TRANSIT SAFETY RESEARCH PROGRAM

PEDESTRIAN COLLISION WARNING DEMONSTRATION PROJECT

AGENCY: Federal Transit Administration (FTA), DOT
ACTION: Notice for Request for Proposals (RFP)

SUMMARY: The Federal Transit Administration's (FTA) research activities are authorized by 49 USC 5312, Research, Development, Demonstration, and Deployment Projects. Safety is one of the U.S. DOT's five Strategic Goals. Under this goal, FTA has set forth the objective to improve safety by reducing transit-related injuries and fatalities.

The main objective of this pilot is to increase pedestrian/cyclist safety through demonstration of advanced pedestrian warning system on transit buses.
FTA seeks applications to demonstrate innovative technologies that support the achievement of this objective.

DATES: The applicant must submit a proposal electronically to *http://www.grants.gov* by August 15, 2012 for consideration. All potential applicants are advised to begin the *http://www.grants.gov* registration process immediately, if they have not previously submitted Federal assistance applications through *http://www.grants.gov,* in order to be able to meet the deadline. FTA expects to award funds through a Cooperative Agreement soon after selection.

ADDRESSES: The website *http://www.grants.gov* allows applicant organizations to electronically find and apply for competitive opportunities from all Federal agencies that award Federal assistance. This website is the single access point for over 1000 Federal assistance programs administered by 26 Federal agencies.

FOR FURTHER INFORMATION CONTACT: Technical, program management and administrative questions should be directed to Roy Chen, Office of Technology (TRI-20), Room E43-440, Federal Transit Administration, U.S. Department of Transportation, 1200 New Jersey Avenue, SE, Washington, D.C. 20590; email address: RoyWeiShun.Chen@dot.gov, or by phone at 202-366-0462.

SUPPLEMENTARY INFORMATION:

Background

Pedestrians represent a considerable portion of traffic-related (cars, trucks and transit) injuries and deaths on our nation's highways. In 2008, 4,378 pedestrians were killed and 69,000 were injured in traffic crashes in the United States. This represents a 12% and 3%of all the traffic fatalities and injuries, respectively. The majority of these

fatalities occurred in urban areas (72%) where pedestrians, cyclists, and vehicular traffic, including transit buses, tend to comingle.[1] Although, the pedestrian injuries and fatalities are few in number relative to other collision types, bus collisions involving pedestrians and cyclists usually carry very high cost (injury claims), attract negative media attention and have the potential to reduce public perception of transit safety.

Transit agency leadership interviewed as part of an FTA-sponsored study titled, "Assessing the Business Case for Integrated Collision Avoidance System on Transit Buses," identified the reduction in pedestrian collisions or severities ranked typically as the highest factor in investment decisions for collision avoidance technologies.[2]

A Transit Cooperative Research Program (TCRP) study indicated that of all the collision types involving transit buses and pedestrians, turns at intersections was the problem most frequently reported by transit agencies. Of the incidents reports reviewed, the data show that 60% occurred while the bus was turning (left-turn collisions were more common than right-turn collisions: 69% involved a left turn, while 31% involved a right turn). The other two common collision types were buses pulling into bus stops (15%) and buses pulling away from stops (10%).[3]

A key factor influencing the occurrence of bus collisions (while turning) with pedestrians might be that pedestrians have difficulty recognizing that buses are about to turn. When buses turn, they pivot on the rear axle, moving forward and then sweeping an arc as the bus follows through the turn. At first glance, it may appear to a pedestrian that the bus is moving straight forward through the intersection when in fact the operator is initiating a turn. In addition, reduced visibility of the pedestrians, failure to scan, and attention to opposing vehicular traffic by the bus operators are other reasons why bus-to-pedestrian collisions are more prevalent in crosswalks.

Objectives

This Request for Proposal (RFP) seeks proposals to demonstrate an advanced warning system for transit buses that would increase pedestrian/cyclist safety.

Project Description

The proposer must clearly define the uniqueness of the pedestrian warning system and the associated technologies and how the system would be integrated into existing transit buses, as well as, the collision scenarios (left turn, right turn, bus pulling into station and out of station) in which the system is designed to mitigate and prevent. The

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[1] NHTSA Traffic Safety Facts 2008 Data http://www-nrd.nhtsa.dot.gov/Pubs/811163.pdf

[2] FTA Research Report: Assessing the Business Case for Integrated Collision Avoidance Systems on Transit Buses. http://www.fta.dot.gov/documents/Transit_IVBSS_Business_Case_Analysis_Final_Report_9-07.pdf

[3] TCRP Report 125: Guidebook for Mitigating Fixed-Route Bus-and-Pedestrian Collisions. http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_125.pdf

proposed system must address, at a minimum, left- and right-turn collision scenarios and be ready for testing, deployment and commercialization.

The project must identify and characterize the effectiveness of the proposed system and how the system would:

1) alert pedestrians and cyclists under different collision scenarios;
2) prevent or mitigate the severity of crashes;
3) minimize bus operator workload;
4) ensure no increase to operator distraction; and,
5) ensure warning system cannot be turned off or overridden.

The selected project(s) shall include a demonstration of the proposed pedestrian warning system in revenue service with a U.S. transit agency.

Project partners shall identify and select the technologies to be used for this demonstration, describe how the transit agency plans to integrate the proposed system with their current bus operation, make any adjustments to operating rules and procedures, install the proposed system to existing buses, conduct training, evaluate the demonstration and characterize the effectiveness of the system and the associated technologies, including a cost/benefit analysis.

The project sponsor selected shall prepare and deliver to FTA a final written report documenting the activities and work performed in this project. The report and supporting documentation must be provided to the FTA project manager in an electronic/web-ready format, as specified by FTA. The project sponsor should prepare to present the final outcome of this project in an industry forum such as an American Public Transportation Association (APTA), Transportation Research Board (TRB) conference or an equivalent industry conference approved by FTA.

The project proposal, at minimum, should address the following:

1) Scope of the demonstration.
    - Technologies to be used in this demonstration;
    - Explanation of the principle of operation for the proposed pedestrian warning system;
    - How the pedestrian warning system is designed to work for each collision scenario proposed and how the system will prevent collisions (audible and/or visual, activated all the time or only at specified locations, etc.);
    - Potential issues (technical or other) that may impact the applicability or the success of the system;
    - Demonstration “envelope” (e.g., projected demonstration routes, number of buses, type of buses, duration of the demonstration, service frequency, service environment, type of service, etc);
    - Current performance or test data that give credibility to the proposed system;
    - Implementation & training plan;

- Data Collection and Evaluation plan; and,
- Project management plan.

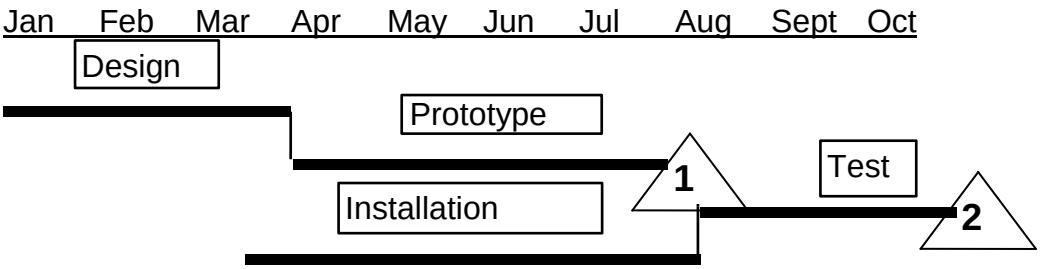
2) Statement of Work (SOW) consisting of a list of tasks with descriptions. Milestones, including short description, expected date and milestone costs, should be part of the SOW and associated with the completion of key events.

3) Schedule chart showing the timing of all tasks listed in the SOW and their major precedence relationships (see example below).

4) Costs. Prepare a matrix showing the uses of funds by milestone and by category. Also, in similar matrix form, show the source of funds for each milestone. These include the costs to the Federal Government, other federal funds (if any), cash costs to the project team, in-kind costs to the project team, and total costs. Show the contribution from each team member separately for each milestone. Costs of labor and materials purchased for the project are considered cash costs. Explain any in-kind costs to the project, such as value claimed for use of buildings, previously purchased materials, or capital equipment that could and would be used for other purposes. The explanation should indicate who is making the in-kind contribution (fee and/or profit is NOT ALLOWED for FTA Cooperative Agreements).

EXAMPLE: Project XYZ

Project Schedule



Project Costs
(Additional details and explanations of labor, materials, and subcontracts may be appropriate.)

Project Subtasks	Cost to Gov.	Matching Funds	Total Cost
Design	50,000	0	50,000
Build Prototype	50,000	0	50,000
Installation	100,000	100,000	200,000
Testing	50,000	75,000	125,000
TOTAL	250,000	175,000	425,000

Milestone	Milestone1(Build)	Milestone 2 (Test)	TOTAL
Labor	75,000	30,000	105,000
Materials	75,000	20,000	95,000
Subcontracts	25,000	5,000	30,000
Travel	5,000	1,000	6,000
Facilities	70,000	44,000	114,000
Overhead	50,000	25,000	75,000
TOTAL	300,000	125,000	425,000

Project Sources of Funds

Milestone	Cost to Gov.	Project Team Cash Cost	Project Team In-Kind Cost	TOTAL
M1 (Build)	200,000	75,000	25,000	300,000
M2 (Test)	50,000	25,000	50,000	125,000
TOTAL	250,000	100,000	75,000	425,000

[End of Example]

Cost Sharing or Matching
Federal transit funds are available to research projects at up to 100 percent of the project cost. However, priority may be given to projects that receive financial commitments from, or otherwise involve, state and local government, other public entities, private or nonprofit entities.

Eligibility Information
Eligible recipients include State and local government agencies, public and private transit agencies, universities, non-profit organizations, consultants, legally constituted public agencies, operators of public transportation services, and private for-profit organizations.

The applicant must be a transit agency or partner with a U.S. transit agency and obtain its commitment to participate in the project.

Proposal Content
The application forms are available in http://www.grants.gov and are required to be completed as a part of the response to this announcement

1. SF 424 and all other associated forms that are marked mandatory in grants.gov http://www.grants.gov/agencies/forms_instruction_information.jsp

Other Attachments Form:

1. The applicant should attach the application (not more than 15 pages in length) as outlined in Chapter II (Item 9.b) of FTA Circular 6100.1D: Transit Research and Technology Programs: Application Instructions and Program Management Guidelines.
   http://www.fta.dot.gov/legislation_law/12349_12669.html

   This application should also address the six criteria laid out below in the Application Review Information section. The project budget justification should include identification of any matching funds and their source. .

2. The applicant should attach information on the qualifications of key personnel, including biographies.

An interested, eligible party intending to apply should initiate the process of registering on *http://www.grants.gov* as soon as possible. All potential applicants are advised to begin the *http://www.grants.gov* registration process immediately, if they have not previously submitted Federal assistance applications through *http://www.grants.gov,* in order to be able to meet the deadline. Only applications submitted via *http://www.grants.gov* will be accepted. In the event of a system problem or outage, the applicants should contact the FTA Project Manager for delivery instructions.

Application Evaluation Information
A review panel will be convened to review each proposal. Project proposals will be evaluated based on the following criteria;

1. Proposed Research, which includes the applicability of the proposed research to the requirements, the uniqueness of the research approach, and the expected results. Projects should be narrowly defined to demonstrate innovative technologies of pedestrian/cyclists collision warning system that minimize injuries and prevent collisions. Proposal should explain and quantify how the proposed system will improve pedestrian safety and which collision scenarios the system will address.
2. Qualifications of Key Personnel, which includes knowledge of and prior experience with pedestrian safety programs and technologies.
3. Technical Management Plan, which includes the management approach for planning, scheduling, administering, and implementing the work effort in the SOW and letters of support from project partners.
4. Past Performance on activities relevant to the proposed work for the main partners.
5. Cost and Cost Sharing and sources of funds.
6. Plan for evaluation and data collection*. The proposal must address how success will be measured (system performance, cost/benefit analysis, etc.).

*Data collection and analysis for the demonstration is subject to independent verification.

Distribution of Funds
FTA may fund one or more applications under this notice. The total available funding is $400,000.

Grant Administration Information
The notification date for successful applications is expected to be during September 2012. Following receipt of the notification letters, the successful entities will be required to submit the Formal Application as outlined in Chapter II (Items 10-25) of FTA Circular 6100.1D: Transit Research and Technology Programs: Application Instructions and Program Management Guidelines http://www.fta.dot.gov/legislation_law/12349_12669.html through the FTA Transportation Electronic Award Management (TEAM) system website.

FTA will manage the cooperative agreement through the TEAM system. Before FTA may award Federal financial assistance through a Federal cooperative agreement, the entity must submit all certifications and assurances pertaining to itself and its project as required by Federal laws and regulations. FTA has consolidated the various certifications and assurances that may be required of its awardees and the projects into a single document published in the Federal Register. Fiscal year 2012 Annual List of Certifications and Assurances for FTA Grants and Cooperative Agreements and

guidelines was published in the Federal Register and posted on the FTA Web site at: http://fta.dot.gov/grants/12825_93.html.

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Recipients will be required to manage their projects in accordance with FTA Circular 6100.1D: Transit Research and Technology Programs: Application Instructions and Program Management Guidelines: http://www.fta.dot.gov/legislation_law/12349_12669.html. This includes requirements for project management and administration, including quarterly reporting, financial management, and payments.

FTA involvement will include approving key decisions and activities, attending review meetings, reviewing interim and final reports, maintaining frequent contact with the project manager and redirecting activities if needed.