



**U. S. Department
of Transportation**

**Office of the Secretary
of Transportation**

PROGRAM SOLICITATION

Small Business Innovation Research Program

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DOT PROGRAM SOLICITATION FOR SMALL BUSINESS INNOVATION RESEARCH

I. PROGRAM DESCRIPTION

A. Introduction

This solicitation for research proposals is issued by The United States Department of Transportation (DOT) pursuant to the Small Business Innovation Development Act of 1982, P.L. 97-219 (codified at 15 U.S.C. 638) as amended by the Small Business Innovation Research (SBIR) Program, Extension, P.L. 99-443 which extended the program through September 30, 1993. On October 28, 1992, through the Small Business Innovation Research and Development Act of 1992 (P.L. 102-564), Congress reauthorized and extended the SBIR program for another seven years (2000). Subsequently, on December 21, 2000, through the Small Business Reauthorization Act of 2000 (P.L. 106-554) Congress again reauthorized the SBIR program through September 30, 2008.

The SBIR program encourages small business concerns to engage in research or research and development (R/R&D) that has the potential for commercialization to meet Federal research or research and development objectives.

The purposes of the SBIR program are:

- (1) To stimulate technological innovation;
- (2) To use small business to meet Federal R/R&D needs;
- (3) To increase private sector commercialization of innovations derived from Federal R/R&D; and
- (4) To foster and encourage participation by minority and disadvantaged persons in technological innovation.

In consonance with the statutory obligations of the Act, the DOT has established a Small Business Innovation Research Program —hereinafter referred to as the DOT SBIR Program.

The purpose of this solicitation is to invite small businesses with their valuable resources and creative capabilities to submit innovative research proposals that address high priority requirements of the DOT.

B. Three-Phase Program

The DOT SBIR Program is a three-phase process.

THIS SOLICITATION IS FOR PHASE I PROPOSALS ONLY.

Phase I. Phase I provides support for the conduct of feasibility-related experimental or theoretical research or R/R&D efforts on research topics as described herein. The dollar value of the proposal may be up to \$100,000 unless otherwise noted and the period of performance is generally six months. The basis for award will be the scientific and technical merit of the proposal and its relevance to DOT requirements and priorities. **Only awardees in Phase I are eligible to participate in Phase II which is by invitation only.**

Phase II. Phase II is the principal R/R&D effort having a period of performance of approximately two years with a dollar value of up to \$750,000 unless otherwise noted. DOT will accept Phase II proposals under the DOT SBIR Program only from firms which have previously received a DOT Phase I award. Phase II proposals must be prepared in accordance with guidelines provided by DOT to Phase I awardees receiving an invitation to submit a Phase II proposal. Phase II awards will be based on the results of Phase I efforts, technical merit, agency priority and commercial applications, and the availability of appropriated funds to support the Phase II effort. Special consideration may be given to proposals that have obtained commitments for follow-on funding from non-Federal sources for Phase III.

Phase III. SBIR Phase III award logically follows SBIR Phase II and may be a continuation of the work under Phase II or commercialization of the research under the previous SBIR phases. Like SBIR Phase II, the award process is exempted from FAR subpart 5.2 requirements. Only those vendors who were awarded both a SBIR Phase I and Phase II may receive a SBIR Phase III award. There is no limit on the performance period length or dollar value of a SBIR Phase III, and the small business size limits for Phase I and Phase II awards do not apply to SBIR Phase III awards.

Phase III is to be conducted by the small business with either:

- non-Federal funds to pursue commercial applications of R/R&D funded in Phases I and II, or
- non-SBIR Government funded contracts for continued research or products or processes intended for use by the United States

Government.

C. Eligibility

Each concern submitting a proposal must qualify as a small business at the time of award of Phase I and Phase II contracts. In addition, **the primary employment of the principal investigator must be with the small business firm at the time of contract award and during the conduct of the proposed research** unless otherwise approved by the Contracting Officer. Primary employment means that more than one-half of the principal investigator's time is spent with the small business. Also for both Phase I and Phase II, the R/R&D work must be performed in the United States. "United States" means the 50 states, the Territories and possessions of the United States, the Commonwealth of Puerto Rico, the Commonwealth of the Northern Mariana Islands, the Trust Territory of the Pacific Islands, and the District of Columbia.

All types of small business organizations may submit proposals, including high technology, R&D, manufacturing, and service firms. Companies with outstanding scientific or engineering competence in highly specialized product, process or service areas may wish to apply their expertise to the research topics in this solicitation through a laboratory prototype. Ideally, the research should make a significant contribution to the solution of an important transportation problem and provide the small business concern with the basis for new products, processes, or services.

D. General Information

This is a solicitation for Phase I R/R&D proposals on advanced, innovative concepts from small business firms having strong capabilities in applied science or engineering.

The Phase I R/R&D proposals shall demonstrate a sound approach to the investigation of an important transportation-related scientific or engineering problem categorized under one of the topics listed in Section VIII.

A proposal may respond to any of the research topics listed in Section VIII, but must be limited to one topic. The same proposal may not be submitted under more than one topic. An organization may, however, submit separate proposals on different topics, or different proposals on the same topic, under this solicitation. Where similar research is discussed under more than one topic, the offeror shall choose that topic which appears to be most relevant to the offeror's technical concept.

The proposed research must have relevance to the improvement of some aspect of the national

transportation system or to the enhancement of the ability of an operating element of the DOT to perform its mission.

Proposals shall be confined principally to scientific or engineering research, which may be carried out through construction and evaluation. Proposals must be for R/R&D, particularly on advanced or innovative concepts, and shall not be for incremental or scaled-up versions of existing equipment or the development of technically proven ideas. Proposals for the development of already proven concepts toward commercialization, or which offer approaches already developed to an advanced prototype stage or for market research shall not be submitted. Commercialization is the objective of Phase III, in which private capital or non-SBIR funds are to be used to continue the innovative research supported by DOT under Phase I and Phase II.

The proposal shall be self-contained and checked carefully by the offeror to ensure that all preparation instructions have been followed.
(See Proposal Checklist, Appendix D).

Requests for additional information or questions relating to the DOT SBIR Program may be addressed to:

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55 Broadway
Cambridge, MA 02142-1093

Telephone: (617) 494-2051

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Email Address: Joseph.Henebury@dot.gov

Volpe Center Website: <http://www.volpe.dot.gov/sbir>

II. DEFINITIONS

A. Research or Research and Development (R/R&D)

R/R&D means any activity which is:

- (1) A systematic, intensive study directed toward greater knowledge or understanding of the subject studied;
- (2) A systematic study directed specifically toward applying new knowledge to meet a recognized need; or
- (3) A systematic application of knowledge toward the production of useful materials, devices, and systems or methods, including design, development, and improvement of prototypes and new processes to meet specific requirements.

B. Small Business Concern

A small business concern is one that at the time of award of Phase I and Phase II contracts meets all of the following criteria:

- (1) Is independently owned and operated, is not dominant in the field of operation in which it is proposing, and has a place of business in the United States and operates primarily within the United States or makes a significant contribution to the U.S. economy, and is organized for profit.
- (2) Is (a) at least 51% owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the United States or (b) it must be a for-profit business concern that is at least 51% owned and controlled by another for-profit business concern that is at least 51% owned and controlled by one or more individuals who are citizens of, or permanent resident aliens in, the United States.
- (3) Has, including its affiliates, an average number of employees for the preceding 12 months of less than 500, and meets the other regulatory requirements found in 13 CFR Part 121. Business concerns are generally considered to be affiliates of one another when either directly or indirectly, (a) one concern controls or has the power to control the other; or (b) a third party/parties controls or has the power to control both.

Control can be exercised through common ownership, common management, and contractual relationships. The term "affiliates" is defined in greater detail in 13 CFR 121.103. The term "number of employees" is defined in 13 CFR 121.106.

A business concern may be in the form of an individual proprietorship, partnership, limited liability company, corporation, joint venture, association, trust, or cooperative. Further information may be obtained at <http://www.sba.gov/size>, or by contacting the Small Business Administration's Government Contracting Area Office or Office of Size Standards.

C. Socially and Economically Disadvantaged Small Business Concern

A socially and economically disadvantaged small business concern is one that is at least 51% owned and controlled by one or more socially and economically disadvantaged individuals, or an Indian tribe, including Alaska Native Corporations (ANCs), a Native Hawaiian Organization (NHO), or a Community Development Corporation (CDC). Control includes both strategic planning (as that exercised by boards of directors) and the day-to-day management and administration of business operations. See 13 CFR 124.109, 124.110, and 124.111 for special rules pertaining to concerns owned by Indian Tribes (including ANCs), NHOs, or CDCs, respectively.

D. Women-Owned Small Business Concern

A woman-owned small business concern is one that is at least 51% owned and controlled by a woman or women. Control includes both the strategic planning (as that exercised by boards of directors) and the day-to-day management and administration of business operations.

E. Veteran Owned Small Business

A veteran-owned small business concerns is one that is at least 51 percent owned and controlled by one or more veterans (as defined at 38 U.S.C. 101(2) or, in the case of any publicly owned business, not less than 51 percent of the stock of which is owned by one or more veterans,

and the management and daily business operations of which are controlled by one or more veterans.

F. Subcontract

Subcontract means any agreement, other than one involving an employer-employee relationship, entered into by a Federal Government funding agreement awardee calling for supplies or services required solely for the performance of the original funding agreement.

G. Historically Underutilized Business Zone (HUBZone)

- A HUBZone small business concern is one that meets the following criteria:
 - 1. Located in “historically underutilized business zone” or HUBZone area located in one or more of the following:
 - a) A qualified census tract (as defined in Section 42(d)(5)(i)(I) of the Internal Revenue Code of 1986);
 - b) A qualified “non–metropolitan county” (as defined in Section 143(k)(2)(B) of the Internal Revenue Code of 1986) with a median household income of less than 80% of the state median household income or with an unemployment of not less than 140% of the statewide average based on U.S. Department of Labor recent data; or
 - c) Lands within the boundaries of Federally recognized Indian reservations.
 - 2. Owned and controlled by one or more U.S. citizen(s).
 - 3. At least 35% of its employees must reside in a HUBZone.

III. PROPOSAL PREPARATION INSTRUCTIONS AND REQUIREMENTS

A. Proposal Submission Requirements

- Each proposal shall not exceed 25 pages (regular size type – no smaller than 10 point font size – single or double spaced, standard 8 ½” by 11” pages) including proposal cover sheet, contract pricing proposal, and all enclosures or attachments.
- Proposals must be a PDF file and submitted online
- No duplicate proposals shall be sent by any other means.
- Proposals may only be submitted online, a link to the web form can found here:
<http://www.volpe.dot.gov/sbir/current.html>
Instructions are included on the submission page.
- Proposals must be received no later than 5:00 p.m. EST on October 3, 2008.
- The proposal file name shall contain eight (8) characters—the first three shall be the topic number you are proposing to (i.e., FH3), and the remaining five characters shall be a unique abbreviation of your company’s name.

It will be available to only the team of DOT engineers and/or scientists responsible for evaluating your proposal.

B. **Proposal Cover Sheet**

Complete the Proposal Cover Sheet in Appendix A as Page one of your proposal. All pages shall be numbered consecutively, beginning with the Proposal Cover Sheet.

C. **Project Summary**

Complete the form in Appendix B as Page two of your proposal. The Project Summary shall include a technical abstract with a brief statement of the problem or opportunity, project objectives, and description of the effort. Anticipated results and potential applications of the proposed research shall also be summarized in the space provided. The Project Summary of successful proposals may be published by the DOT and, therefore, shall not contain classified or proprietary information. The technical abstract must be limited to 200 words in the space provided on the Project Summary form.

D. **Technical Content**

Submitted proposals must include the following:

- (1) **Identification and Significance of the Problem or Opportunity.** The specific technical problem or innovative research opportunity addressed and its potential benefit to the national transportation system shall be clearly stated.
- (2) **Phase I Technical Objectives.** State the specific objectives of the Phase I R/R&D effort, including the technical questions it will try to answer to determine the feasibility of the proposed approach.
- (3) **Phase I Work Plan.** Describe the Phase I R/R&D plan. The plan shall indicate what will be done, where it will be done, and how the R/R&D will be managed or directed and carried out. Phase I R/R&D shall address the objectives and the questions cited in (2) above. The methods planned to achieve each objective or task shall be discussed in detail, including the level of effort associated with each task.
- (4) **Related Research or R&D.** Describe significant R/R&D that is directly related to the proposal including any conducted by the project manager/principal investigator or by the proposing firm. Describe how it relates to the proposed effort, and any planned coordination with outside sources. The offeror must persuade reviewers of his or her awareness of key recent R/R&D conducted by others in the specific topic area.
- (5) **Key Personnel and Bibliography of Directly Related Work.** Identify key personnel involved in Phase I including their directly related education, experience, and bibliographic information. Where vitae are extensive, summaries that focus on the most relevant experience or publications are desired and may be necessary to meet proposal page limitations.
- (6) **Relationship with Future Research and Development.**

- (a) State the anticipated results of the proposed approach if the project is successful (Phase I and Phase II).
 - (b) Discuss the significance of the Phase I effort in providing a foundation for Phase II R/R&D effort.
- (7) **Facilities.** Provide a detailed description, availability and location of instrumentation and physical facilities proposed for Phase I.
- (8) **Consultants.** Involvement of consultants in the planning and research stages of the project is permitted. If such involvement is intended, it shall be described in detail.
- (9) **Potential Applications.** Briefly describe:
- (a) Whether and by what means the proposed project appears to have potential commercial application.
 - (b) Whether and by what means the proposed project appears to have potential use by the Federal Government.
- (10) **Similar Proposals or Awards.** Warning — while it is permissible, with proposal notification, to submit identical proposals or proposals containing a significant amount of essentially equivalent work for consideration under numerous Federal program solicitations, it is unlawful to enter into contracts or grants requiring essentially equivalent effort. If there is any question concerning this, it must be disclosed to the soliciting agency or agencies before award.
- If a firm elects to submit identical proposals or proposals containing a significant amount of essentially equivalent work under other Federal program solicitations, a statement must be included in each such proposal indicating:
- (a) The name and address of the agencies to which proposals were submitted or from which awards were received;
 - (b) Date of proposal submission or date of award;
 - (c) Title, number, and date of SBIR Program solicitations under which proposals were submitted or awards received;
 - (d) The applicable research topics for each SBIR proposal submitted or award

- received;
- (e) Titles of research projects; and
- (f) Name and title of Project Manager or Principal Investigator for each proposal submitted or award received.

E. Contract Pricing Proposal

A firm fixed price Phase I Contract Pricing Proposal (Schedule 1) must be submitted in detail as shown in Appendix C. Note: firm fixed price is the type of contract to be used for Phase I SBIR awards. Some cost breakdown items of Appendix C may not apply to the proposed project. If such is the case, there is no need to provide information for each and every item. It is important, however, to provide enough information to allow the DOT to understand how the offeror plans to use the requested funds if the contract is awarded. Phase I contract awards may include profit.

F. Central Contracting Registration (CCR) and Data Universal Numbering System (DUNS) Identification Number

Since October 1, 2003, it is federally mandated that any business wishing to do business with the Federal Government under a Federal Acquisition Regulation (FAR)-based contract must be registered in CCR before being awarded a contract. You can find more information on CCR and the registration process in their handbook, <http://www.ccr.gov/handbook.asp>. You can register online at <http://www.ccr.gov> by clicking on “Start New Registration” if you already have a DUNS number. If you need a DUNS number, you can find instructions at <http://fedgov.dnb.com/webform/displayHomePage.do>

A firm must note its DUNS identification number on Appendix C, Contract Pricing Proposal, Schedule 1. This number is assigned by Dun & Bradstreet, Inc.

G. Prior SBIR Phase II Awards

If the small business concern has received more than 15 Phase II awards in the prior five fiscal years, submit name of awarding agency, date of award, funding agreement number, amount, topic or subtopic title, follow-on agreement amount, source and date of commitment, and current commercialization status for each Phase II. (This required proposal information shall not be counted toward the proposal 25-page count limitation.)

IV. METHOD OF SELECTION AND EVALUATION CRITERIA

A. General

All Phase I and Phase II proposals will be evaluated and judged on a competitive basis. Initially, all proposals will be screened to determine responsiveness to the solicitation. Proposals passing this screening will be evaluated to determine the most promising technical and scientific approaches. Each proposal will be judged on its own merit. The DOT is under no obligation to fund any proposal or any specific number of proposals on a given topic or subtopic. It may elect to fund several or none of the proposed approaches to the same topic or subtopic.

B. Evaluation Criteria

The evaluation process involves the following factors:

- (1) Scientific and technical merit and the feasibility of the proposal's commercial potential, as evidenced by:
 - a) Past record of successful commercialization of SBIR or other research;
 - b) Existence of Phase III funding commitments from private sector or non-SBIR funding sources; and
 - c) Presence of other indicators of the commercial potential of the idea.
- (2) The adequacy of the work plan and approach to achieve specified work tasks and stated objectives of the proposed effort within budgetary constraints and on a timely schedule.
- (3) Qualifications of the proposed principal/key investigator(s) including demonstrated expertise in a disciplinary field related to the particular R/R&D topic that is proposed for investigation.
- (4) Adequacy of supporting staff and facilities, equipment, and data for the successful completion of the proposed R/R&D.

C. Prescreening

Each proposal submission will be examined to determine if it is complete and contains adequate technical and pricing data. Proposals that do not meet the basic requirements of the solicitation will be excluded from further consideration. Each offeror will be notified promptly by email of such action.

D. Schedule

All DOT reviews shall be completed and awards recommended within twelve weeks of the closing date for Phase I proposals.

E. Program Selection

A Proposal Review Panel, chaired by the DOT SBIR Program Director and comprising senior management officials representing the Department's Operating Administrations and the Office of the Secretary, will arrange for review and evaluation of proposals by professionals, in their respective organizations, of all Phase I proposals that meet the requirements of this solicitation. The Proposal Review Panel will review the technical evaluations by the engineers and/or scientists and recommend to the DOT SBIR Program Director the proposals for awards. The DOT SBIR Program Director will announce the awards.

F. Contact with DOT

Contact with DOT relative to this solicitation during the Phase I proposal preparation and evaluation period is restricted for reasons of competitive fairness. Technical questions pertaining to the FY08.2 DOT SBIR solicitation research topics must be submitted to the DOT SBIR Program Office by e-mail to: Linda.Duck@dot.gov. Technical questions will be researched and answers provided in as timely a manner as possible. Technical questions submitted to the DOT SBIR Program Office during the few weeks prior to the closing date for receipt of Phase I proposals may not be able to be answered before the closing date.

No information on proposal status will be available until the complete list of FY08.2 Phase I Award Recommendations is posted on the DOT SBIR Program Webpage: <http://www.volpe.dot.gov/sbir>. For planning purposes the notification of FY08.2 Phase I Award Recommendations is expected to be posted on the DOT SBIR Program Webpage by December 19, 2008. **Phase I proposals which are not included in the December 19th list of FY08.2 Phase I Award Recommendations will not receive an award.**
NO WRITTEN CORRESPONDENCE

REGARDING PROPOSAL STATUS WILL BE ANSWERED.

After the FY08.2 Phase I Award Recommendations are posted on the DOT SBIR Program Webpage, a debriefing comprised of the overall comments on the proposal may be provided to the offeror upon request.

Debriefing requests should be submitted to the Contracting Officer by e-mail to: Orin.Cook@dot.gov,

and must include the offeror's name, address, research topic number, and the proposal identification number assigned on the acknowledgement of receipt card. The identity of the evaluators will not be disclosed.

V. CONSIDERATIONS

A. Awards

It is estimated that during FY08.2, DOT will award approximately 3 Phase I contracts with an anticipated potential maximum of 5 awards, depending on actual funding available and the responses from small business firms to the solicited research topics in Section VIII.

All Phase I awards will be firm fixed price contracts and may be up to \$100,000 each unless otherwise noted. Phase II awards anticipate cost-plus-fixed-fee contracts with a value of up to \$750,000 each unless otherwise noted. Phase II awardees will be required to have an acceptable accounting system to receive a cost-plus-fixed-fee contract.

Only recipients of Phase I contracts will be eligible to compete for Phase II awards.

DOT's Operating Administrations contribute to SBIR funding. Each Operating Administration's contribution may be used only to support research of concern to that Operating Administration. For example, funds furnished by the Federal Highway Administration may not support research solely of concern to the National Highway Traffic Safety Administration. Based on anticipated funding levels, there may not be adequate funding within the DOT SBIR Program to support Phase I and/or Phase II awards for research which is solely of concern to the following Operating Administrations: Federal Aviation Administration, Federal Highway Administration, Federal Motor Carrier Safety Administration, Federal Railroad Administration, Federal Transit Administration, National Highway Traffic Safety Administration, Research and Innovative Technology Administration, and Pipeline Hazardous Materials Safety Administration. Phase I and Phase II awards for such research will depend on the actual funding available.

B. Reports

Under Phase I SBIR contracts, three reports will be required, consisting of two interim letter reports, and a comprehensive final report.

C. Payment Schedule

Payments for Phase I contracts will be made in three equal installments upon submission of invoices by the contractor in conjunction with the submission of acceptable reports as described in Paragraph B above.

D. Innovations, Inventions, and Patents

1. **Proprietary Information.** Information contained in unsuccessful proposals will remain the property of the offeror. The Government may, however, retain copies of all proposals. Public release of information in any proposal submitted will be subject to existing statutory and regulatory requirements.

If proprietary information is provided by a offeror in a proposal which constitutes a trade secret, proprietary commercial or financial information, confidential personal information or data affecting national security, it will be treated in confidence, to the extent permitted by law, provided this information is clearly marked by the offeror with the term "confidential proprietary information" and provided the following legend appears on the title page of the proposal:

"For any purpose other than to evaluate the proposal, these data shall not be disclosed outside the Government and shall not be duplicated, used, or disclosed in whole or in part, provided that if a contract is awarded to this offeror as a result of or in connection with the submission of these data, the Government shall have the right to duplicate, use, or disclose the data to the extent provided in the contract. This restriction does not limit the Government's right to use information contained in the data if obtained from another source without restriction. The data subject to this restriction is contained pages _____ of this proposal."

Any other legend may be unacceptable to the Government and may constitute grounds for return of the proposal without further consideration and without assuming any liability for inadvertent disclosure. The Government will limit dissemination of such information to within official channels.

DOT prefers that offerors avoid inclusion of proprietary data in their proposals. If the inclusion of proprietary data is considered essential for meaningful evaluation of a proposal submission, then such data should be provided on a separate page with a numbering system to key it to the appropriate place in the proposal.

2. **Rights in Data Developed under SBIR Contracts.** Rights in technical data, including software developed under any contract resulting from this solicitation, shall remain with the contractor except that the Government shall have

the limited right to use such data for Government purposes and shall not release such data outside the Government without permission of the contractor for a period of four years from completion of the project from which the data were generated. However, effective at the conclusion of the four-year period, the Government shall retain a royalty-free license for Federal Government use of any technical data delivered under an SBIR contract whether patented or not.

3. **Copyrights.** With prior written permission of the Contracting Officer, the contractor normally may copyright and publish (consistent with appropriate national security considerations, if any) material developed with DOT support. The DOT receives a royalty-free license for the Federal Government and requires that each publication contain an appropriate acknowledgement and disclaimer statement.
4. **Patents.** Small business firms normally may retain the principal worldwide patent rights to any invention developed with Government support. The Government receives a royalty-free license for Federal Government use, reserves the right to require the patent holder to license others in certain circumstances, and requires that anyone exclusively licensed to sell the invention in the United States must normally manufacture it domestically. To the extent authorized by 35 U.S.C. 205, the Government will not make public any information disclosing a Government-supported invention for a two-year period to allow the contractor a reasonable time to pursue a patent.

E. Cost-Sharing

Cost-sharing is permitted for Phase II proposals under the topic areas identified in this solicitation; however, cost-sharing is not required nor will it be a factor in proposal evaluations.

F. Profit or Fee

A profit is allowed on awards to small business concerns under the DOT SBIR Program.

G. Joint Ventures or Limited Partnerships

Joint ventures and limited partnerships are permitted provided the entity created qualifies as a small business

concern in accordance with the Small Business Act, 15 U.S.C. 631, and the definition included in this solicitation.

H. Research and Analytical Work

1. **For Phase I, a minimum of two-thirds of the research and/or analytical effort must be performed by the proposing firm** unless otherwise approved in writing by the Contracting Officer.
2. **For Phase II, a minimum of one-half of the research and/or analytical effort must be performed by the proposing firm** unless otherwise approved in writing by the Contracting Officer.

I. Contractor Commitments

Upon award of a contract, the awardee will be required to make certain legal commitments through acceptance of numerous contract clauses. The outline that follows is illustrative of the types of clauses to which the contractor would be committed. This list shall not be understood to represent a complete list of clauses to be included in Phase I contracts, nor to be the specific wording of such clauses. A complete copy of the terms and conditions will be provided upon issuance of the model contract for signature prior to award.

1. **Standards of Work.** Work performed under the contract must conform to high professional standards.
2. **Inspection.** Work performed under the contract is subject to Government inspection and evaluation at all times.
3. **Examination of Records.** The Comptroller General (or a duly authorized representative) shall have the right to examine any directly pertinent records of the contractor involving transactions related to this contract.
4. **Default.** The Government may terminate the contract if the contractor fails to perform the work contracted.
5. **Termination for Convenience.** The contract may be terminated at any time by the Government if it deems termination to be in its best interest, in which case the contractor will be compensated for work performed and for reasonable termination costs.
6. **Disputes.** Any dispute concerning the contract which cannot be resolved by agreement shall be

- decided by the Contracting Officer with right of appeal.
7. **Contract Work Hours.** The contractor may not require an employee to work more than eight hours a day or 40 hours a week unless the employee is compensated accordingly (i.e., overtime pay).
 8. **Equal Opportunity.** The contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin.
 9. **Affirmative Action for Veterans.** The contractor will not discriminate against any employee or applicant for employment because he or she is a disabled veteran or veteran of the Vietnam era.
 10. **Affirmative Action for Handicapped.** The contractor will not discriminate against any employee or applicant for employment because he or she is physically or mentally handicapped.
 11. **Officials Not to Benefit.** No member of or delegate to Congress shall benefit from the contract.
 12. **Covenant Against Contingent Fees.** No person or agency has been employed to solicit or secure the contract upon an understanding for compensation except bonafide employees or commercial agencies maintained by the contractor for the purpose of securing business.
 13. **Gratuities.** The contract may be terminated by the Government if any gratuities have been offered to any representative of the Government to secure the contract.
 14. **Patent Infringement.** The contractor shall report each notice or claim of patent infringement based on the performance of the contract.
 15. **Procurement Integrity.** Submission of a proposal under this solicitation subjects the offeror to the procurement integrity provision (§27) of the Office of Federal Procurement Policy Act (41 U.S.C. 423). This statute, as implemented by Federal Acquisition Regulation (FAR, 48 CFR) §3.104, prescribes the following conduct by competing contractors during an agency procurement: offering or discussing future employment or business opportunities with an agency procurement official; promising or offering a gratuity to an agency procurement official; and/or soliciting or obtaining proprietary or source selection information regarding the procurement. Violations of the statute may result in criminal and/or civil penalties, disqualification of a offeror, cancellation of the procurement, or other appropriate remedy.
16. **Section 508 Access Board Standards.** All electronic and information technology deliverables rendered must comply with Section 508 of the Rehabilitation Act and the Access Board Standards available for viewing at <http://www.section508.gov>. Unless otherwise indicated, the contractor represents by signature on a contract that all deliverables will comply with the Access Board Standards.
- J. Additional Information**
1. This solicitation is intended for informational purposes and reflects current planning. If there is any inconsistency between the information contained herein and the terms of any resulting SBIR contract, the terms of the contract are controlling.
 2. Before award of an SBIR contract, the offeror shall complete Online Representations and Certifications Application: <https://orca.bpn.gov>
 3. The Government may request the offeror to submit additional management, personnel, and financial information to assure responsibility of the offeror.
 4. The Government is not responsible for any monies expended by the offeror before award of any contract.
 5. This solicitation is not an offer by the Government and does not obligate the Government to make any specific number of awards. Also, awards under this program are contingent upon the availability of funds.
 6. The DOT SBIR Program is not a substitute for existing unsolicited proposal mechanisms. Unsolicited proposals shall not be accepted under the DOT SBIR Program in either Phase I or Phase II. See <http://www.volpe.dot.gov/procure/unsolguide.html> for specifics on unsolicited proposal submission requirements.
 7. If an award is made pursuant to a proposal submitted under this solicitation, the contractor will be required to certify that he or she has not previously been, nor is currently being paid for essentially equivalent work by any agency of the Federal Government.

8. When purchasing equipment or a product with funds provided under the DOT SBIR Program, purchase only American made equipment and products, to the extent possible in keeping with the overall purposes of the program.
9. In accordance with FAR 52.233-2, Service of Protest, the following Service of Protest procedures

shall be followed. Protests, as defined in Section 33.101 of the FAR that are filed directly with an agency, and copies of any protests that are filed with the Government Accountability Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgement of receipt from: Orin Cook, DOT/RITA/Volpe Center, 55 Broadway, RTV-6D1, Cambridge, MA 02142-1093

VI. SCIENTIFIC AND TECHNICAL INFORMATION SOURCES

The following organizations may be sources for providing technology search and/or document services and may be contacted directly for service and cost information:

Center for Technology Commercialization
1400 Computer Drive
Westborough, MA 01581
(508) 870-0042

Federal Information Exchange, Inc.
555 Quince Orchard Road, Suite 360
Gaithersburg, MD 20878
(301) 975-0103

Midcontinent Technology Transfer Center
Texas Engineering Extension Service
The Texas A&M University System
301 Tarrow Street, Suite 119
College Station, TX 77840-7896
(409) 845-8762

MidAtlantic Technology Applications Center
University of Pittsburgh
3400 Forbes Avenue, 5th Floor
Pittsburgh, PA 15260
(412) 383-2500

Great Lakes Industrial Technology Center
25000 Great Northern Corporation Center, Suite 260
Cleveland, OH 44070-5320
(440) 734-0094

Southern Technology Applications Center
University of Florida
1900 SW 34th Street, Suite 206
Gainesville, FL 32608
(352) 294-7822

National Technical Information Service
5285 Port Royal Road
Springfield, VA 22161
(800) 553-6847

Technology Transfer Center
University of Southern California
3716 South Hope Street, Suite 200
Los Angeles, CA 90007-4344
(213) 743-2352

VII. RESEARCH TOPICS

Phase I research topics for DOT Operating Administrations are listed below. These topics indicate the specific areas for which proposals are to be considered for acceptance by DOT. The topics are not listed in any order of priority. Each proposal must respond to one (and only one) topic as described in this section. A proposal may, however, indicate and describe its relevance to other topics.

DOT OPERATING ADMINISTRATION/TOPICS AND POTENTIAL MAXIMUM FY08.2 PHASE I AWARDS

FEDERAL HIGHWAY ADMINISTRATION

2 AWARDS

082-FH1 Dilemma Zone Detection and Warning System

082-FH2 Origin-Destination – Travel Time Measurement and Characterization

FEDERAL RAILROAD ADMINISTRATION

1 AWARD

¹082-FR1 Cursory and Non-regulatory Removable Safety Appliances for Intermodal or Semi-Permanently Attached Railcars

¹ Phase I may be up to \$100,000 and Phase II \$250,000

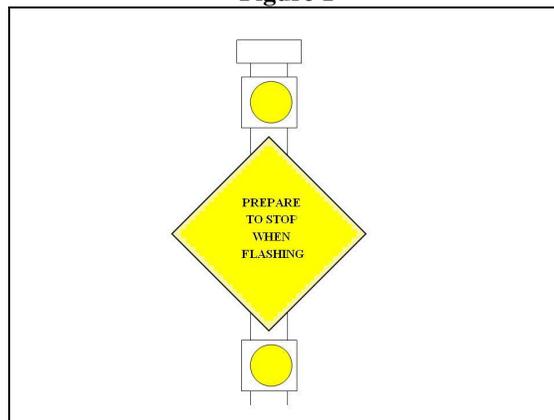
082-FH1 Dilemma Zone Detection and Warning System

BACKGROUND

The dilemma zone problem is a major safety problem at high-speed signalized intersections. During a Green-Yellow signal transition period, drivers in a roadway section near the intersection usually have a difficult time in making a decision whether to go or to stop. In this case, the section is called a Dilemma Zone (DZ), since there might be no sufficient braking distance to stop, nor sufficient yellow time to go through the intersection. The former may cause an unsafe hard braking with the risk of a rear-end collision, and the latter may cause running through an intersection on red with the risk of a lateral collision.

For decades, researchers and traffic engineers have studied and delivered many methods to deal with the dilemma zone problem. The major methods include (i) defining dilemma zone boundaries (1), (ii) extending green phase to avoid forming a dilemma zone (2, 3), (iii) placing warning sign (see fig. 1) at upstream of the intersections (4, 5), and (iv) choosing the right time for the green-yellow transition to minimize the number of vehicles to be trapped in a dilemma zone (6).

Figure 1



Due to the limitations in the available technologies and their associated costs, two major problems still remain and thus, impede the effectiveness of the above methods. The first problem is that the actual boundary of a dilemma zone is not clear, and the second one is that current warning system approaches are not effective in assisting the driver in deciding what to do. It is hypothesized that solving these two problems can significantly improve safety at high-speed signalized intersections.

An effective detection system is the fundamental tool to define the location and boundary of a dilemma zone, and to assess the risk of a vehicle being trapped in a dilemma zone. With a good detection system, many safety measures, such as green phase extension, can be well applied to improve the safety.

An effective warning display will provide valuable information to help drivers making a right decision (to go or not to go) early, so a dilemma zone situation can also be avoided.

In existing practices, most detection systems use inductive loops or radars to detect if there are vehicles running into pre-defined dilemma zones. If a vehicle is predicted to be in a dilemma zone while the signal is still green, the green phase may be extended to allow this vehicle's passing through the intersection. Due to the difficulties in the detection system, the actual boundary of a dilemma zone is not clear; the pre-defined DZ boundary is based on statistics and assumptions, such as the average speed, as based on prior studies. With such a detection system, it is not certain that a vehicle predicted to be in a DZ will actually be in dilemma zone situation.

The DZ warning display is normally a single sign (either active or passive) located about 700 ft upstream of the stop bar at an intersection, and the sign will flash few seconds before the end of the green phase. When a driver sees the active sign starting to flash, the traffic light is still green, and the driver is still having a difficult time in making a decision even though the sign means “Prepare to Stop.” These technical difficulties significantly limit the effectiveness of such systems.

THE PROPOSED SYSTEM

In this concept of operations, a new system is proposed which uses advanced concept of operations and technologies. Compared to the existing systems, the proposed system will have much better performance with almost the same or lower cost because it takes the advantage of following up-to-date technologies that did not exist 20-30 years ago when most DZ studies were conducted. These technologies include: (1) high computing power within a small processing board, (2) low power LED flashers, (3) reliable, low-cost wireless communications; and, (4) effective, low-cost magnet sensors. Since these technologies are COTS products with low cost, they provide a promising opportunity for safety improvements at high-speed intersections.

The concept of operations can be described as follows:

First, the detection system will use either a digital radar or multiple magnet sensors to track every vehicle that could run into a DZ. The tracking data will be sent to a central processing board for data processing.

Second, the processing board will run a sophisticated formula to determine if a vehicle is likely to run into a DZ. The board will determine how to send the warning messages to different drivers (e.g., drivers in leading vehicles as well as in following vehicles).

Third, multiple, low-power LED flashers will be installed along the roadside with strategically designed locations. Each flasher is controlled by the central processing board or a computer through wireless or line communication. The drivers who would be trapped in a DZ and need to reduce speed will see the flashing along their path; while the drivers who can proceed through intersection safely will not see the flashing. In this way, a DZ situation can be eliminated or significantly reduced.

Fourth, the processing board will determine if a green extension can be implemented to avoid a DZ, or determine the best time to implement a G-Y transition should a max-out situation occur. In this way, the system will ensure safety improvement with less disruption of traffic flow.

Figures 2 – 5 are graphic expressions of an example of operations.

Fig. 2 shows that the detection system is tracking all the vehicles and determined that vehicle No. 2 will run into a dilemma zone, based on the signal timing and the vehicle speed data. And, vehicle No. 1 will not be in the DZ.

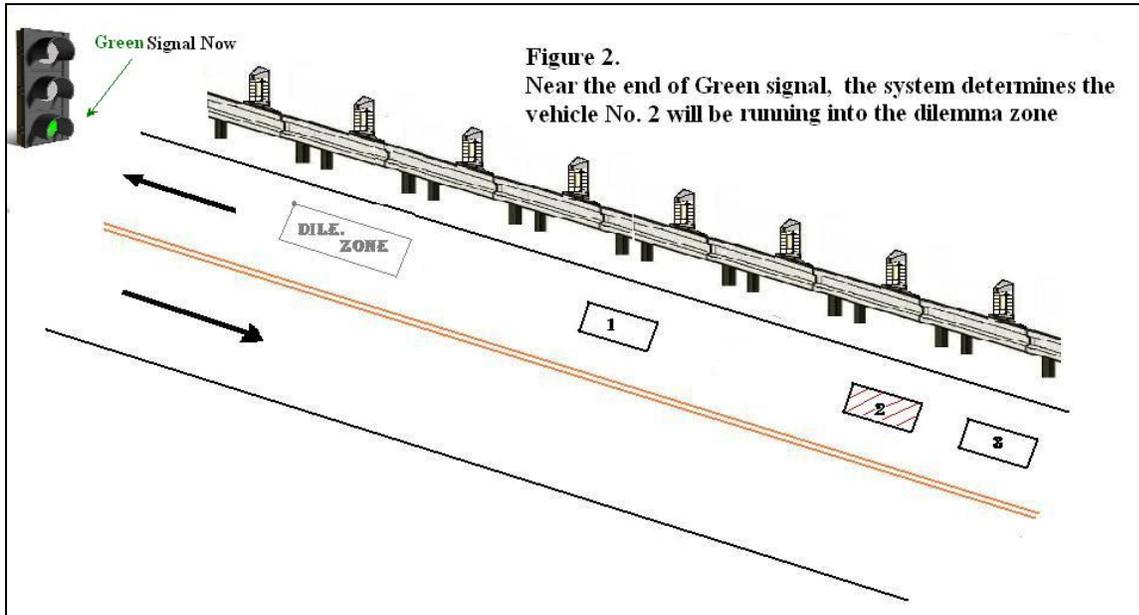


Fig. 3 shows that the system implements a flashing pattern to warning vehicle No. 2 and No. 3 only. Vehicle No. one will not see the flashing.

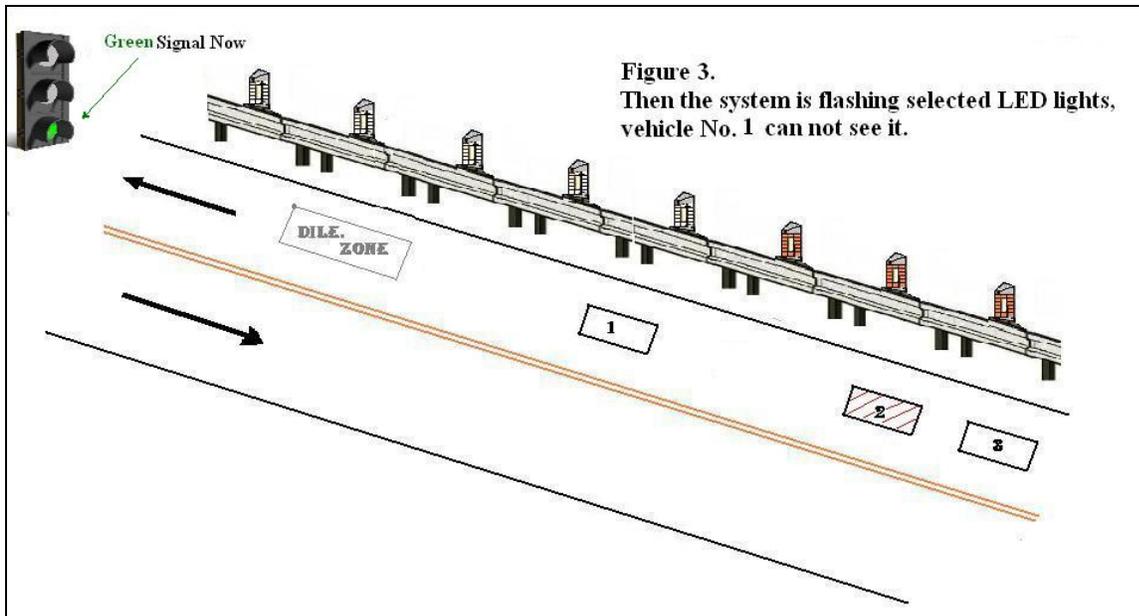


Fig. 4 shows that the system implements more flashing downstream to keep warning vehicle No. 2.

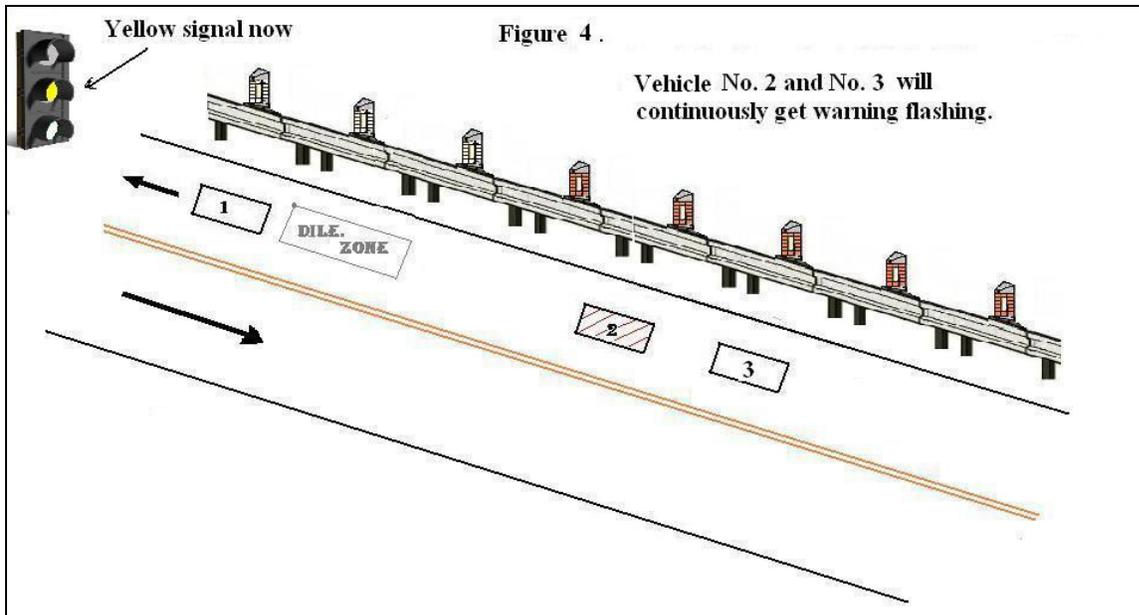
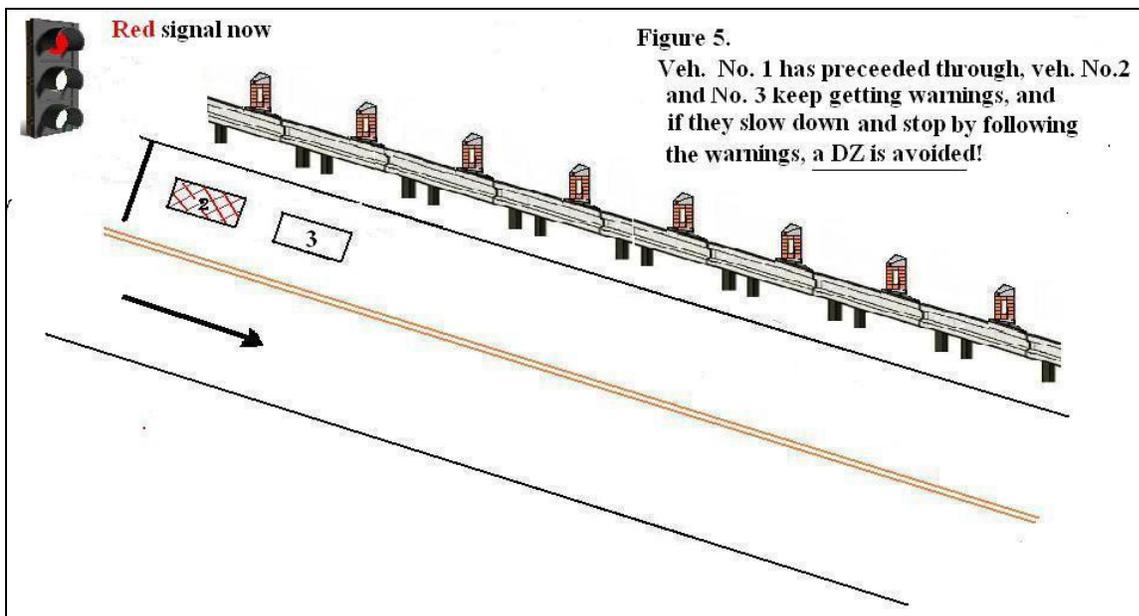


Fig. 5 shows that No. 1 has passed through the intersection and No. 2 & No. 3 have slowed down to prepare a stop. In this way, a dilemma zone is avoided!



The above figures describe only one example, but the basic principle is the same for other scenarios. The key requirement for this concept is using up-to-date technologies meanwhile keeping the cost low. There are many innovative ways to implement these scenarios using modern technologies.

Functionality and General Specifications of the System

- (i) The detection system shall have tracking capacity up to 800 ft upstream, using either multiple low cost point sensors or a single radar sensor.

- (ii) The warning display system shall have continuous coverage for the vehicles likely running into a DZ. Each of the LED flashers can be controlled by a central computer, and the flasher group should be configurable.
- (iii) Communication shall be built among sensors, central computer (or processing board), and flashers.

Knowledge, Skills and Abilities needed to implement this concept of operations:

- (i) The approach of using new system to solve the dilemma zone problems
- (ii) Work experience on systems integration
- (iii) Good understanding of dilemma zone problems and the existing methods to deal with the problems
- (iv) Experiences on sensor applications, software development, and systems communications.
- (v) Knowledge of traffic data collection and analysis for systems validation.

Expected Deliverables

A prototype system is expected by the end of Phase I, which can demonstrate the concept of operations and the functionality. The prototype is not required to perform at live intersections.

In Phase II, a final product is expected which will be tested and operated at live intersections.

Reference

- (1) Traffic Detection Handbook; 3rd Edition, FHWA-HRT-06-139, 2007
- (2) Parsonson, P; Use of EC-DC Detector for Signalized Intersections; Transportation Research Record No. 737, Transportation Research Board 1979.
- (3) Large-Area Detection at Intersection Approaches, Southern Section of ITE, Traffic Engineering, June, 1976.
- (4) Pant, P.; Evaluation of Detection and Signing Systems for High Speed Signalized Intersection; Report FHWA/OH-95/016, 1996.
- (5) Huang, P.; Simulation-Neural Network Model for Evaluating Dilemma Zone Problems at High-Speed Signalized Intersections; Transportation Research Record 1456, Transportation Research Board, 1994.
- (6) Zimmerman and Bonneson; In-Service Evaluation of a Detection-Control System for High-Speed Signalized Intersections, Report FHWA/TX-05/5-4022-1, 2005.

082-FH2 Origin-Destination – Travel Time Measurement and Characterization

Travel time and origin-destination data and characterization are key to developing algorithms for improved traveler information systems, traffic control systems and planning. The objective of this project is to develop a technology for monitoring the travel time and origin-destination of vehicles.

Creation of either new technologies or new applications of existing technologies, such as Bluetooth, WiFi, and other open source standards, to detect vehicles and to re-identify them and calculate the travel time between measurement points anonymously, is key to the success of this project..

The objective of measuring travel time has several aspects. First, the vehicle must be accurately yet anonymously sensed at the first location. Second, it must be accurately yet anonymously sensed at a second location. Third, it must be possible to measure accurately the elapsed time between the two identifications while providing anonymity to the driver. Fourth, it must be possible to assemble these identifications into origin-destination tables.

The software for processing the unique id number data, tracking the travel time measurements from the unique id's and calculating the origin-destination data from the unique id's must be both open source and use the GNU

pretty good privacy algorithms. The open source requirement is to ensure full and continued inspectability of the algorithms. The GNU OpenPGP is an encryption standard which facilitates full privacy and anonymity.

<http://www.gnupg.org/>

<http://www.ietf.org/rfc/rfc4880.txt>

In phase I, field tests must demonstrate that the technology can successfully track vehicles between two points without violation driver anonymity. Statistical characterizations of the number of vehicles that can be successfully identified at the first location and then re-identified at the second location must be made. These should be compared to ground truth against the total vehicle population traveling between the two points. This will demonstrate the test and evaluate the potential of the new technology or enhancement of an existing technology.

Phase II would develop the new or enhanced technology and then demonstrate the prototype at the a sequence of intersections and or freeway locations. The technology should be evaluated at a sequence of permanent traffic count stations for establishment of a rigorous statistical measurement of the accuracy of the technology against “ground truth” in the real world during a variety of weather conditions.

NOTE: The specific technology(ies) for this SBIR have not been specified.

Preferred strengths for the project team include experience with system integration, traffic engineering, experience on sensor applications, software development and system communications. Also preferred are experience with traffic data collection and analysis for systems validation.

Relationship to FHWA Strategic Objectives:

Goal: Mobility & Productivity

Desired Outcome: Improved descriptions of travel time from origin to destination. Increase the reliability of trip time estimations for the Individual Transportation User.

Performance Objective: MP1– Mitigate congestion and improve system reliability through actions targeted at key causes of congestion (VF).

Performance Measures: Allow deployments of traffic monitoring systems which can accurately measure travel times under Transportation Technology and Innovation.

This outcome cannot be reached unless systems can reliably and accurately detect and characterize traffic travel times and origin-destination patterns in all weather and lighting conditions. Existing technologies do not adequately provide these capabilities. Probe vehicle methods and survey methods are expensive and difficult to technologies to use on a regular basis.

Federal Railroad Administration (FRA)

¹082-FR1 Cursory and Non-regulatory Removable Safety Appliances for Intermodal or Semi-Permanently Attached Railcars

Situations arise during transport of Continuous Welded Rail (CWR) Maintenance of Way equipment with traditional couplers where railroad employees at times may have to apply handbrakes while the car is in motion. To do so, railroad employees would need to operate the handbrake and the current handholds above the deck of the flat car provide safe operation of its intended use. The rail movement in a CWR rail train at intermediate locations prohibits the safety appliance placement and thus handholds are removed to allow the transporting of the rail to its destination. Removal of the handholds to transport rail causes the car to be non-compliant, as per 49 CFR 231.6 and as identified in Motive Power and Equipment (MP&E) Technical Bulletins (TB) 98-69 (MP&E 98-69) Safety Appliance Arrangements For Flat Cars and MP&E TB 00-07. After removal of the handholds, the railroad must request a one-time movement from the Federal Railroad Administration in order to move the cars to its destination. At its destination, the railcar must be brought back into compliance by reattaching the safety appliance prior to any movement.

The purpose of this SBIR project is to develop a collapsible or retractable cursory handhold to eliminate the need for a railroad to remove the handholds and provide an enhanced safe operational environment for railroad employees as they perform their duties. The proposed design must be acceptable to the Federal Railroad Administration as an alternate compliant type safety appliance based on the regulations provided in 49 CFR 231 Safety appliance standards, MP&E TB 98-69, MP&E TB 00-07, the requirement for “securely fastened” and railroad employee safety rules for three point protection.

The contractor shall develop a set of design requirements for an advanced handhold device that accomplishes the goals above. A preliminary proof of concept design shall be developed and demonstrated. The contractor must also evaluate the prospect of commercialization of the proposed device. The contractor must possess knowledge of railcar Safety appliance standards as it pertains to the Federal regulation, railroad safety and operating safety rules, practices, and standards. The information generated in the course of this project shall be summarized and presented in a public forum at the discretion of the Government. The contractor shall also develop a final report describing the methodology and approach used to develop the technology.

VIII. SUBMISSION FORMS AND CERTIFICATIONS

1. PROPOSAL COVER SHEET Appendix A
2. PROJECT SUMMARY Appendix B
3. CONTRACT PRICING PROPOSAL Appendix C
4. PROPOSAL CHECKLIST Appendix D
(do not include with your proposal – for your use only)

**U.S. DEPARTMENT OF TRANSPORTATION
 SMALL BUSINESS INNOVATION RESEARCH PROGRAM
 SOLICITATION NO. DTRT57-08-R-SBIR2
 FY08.2**

PROPOSAL COVER SHEET

Project Title _____

Research Topic No. _____ Research Topic Title _____

Submitted by: Name _____

Address _____

City _____ State _____ Zip + _____

Amount Requested (Phase I) \$ _____
 (May be up to \$100,000 unless otherwise indicated)

Proposed Duration _____
 (in months) (Not to exceed six months)

1. The above concern certifies it is a small business firm and meets the definition stated in Section II.B; and that it meets the eligibility requirement in Section I.C. Yes _____ No _____
2. The above concern certifies it _____ does _____ does not qualify as a socially or economically disadvantaged small business as defined in Section II.C. (For statistical purposes only.)
3. The above concern certifies it _____ does _____ does not qualify as a women-owned small business as defined in Section II.D. (For statistical purposes only.)
4. This firm and/or Principal Investigator has submitted proposals containing a significant amount of essentially equivalent work under other federal program solicitations, or has received other federal awards containing a significant amount of essentially equivalent work. (If yes, identify proposals in the Section III. D.10. "Similar Proposals or Awards".) Yes _____ No _____
5. Will you permit the Government to disclose the title and technical abstract of your proposed project, plus the name, address, and telephone number of the Corporate/Business Official and Principal Investigator of your firm, if your proposal does not result in an award, to any party that may be interested in contacting you for further information? Yes _____ No _____
6. Do you qualify as a HUBZone-owned and meet the definition as stated in this Section II. F (For statistical purposes only) Yes _____ No _____

Principal Investigator
 Name _____
 Title _____
 Signature _____ Date _____
 Telephone No. _____

Corporate/Business Official
 Name _____
 Title _____
 Signature _____ Date _____
 Telephone No. _____

PROPRIETARY NOTICE (IF APPLICABLE, SEE SECTION V.D.1)

**U.S. DEPARTMENT OF TRANSPORTATION
 SMALL BUSINESS INNOVATION RESEARCH PROGRAM
 SOLICITATION NO. DTRT57-08-R-SBIR2
 FY08 .2
 PROJECT SUMMARY**

Name and Address of Offeror	FOR DOT USE ONLY
	Proposal No.

Name and Title of Principal Investigator

Project Title

Research Topic No.	Research Topic Title
--------------------	----------------------

Technical Abstract (Limited to two hundred words in this space only with no classified or proprietary information/data).

Anticipated Results/Potential Commercial Applications of Results.

Provide key words (eight maximum) description of the project useful in identifying the technology, research thrust, and/or potential commercial application.

**U.S. DEPARTMENT OF TRANSPORTATION
 SMALL BUSINESS INNOVATION RESEARCH PROGRAM
 SOLICITATION NO. DTRT57-08-R-SBIR2
 FY08 . 2**

**APPENDIX C
 (SCHEDULE 1)**

CONTRACT PRICING PROPOSAL

PROPOSAL COVER SHEET				1. SOLICITATION/CONTRACT/MODIFICATION NUMBER			
2a. NAME OF OFFEROR				3a. NAME OF OFFEROR'S POINT OF CONTACT			
2b. FIRST LINE ADDRESS				3b. TITLE OF OFFEROR'S POINT OF CONTACT			
2c. STREET ADDRESS				3c. TELEPHONE		3c. FACSIMILIE	
2d. CITY	2e. STATE	2f. ZIP CODE	AREA CODE	NUMBER	AREA CODE	NUMBER	
4. TYPE OF CONTRACT OR SUBCONTRACT (<i>Check</i>)				5. <input type="checkbox"/> PRIME OFFEROR			
<input checked="" type="checkbox"/> FFP <input type="checkbox"/> CPFF <input type="checkbox"/> CPIF <input type="checkbox"/> CPAF <input type="checkbox"/> FPI <input type="checkbox"/> OTHER (<i>Specify</i>)				<input type="checkbox"/> SUBCONTRACTOR _____ PRIME OFFEROR'S NAME			
6. ESTIMATED COST, FEE, AND PROFIT INFORMATION							
A. ESTIMATED COST							
B. PROFIT							
C. TOTAL PRICE							
7. PROVIDE THE FOLLOWING							
NAME OF COGNIZANT CONTRACT ADMINISTRATIVE AGENCY				NAME OF COGNIZANT GOVERNMENT AUDIT AGENCY			
STREET ADDRESS				STREET ADDRESS			
CITY	STATE	ZIP CODE	CITY	STATE	ZIP CODE		
TELEPHONE	AREA CODE	NUMBER	TELEPHONE	AREA CODE	NUMBER		
FACSIMILE	AREA CODE	NUMBER	FACSIMILE	AREA CODE	NUMBER		
NAME OF CONTACT				NAME OF CONTACT			
PROPERTY SYSTEM				APPROXIMATE DATE OF LAST AUDIT			
<input type="checkbox"/> Reviewed by cognizant contract administrative agency and determined acceptable <input type="checkbox"/> Reviewed by cognizant contract administrative agency and determined not acceptable <input type="checkbox"/> Never reviewed				PURPOSE OF AUDIT (e.g. proposal review, establishment of billing rates, finalize indirect rates, etc.)			
PURCHASING SYSTEM				ACCOUNTING SYSTEM			
<input type="checkbox"/> Reviewed by cognizant contract administrative agency and determined acceptable <input type="checkbox"/> Reviewed by cognizant contract administrative agency and determined not acceptable <input type="checkbox"/> Never reviewed				<input type="checkbox"/> Audited and determined acceptable <input type="checkbox"/> Audited and determined not acceptable <input type="checkbox"/> Never audited			
8a. NAME OF OFFEROR (<i>Typed</i>)				9. NAME OF FIRM			
8b. TITLE OF OFFEROR (<i>Typed</i>)							
10. SIGNATURE					11. DATE OF SUBMISSION		

**U.S. DEPARTMENT OF TRANSPORTATION
SMALL BUSINESS INNOVATION RESEARCH PROGRAM
CONTRACT PRICING PROPOSAL
FY08.2**

Background

The following items, as appropriate, should be included in proposals responsive to this Solicitation.

Cost Breakdown Items (in this order, as appropriate) (See Section III.E)

1	Name of offeror		
2	Address of offeror		
3	Location where work will be performed		
4	Offeror's Project Title		
5	Research topic number and title from DOT SBIR Program Solicitation		
6.	Total Proposal Amount		\$ _____
7.	Direct Material Costs		
	a. Purchased Parts		\$ _____
	b. Subcontracted Items		\$ _____
	c. Other		\$ _____
	(1) Raw Materials		\$ _____
	(2) Standard Commercial Items		\$ _____
	Total Direct Materials (TDM)		\$ _____
8.	Material Overhead (TDM x Rate %)		
		Rate	Amount
	Total Material Overhead (TMO)	_____ %	\$ _____
9.	Total Materials (TDM + TMO)		
			\$ _____
10	Direct Labor		
	Type / Personnel	Hours	Rate (\$ / Hr)
			\$ _____
			\$ _____
			\$ _____
	Total Direct Labor (TDL)		\$ _____
11.	Labor Overhead (TDL x Overhead Rate)		
		Rate	Amount
	Total Labor Overhead (TLO)	_____ %	\$ _____
12.	Labor: Fringe Benefits (TDL x Benefit Rate)		
		Rate (% or \$ / Hr)	Amount
	Fringe Benefits	_____ %	\$ _____
13.	Total Labor (TDL + TLO + Fringe)		Amount \$ _____
14	Direct Costs: Special Testing (Include field work at Government installations)		
	Item & Anticipated Use	Unit Cost	Estimated Cost
			\$ _____
			\$ _____
			\$ _____

					\$		
	Estimated Total Special Testing					\$	
15.	Direct Costs: Special Equipment						
	Item & Anticipated Use		Unit Cost		Amount		
					\$		
					\$		
					\$		
	Estimated Total Special Equipment					\$	
16	Direct Costs: Travel						
	Travel Location	Mode of Travel	# of Trips	Per Diem	Amount		
					\$		
					\$		
	Travel					\$	
17	Direct Costs: Consultant Services						
	Description of Service				Amount		
					\$		
					\$		
	Total Consultant Services				\$		
18	Direct Costs: Other Direct Costs (ODC) not previously accounted for.						
	Item & Anticipated Use		Unit Cost if applicable		Amount		
					\$		
					\$		
					\$		
	Total Other Direct Costs					\$	
19	Total Direct Costs (TDC) (Sum of Line No. 14 – 18)					Amount	
						\$	
20	General & Administrative Expense ((Total Materials + Total Labor + Total ODC) x Rate)						
			Rate %		Amount		
					\$		
21	Royalties						
	Description				Amount		
					\$		
	Total				\$		
22	Total Cost (Sum of lines 9, 13, 19, 20 & 21)					Amount	
						\$	
23	Profit (Total Cost x Profit Rate)						
			Rate %		Calculated Amount		
					\$		
24	Total Firm Fixed Price Amount (Total Cost + Profit)		\$				
25	THE COST BREAKDOWN PORTION OF A PROPOSAL MUST BE SIGNED BY A RESPONSIBLE OFFICIAL OF THE FIRM. (INCLUDE TYPED NAME AND TITLE AND DATE OF SIGNATURE IN THE SPACE PROVIDED ON THE COVERPAGE OF THIS PROPOSAL)						
26	Provide a yes or no answer to each of the following questions:					(Yes / No)	
	Has any executive agency of the United States Government performed any review of your accounts or records in connection with any other Government prime contract or subcontract within the past twelve months? If yes, provide the name and address of the reviewing office, name of the individual and telephone/extension below						

	Will you require the use of any Government property in the performance of this proposal? If yes, identify. _____ _____	
	Do you require Government contract financing to perform this proposed contract? If yes, specify type as advanced payments or progress payments. _____ _____ _____	
27	Type of contract proposed is, <u>firm-fixed price</u>	
28	DUNS number, if available _____ (See Section III.F)	
29	Tax Identification Number, if available _____	

**U.S. DEPARTMENT OF TRANSPORTATION
SMALL BUSINESS INNOVATION RESEARCH PROGRAM
SOLICITATION NO. DTRT57-08-R-SBIR2
FY08.2
PROPOSAL CHECKLIST**

This is a CHECKLIST OF REQUIREMENTS for your proposal. Please review the checklist carefully to assure that your proposal meets the DOT SBIR requirements. Failure to meet these requirements may result in your proposal being returned without consideration. (See Sections III of this Solicitation). **Do not include this checklist with your proposal.**

- ___ 1. The proposal reflects the fact that for Phase I a minimum of two-thirds (and for Phase II a minimum of one-half) of the research and/or analytical effort will be performed by the proposing firm as required (see Sections V.H.1 and V.H.2) and the primary employment of the principal investigator (for both Phase I and Phase II) must be with the small business firm at the time of award and during the conduct of the proposed research as required (see Section I.C).
- ___ 2. The proposal is 25 PAGES OR LESS in length. This limitation does not apply to the additional information required by Section III.H.
- ___ 3. The proposal is limited to only ONE of the research topics in Section VIII.
- ___ 4. The proposal budget may be up to \$100,000 unless otherwise indicated and duration does not exceed six months.
- ___ 5. The technical abstract contains no proprietary information, does not exceed 200 words, and is limited to the space provided on the Project Summary sheet (Appendix B).
- ___ 6. The proposal contains no type smaller than ten point font size.
- ___ 7. The COVER SHEET (Appendix A) has been completed and is PAGE one of the proposal.
- ___ 8. The PROJECT SUMMARY (Appendix B) has been completed and is PAGE two of the proposal.
- ___ 9. The TECHNICAL CONTENT of the proposal begins on PAGE three and includes the items identified in SECTION III.D of the Solicitation.
- ___ 10. The Contract Pricing Proposal (Appendix C) has been included as the last section of the proposal.
- ___ 11. The additional information on prior Phase II awards, if required, in accordance with Section III.H.
- ___ 12. The proposal must be a PDF file and submitted online by 5 p.m., October 3, 2008. Proposals may only be submitted online, a link to the web form can be found here: <http://www.volpe.dot.gov/sbir/current.html>. Instructions are included on the submission page.