superior practices for testing and evaluating asphalt materials. As part of the FHWA Superpave® implementation program, performance-related specifications are developed and used to improve the quality of asphalt pavements, which will ideally result in long life pavements. The FHWA supports advanced research in pavements and bituminous materials through the National Cooperative Highway Research Program (NCHRP) and the Strategic Highway Research Program (SHRP). Once these research projects are completed, the FHWA supports the further development and deployment of the technology through additional experiments, material testing, and coordination of field trials. As part of this research implementation program, FHWA coordinates three Transportation Research Board (TRB) Expert Task Groups (ETGs) related to asphalt binder, mixture, and advanced modeling and comprised of industry, researchers/academia, and federal and state government representatives. In addition, the FHWA has established a Reclaimed Asphalt Pavement (RAP) ETG and a Warm-Mix Asphalt (WMA) Technical Working Group (TWG). These ETGs and TWG are tasked with facilitating the implementation of innovative technology for testing and analysis of asphalt binders and mixtures and the development of specifications that will be used by state highway agencies to evaluate materials and asphalt pavements. The ETGs require assistance in the testing, analysis and evaluation of asphalt materials and pavements and in the development of specifications for new technology. Previously, in Phase I of this cooperative agreement, the FHWA cooperated with the Asphalt Institute for performance testing and analysis of asphalt binders and mixtures. The FHWA plans to continue cooperating with a preeminent asphalt testing laboratory with extensive test equipment and knowledge of asphalt binders and mixtures to perform testing in support of the ETGs, WMA TWG, and NCHRP and SHRP research projects. In addition, a network of field engineers across the United States is needed to successfully assist in coordination of field projects that will provide valuable information to improve performance of asphalt pavements.

The following innovative material and technology deployment needs, in particular, have been identified:

Development of Multiple-Stress Creep and Recovery Test (MSCR) Method Specifications for Asphalt Binders

As part of the asphalt binder ETG, a high temperature task group was formed to explore incidences of pavement failure at high temperatures. It has been determined that to accurately address mixture failure at high temperatures, non-linear binder properties must be evaluated. To describe binder properties in the non-linear range, creep and recovery testing at different stress levels is required. A test method is being developed called the Multi-Stress Creep and Recovery Test (MSCR) to determine the non-recoverable compliance of asphalt binders. The non-recoverable compliance describes the stress dependency of the binder. This test method uses the Dynamic Shear Rheometer (DSR) test equipment which is available at most State DOTs with a modified procedure. Creep and recovery testing conducted at multiple stress levels on an individual sample describes the stress dependency of the binder. Then, non-recoverable compliance can be correlated to mixture testing performed at different stress conditions and related to performance. Current Superpave binder specifications work very well for neat binders, however it has become increasingly necessary to evaluate binders in the non-linear range not only for high temperature properties, but for polymer-modified binders, and grade bumping requirements based on the pavement project's environmental conditions.

A draft test method for the MSCR test is being developed for publication and adoption by AASHTO and ASTM. However, additional testing and evaluation of asphalt binders is required for final development of the specific test method specifications. In addition, these results will be measured against asphalt mixture properties such as Repeated Shear at Constant Height (RSCH) in order to determine the relationship of rate of change compliance.

Laboratory Aging of Asphalt Binders

The current short-term aging test for asphalt binders, the Rolling Thin Film Oven Test, has been shown to not be an appropriate aging procedure for modified asphalt binders since it does not simulate aging of modified asphalt binders that occurs in the field. A new binder aging procedure is developed in NCHRP Project 09-36 "*Improved Procedure for Laboratory Aging of Asphalt Binders in Pavements*". The method requires calibration and validation through additional laboratory and field experiments. Also, there have been occurrences of asphalt mixtures that are "tender" after compaction preventing the road or highway from being re-opened to traffic for days in some cases. It is unknown if the binder is contributing to the tender mixtures and there is a need to identify and perform tests on asphalt binders to determine binder curing properties.

For long-term aged binders, a procedure called vacuum degassing has been further developed for Pressure Aging Vessel (PAV)-aged binders. This procedure would potentially occur before binder property testing in the Superpave performance-graded requirements. The binder ETG requires laboratory evaluation of asphalt binders so that they may make proper recommendations regarding these laboratory aging methods and the occurrence of “tender” mixtures.

During NCHRP Project 9-39 Determining Mixture and Compaction Temperatures of Modified Binders, temperature or temperature ranges for laboratory specimen compaction and plant mixing temperatures are being developed. Of particular concern is the specification of temperatures that will minimize asphalt binder degradation. Additional testing of materials is required to support and verify the results of this study including HMA and HMA with RAP and asphalt binders produced from various crude sources such as:

- Air blowing;
- Radial, linear, or cross-linked SBS or SBR, or similar elastomeric materials;
- Polyethylene or similar plastomeric materials;
- Terpolymers;
- Polyphosphoric acid.

Laboratory Support and Performance-related Testing of Asphalt Binders for Technology Deployment

FHWA, in conjunction with NCHRP and the Hot-Mix Asphalt (HMA) industry, is exploring Warm Mix Asphalt (WMA) technologies and their impact on the performance of asphalt pavements. WMA technologies allow lower mixing and compacting temperatures reducing the energy required to make HMA, reducing emissions, and improving working conditions at the plant and project site. In addition, WMA technologies improve compaction which may result in better performing pavements. However, there are challenges to the widespread use of WMA. Due to the lower compaction temperatures, WMA may be more susceptible to permanent deformation especially if opened to traffic early. Strategies to address these challenges, such as the use of different binder performance grades, are needed. NCHRP Project 09-47, *Evaluation of the Environmental and Performance Properties of Warm Mix Asphalt Technologies*, will further explore these issues by conducting field trials. A specific task of NCHRP Project 09-47 is to coordinate with FHWA to evaluate the applicability of methods for HMA mixture design and performance testing to WMA. In addition, as part of NCHRP Project 09-47, a laboratory experiment will be conducted to determine the feasibility of the developed WMA mixture procedure. Laboratory support of the WMA mixture procedure is required in the form of performance-related testing of binders and mixtures.

The FHWA promotes the increased use of RAP in the construction and rehabilitation of asphalt pavements. Currently RAP materials must meet all Superpave® requirements. However, there is concern that following the current Superpave® performance-grade recommendations for determining binder properties will lead to mixtures that fail early due to rutting or, when fractionated RAP is used, underestimate the mix stiffness leading to damage due to cracking. Currently, NCHRP is sponsoring a project called *Mix Design and Evaluation Procedures for High Reclaimed Asphalt Pavement Content in Hot Mix Asphalt*. As part of this project, specifications for evaluating RAP binders and mixtures will be developed. The FHWA requires laboratory support to further verify the developed standards and specifications for evaluating RAP binders and, in particular, requires a laboratory with expertise in determining binder properties using various methods. The FHWA RAP ETG also has ongoing field demonstration projects to showcase the use of high amounts of RAP in asphalt mixture pavement layers and document the performance of pavements that utilize high amounts of RAP (greater than twenty-five percent). Additional materials from these research and demonstration projects must be evaluated, tested, and analyzed using binder and performance-related test equipment.

Intelligent Compaction Technology Deployment

In addition to necessary material testing and asphalt mixture design protocol, the compaction process is a vital final step in the construction of quality, long lasting pavements. Embankments, subgrades, base materials, and pavement must be well compacted to obtain uniform, optimum density levels that ensure adequate support and strength. Currently used compaction equipment and processes can often result in inadequate and/or non-uniform material density, which can contribute to short embankment and/or pavement service life. The FHWA has identified an emerging technology, compaction rollers with intelligent compaction (IC) capabilities, which was developed and is routinely used in Europe and Asia. Many studies have shown that the use of IC technology can dramatically improve the compaction process. Specifically, it seems that the implementation of IC technology may result in more uniform material density, improve the efficiency of compaction operations by reducing the number of passes needed to obtain specification density and can provide a valuable tool in Quality Control/Quality Analysis (QC/QA) by allowing a visual record of material stiffness values at 100 percent of the roadway locations recorded during compaction.

Rollers with IC technology for soils/aggregate (single drum) and asphalt pavement (tandem drum) compaction have now become available in the United States. At the same time, FHWA and State DOTs have expressed interest in conducting studies to accelerate the study and implementation of IC technology. To this end, FHWA has produced a report titled "Strategic Plan for Intelligent Compaction" that establishes a five-year plan to study IC, write AASHTO-style construction QC specifications and implement the technology. The report suggests, among other things, that a coordinated effort by roller manufacturers and government agencies be undertaken to use IC technology on various roadway construction projects at locations around the country. An FHWA-led pooled fund study is currently being conducted titled "Accelerated Implementation of Intelligent Compaction Technology for Embankment Subgrade Soils, Aggregate Base and Asphalt Pavement Material." In order to begin the development and implementation of IC technology in the US, the FHWA would like to utilize the expertise and field engineering resources of a facilitator to assist in coordinating demonstration projects in various States. The ideal facilitator must have close ties with material suppliers and equipment manufacturers for the deployment of IC technology in the construction and rehabilitation of asphalt pavements.

The Recipient shall cooperate with the FHWA to:

1. Stimulate the development and deployment of new, cost effective, and/or innovative asphalt materials and practices to extend pavement life and performance by providing asphalt binder and performance-related testing and analysis services and technical assistance to the FHWA ETGs and TWG;
2. Promote the deployment of engineering design criteria and specifications for innovative practices and products for use in highway pavements; and
3. Encourage the adoption of new, real-time pavement evaluation technology by facilitating the deployment of IC technology throughout the United States.

During the period of performance, the FHWA and the recipient will meet periodically, at a minimum on an annual basis, to discuss project activities. The location of the meeting will be established by the AOTR.

Delineation of Tasks

TASK 1- Identification of Technology and Research Needs and Preparation of Work Plan(s) for Material Testing and Analyses

- 1.1 The Recipient will identify critical limitations, gaps, and needs in the current Superpave Performance-Graded (PG) binder and material test protocol including laboratory aging of asphalt binders, binders modified with polymer, Polyphosphoric Acid (PPA), Warm-Mix Asphalt (WMA) additives, and Reclaimed Asphalt Pavement (RAP) recovered binders.
- 1.2 The Recipient will submit an interim report summarizing the findings of subtasks 1.1. The interim report will be submitted to the AOTR for technical review and will be submitted by FHWA to the ETGs and TWG in order to determine which needs shall be addressed in this agreement. Upon notification from the AOTR, the recipient will proceed with subtask 1.3.
- 1.3 The Recipient will prepare a work plan based on the findings of subtasks 1.1 and 1.2. The recipient has the option to submit the work plan for the entire period of performance or the recipient may submit a yearly work plan (submitted on an annual basis). All work plan(s) will be submitted to the AOTR for technical review. The AOTR will provide comments to the Recipient within 21 days after receipt of the draft(s). The Recipient will revise the work plan(s) according to the AOTR comments. The Recipient will make the necessary revisions and submit the final version of the work plan to the AOTR.

NOTE: Applicants shall indicate in their technical proposal whether they intend to submit one work plan for the entire period of performance or that they intend to submit an annual work plan for each year of the agreement.

Task 2 - Laboratory Testing and Analysis of Asphalt Binders and Materials and Technical Support

- 2.1 With written approval of the AOTR, the recipient will proceed with laboratory testing and analysis based on the approved work plan(s).
- 2.2 The Recipient will provide testing and analysis services and results, including documentation, and technical support to the FHWA asphalt ETGs (for binder, mixtures, and RAP) and the WMA TWG.

Task -3 Information, Techniques, and Strategies for Improving Performance Testing and Evaluation of Asphalt Materials and Disseminating Information

- 3.1 The Recipient will develop presentations summarizing the work completed, findings and results of Task 2 that are suitable for technical audiences. The Recipient will deliver these presentations at least once a year at the ETG and TWG meetings, which are held twice a year, and will deliver these presentations in cooperation with FHWA at technical conferences related to asphalt materials.
- 3.2 The Recipient will deliver technical guidance in cooperation with FHWA on asphalt binder grade selection criteria, asphalt binder, and mixture protocols focusing in particular on performance properties of the materials based on the results of Task 2. The Recipient will prepare report(s) that describe in detail the work performed in Task 2.
- 3.3 The Recipient will provide case studies, best practices, and other related technical guidance in cooperation with FHWA to Federal, State, regional and local highway agencies on asphalt binder testing and evaluation issues related to the Superpave system and performance testing
- 3.4 The Recipient will develop needed informational literature for State DOTs and highway agencies related to the findings in Task 2 and reported in subtask 3.2.
- 3.5 The Recipient will develop information exchange mechanisms such as final reports, newsletters, training courses, and websites to disseminate the results of Task 2 and the reports generated in subtask 3.2.

Task 4 – Coordination of Intelligent Compaction Demonstration Projects

- 4.1 The Recipient will familiarize themselves with the background, objectives, and scope of work of the FHWA-led Transportation Pooled Fund Study (TPF-5(128)) “Accelerated Implementation of Intelligent Compaction Technology for Embankment Soils, Aggregate Base, and Asphalt Pavement Material”. More information can be found here: <http://www.pooledfund.org/projectdetails.asp?id=359&status=4> .
- 4.2 The Recipient will provide a general outline of necessary steps that will be taken in coordinating field projects, specifically tailored to the demonstration of IC technology. This outline should be general in nature so that the outline of steps is applicable to each demonstration field project and can be provided to all the participants in the demonstration field projects including the State DOTs and the equipment suppliers.

- 4.3 The Recipient will provide coordination with the contractor of TPF-5(128), the State DOT's participating in TPF-5(128), and IC equipment suppliers in facilitating the logistics of conducting field trials. This subtask includes assisting in the development of plans to conduct integrated multi-state IC construction projects (not limited scope demonstration projects), scheduling, data collection and clearly summarizing all activities necessary to conduct the demonstration projects such as the logistics of each project, meetings, and coordinating necessary equipment. In addition, the Recipient may be required to conduct quality assurance training and assistance during the field demonstration projects.
- 4.4 The Recipient will provide a concise summary for each demonstration field project summarizing important activities conducted in planning the project, pertinent project information such as (but not limited to) location, participants, equipment used, and lessons learned in the coordination of the project.

NOTE: The Recipient will NOT be conducting the field trials. The recipient will be coordinating activities among the TPF-5(128) participants, including the pooled fund contractor, and the IC equipment suppliers. The following information is provided to assist the Applicant in preparing a proposal. Currently, twelve states are participating in TPF-5(128) and FHWA anticipates that there will be one to two projects conducted in each participant's state. At least one project must be conducted in each TPF-5(128) participating state. It is anticipated that each project will be conducted, at a maximum, over a one-week period and include an open-house meeting and debriefing of the project.

Reporting Requirements

NOTE: See Section VI, **AWARD ADMINISTRATION INFORMATION**, Paragraph B.1 for information on number of copies and addresses for submittal of deliverables and reports. See Section VI, **AWARD ADMINISTRATION INFORMATION**, Paragraph b.4, Deliverables, for Deliverables Due Dates.

Section 508

While the requirements of Section 508 of the Rehabilitation Act do not apply to assistance agreements, the FHWA is subject to the Act's requirements that all documents posted on an FHWA or FHWA-hosted website comply with the accessibility standards of the Act. As such, all electronic and information technology products that are submitted under this cooperative agreement must be Section 508-compliant so that they can be posted without further modification.

All final reports prepared under this agreement and the website required under this agreement must meet the requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The act requires that all electronic products prepared for the Federal Government be accessible to persons with disabilities, including those with vision, hearing, cognitive, and mobility impairments. View [Section 508 of the Rehabilitation Act \(http://www.access-board.gov/508/508standards.htm - PART 1194\)](http://www.access-board.gov/508/508standards.htm) and the [Federal IT Accessibility Initiative Home Page \(http://section508.gov\)](http://section508.gov) for detailed information. The following paragraphs summarize the requirements for preparing FHWA reports in conformance with Section 508 for eventual posting by FHWA to an FHWA-sponsored website.

Electronic documents with images

Provide a text equivalent for every non-text element (including photographs, charts and equations) in all publications prepared in electronic format. Use descriptions such as “alt” and “longdesc” for all non-text images or place them in element content. For all documents prepared, vendors must prepare one standard HTML format as described in this statement of work AND one text format that includes descriptions for all non-text images. “Text equivalent” means text sufficient to reasonably describe the image. Images that are merely decorative require only a very brief “text equivalent” description.

However, images that convey information that is important to the content of the report require text sufficient to reasonably describe that image and its purpose within the context of the report.

- a. Electronic documents with complex charts or data tables
When preparing tables that are heavily designed, prepare adequate alternate information so that assistive technologies can read them out. Identify row and column headers for data tables. Provide the information in a non-linear form. Markups shall be used to associate data cells and header cells for data tables that have two or more logical levels of row and column headers.
- b. Electronic documents with forms
When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

SECTION II – AWARD INFORMATION

A. FUNDING

FHWA anticipates Federal funding up to the amount of \$353,547 will be made available for this award subject to availability. Currently \$200,000 will be made available for this award subject to availability. The recipient is required to provide a 50% non-federal matching contribution to the total project cost.

B. NUMBER OF AWARDS ANTICIPATED

FHWA anticipates making the award of one cooperative agreement resulting from this RFA.

C. PERIOD OF PERFORMANCE

The period of performance for this cooperative agreement is 60 months, commencing from the effective date of the agreement.

D. TYPE OF AWARD

FHWA intends to award a Cooperative Agreement as a result of the RFA.

E. DEGREE OF FEDERAL INVOLVEMENT

FHWA anticipates substantial Federal involvement between FHWA and the Recipient during the course of this project. FHWA anticipates the Federal involvement will include:

- Technical assistance and guidance;
- Close monitoring during performance;
- Involvement in technical decisions; and
- Participation in status meetings including kickoff meeting and annual budget reviews.

The FHWA will partner with the Recipient and provide the necessary guidance to help complete all work under the agreement. The AOTR will participate in the planning and management of this cooperative agreement and will coordinate activities between the Recipient and the FHWA.

SECTION III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS

This solicitation is open to all sources.

B. COST SHARING OR MATCHING

Pursuant to Section 5101 of Public Law 109-59, the Recipient shall provide a minimum non-federal matching contribution of 50 percent of the total project cost.

C. MINIMUM QUALIFICATIONS

This section describes the minimum qualifications that an Applicant must have to be considered for participation in this effort. Satisfying the minimum qualification criteria does not guarantee that the Applicant will be selected. Failing to meet the minimum qualifications, however, disqualifies the Applicant from further consideration as a Recipient.

The Applicant must have the capabilities to perform asphalt material research, engineering, testing and analysis and develop and apply new pavement-related technology based on the government's requirements for high standards of performance. The Applicant should be capable of executing a large, multi-year federally-funded project. In order to effectively promote the development and deployment of new technologies, the Applicant must have established and maintain close relationships with asphalt producers, manufacturers, and affiliated businesses. In addition, the Applicant should be an active participant in the FHWA's asphalt ETGs, and work closely with state DOTs, and government and academic research facilities.

The minimum qualifications that an Applicant must have to be considered as a Recipient include:

- a) Capabilities consisting of conventional and state-of-the-art testing equipment required for determining the physical characteristics of asphalt binders including extensive experience with the Superpave performance-graded binder standards (AASHTO M 320 with MP1a Analysis and AASHTO R 29), necessary equipment and capable of performing the standard specifications for Viscosity Grade Verification (AASHTO M 226), Penetration Grade Verification (AASHTO M 20), Emulsified Asphalt Analysis (AASHTO M 140), and Cutback Asphalt Analysis (AASHTO M 81/M82)
- b) Capabilities for performing non-standard asphalt tests such as the cone and plate viscometer test.

- c) Capabilities for performing component analysis of asphalt mixtures using the asphalt ignition oven, centrifuge extraction, Abson recovery, Rotavapor recovery, and SHRP extraction and recovery procedures.
- d) Experience with and working knowledge of the following materials: polymer-modified binders, emulsions, binders modified with PPA, Warm-Mix Asphalt (WMA) additives, and Reclaimed Asphalt Pavements (RAP) materials.
- e) Capabilities for performing aggregate tests required for Superpave volumetric mixture design.
- f) Capabilities for preparation of compacted asphalt mixture specimens including Marshall, Hveem, and Superpave Gyratory Compaction (SGC), vibratory and static compaction.
- g) Capabilities consisting of necessary equipment and experience required for the Superpave volumetric mixture design system (AASHTO M 323 and AASHTO R 35).
- h) Equipment, i.e. servohydraulic testing machine(s), capable of performing mechanical property testing and analysis and mixture performance tests developed by NCHRP.
- i) Equipment, e.g. loaded wheel tracking device, used to evaluate permanent deformation and moisture susceptibility of asphalt mixtures.
- j) Necessary equipment and personnel for performing the practices, specifications and test methods listed in **Table 1, Table 2, and Table 3.**
- k) Laboratories that are AASHTO Materials Reference Laboratory (AMRL) accredited.
- l) Technicians that are well-qualified and certified to perform construction materials testing, specifically asphalt material testing.
- m) Computer resources with word processing, spreadsheet, and presentation preparation software (e.g. Microsoft Office tools such as Word, Excel, and Powerpoint).
- n) Digital camera equipment and associated software for project documentation.
- o) A network of field engineers across North America that can provide technical support, participate in job site visits, and gather information for IC technology demonstrations and QC/QA specifications and identify further research needs related to IC.
- p) Experience developing and presenting national training on advanced asphalt design and testing systems.

Table 1. Required Asphalt Binder Tests and Practices

	ASTM Designation	AASHTO Designation	Title
<input type="checkbox"/>	D 93	T 73	Flash-point by Pensky-Martens Closed Cup Tester
<input type="checkbox"/>	D 95	T 55	Water in Petroleum Products and Bituminous Materials by Distillation
<input type="checkbox"/>	D 36	T 53	Softening Point of Bitumen (Ring and Ball Apparatus)
<input type="checkbox"/>	D 113	T 51	Ductility of Bituminous Materials
<input type="checkbox"/>	D 5	T 49	Penetration of Bituminous Materials
<input type="checkbox"/>	D 92	T 48	Flash and Fire Points by Cleveland Open Cup
<input type="checkbox"/>	D 2042	T 44	Solubility of Bituminous Materials
<input type="checkbox"/>	D 5404	T 319	Quantitative Extraction and Recovery of Asphalt Binder from Asphalt Mixtures
<input type="checkbox"/>	D 4402	T 316	Viscosity Determination of Asphalt Binder using Rotational Viscometer
<input type="checkbox"/>		T 315	Determining Rheological Properties of Asphalt Binder using a Dynamic Shear Rheometer
<input type="checkbox"/>		T 314	Determination of Fracture Properties of Asphalt Binder in Direct Tension
<input type="checkbox"/>		T 313	Determining Flexural Creep Stiffness of Asphalt Binder Using Bending Beam Rheometer
<input type="checkbox"/>		T 308	Determining the Asphalt Binder Content of Hot-Mix Asphalt by the Ignition Method
<input type="checkbox"/>	D 2872	T 240	Effect of Heat and Air on a Moving Film of Asphalt (Rolling Thin Film Oven Test)
<input type="checkbox"/>	D 2171	T 202	Viscosity of Asphalts by Vacuum Capillary Viscometer
<input type="checkbox"/>	D 2170	T 201	Kinematic Viscosity of Asphalts (Bitumens)
<input type="checkbox"/>	D1754	T 179	Effect of Heat and Air on Asphalt Materials (Thin Film Oven Test)
<input type="checkbox"/>		T 164	Quantitative Extraction of Bitumen from Bituminous Paving Mixtures
<input type="checkbox"/>	D 1461	T 110	Moisture or Volatile Distillates in Bituminous Paving Mixtures
<input type="checkbox"/>		R 28	Accelerated Aging of Asphalt Binder Using a Pressure Aging Vessel
<input type="checkbox"/>		PP 42	Determination of Low-Temperature Performance Grade of Asphalt Binder

Table 2. Required Asphalt Mixture and Aggregate Tests and Practices

	ASTM Designation	AASHTO Designation	Title
<input type="checkbox"/>	C 136	T 27	Sieve Analysis of Fine and Coarse Aggregate
<input type="checkbox"/>		T 11	Materials Finer Than 75-mm (No. 200) Sieve in Mineral Aggregates by Washing
<input type="checkbox"/>	D 5821		Determining Percentage of Fractured Particles in Coarse Aggregate
<input type="checkbox"/>	C 1252	T 304	Uncompacted Void Content of Fine Aggregate
<input type="checkbox"/>	D 4791		Flat Particles, Elongated Particles, or Flat & Elongated Particles in Coarse Aggregate
<input type="checkbox"/>		T 176	Plastic Fines in Graded Aggregates and Soils by Use of Sand Equivalent Test
<input type="checkbox"/>		T 312	Preparing and Determining the Density of HMA Specimens by Means of the Superpave Gyrotory Compactor
<input type="checkbox"/>		R 30	Mixture Conditioning of Hot-Mix Asphalt (HMA)
<input type="checkbox"/>	D 140	T 168	Sampling Bituminous Paving Mixtures
<input type="checkbox"/>		T 329	Moisture Content of Hot-Mix Asphalt (HMA) by Oven Method
<input type="checkbox"/>	D 3549		Standard Test Method for Thickness or Height of Compacted Bituminous Paving Mixture Specimens
<input type="checkbox"/>		T 166	Bulk Specific Gravity of Compacted Bituminous Mixtures Using Saturated Surface Dry Method
<input type="checkbox"/>	D 2726		Bulk Specific Gravity and Density of Non-Absorptive Compacted Bituminous Mixtures
<input type="checkbox"/>		T 209	Theoretical Maximum Specific Gravity and Density of Hot-Mix Asphalt Paving Mixtures
<input type="checkbox"/>	D 3203	T 269	Percent Air Voids in Compacted Dense and Open Asphalt Mixtures
<input type="checkbox"/>	PS 132		Standard Provisional Test Method for Maximum Specific Gravity and Density of Bituminous Paving Mixtures Using Automatic Vacuum Sealing Method
<input type="checkbox"/>		T 283	Resistance of Compacted Bituminous Mixtures to Moisture Induced Damage

Table 3. Required Performance-Related Tests and Practices

	ASTM Designation	AASHTO Designation	Title
<input type="checkbox"/>		T 321	Determining Fatigue Life of Compacted HMA Subjected to Repeated Flexural Bending
<input type="checkbox"/>	N/A	N/A	Loaded Wheel Tracking Device for Rutting and Moisture Susceptibility Analysis
<input type="checkbox"/>		T 320	Determining Permanent Shear Strain and Stiffness of Asphalt Mixtures Using the Superpave Shear Tester
<input type="checkbox"/>		TP 62, NCHRP 9-29	Determining Dynamic Modulus of Hot-Mix Asphalt (HMA)
<input type="checkbox"/>	D 3497		Standard Test Method for Dynamic Modulus of Asphalt Mixtures
<input type="checkbox"/>	D 4123		Standard Test Method for Indirect Tension Test for Resilient Modulus of Bituminous Mixtures
<input type="checkbox"/>		T 322	Determining the Creep Compliance and Strength of Hot-Mix Asphalt (HMA) Using the Indirect Tensile Test Device

SECTION IV – APPLICATION AND SUBMISSION INFORMATION

A. APPLICATION FORMS

Applicants shall complete all forms included in the Application Package for this RFA as contained in www.grants.gov. The Applicant shall submit the Application Package online at www.grants.gov.

Note: It is recommended that applicants register on grants.gov in advance of the application due date. Approval of user registrations for the grants.gov site may take multiple weeks.

B. CONTENT AND FORM OF APPLICATION SUBMISSION

The Application Package shall consist of the following:

- SF 424
- SF 424A
- SF 424B
- SF LLL
- Grants.gov Lobbying Form
- Attachments Form
 - 1) Technical Application* 25 page limit
 - 2) Budget Application *– no page limit

*Applicants may attach as many files as necessary to provide information requested below.

Note: Applications under this RFA are not subject to the State and local government review under E.O. 12372.

Submit your application in the following format:

Part I – Technical Application

NOTE: The Technical Application cannot exceed 25 pages.

In the event an application exceeds the 25-page limitation, the Government will evaluate only the first 25 pages of the proposal. The format of the above application shall be as follows:

1. Proposals shall be prepared on 8 ½ x 11 inch paper except for foldouts used for charts, tables or figures, which shall not exceed 11 x 17 inches. Foldouts shall not be used for text, and shall count as two pages.
2. A page is defined as one side of an 8 ½ x 11 inch paper. Therefore, a piece of paper with printing on both sides is considered two pages.
3. Text shall be printed using a font size no less than 12 cpi.
4. Page margins shall be a minimum of 1 inch top, bottom and each side.

Technical applications must contain:

TECHNICAL & MANAGEMENT APPROACH:

The application shall include a program narrative statement that describes the technical and management approach. Describe in detail how you would proceed if awarded this agreement and how you propose to meet the program objectives. Describe facilities for the conduct of the research.

STAFFING APPROACH:

Provide a program organizational chart identifying proposed staff members assigned to the project. Include the title and a brief description of each position's responsibilities, as well as the proposed level of effort and allocation of time for each position.

Provide brief resumes for the proposed Principal Investigator, Project Manager and other key personnel to include name, experience, education, and proposed role in project. (Note: resumes do count against the designated page limitations).

Part II - Budget Application

NOTE: There is no page limit on budget applications.

Budget applications must contain:

1. Detailed spreadsheets and supporting information clearly delineating and supporting all estimated costs by cost element for Federal Share and Cost Share for each year of the agreement and in summary form, clearly designating costs under the (1) Federal Share, (2) Cost Share and (3) in total.
 - Provide labor categories, labor hours or percentage of time, labor rates.
 - Provide indirect rates and bases, include any audit information to support rates.
 - Provide supporting information to justify estimates for Other Direct Costs such as equipment, travel, etc.

Note: Travel will be reimbursed at cost in accordance with Article 3 on page 25.

2. If sub-recipients (lower-tiered organizations and/or individual consultants) will be used in carrying out this project, the following minimum information concerning such, should be furnished:
 - Name and address of the organization or consultant.
 - Description of the portion of work to be conducted by the organization or consultant.
 - Cost details for that portion of work.
 - Letter of commitment from sub-recipient.
3. The use of a Dun and Bradstreet (D&B) Data Universal Numbering System (DUNS) number is required on all applications for Federal grants or cooperative agreements. Please provide your organization's DUNS number in your budget application.
4. A statement to indicate whether your organization has previously completed an A-133 Single Audit and, if so, the date the last audit was completed.
5. A statement to indicate whether your organization has an approved accounting system and the internal controls in accordance with 49 CFR Part 19 "Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and other Non-profit Organizations."

C. SUBMISSION DATES AND TIMES

Applications must be received electronically through www.Grants.gov by 4:15 pm EST on May 15, 2008.

The deadline cited herein is the date and time by which the agency must receive the application.

Late applications will not be reviewed or considered unless the Agreement Officer determines it is in the Government's best interest to consider the late application.

D. FUNDING RESTRICTIONS

FHWA will not provide any reimbursement of pre-award costs under this proposed agreement.

E. OTHER SUBMISSION REQUIREMENTS

FHWA uses www.Grants.gov for receipt of all applications. Applicants must register with www.Grants.gov and use the system to submit applications electronically.

In the event of system problems or technical difficulties with the application submittal, applicants should contact the FHWA point of contact designated on page 1. If applicants are unable to use the www.Grants.gov system due to technical difficulties, applicants must e-mail applications to the FHWA point of contact listed on page 1 no later than the application deadline cited above.

SECTION V – APPLICATION REVIEW INFORMATION

A. EVALUATION CRITERIA

Applications received will be evaluated in accordance with the Evaluation Criteria specified herein.

Technical

The FHWA will evaluate the technical applications based upon the following criteria listed in descending order of importance.

- 1. Applicant's Demonstration of Technical Competence and Understanding of the Subject Agreement Requirements.**
 - a. Demonstrated experience such as published technical articles, government-funded research projects, reports and/or direct field experience with Superpave performance-graded binder requirements and performance-related and mechanical testing of asphalt materials. Applicant should also demonstrate complete familiarity with asphalt concrete testing standards and referenced documents, as well as have a working knowledge of the fundamental asphalt concrete and materials testing which are covered by ASTM, AASHTO and Superpave mixture design and listed in Tables 1, 2, and 3.
 - b. Demonstrated experience and working knowledge of the following materials: polymer-modified binders, emulsions, binders modified with PPA, Warm-Mix Asphalt (WMA) additives, and Reclaimed Asphalt Pavements (RAP) materials.

- c. Demonstrated experience and familiarity with performing all the necessary managerial and administrative aspects of conducting laboratory experiments, research projects, and field demonstration projects. This includes coordinating communication with prospective State highway agencies and industry groups, arrangement for dissemination of information in reports, articles, and refereed journals of a technical nature, and the ability to apply new technology.
- d. Demonstrated relationships with asphalt producers, manufacturers, and affiliated businesses. Demonstrated relationships with FHWA, State highway agencies, and academia.
- e. Demonstrated experience developing and presenting national training on advance asphalt design and testing systems.

2. Offeror's Indication of Sufficient Resources to Complete the Agreement Requirements Satisfactorily.

- b. Acceptable facilities including laboratory space for necessary binder and asphalt material testing equipment, specimen fabrication and conditioning, storage, testing, and analysis. Demonstrated AMRL accreditation.
- c. Acceptable and sufficient relevant education and experience of the proposed Principal Investigator (PI) in the agreement technical areas of hot-mix asphalt testing. The PI shall supply a resume with experience and prior projects conducted related to asphalt concrete. Availability of the PI over the agreement period.
- d. Acceptable network of field engineers throughout North America.
- e. Acceptable and sufficient education, qualifications, and field experience of the other proposed staff in the contract technical areas of hot-mix asphalt testing. Acceptable qualifications and certifications of technicians that will be performing testing. Adequate staff resources to conduct laboratory experiments and coordinate demonstration field projects.
- f. Demonstrate adequate capabilities to produce visual aids of a satisfactory nature for use in information dissemination at ETG and TWG meetings and industry conferences.

3. Offeror's Responsiveness to the Technical Requirements of the RFA.

- a. Demonstrated completeness of the proposal in concisely addressing the work to be performed in each task and an overall grasp of the agreement goals and requirements. A demonstrated understanding of the necessity of meeting schedule requirements in a timely and professional manner.
- b. Demonstrated technical and administrative grasp of the agreement requirements. Completeness of the proposal in concisely addressing the work to be carried out in each task.
- c. Understanding of the technical and administrative requirements of the agreement as demonstrated in the offeror's proposal.

Cost

In addition to the criteria listed above, relative cost will be considered in the ultimate award decision. The budget application will be analyzed to assess cost reasonableness and conformance to the application principles.

Past Performance

The Government will evaluate the relevant merits of each applicant's past performance based on its reputation and record with its current and/or former customers with respect to quality, timeliness and cost control. Past performance will be reviewed to assure that the applicant has relevant and successful experience and will be considered in the ultimate award decision, but will not be rated. In evaluating past performance, the Government may consider both written information provided in the application, as well as any other information available to the Government through outside sources.

B. REVIEW AND SELECTION PROCESS

The Government will accept the application that is considered the most advantageous to the Government. The three evaluation factors are listed in descending order of importance: Technical, Cost and Past Performance.

The Agreement Officer is the official responsible for final award selections. The Government will select for award the applicant(s) that, when taken into consideration as a group, best meet(s) the objectives of the program legislation.

The Government is not obligated to make any award as a result of this announcement.

C. ANTICIPATED ANNOUNCEMENT AND AWARD DATES

FHWA anticipates making award on or about June 15, 2008.

D. AWARD NOTICES

Only the Agreement Officer can commit the Government. The award document, signed by the Agreement Officer, is the authorizing document.

Notice that an organization has been selected as a Recipient does not constitute approval of the application as submitted. Before the actual award, FHWA will enter into negotiations concerning such items as program components, staffing and funding levels, and administrative systems. If the negotiations do not result in an acceptable submittal, the FHWA reserves the right to terminate the negotiation and decline to fund the applicant.

SECTION VI – AWARD ADMINISTRATION INFORMATION

A. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS

1. GOVERNING REGULATIONS

Performance under this cooperative agreement shall be governed by and in compliance with the following requirements as applicable to the type of organization of the Recipient and any applicable subrecipients:

- 49 CFR 19 “Uniform Administrative Requirements for Grants and Agreements with Institutions of Higher Education, Hospitals, and other Non-profit Organizations”, [*located at: <http://www.dot.gov/ost/m60/grant/49cfr19.htm>*];
- 2 CFR Part 220 (OMB Circular A-21), “Cost Principles for Educational Institutions” [*located at: <http://www.whitehouse.gov/omb/circulars/a021/a021.html>*];
- 2 CFR Part 230 (OMB Circular A-122). “Cost Principles for Non-Profit Organizations” [*located at: <http://www.whitehouse.gov/omb/circulars/a122/a122.html>*];
- 2 CFR Part 215 (OMB Circular A-110), “Uniform Administrative Requirements for Grants and Agreements With Institutions of Higher Education, Hospitals, and Other Non-Profit Organizations” [*located at: <http://www.whitehouse.gov/omb/circulars/a110/a110.html>*]; and

- OMB Circular A-133, “Audits of States, Local Governments, and Non-Profits” [<http://www.whitehouse.gov/omb/circulars/a133/a133.html>];
- Any other applicable Federal regulation or statute.

2. RESPONSIBILITIES OF THE RECIPIENT

The Recipient shall provide overall program management. Specifically, the Recipient shall be responsible for the following, as a minimum:

- Performing the Statement of Work as described in Section I, Funding Opportunity Description.
- Coordinating and managing work, including issuing and managing subcontracts/sub awards and consulting arrangements, as necessary.
- Submitting all required reports including Quarterly Progress Reports and Annual Budget Reviews. (See Paragraph B of this Section, entitled Reporting.)
- Meeting with the FHWA Agreement Officer’s Technical Representative (AOTR) as necessary.
- Participating in a kick-off meeting with the AO and/or the AOTR to discuss agreement expectations and procedures.
- Participating in Annual Budget Review meetings with the AO and/or AOTR.

3. TRAVEL AND PER DIEM

Travel and per diem authorized under this cooperative agreement shall be reimbursed in accordance with the travel costs section of 2 CFR Part 220 (OMB Circular A-21), “Cost Principles for Educational Institutions,” and 2 CFR Part 230 (OMB Circular A-122), Cost Principles for Non-Profit Organizations.” Per the Circular, in the absence of an acceptable, written institution policy regarding travel costs, the rates and amounts established in the Federal Travel Regulations in effect at the time of travel shall apply. In addition, all non-domestic travel shall be approved by the AO prior to incurring costs. Travel requirements under this cooperative agreement shall be met using the most economical form of transportation available. If economy class transportation is not available, the request for payment vouchers must be submitted with justification for use of higher class travel indicating dates, times, and flight numbers.

4. AMENDMENTS

Amendments to this agreement may only be made in writing, signed by both parties for bilateral actions and by the AO for unilateral actions, and specifically referred to as an amendment to this agreement.

5. AGREEMENT OFFICER'S TECHNICAL REPRESENTATIVE (AOTR)

The AO has designated _____ as Technical Representative to assist in monitoring the work under this agreement. The AOTR will oversee the technical administration of this agreement and act as technical liaison with the performing organization. The AOTR is not authorized to change the scope of work or specifications as stated in the agreement, to make any commitments or otherwise obligate the Government or authorize any changes which affect the agreement funding, delivery schedule, period of performance or other terms or conditions.

The AO is the only individual who can legally commit or obligate the Government for the expenditure of public funds. The technical administration of this agreement shall not be construed to authorize the revision of the terms and conditions of performance. The Agreement Officer shall authorize any such revision in writing.

6. OBLIGATION CEILING RATIO

Pursuant to section 1102 of SAFETEA-LU, the FHWA is required to annually redistribute a portion of allocated program authorization. Funds available for subsequent years of this agreement shall be adjusted for each fiscal year, which may increase or decrease the total estimated funding available.

7. INDIRECT COSTS

Indirect costs are allowable under this agreement as follows:

<i>Indirect Rate Type</i>	<i>Rate (%)</i>	<i>Base</i>
<i>(Information to be filled in at award)</i>		

In the event the recipient determines the need to adjust the above listed rates, the Recipient shall notify the FHWA of the planned adjustment and provide rationale for such adjustment. In the event such adjustment rates have not been audited by a Federal agency, the adjustment of rates must be pre-approved in writing by the Agreement Officer.

This Indirect Cost provision does not operate to waive the limitations on Federal funding provided in this document. The Recipient's audited final indirect costs are allowable only insofar as they do not cause the Recipient to exceed the amount of Federal funds obligated to the agreement.

8. DATA RIGHTS

The Recipient shall make available to the Government copies of all work developed in performance with this cooperative agreement, including but not limited to software and data. The Government and others acting on its behalf shall have unlimited rights to obtain, reproduce, publish or otherwise use the data developed in the performance of this agreement pursuant to 49 CFR Part 19.36.

9. PAYMENT

The Recipient may request advances or reimbursement of costs incurred in the performance hereof as are allowable under the applicable cost provisions [see 49 CFR Part 19.25] not-to-exceed the funds currently available as stated in this cooperative agreement. The Recipient shall submit an electronic copy of the SF 270, Request for Advance or Reimbursement, no more frequently than monthly, to the finance office in Oklahoma City.

Advance Payments: Recipients may be paid in advance, provided they maintain or demonstrate the willingness to maintain the following in accordance with 49 CFR Part 19: (1) written procedures that minimize the time elapsing between the transfer of funds and disbursement by the Recipient, and (2) financial management systems that meet the standards for fund control and accountability. When these items are not met, reimbursement will be the method for payment.

Payments by Reimbursement: When requesting reimbursement of costs incurred and credit for cost share incurred, the Recipient shall submit supporting cost detail with the SF 270 to clearly document costs incurred. Cost detail includes a detailed breakout of all costs incurred including direct labor, indirect costs, other direct costs, travel, etc... Additionally, TCRPC accepts the risk that, if the cost share is determined not to be reasonable, allocable or allowable, the cost share will be rejected by Government after TCRPC or its partners have incurred the costs.

The Agreement Specialist and the AO reserve the right to withhold processing requests for reimbursement until sufficient detail is received. In addition, reimbursement will not be made without AOTR review and approval to ensure that progress on the Agreement is sufficient to substantiate payment. After AOTR approval, the Agreement Specialist will certify and forward the advance or request for reimbursement to the payment office. *Note: Standard Forms may be located at <http://fhwa.dot.gov/aaa/hamhome.htm>.*

Instructions for Submission of Requests for Advance or Reimbursement:

Requests for advance or reimbursement and required supporting documents, should be sent via e-mail to the following e-mail address: 9-AMC-AMZ-FHWA-Invoices@faa.gov.

- a) Include the request for advance or reimbursement and supporting documents as an attached PDF document.
- b) Include in the e-mail subject line the following:
 - (i) Requests for Advance or Reimbursement #
 - (ii) Agreement Number
 - (iii) Name of your Company/Organization
 - (iv) Attention: (Agreement Specialist's name)

Example: Invoice No. 1 of Cooperative Agreement No. DTFH61-08-H-00001
ABC Corporation, Attention: John Doe

If the request for advance or reimbursement and supporting documents exceed 8 MB, as an e-mail attachment, the recipient must select one of two non-electronic submission options presented below:

- 1. Requests for advance or reimbursement may be submitted via regular U.S. Postal Service to the following P.O. Box address:

Federal Highway Administration
Markview Processing
P.O. Box 268865
Oklahoma City, OK 73126-8865
Attention: Angela Jones

- 2. Requests for advance or reimbursement submitted via an overnight service must use the following physical address because delivery services other than the U.S. Postal Service will not deliver to the P.O. Box address noted above:

MMAC
FHWA/AMZ-150
6500 MacArthur Blvd.
Oklahoma City, OK 73169
Attention: Angela Jones

Express Delivery Point of Contact: April Grisham, 405-954-8269

NOTE: All three request for advance or reimbursement submission options described above (e-mail, U.S. Postal Service or overnight service) result in the delivery of the request for advance or reimbursement to the same finance office in Oklahoma City, OK.

10. ACKNOWLEDGEMENT OF SUPPORT AND DISCLAIMER

An acknowledgment of FHWA support and a disclaimer must appear in any publication of any material, whether copyrighted or not, based on or developed under the agreement, in the following terms:

“This material is based upon work supported by the Federal Highway Administration under Agreement No. DTFH61-08-(to be filled in at award).”

All materials must also contain the following:

“Any opinions, findings, and conclusions or recommendations expressed in this publication are those of the Author(s) and do not necessarily reflect the view of the Federal Highway Administration.”

11. SITE VISITS

The Federal Government, through its authorized representatives, has the right, at all reasonable times, to make site visits to review project accomplishments and management control systems and to provide such technical assistance as may be required. If any site visit is made by the Federal Government on the premises of the Performing Organization or a subrecipient under this agreement, the Performing Organization shall provide and shall require their subrecipients to provide all reasonable facilities and assistance for the safety and convenience of the Government representative in the performance of their duties. All site visits and evaluations shall be performed in such a manner as will not unduly delay work.

12. TERMINATION AND SUSPENSION

The Government may terminate this agreement in whole or in part, upon providing written notification to the Recipient, if the AO determines that a Recipient has failed to complete the technical or administration terms and conditions of the award.

13. BUDGET REVISION/REALLOCATION OF AMOUNTS

The Recipient is required to report deviations from budget and program plans, and request prior approval for budget and program plan revisions in accordance with 49 CFR Part 19.25.

Note: The Recipient must obtain prior written approval from the Agreement Officer to transfer amounts budgeted for direct cost categories when the cumulative value of such transfers will exceed 10% of the value of Federal share of this agreement. When requesting such approval, a letter request suffices.

14. FINANCIAL MANAGEMENT SYSTEM

By signing this agreement, the Recipient verifies that it has, or will implement, a financial management system adequate for monitoring the accumulation of costs and that it complies with the financial management system requirements of 49 CFR Part 19. The Recipient's failure to comply with these requirements may result in agreement termination.

15. ALLOWABILITY OF COSTS

Allowable costs will be determined in accordance with the applicable Federal cost principles, e.g., Non-Profit Organizations-2 CFR Part 230; Educational Institutions- 2 CFR Part 220.

16. AVAILABLE FUNDING

The total not-to-exceed amount of Federal funding that may be provided under this grant agreement is between \$350,000 and \$400,000 for the entire period of performance, subject to the limitations shown below:

- (1) Currently, Federal funds in the amount of \$_____ (to be filled in at award), are obligated to this agreement.
- (2) Subject to availability of funds, and an executed document by the Agreement Officer, \$_____ (to be filled in at award) may be obligated to this agreement.

The Government's liability to make payments to the Recipient is limited to those funds obligated under this agreement as indicated above and any subsequent amendments.

17. CENTRAL CONTRACTOR REGISTRY (CCR)

The Recipient must be registered in the CCR in order to receive payments under this agreement. Use of the CCR is to provide one location for applicants and Recipients to change information about their organization and enter information on where Government payments should be made. The registry will enable Recipients to make a change in one place and one time for all Federal agencies to use. Information for registering in the CCR and online documents can be found at www.ccr.gov.

18. KEY PERSONNEL

The Recipient shall request prior written approval from the AO for any change in key personnel specified in the award. Key personnel under this agreement include:

(To be filled in at award)

19. PROGRAM INCOME

Program Income earned during the project period shall be retained by the Recipient and added to funds committed to the project by the Federal awarding agency and the Recipient and used to further eligible project or program objectives.

20. SUBAWARDS

Unless described in the application and funded in the approved award, the Recipient shall obtain prior written approval from the AO for the subrecipient, transfer, or contracting out of any work under this award. This provision does not apply to the purchase of supplies, material, equipment, or general support services.

21. DEBARMENT AND SUSPENSION REQUIREMENTS

The Recipient shall comply with Subpart C of 49 CFR Part 29, Government Debarment and Suspension (Nonprocurement). Further, the Recipient shall flow down this requirement to applicable subawards by including a similar term or condition in lower-tier covered transactions. See 49 CFR Part 29 for details of the requirement. (Note: 49 CFR Part 29 is available online at <http://www.dot.gov/ost/m60/grant/regs.htm>).

DRUG FREE WORKPLACE

The Recipient shall comply with Subpart B of 49 CFR Part 32, Governmentwide requirements for Drug-Free Workplace (Financial Assistance). See 49 CFR Part 32 for details of the requirement. (Note: 49 CFR Part 32 is available online at <http://www.dot.gov/ost/m60/grant/regs.htm>)

22. DISPUTES

The parties to this agreement shall communicate with one another in good faith and in a timely and cooperative manner when raising issues under this Disputes provision. Any dispute, which for the purposes of this provision includes any disagreement or claim, between the FHWA and the recipient concerning questions of fact or law arising from or in connection with this Agreement and whether or not involving alleged breach of this Agreement, may be raised only under this Disputes provision.

Whenever a dispute arises, the parties shall attempt to resolve the issues involved by discussion and mutual agreement as soon as practical. In no event shall a dispute which arose more than three months prior to the notification made under the following paragraph of this provision constitute the basis for relief under this article unless FHWA waives this requirement.

Failing resolution by mutual agreement, the aggrieved party shall document the dispute by notifying the other party in writing of the relevant facts, identify unresolved issues and specify the clarification or remedy sought. Within five working days after providing written notice to the other party, the aggrieved party may, in writing, request a decision from the Agreement Officer. The other party shall submit a written position on the matters in dispute within thirty calendar days after being notified that a decision has been requested. The Agreement Officer shall conduct a review of the matters in dispute and render a decision in writing within thirty calendar days of receipt of such written position. Any decision of the Agreement Officer is final and binding unless a party shall, within thirty calendar days, request further review as provided below.

Upon written request to the FHWA Director, Office of Acquisition Management or designee, made within thirty calendar days after the Agreement Officer's written decision or upon unavailability of a decision within the stated time frame under the preceding paragraph, the dispute shall be further reviewed. This review shall be conducted by the Director, Office of Acquisition Management. Following the review, the Director, Office of Acquisition Management, will resolve the issues and notify the parties in writing. Such resolution is not subject to further administrative review and to the extent permitted by law, shall be final and binding. Nothing in this Agreement is intended to prevent the parties from pursuing disputes in a United States Federal Court of competent jurisdiction.

B. REPORTING

1. ADDRESSES FOR SUBMITTAL OF REPORTS AND DOCUMENTS

The Recipient shall submit all required reports and documents, under transmittal letter referencing the agreement number, as follows:

Submit one hard copy to the Agreement Specialist at the following address:

Department of Transportation
Federal Highway Administration
Office of Acquisition Management
1200 New Jersey Avenue, SE
Mail Stop E65-101
Washington, DC 20590

Attention: Angela A. Jones, HAAM-40F

Submit two hard copies and one electronic copy to the AOTR at the following address:

Department of Transportation
Federal Highway Administration
Office of Pavement Technology, HIBT
120 New Jersey Avenue, SE
Washington, DC 20590

Attention: (to be filled in at award)

2. QUARTERLY PROGRESS REPORT

The Recipient shall submit an electronic copy, in PDF format, of the quarterly progress report to the AOTR and one hard copy to the Agreement Specialist on or before the 30th of the month following the calendar quarter being reported. Final progress reports are due 90 calendar days after expiration of the award.

Calendar Quarters are:

- (1) January - March
- (2) April – June
- (3) July – September
- (4) October- December

Each report shall contain concise statements covering the activities relevant to the project, including:

- (a) A clear and complete account of the work performed each quarter.
- (b) An outline of the work to be accomplished during the next report period.
- (c) A description of any problem encountered or anticipated that will affect the completion of the work within the time and fiscal constraints as set forth in the cooperative agreement, together with recommended solutions to such problems; or, a statement that no problems were encountered.
- (d) A section addressing how the results of the work performed supports one or more of the FHWA and Department of Transportation (DOT) strategic goals of safety, mobility, global connectivity, environmental stewardship, security, and organizational excellence.
- (e) A tabulation of the current and cumulative costs expended by quarter versus budgeted costs.
- (f) SF269 or SF269A, Financial Status Report.
- (g) If advance payments are used, SF272, Report of Federal Cash Transactions.
- (h) A summary of current performance measures reflecting research, training, and outreach.

3. ANNUAL BUDGET REVIEW AND PROGRAM PLAN

The Recipient shall submit two copies of the Annual Budget Review and Program Plan to the AOTR and one copy to the Agreement Specialist 60 days prior to the end of each agreement year. The Annual Budget Review and Program Plan shall provide a detailed schedule of activities, estimate of specific performance objectives, include forecasted expenditures, and schedule of milestones for the upcoming agreement year. If there are no proposed deviations from the Approved Project Budget, the Annual Budget Review shall contain a statement stating such. The Recipient will meet with FHWA to discuss the Annual Budget Review and Program Plan. Work proposed under the Annual Budget Review and Program Plan shall not commence until AO written approval is received.

4. DELIVERABLES AND SCHEDULE

Deliverable	Due Date
<i>Task 1 Deliverables</i>	
Interim Report	8 weeks after agreement effective date

Work Plan	6 weeks after receipt of comments from AOTR
<i>Task 2 Deliverables</i>	
The specific deliverables and due dates will depend upon the approved work plan submitted in Task 1. At a minimum, the Recipient shall present results for all testing and analysis and submit a final report, with technical summary, that documents the research conducted in each task identified in the work plan. Additional deliverables such as interim reports, computer programs and documentation, instrumentation and prototype equipment may be required and the specific deliverables will be identified in the negotiated work plan.	To be inserted after work plan is approved in Task 1.
Deliverables are anticipated to be made available to the public.	
<i>Task 3 Deliverables</i>	
Technical guidance reports as indicated in work plan from Task 1.	To be inserted after work plan is approved in Task 1.
Presentations as indicated in work plan from Task 1.	
Informational literature as indicated in work plan from Task 1.	
<i>Task 4 Deliverables</i>	
Outline of necessary steps to coordinate field projects	24 weeks after agreement effective date
Summary report of activities conducted for each demonstration field project	2 weeks after each demonstration field project end date
<i>Agreement Deliverables</i>	
Quarterly Progress and Budget Reports	On or before the 30 th of each month following calendar quarter being reported.
Annual Progress and Budget Reports	60 days prior to end of each agreement year
Final Progress and Budget Report	90 calendar days after expiration of award

SECTION VII - AGENCY CONTACT

Address any questions to:
Angela A. Jones
Grant Specialist
Federal Highway Administration, HAAM-40F
Office of Acquisition Management
1200 New Jersey Avenue, SE
Mail Stop E65-101
Washington, DC 20590

Angela.Jones@dot.gov, (202) 366-4255

Secondary point of contact is Carl Rodriquez, Agreement Officer, (202) 366-4240, Email Carl.Rodriquez@dot.gov

