

Safe and Efficient Travel through Innovation and Partnerships for the 21st Century (SAFE TRIP-21)

Part

U.S. Government Procurements

Subpart

Services

Classification Code

A- Research and Development

Office Address

DOT/RITA/VOLPE National Transportation Systems Center, 55 Broadway, Kendall Square, Cambridge, MA 02142

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POC

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DESCRIPTION and SUMMARY OF IMPORTANT DATES:

This synopsis is a Broad Agency Announcement (BAA) as contemplated in Federal Acquisition Regulation (FAR) 6.102 and FAR 35.016. A formal Request for Proposals (RFP), or other solicitation will not be issued. This BAA describes proposal submission and the evaluation process by the Research and Innovative Technology Administration (RITA), the Volpe National Transportation Systems Center (the Volpe Center) for soliciting field test sites in combination with ITS applications for SAFE TRIP-21. Further detail on proposed dates follows:

1. (1) BAA Proposals are due by mail by 4:00 pm Eastern Daylight Time (EDT) on March 28, 2008.
2. (2) BAA final awards are anticipated to take place in April 2008.

1. BACKGROUND:

SAFE TRIP-21, *Safe and Efficient Travel through Innovation and Partnerships for the 21st Century*, is a new initiative of the United States Department of Transportation (U.S. DOT) Research and Innovative Technology Administration (RITA). The goals of SAFE TRIP-21 are to:

- Expand and accelerate the U.S. DOT's Vehicle Infrastructure Integration (VII) initiative.
- Build upon Intelligent Transportation Systems (ITS) research in advanced-technology applications.
- Explore and validate the benefits of deployment-ready applications that provide travelers, drivers, and transit and commercial motor vehicle operators with enhanced safety, real-time information, navigation assistance, electronic payment, and other services in an integrated operational setting.

Specific SAFE TRIP-21 objectives are to:

- Transition ITS research into real-world use.
- Accelerate acceptance and adoption of technologies.
- Generate widespread awareness about the potential of deployment-ready ITS technology to provide transportation benefits to travelers, public agencies, and commercial vehicle operators.
- Test and evaluate multiple ITS applications in an integrated, multi-modal operational test setting relative to prospective benefits in terms of:
 - Safety
 - Mobility
 - Commercial vehicle safety and operations
 - E-payment services.
- Identify associated environmental and energy benefits.

Candidate SAFE TRIP-21 applications will use electronic information, navigation, and communications technologies to further national transportation goals by:

- Reducing motor vehicle crashes
- Alleviating traffic congestion
- Improving emergency response times
- Enhancing transit use and ride sharing
- Improving traveler information
- Promoting motor freight efficiency
- Enabling convenient electronic payment options
- Mitigating environmental impacts
- Reducing unnecessary motor fuel consumption.

SAFE TRIP-21 will be launched during the 2008 ITS World Congress in New York City from November 16-20, 2008, at which time initial operational capabilities will be unveiled. Formal field test and evaluation activities will begin thereafter at one or more sites that afford opportunities to assess and measure the ability of traffic data collection, networks, and advanced

communications technologies (including, but not limited to, vehicle-to-vehicle and vehicle-to-roadside Dedicated Short Range Communications (DSRC) and other ITS technologies) to yield near-term transportation safety and efficiency benefits while enabling evolutionary transition to future communications environments.

2. OBJECTIVES:

Through this BAA, the Volpe Center seeks field test sites and deployment-ready ITS applications that will lead to transformational changes and advances in transportation safety, mobility, efficiency, convenience, environmental stewardship, energy independence and security in the United States.

This BAA solicits proposals that either: 1) include a field test site in combination with ITS applications or 2) ITS applications independent of a field test site.

2.1 Field Test Sites with ITS Applications.

The Volpe Center seeks to develop and sustain SAFE TRIP-21 test sites at one or more U.S. locations. This BAA solicits test site locations in urban and rural settings for the installation, testing, and evaluation of ITS applications. Operational test and evaluation procedures will be designed to assess both the performance and the benefits of integrating a wide variety of advanced technologies and applications as part of the existing transportation system, as well as to showcase the market readiness and deployment potential of the applications.

Offerors should identify a lead agency or organization that has established agreements and relationships with local and regional transportation agencies and that allow for the initiation of a multi-modal / intermodal test environment within one month after an award is made. Test sites should provide a suitable intermodal environment for testing and evaluating ITS concepts and technologies under naturalistic real world conditions, in a location where problems are so evident that improvements would be newsworthy to both regional and national media outlets.

Offerors of field test sites must address seven (7) requirements:

- Ability to offer a transportation network as a test site that will clearly allow for the testing and evaluation of a wide range of ITS applications and that, through use of historical and baseline data, will demonstrate measurable impacts and benefits that meet SAFE TRIP-21 goals and objectives.
- Documented transportation problems that indicate the test site offers opportunities for significant benefit from the implementation of ITS technology in safety, congestion, mobility, mode shift to transit / ridesharing / biking / walking, commercial vehicle safety and/or operations efficiency, or e-payment services.
- Robust transportation monitoring capabilities and historical traffic and safety data sets that can be shared with the U.S. DOT to serve as a baseline for comparing system performance and benefits before, during, and after the test evaluation and to measure the impacts due to the addition of ITS applications. As a part of this requirement, Offerors must provide evidence of a willingness to cooperate and share data with the U.S. DOT and its evaluator(s).

- Ability to participate in the unveiling of SAFE TRIP-21 at the ITS World Congress in New York City during November 2008. Participation involves showcasing ITS applications associated with the test site through operational displays involving field site personnel and promoting widespread SAFE TRIP-21 awareness and interest among public sector transportation officials and stakeholders.
- Ability and willingness to accommodate sites visits and demonstrations during the operational test.
- Ability to provide plans and commitments for sustaining the test bed and applications beyond the test period.
- Ability to provide routine operations and maintenance at no cost to the U.S. DOT during the operational test.

In addition, prospective test sites should address their ability to provide additional capabilities such as:

- Capability to plan and conduct the development, installation, and testing necessary to meet SAFE TRIP-21 goals and objectives.
- Open architectures that offer multiple opportunities for combining a variety of ITS services to improve traffic safety, alleviate congestion, enhance mobility, increase the efficiency of commercial vehicle safety and operations, and allow for electronic- or e-payment systems (e.g., tolling, parking reservations and payment, among others).
- Ability to receive and process electronic data rapidly, and deliver information to travelers (for instance, regarding road hazards, travel times, transit alternatives, or parking availability), through multiple means (e.g., Dynamic Message Signs, websites, roadside / area-wide wireless communications, among others).
- Opportunities to involve transit in such a manner as to achieve meaningful mode shifts.
- Opportunities to test integrated electronic payment systems.
- Capability to operate and maintain ITS technologies during the test period.
- Ability to accommodate other SAFE TRIP-21 ITS applications.
- Ability to integrate SAFE TRIP-21 ITS applications into the operational transportation network to the extent which these are not problematic to prevailing traffic and transit system operations.
- Real-time, intermodal trip planning capabilities.
- Reasonable provisions, if possible, for providing the requisite systems engineering and development attendant with building out the test site.
- Ability to leverage, and thus enhance, the existing functionality of systems and capabilities (e.g., 511, Highway Advisory radio, vehicle-based collision warning technologies, emergency response systems, existing traffic reporting services, etc.).
- Capability to incorporate other U.S. DOT activities, for example, the Urban Partnership Agreements, Corridors of the Future Sites, or University Transportation Centers (UTCs), and/or are suitable for future ITS technology Field Operational Tests.
- Use of ITS Standards and protocols.

- Ability to employ ITS privacy principles and protect personally identifiable information (PII).
- Ability to extend lessons learned to other sites after SAFE TRIP-21.

Appendix A expands on this list and provides further descriptions on additional desirable attributes for ITS test site environments.

2.2 ITS Applications Independent of a Field Test Site.

Offers are sought regarding real-time ITS information, navigation, communication, and electronic payment in an integrated operational setting that meet the SAFE TRIP-21 goals and objectives in terms of enhancing roadway-based transportation safety, mobility, commercial vehicle safety and operations, and e-payment. The Government is soliciting offers for ITS applications that have the near-term (1-3 years) potential to:

- Reduce motor vehicle crashes
- Alleviate traffic congestion
- Improve emergency response times
- Enhance transit use, modal shifts, and/or ride sharing
- Improve traffic data and/or traveler information
- Promote motor freight safety and efficiency
- Enable convenient electronic payment options
- Mitigate environmental impacts
- Reduce unnecessary motor fuel consumption

A wide range of ITS applications are possible; however, Offerors of ITS Applications must address five (5) requirements:

- The ability to work with the test sites to install applications into existing facilities, infrastructure, and systems.
- Ability to generate data during the SAFE TRIP-21 test period that is required to measure the impacts to the transportation network and demonstrate benefits. As a part of this requirement, Offerors should provide evidence of a willingness to cooperate and share data with the U.S. DOT and its evaluator(s).
- Ability to provide routine operations and maintenance at no cost to the U.S. DOT during the operational test.
- Ability to participate in the unveiling of SAFE TRIP-21 at the ITS World Congress in New York City during November 2008. Participation involves showcasing ITS applications associated with the applications through operational displays involving field site personnel and promoting widespread SAFE TRIP-21 awareness and interest among public sector transportation officials and stakeholders.

- A viable business model for sustained operations and/or expanded deployment after SAFE TRIP-21 is completed.

SAFE TRIP-21 seeks to test and evaluate integrated, intermodal applications, particularly those that do not entail extensive public sector infrastructure requirements to achieve immediate benefits. Applications that are ready for operational test and evaluation are of primary interest, as applications must be able to be deployed in an integrated field test bed and be showcased as part of the SAFE TRIP-21 launch during the ITS World Congress in New York City in November 2008. Offers that entail research and development efforts that cannot be completed in time for testing in a unified test bed environment and/or an ITS World Congress demonstration display setting, may not be considered.

Applications that do not rely solely on DSRC and can employ other communications technologies and in doing so, offer sufficient communication speed, reliability, privacy, and security for the proposed application(s) are encouraged. Applications that address more than one SAFE TRIP-21 goal (i.e., safety, mobility, etc.) are encouraged. Organizations offering applications with plans for deployment that spur market growth and increase the density of ITS-equipped travelers and/or vehicles leveraging aftermarket solutions, efficiently and inexpensively, also are encouraged.

Appendix B provides further descriptions of desired ITS applications and benefits.

3. PROPOSAL SUBMISSION REQUIREMENTS:

In order to submit a proposal for SAFE TRIP-21, information must be submitted in a succinct, logical, and easy to understand format. Proposals are limited to no more than 25 pages in length (single-space, 12-pt Times New Roman font, one-inch margins all around, excluding footnotes, and single-sided) exclusive of graphs, charts, photos, facility descriptions, and resumes. Proposals must consist of two separate volumes entitled *technical* and *cost*.

Offerors shall appropriately mark data that they consider proprietary. Facsimile transmissions will not be accepted. Extraneous attachments such as institutional brochures, reprints, disks, or videotapes will not be evaluated. Cost proposals are not subject to a length limitation.

3.1 Technical Proposal: The technical proposal shall include:

- A cover page with the following information (a) the Broad Agency Announcement Number, (b) project title, (c) name of organization, (d) name of principle investigator(s), (e) phone and addresses for both technical and business contacts, and (f) the identification of the primary subject area and subordinate subject area or areas, if any, the proposal addresses (i.e., whether the proposal is for a test site with applications or applications independent of a test site; whether the proposal address safety, mobility, commercial vehicle safety and operations, e-payment services or some combination).

Offerors may submit more than one proposal; however each technical proposal must *only* describe one of the following:

1. A field test site with associated ITS applications.
 2. ITS applications or technologies independent of a test bed, but that can clearly support SAFE TRIP-21 goals and objectives and that are suitable for incorporation into a test bed.
- An Executive Summary (two pages or less) that describes the technical goals, approach, expected results, and the level of public access and rights to intellectual rights and data. It is the Government's intent to be able to allow the public and Government access to the SAFE TRIP-21 results obtained during field testing.
 - A list of all figures, references, tables, charts, and appendices and information.

The Technical Proposal shall also include the following:

3.1.2 Technical Concept for Meeting SAFE TRIP-21 Objectives

In order to allow a complete evaluation, the Offeror shall provide a clear description on the proposed technical concepts and planned efforts to achieve SAFE TRIP-21, including a realistic technical approach to meeting the program's objectives. All Offerors shall provide:

- A clear description of how the Offeror will meet the requirements listed under section **2.1 Field Test Sites with ITS Applications**, if proposing test site, and section **2.2 ITS Applications Independent of a Field Test Site**, if proposing an ITS Application(s).
- An estimate of technical and institutional risk factors and the likelihood of success.
- A clear identification of the ITS Standards and protocols that are embodied as part of the proposal and the extent to which these will be implemented.
- A description of how ITS privacy principles are employed and the process for ensuring that personally identifiable information (PII) will be protected to ensure against inappropriate collection, use, and/or disclosure.
- A concept for how the proposed test bed and/or applications would be displayed at the ITS World Congress in November 2008, technical requirements for booth or demonstration space, and requirements for invitational travel, if any. This description should be accompanied by a description of one past technology development project that resulted in a successful new technological achievement, including a description of the public relations strategy and media coverage of the event, and an approximate number of people and public sector decision makers reached.
- All arrangements to leverage funding from U.S. DOT programs other than U.S. DOT funding provided already under the VII program (such as an Urban Partnership Agreement, Corridors of the Future, University Transportation Center, ITS field operational test, or other source) should describe how their technical efforts meet both the SAFE TRIP-21 goals as well as the other program's goals. Any risks or

constraints associated with leveraging funding from these other sources should be described.

- The extent to which the Offeror has existing, established arrangements with other organizations to achieve a multi-modal, integrated environment and/or the speed with which the installation activities with all parties concerned can be initiated.
- Any additional information that further describes the technical concept for a test site or an ITS application(s), by referencing the lists under section **2.1 Field Test Sites with ITS Applications** if proposing test site and section **2.2 ITS Applications Independent of a Field Test Site** if proposing an ITS Application(s), or the materials in Appendices A and B.

Additionally, proposals for test beds shall describe:

- The adequacy and availability of current and planned facilities, equipment, and institutional arrangement such as communications systems, data, operations centers, existing ITS field devices and systems, legislation, and other field site attributes referred to in Appendix A. Discuss how the available facilities and equipment meet the needs of SAFE TRIP-21.
- The plans and commitments for sustaining the test bed and applications beyond the test period. Risk factors that may void these commitments should be highlighted.

Proposals for ITS applications independent of field test sites shall provide:

- A description of the expected scope and scale of benefits to be provided through the application.
- Evidence that the application/technology is ready or nearly ready for field operational testing and evaluation. "Off the shelf" commercial availability, successful completion of proof-of-concept testing at a proving ground or research test bed under controlled conditions, prior smaller scale, operational test results in real-world traffic and transit environments are all representative indications of readiness.
- A description of specific needs or requirements associated with integrating the application into the SAFE TRIP-21 test sites, including needs associated with the communications systems and transportation infrastructure and for test and evaluation purposes.
- A description of the level of existing functionality of the applications and how this level of functionality is expected to evolve in the future.
- The business model that, when implemented, will result in widespread deployment based on successful test results.

Offerors should not include evaluation elements beyond data collection and storage capabilities as evaluation services will be acquired separately.

3.1.3 Management Approach

In order to allow a complete evaluation, the Offeror shall provide a brief description of:

- The Offeror's organization and a realistic schedule for accomplishing the work and providing the deliverables within the SAFE TRIP-21 time frame and in a cost effective manner. Highlight the key milestones.
- The Offeror's project management approach and how the Offeror plans to address technical and cost control.
- The Offeror's approach to managing changes that impact cost and schedule (configuration management).
- The Offeror's approach to forming teams and ensuring availability of key project personnel throughout the duration of SAFE TRIP-21.
- Provide a detailed description of the management of the technical components, (i.e., progress reports, milestones, tasks, deliverables) and proposed level of rights in data developed under SAFE TRIP-21.

3.1.4 Staffing and Qualifications of the Offeror's Team

In order to allow a complete evaluation, the Offeror shall provide information on:

- The key project personnel's (Principal Investigator(s), Program Manager(s), and team) education level, experience, capability, availability, and resumes.
- The relevance of the key project personnel's experience, knowledge, and technical achievements to SAFE TRIP-21.
- The key project personnel's skills to communicate clearly through reports, briefings, and technical presentations (i.e., recent publications).

3.1.5 Past Performance:

In order to allow a complete evaluation, the Offeror shall provide:

- A list of the organization's past performance on five (5) projects similar in size and/or scope to SAFE TRIP-21. Include current work or work that has been completed within the past three years. Highlight work performed specifically for the Federal Government, although the list may include other contracts considered relevant by the Offeror. Include the dollar value of these previous efforts.
- References the Government may contact or a copy of the performance evaluation report for Government-sponsored projects.
- A brief description of how past performance on each project is relevant in demonstrating ability to successfully participate in SAFE TRIP-21.

Offerors may include information on problems encountered on the identified projects and the Offeror's corrective actions. **If Offeror has no relevant past performance history, it must affirmatively so state.**

3.2 Cost Proposal: The cost/funding proposals should be organized in three (3) sections in the following order:

- (1) Total project cost for the field test component or ITS applications
- (2) Cost sharing and in-kind contributions (i.e., cost to the Government and off-budget supporting resources)
- (3) Total cost and cost sharing for the ITS World Congress component.

These are described in more detail below.

3.2.1 Total Project Cost for Field Test and/or ITS Application Components

This section will give a detailed breakdown of costs of the project. Costs should be broken down on a task-by-task basis for each task appearing in the Offeror's technical proposal. This should include all of the proposed costs to the Government and cost sharing by the Offeror. The following information should be presented in the cost proposal for each task:

- Total cost
- Costs of major tasks
- Funding requested from the Government
- Elements of cost: labor, direct materials, travel, other direct costs, equipment, software, patents, royalties, indirect costs, and cost of money
- Financial ability to sustain and/or extend SAFE TRIP-21 applications beyond the test and evaluation period.

Sufficient information should be provided in supporting documents to allow the Government to evaluate the reasonableness of these proposed costs, including salaries, overhead, Facilities Capital Cost of Money equipment purchases, fair market rental value of leased items, and the method used for making such valuations.

3.2.2 Cost Sharing and In-Kind Contributions

Cost sharing or matching means the value of the third party in-kind contributions and the portion of the costs of a federally assisted project or program not borne by the Federal Government. Proposals should contain sufficient information regarding the sources of the Offeror's proposed cost share or matching so that a determination may be made by the Government regarding the Offeror's availability, timeliness, and control of these resources. For example: How will funding and resources be applied to advance the progress of the proposed effort? What is the role of any proposed in-kind contributions?

Proposals that include arrangements to leverage funding through an Urban Partnership Agreement, Corridor of the Future, University Transportation Centers, future field operational test, or other source should describe the amount of the funding, the arrangements by which the funding will be made available to the Offeror, and the timing of the funding availability.

3.2.3 Total Cost and Cost Sharing for ITS World Congress Component

Proposals should describe the costs related to participation and demonstration in the ITS World Congress, as described in the Technical Proposal. Costs should include:

- Total cost
- Costs of the major tasks
- Total Offeror cost share
- Funding requested from the Government
- Elements of cost: labor, direct materials, travel, other direct costs, equipment, software, patents, royalties, indirect costs, and cost of money

Items previously paid for under the U.S. DOT's VII Program and/or the cost of roadways and public transit systems that comprise the test bed are excluded from cost sharing and in-kind contributions.

The Volpe Center may request additional cost back-up information, resumes or supplemental information as appropriate. Required deliverables are to be defined by offerors as part of the proposal.

4. GENERAL PROPOSAL INFORMATION:

Proposals must be submitted in hard copy. Offeror must submit one original and seven (7) copies, **DUE NO LATER THAN 4:00 PM Eastern Daylight Time (EDT), March 28, 2008.** Submission of an Offeror's proposal received after 4:00 PM EDT, March 28, 2008, may be considered late and rejected.

Proposals are to be received at the Volpe National Transportation Systems Center, 55 Broadway, Cambridge, MA 02142. The proposal packages must be clearly labeled with the BAA number and a statement that the contents are "Proposal Data To Be Opened By Addressee Only."

Interested Offerors should send the original and seven (7) copies of their proposals to:

U.S. Department of Transportation
RITA/Volpe National Transportation System Center
Attn: Orin Cook, RTV-6D1
55 Broadway, Kendall Square
Cambridge, MA 02142

Offerors are also requested to forward its proposal via email to:

Orin.Cook@volpe.dot.gov. The intent of the email proposal is for information purposes only and will not relieve the contractor of meeting the submission time and date identified above. Proposals should be submitted in Microsoft Word or Adobe portable document format.

All questions pertaining to the BAA must be received no later than 14 calendar days after issuance of the BAA.

All written inquiries should be addressed to:

U.S. Department of Transportation
RITA/Volpe National Transportation System Center
Attn: Orin Cook, RTV-6D1
55 Broadway, Kendall Square

Cambridge, MA 02142

Questions may be submitted by email to orin.cook@volpe.dot.gov or by facsimile at (617) 494-3024. Any questions received after this date will be answered only if determined by the Contracting Officer to be in the best interest of the Government. **NO ORAL INQUIRIES WILL BE ANSWERED.** No question of any nature or form is to be directed to technical personnel. Any additions, deletions, or changes to this announcement will be made by amendment to the BAA. Each amendment will be identified by number, and receipt thereof will be acknowledged by each Offeror. Consistent with the dissemination of the BAA, **any amendment will be posted to Fed Biz Opps and on the Volpe Center Acquisition Management Division internet home page at: <http://www.volpe.dot.gov/procure/index.html>.** No paper copies will be mailed to prospective Offerors.

5. TIMELINE

The selected awardees should expect to begin work as early as May 4, 2008, and conclude all work necessary for integrating intended test bed capabilities by August 1, 2008, to allow for testing and validation of performance by October 1, 2008 and for exhibiting the concept at the ITS World Congress in November 2008. The field test bed and applications should be ready to initiate data collection for testing and evaluation purposes by December 15, 2008.

6. EVALUATION CRITERIA:

6.1 GENERAL

6.1.1 BASIS FOR AWARD

The proposals shall be evaluated to determine the extent of the Offeror's capability to meet the SAFE TRIP-21 goals and objectives, as described above, and the offer(s) that provide best value to the Government within the Government's availability of funds. The Government will make awards resulting from this BAA to the responsible Offeror(s) most advantageous to the Government, technical, price, and other factors considered.

6.1.2 ORDER OF IMPORTANCE

The technical evaluation factors stated in the technical proposal when combined are significantly more important than cost in the selection for award of this contract. Notwithstanding this fact, Offerors are cautioned not to minimize the importance of the cost proposal. As the difference in ratings of submitted Technical Proposals decreases, the importance of evaluated cost and cost sharing will increase. When the Technical Proposals are evaluated as essentially equal, cost may become the determining factor in making an award.

6.2 TECHNICAL PROPOSAL EVALUATION

6.2.1 GENERAL

Technical concept is significantly more important than Management Approach, Staffing, and Past Performance. Management Approach is more important than Staffing and Past Performance. Staffing is more important than Past Performance.

6.2.2 TECHNICAL FACTORS FOR EVALUATION

Technical Concept: The purpose of this factor is to assess the Offeror's ability to plan and provide for either a test site combined with ITS applications or independent ITS applications that can be integrated into the test environment that will meet the goals and objectives of SAFE TRIP-21, and to demonstrate that the Offeror has the necessary understanding, expertise, and experience to successfully complete these plans.

Management Approach: The purpose of this factor is to assess the Offeror's capability to effectively and efficiently manage the work represented, the Offeror shall have a realistic approach for (1) accomplishing the work and providing deliverables within the SAFE TRIP-21 timeframe; (2) managing the project, technical changes, and controlling costs; and (3) forming and managing teams that ensure the availability of key project personnel throughout SAFE TRIP-21. These three factors are of equal importance.

Staffing: The purpose of this factor is to assess (1) the qualifications of the key project personnel (Principal Investigator(s), Program Manager(s), and team), (2) the relevance of these qualifications to SAFE TRIP-21; and (3) the key project personnel's ability to communicate clearly. All three of these factors are of equal importance.

Past Performance: The purpose of this factor is to assess the likelihood of success from the Offeror's past performance history. The Government will determine the relevance of past performance information based on the similarity of the nature of the previous work to the current requirement (as described throughout this BAA), the dollar value of the previous efforts, and the currency of the prior work (i.e., within the past three years). Each Offeror will be evaluated on its performance under existing and prior contracts for relevant products and services. Performance information will be used both for responsibility determinations and as an evaluation factor. References other than those provided by the Offeror may be contacted by the Government.

6.3 COST FACTORS FOR EVALUATION

Proposed costs, cost sharing, and in-kind contributions will be evaluated to establish that they are fair and reasonable and that they demonstrate cost realism. The Government will calculate

probable cost that shall be used to determine best value and will be used in the selection decision. The following factors are additional cost considerations, not necessarily in order of importance:

- Competitiveness of the proposed costs, cost sharing, or in-kind contributions.
- Acceptability of the cost control plan.
- Risks associated with a proposal that fails, or partially fails, to satisfactorily and convincingly support its proposal.
- Innovative approaches to contracting.
- The extent to which current and past technology developments or installations are leveraged.
- The degree to which costs can be identified for sustaining the SAFE TRIP-21 applications beyond the test and evaluation period.

Proposals for test sites with applications will be reviewed first in order to define the test environments; applications independent of a test site will be reviewed second.

Awards will be typically of 12-24 months duration. The Government reserves the right to make awards up to \$3,000,000 depending on the site and requirements for proper installing and testing.

8. OTHER ADMINISTRATIVE INFORMATION:

It is the policy of the Volpe Center to treat all proposals as competitive information and to disclose the contents only for the purposes of evaluation. This announcement constitutes the public announcement as contemplated by FAR 6.102(d) (2), and no formal Request for Proposals or other solicitation regarding this announcement will be issued. Requests for same will be disregarded.

The Government reserves the right to select for award any, all, part, or none of the proposals received in response to this announcement. In addition, the Government reserves the right to award either contracts, cooperative agreements, or other instruments determined to be of benefit to the government in achieving the goals of this program. This BAA is an expression of interest only and does not commit the Government to pay any proposal preparation costs.

The resulting award documents will include the applicable Rights and Data and Patent Rights clauses.

This Broad Agency Announcement is separate and distinct from other Volpe Center Broad Agency Announcements.

APPENDIX A: FIELD TEST ENVIRONMENTS

SAFE TRIP-21 shall be able to integrate a range of ITS applications into field test sites to improve traffic safety, alleviate congestion, enhance mobility, increase the efficiency of commercial vehicle safety and operations, and/or integrate a variety of services into electronic- or e-payment systems (e.g., tolling, parking reservations and payment, among others).

The Government is seeking test site locations in urban and rural settings for the installation, testing, and evaluation of ITS applications. Test sites should have the capability to assess both the performance and the benefits of integrating a wide variety of advanced technologies and applications as part of the existing transportation system, as well as to showcase the market readiness and deployment potential of the applications.

Test sites should have the capabilities to host applications related to:

- Safety
- Mobility
- Commercial Vehicle Safety and Operations
- E-Payment Systems

Below is a description of what SAFE TRIP-21 hopes to achieve in each of these areas and the attributes that are critical for sites that are proposing to host applications in one or more of these areas. Offerors that can host and integrate more than one set of applications within one test site are preferred.

ATTRIBUTES OF TEST SITES

Test sites should meet or include proposal provisions to meet the following general attributes:

Communications Systems and Facilities:

- Prevailing wireless communications services (cellular, Wi-Fi, WiMax, DSRC, but not limited to these) and network operations and management capabilities; recognizing that some but not all of these may need to be installed and/or augmented to fully meet application requirements.
- High speed internet connectivity for remote monitoring and data sharing.
- Assurances of the necessary permits and ROW access for test purposes and participants.
- Traveler information dissemination systems (i.e., HAR, 511, Website, Radio Traffic Reports, Dynamic Message Signs, but not limited to these).
- Ability to gather and process probe data.
- Ability to fuse data from multiple sources.
- Ability to leverage, and thus enhance, the existing functionality of systems and capabilities (i.e., 511, Highway Advisory radio, vehicle-based collision warning technologies, existing traffic reporting services, but not limited to these).
- Real-time, intermodal trip planning capabilities
- Transit systems including, but not limited to, bus, light rail, commuter rail, or Para transit.

Data:

- Traffic and transit or commercial vehicle safety incident monitoring and data collection capabilities.
- At least one year of historical safety, congestion/mobility, or electronic payment system data that provides a suitable baseline for assessing the effects of the proposed ITS field test.

Operations:

- The capability to operate and maintain ITS technologies during the test period.
- The ability to accommodate other SAFE TRIP-21 ITS applications to the extent which these are not problematic to prevailing traffic and transit system operations.
- Ability to involve transit to achieve mode shifts.
- Road weather monitoring/forecasting and related information dissemination capability.

Field Test Characteristics:

- Documented hazardous travel locations (e.g., sharp curves, blind spots, abrupt traffic flow changes, rail grade crossings, work zones, school zones, etc.).
- A substantial population of test subjects who travel in the test area frequently (for instance, commuters, commercial vehicle, taxi cab or transit fleets, others).
- A frequency of railroad-street crossings.

Institutional Policies:

- Legislation that facilitates or does not impede the deployment or installation of new technologies, applications, and communications systems.
- The ability to assemble a panel of test subjects in a manner that adheres to the Federal human test protocols.

Communications and Outreach:

- The ability to showcase test bed applications and capabilities at ITS WC.
- A high-visibility location, where media and decision-makers can regularly witness the benefits of ITS.
- Suitable facilities for hosting and providing interactive orientation for visitors at test site locations.

Additional highly desired characteristics include:

- Local match or in-kind contributions.
- Ability to offer Urban Partnership Agreements (UPA) funding or Corridor of the Future funding.
- Opportunity to offer other innovative means of partnering, such as simultaneously hosting other planned ITS technology Field Operational Tests.
- Ability to provide the requisite systems engineering and development capabilities.
- Demonstration of interest for continuing successful elements of the test without ongoing Federal assistance after the test period is over.

Proposals that offer multiple applications are preferred and will be evaluated accordingly. Test sites that can accommodate the addition of applications that might be identified at a later date also are preferred.

SAFETY SITE ATTRIBUTES

In the area of safety, SAFE TRIP-21 seeks to provide travelers and drivers with information and advisories that help drivers avoid crashes, and thus reduce the overall number of fatalities, crashes, and injuries. Through this BAA, the Volpe Center is seeking test sites with one or more of the following characteristics in addition to the general site attributes:

- Above average levels of traffic accidents that can be characterized as responsive to ITS technologies for reducing accidents.
- Weather events (including, but not limited to, rain, fog, snow, ice, high wind gusts, etc.) that represent travel hazards.
- Restricted routings / zones for hazardous material (hazmat) transportation and/or hazmat monitoring.
- A prevalence of railroad -grade crossings.

Proposals should address the current impediments to widespread deployment of safety applications, such as the high costs associated with deploying and maintaining roadside systems, the lack of equipment inside the vehicle that can utilize roadside safety systems, and awareness on the part of the public and decision-makers of the potential benefits that can be derived from ITS.

MOBILITY SITE ATTRIBUTES

In the area of mobility, SAFE TRIP-21 seeks to provide travelers and drivers with information to alleviate traffic congestion, enhance transit and ride sharing, promote mode shift and intermodal coordination, optimize system capacity, mitigate environmental impacts, and reduce unnecessary motor fuel consumption. Through this BAA, the Volpe center is seeking test sites with the following characteristics in addition to the general site attributes:

- Severe traffic congestion and major incidents documented by major media outlets.
- A highway corridor or network that includes both freeway and arterial facilities, and offers multiple opportunities for traffic diversion and/or mode shift to transit (bus and/or rail) and/or ridesharing, biking and walking.
- Traffic and transit system performance monitoring devices to monitor traffic flow and transit operations throughout the test area.
- A data processing capability that captures, stores and analyzes traffic and transit performance data and information. This could be part of a TMC or 511 center.
- Park and ride lots that fill up during peak periods and have the potential for real time monitoring.
- Weather events including, but not limited to, rain, fog, snow, ice, high wind gusts, etc.) that impact traffic flow and/or transit operations.
- Major airport/seaport/intercity rail facilities that offer opportunities for information delivery and intermodal, seamless connections.

- Ability to implement congestion pricing strategies.
- Application partners that can offer a significant number of their technologies as part of the test.

COMMERCIAL VEHICLE SAFETY AND OPERATIONS SITE ATTRIBUTES

In the area of commercial vehicle safety and operations, SAFE TRIP-21 seeks to enhance the information available to motor carrier fleets that leads to increased safety, avoidance of congestion, just-in-time deliveries and economic productivity, and environmental benefits. Through this BAA, the Volpe Center is seeking test sites with the following characteristics in addition to the general site attributes:

- A highway corridor or network that hosts a significant amount of motor carrier traffic due to the presence of distribution centers, ports, cargo terminals, or customers (e.g., an industrial park).
- Commercial vehicle parking locations that fill up during peak periods and have the potential for real time monitoring.
- Electronic infrastructure for commercial vehicle operations, safety, or e-payments.
- Major airport/seaport/intercity rail facilities that have high concentrations of motor vehicle traffic/parking.
- Motor carrier incident monitoring and data collection capabilities.
- Crash avoidance technologies.
- Inspection and safety records.
- Intermodal connections.
- Existing technologies for weigh-in-motion, cargo tracking, wireless inspection, and/or fleet management.
- Freight motor carrier fleet partners.
- Vehicle-to-vehicle applications between heavy vehicles and light vehicles.

E-PAYMENT SERVICES SITE ATTRIBUTES

In the area of e-payment services, SAFE TRIP-21 seeks to integrate existing services such as toll payments with transit systems, parking systems, intermodal transfers, and reservation systems, among others. SAFE TRIP-21 recognizes that travel is increasingly intermodal, inter-jurisdictional, and inter-regional in nature. Enhanced and integrated e-payment services allow for reduced delays, greater convenience, greater security due to less cash, and opportunities to meet needs in-transit. Through this BAA, the Volpe Center is seeking test sites with the following characteristics in addition to the general site attributes:

- Existing electronic payment infrastructure for tolling, transit fare payment and/or parking payment.
- Integrated fare/toll/parking payment media or use of advanced payment technologies (e.g. contactless smart cards, NFC-equipped phones, advanced transponders, etc).
- Integrated payment transaction processing and account management.
- Established relationships with financial institutions for issuance of payment media and transportation payment processing.
- Ability to integrate payment systems with navigation and traffic applications.
- Ability to demonstrate congestion pricing strategies.

APPENDIX B: ITS APPLICATIONS

SAFE TRIP-21 seeks to incorporate a range of new ITS applications into existing networks and transportation systems. These new applications should assist in the reduction of traffic-related fatalities and injuries, fight congestion on America's roadways, improve the efficiency and safety of commercial vehicle operations, and improve performance of the transportation system. All applications must be able to be integrated into SAFE TRIP-21 test sites, as described in the minimum requirements in section 2.2 and as referenced in Appendix A. Evaluation and test procedures will be designed to both assess the performance and the benefits of integration of a variety of applications as part of the existing transportation system, as well as to showcase the market readiness and deployment potential of applications.

At a minimum this BAA seeks ITS applications in the following four areas:

- Safety
- Mobility
- Commercial Vehicle Safety and Operations
- E-Payment Systems

In addition to the minimum requirements in section 2.2, the following are attributes that the government is seeking in application proposals:

- Applications that combine multiple solutions into a single integrated system. For instance, a system that provides real-time route guidance in addition to e-payment functions and/or safety functions such as collision avoidance
- Applications that do not rely solely on DSRC and can employ other communications technologies (and in doing so, offer sufficient communication timeliness, reliability, privacy, and security) to ensure reliable operations.
- The ability to deliver dynamic information to mobile devices (either in-vehicle or nomadic handheld devices such as cell phones / personal digital assistant devices).
- The ability to deliver alerts regarding static roadway features such as school zones, high hazard locations, size / weight / hazmat traffic restrictions, parking locations / fees, rail-highway grade crossings, and traffic restrictions (e.g., one-way, no left turn, etc.).
- Plans for deployment that spur market growth and increase the density of ITS-equipped travelers and/or vehicles leveraging aftermarket solutions, efficiently and inexpensively.

SAFETY APPLICATIONS

Safety applications may be vehicle-based, nomadic, or another technology. It is envisioned that safety applications will provide greater situational awareness to the driver by providing real-time driver assistance or driver advisories.

Applications that are desired include, but are not limited to, technologies such as:

- Vehicle-based sensor and communication systems

- Cooperative intersection collision avoidance systems
- Merge assistance systems
- Rear-end collision warning systems
- In-vehicle signing for both static advisories (e.g., sharp curves, school zones, etc.) and dynamic advisories (e.g., temporary work zones, weather impacts, presence of emergency vehicles, congestion ahead, etc.)
- Signal violation warnings
- Vehicle-to-vehicle communications
- Vehicle Assist and Automation applications
- Precision Docking

It is highly desirable that a multi-application proposal include functionality for prioritizing messages and managing alerts so that safety is always a priority, e.g., technologies that help to manage driver workload and decrease driver distraction. Furthermore, safety application proposals should aim to address the current impediments to widespread deployment of ITS safety technologies.

MOBILITY APPLICATIONS

Mobility applications include two types of applications – mobile, dynamic travel information technologies and traffic monitoring and management technologies.

Mobile travel information technologies may be vehicle-based, nomadic, or other technologies. It is envisioned that these mobility applications will provide real-time transportation system and network information to enhance travelers' decision making and increase their choices while in-transit.

Traffic monitoring and management technologies may be public or private sector in nature, and may be part of the roadside infrastructure, within management and operations centers or centers for gathering and fusing data, or embedded as a mobile part of the network, for instance, traffic probes. It is envisioned that these monitoring and management technologies are the basis for real-time data generation that will lead to the optimization of network capacity.

Traveler information applications that are desired include, but are not limited to, technologies such as cell phones, navigation devices, personal digital assistants (PDAs), among others. Mobile traveler information technologies should meet the following requirements in addition to the general requirements:

- Act as a traffic probe.
- Deliver dynamic information to travelers on most, if not all, of the following:
 - Traffic and travel conditions, including route specific travel times and delays
 - Route assistance and route diversion
 - Map database assistance
 - Adverse weather information / indicators
 - Transit connections, fare information, schedules, and real-time bus/train arrival information

- Parking information (location, cost, and availability) including transit park and ride lots and commercial vehicle parking lots
- Airport/port authority information on connections, arrival/departure times
- Signal phase timing information
- Road surface conditions

Traffic monitoring and management applications that are desired include, but are not limited to, technologies such as dynamic, integrated infrastructure sensor and positioning systems; emergency vehicle and transit signal priority devices; probe data collection devices; innovative traffic flow monitoring technologies; innovative adverse weather/information systems; surveillance systems; responsive or adaptive signal timing technologies that optimize traffic flow.

COMMERCIAL VEHICLE SAFETY AND OPERATIONS APPLICATIONS

Commercial Vehicle applications may be vehicle-based, nomadic, or another technology. Similar to mobility applications, commercial vehicle applications can be divided into two categories – those that provide greater situational awareness and information to drivers to result in increased safety, mobility, and productivity benefits; and those that provide enhanced monitoring and management applications to roadside inspectors, customs and border agents, and fleet managers.

For commercial vehicle safety, mobility, and productivity, applications that are desired include, but are not limited to, technologies such as:

- Collision avoidance systems
- On-board advisory systems that deliver safety information such as curve speed warnings, temporary work zones, congestion ahead, hazmat routing, low bridge advisories, etc.
- On-board information systems that deliver mobility information such as traffic conditions, freight/cargo logistics and status information, weather conditions, etc.
- Security systems such as truck-trailer communication systems

For commercial vehicle monitoring and management, applications that are desired include, but are not limited to, technologies such as:

- Asset tracking systems
- Gateway facilitation technologies such as RFID, smart cards, weigh-in-motion, etc.
- Expanded CVISN capabilities such as Smart Roadside or Enhanced Safety information
- Electronic On-Board Recorders
- Clearance and Credentialing systems
- Driver performance monitoring systems
- Real-time fleet management systems

In addition to meeting the general requirements, it is highly desirable that commercial vehicle applications have the capability of integrating with other SAFE TRIP-21 mobility and safety applications.

E-PAYMENT APPLICATIONS

E-payment applications may be vehicle-based, nomadic, or another technology. It is envisioned that e-payment applications may result in an integrated, multi-agency or commercial account that allows for seamless inter-jurisdictional and inter-regional travel.

E-payment applications that are desired include, but are not limited to, technologies such as:

- Open road tolling
- Seamless intermodal payment cards
- Parking reservation and/or payment systems
- Other transportation venue payments.