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# National Institute of Justice

## S o l i c i t a t i o n

*Sarah V. Hart, Director*

*February 2002*

### NIJ School Safety Technology Solicitation FY 2002

**APPLICATION DEADLINE:**

April 24, 2002

**U.S. Department of Justice**  
**Office of Justice Programs**  
810 Seventh Street N.W.  
Washington, DC 20531

**John Ashcroft**  
*Attorney General*

**Deborah Daniels**  
*Assistant Attorney General*

**Sarah V. Hart**  
*Director, National Institute of Justice*

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For grant and funding information, contact:  
**Department of Justice Response Center**  
800-421-6770

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**Office of Justice Programs**  
**World Wide Web Site:**  
<http://www.ojp.usdoj.gov>

**National Institute of Justice**  
**World Wide Web Site:**  
<http://www.ojp.usdoj.gov/nij>

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## I. Introduction

The National Institute of Justice (NIJ) is seeking proposals for research and development of new technologies, and evaluation studies of technologies already in use, in order to create safer school environments. This solicitation encourages developers and researchers to work creatively with schools and those in law enforcement responsible for school safety and security as they develop proposals. NIJ seeks new or improved technologies that have promise for wide implementation. Evaluation studies of technologies already in use or soon to be implemented in schools are particularly encouraged.

NIJ seeks to achieve a balanced portfolio of technology and product development, implementation, and evaluation projects that will help create safer and more secure learning environments.

Technologies that could help create safer school environments for students, teachers, and administrative staff may include the general categories of communication interoperability and information sharing, protective systems technologies, crime prevention technologies and learning technologies/education and training.

Successfully implemented products from this solicitation should help NIJ meet the goal of the Safe Schools Initiative to develop new, more effective school safety technologies.

*Innovative solutions are the focus of this solicitation. This solicitation is not intended to fund the purchase of existing commercial systems. Proposals should focus on projects that can be successfully completed within one to two years.*

## II. Background

The majority of our Nation's schools are quite safe, and even those with higher levels of crime than the typical school may be safer than the neighborhoods in which they reside. However, reducing the levels of violence in schools and assuring that students can

learn in a safe, non-threatening environment is a national goal that continues to receive public attention.

Many programs encouraged or funded by Federal and State government agencies have been implemented in the Nation's schools in recent years to promote an atmosphere of non-violence and mutual respect for persons and property and to encourage conflict resolution rather than disruptive behavior or violence. While the use of security technology to complement or supplement these efforts already exists in some schools (e.g. metal detectors and closed circuit television cameras), the role of technology as an effective aid or force multiplier in creating safer and more secure schools has just begun. As part of the National Safe Schools Initiative, NIJ seeks to further explore the role that technology can play.

NIJ is the research and development arm of the U.S. Department of Justice. Created by Congress in 1968, the Institute is charged with investing public funds to develop knowledge that will reduce crime, enhance public safety, and improve the administration of justice. Through its Office of Science and Technology (OS&T) NIJ assists State and local justice systems by:

- Supporting research, demonstrations, and validations to develop new approaches, techniques, systems, and equipment to improve law enforcement and the administration of justice; and
- Developing, validating, and evaluating new technologies to deter crime and enhance criminal justice operations.

NIJ's portfolio covers a diverse and dynamic array of research and development topics. Each year, NIJ's research program evolves as a result of consultation with a community of researchers; technologists and practitioners; Federal, State and local policymakers; and other public and private organizations. The NIJ Research Portfolio, which lists ongoing NIJ research and development, with project descriptions, is available online at <http://nij.ncjrs.org/portfolio/>. NIJ encourages use of the portfolio as a guide to NIJ's

approach to criminal justice research and development.

### III. Suggested Proposal Topic Areas

Within the following technical areas that NIJ is already supporting, there may be specific topics that could meet critical school security and safety needs. These topics are not considered to be all inclusive; you may submit proposals in other areas.

#### A. Learning Technologies/Education and Training

The operational duties and tasks of school personnel charged with school safety and security, whether they are law enforcement officers, school principals, or others, are becoming increasingly complex, diverse, situation-dependent, and highly interactive. Traditional classroom training techniques to address this responsibility can be limited because they lack the realism and interpersonal tension that can exist in resolving conflict and violence in a school environment. While live exercises and role playing can provide more of the desired realism, they are expensive, manpower intensive, and sometimes not feasible. New methods of training are required to address areas such as: (1) event modeling and simulation; (2) policy and procedures training; (3) interpersonal skill development; (4) officer safety; (5) use of force or judgment training; and (6) supervisor, management, and resource allocation training. Consider training technologies such as computer-based training, interactive/multi-media, video-based, distributed, and virtual reality.

Simulation and statistical modeling technology can also be used to enhance operational capability and capacity. Technology can improve: (1) geo-coded information that may provide a basis for new safety and violence reduction strategies; (2) statistical modeling, neural network, or expert-based methods to classify students needing special supervision or other attention; (3) general crime prevention practices; and (4) other areas that will improve strategies and procedures to more effectively use all the resources available to schools. The simulation and modeling technologies should be inexpensive to procure, easy to

learn, and sufficiently flexible to adapt to specific needs of individual school systems.

#### B. Communication Interoperability/Information Sharing

NIJ solicits proposals that examine communication interoperability technology needs and methods for information database integration and sharing.

NIJ continues to look for technology related to interagency communications interoperability and secure communications that could help save lives during a critical incident (natural or man-made) in a school or school district, video/data capture, transmission (including video conferencing), and/or compression (including noise and false alarm reduction).

NIJ solicits proposals that (1) delineate current school security information systems; (2) provide brief descriptions that characterize the current databases; (3) describe the common needs and new or modified requirements for a school security information system; (4) provide a technical, organizational, and operational system that permits schools to share or acquire relevant security information; (5) describe which of the current information systems could or should be linked together, and how this should be accomplished; (6) describe any new or novel applications of information technology and the cost effectiveness of any proposed shared information system; and (7) provide a plan for implementation of any proposed information systems or technologies.

Proposals should consider the viability of facilitating increased information flow between security and other school functions as well as increased information flow among schools. This effort could include the ongoing assessment or evaluation of the information on the systems currently available to schools. Assessment or evaluations should focus on how information technology can be better applied to sharing among schools and with the law enforcement community.

## **C. Protective Systems Technologies**

Law enforcement needs techniques, materials, and methods to improve the protective and safety equipment used by School Resource Officers (SRO) and other school safety officials.

## **D. Crime Prevention**

Innovative sensor, detection, monitoring, surveillance, communications, and processing products and techniques have the potential to prevent crime and enhance school safety. Examples are concealed weapons/contraband detection and tracking and monitoring technologies. Applications in this area should develop systems that are easy to use, require low power (primarily for portable or unattended applications), and inexpensive to purchase and operate. Examples where these technologies may be applied are: (1) perimeter/physical security; (2) theft prevention; and (3) explosives/drug detection.

Although closed-circuit-television (CCTV) is being used in some schools, the development and adaptation of new or existing commercial CCTV systems, and their appropriate deployment in a school environment is an area of technology that may benefit from further research and development. Image processing, enhancement and analysis may also be useful. For some types of safety threats to a school (e.g. telephoned bomb scares), speaker identification might have some value. Other types of biometric identification technology that are unobtrusive are of interest. However, it is incumbent on the applicant to articulate the expected benefits and cost trade-offs with existing approaches for dealing with the problems that the technology seeks to address.

## **E. GIS and Crime Mapping**

NIJ encourages proposals that advance the use of Geographic Information System (GIS) technology to monitor and assess issues of crime and safety in and around schools, as well as routes to and from school. Students' routes to and from school might be analyzed in the context of environmental factors such as street lighting, "dark corners," and the proximity of public transportation. Other important contextual

factors that might be spatially analyzed with a GIS include places frequented by known offenders and drug markets that are proximate to school grounds. In addition, proposals that utilize "high definition" GIS technology to map problem areas within and around school buildings are welcomed. The uniqueness and utility of proposed GIS applications compared to existing GIS systems must be demonstrated. Partnerships between school administrators and local police are encouraged.

## **F. School Technology Assessment**

Proposals that will assess the effective uses of technology for school security will also be considered. In your proposal, please describe your assessment plan in sufficient detail to demonstrate your ability to capture and document school security needs and to identify strategic uses of technology to meet these needs. Proposed assessments should be comprehensive in nature, taking into account regional, national, and demographic concerns. Identified technology solutions should be affordable to acquire and maintain.

## **G. Creative Technology Solutions in Other Areas**

The intent of this category is to serve as an open window to encourage the submission of research, development, and application proposals that will result in creative, innovative technologies to benefit school security. All proposals in technology application, assessment, or practice areas not addressed in the above technical areas will be considered in this category. The proposal must explain how the successful completion of the project will result in safer schools.

## **IV. Guidance**

The proposal should describe efforts to advance technology in support of safe schools beyond the current state-of-the-art. Documented knowledge of the understanding of the current state-of-the-art in the subject area of the proposal is very important. References to past or current relevant products or studies is expected. Proposals should focus on the

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research, development, testing, evaluation, adoption, and implementation phases of new technology; or modifications of existing technology in new or innovative ways may be proposed.

Proposed technological solutions should serve as work force multipliers that enhance the ability of school safety and security personnel to perform their duties and should address real and significant problems. The resulting technological solutions should be affordable to acquire as well as to maintain and not require special expertise or excessive training to implement.

As noted earlier, this solicitation particularly seeks evaluation proposals that will assess the effective uses of technology for school safety and security.

NIJ encourages use of the resources and expertise of the NIJ National Law Enforcement and Corrections Technology Center (NLECTC) located in Rockville, Maryland, and the regional NLECTC's located in Rome, New York; Charleston, South Carolina; Denver, Colorado; El Segundo, California; Anchorage, Alaska; the Rural Law Enforcement Technology Center, Hazard, Kentucky; and the Border Research and Technology Center (BRTC), San Diego, California. More information about the NIJ National Law Enforcement and Corrections Technology Center system is available on the Internet at <http://www.justnet.org>.

Please keep in mind that cost considerations of technology development products are a major concern. Most school systems have little money for school security. These and related factors all influence the timeliness and the degree to which new technologies are accepted by school administrators. Consider the questions below when determining the usefulness of the proposed new technology development effort. The proposal should address the general themes posed by these questions; however, it is not necessary to explicitly answer each question.

- How important is the new technology to the overall security of schools? What will be its impact on organizational structure and personnel requirements?
- What is the technical goal of the proposed project and what objectives must be achieved to meet this goal?
- What is the breakdown of the various tasks that will be undertaken within the proposed technical work to accomplish the objectives? What resource expenditures are planned for each proposed task? (This information helps assure that the proposed technical and cost efforts are appropriate.)
- How much will the technology cost to purchase, customize to fit local needs (if necessary), and maintain?
- How many units will be needed to accomplish a required or desirable school safety objective?
- What are the hidden costs? For example, new computers may require additional labor hours for data input, the purchase of additional software or peripheral equipment, and highly specialized and complex equipment may incur expensive maintenance costs. A single metal detector may be totally inadequate for rush hour needs in the morning or at lunch times.
- What, if any, are the net savings in labor or other costs that would be achieved by implementing the proposed technology as opposed to maintaining the status quo?
- How much training is required to use, maintain, and repair the technology? Will the required level of sophistication of the training be cost effective?
- How will the courts view the technology in terms of liability and interference with personal freedom? What constitutional or other legal issues may arise from utilization of the technology?
- How will the product of the proposed project work with existing technology or within the existing technical infrastructure?

- What technical standards will be employed in the development, implementation, and evaluation of this technology?

NIJ encourages proposals that link public and private sectors. For example, partnerships between a school or school district and a company with technological expertise, or a consortium that may include a police department and one or more companies or academic institutions, would receive favorable consideration. Partnership groups should include an active member of a recognized law enforcement agency or school.

If proposed, teaming arrangements need to have clearly defined technical milestones, leadership roles and responsibilities, business strategies, intellectual property sharing agreements, and participant cost sharing plans. A coordination plan should also be developed identifying technology users, training institutions, government test facilities and laboratories, legal and legislative bodies and other components that may be required to bring a technology to market.

Cooperative agreements between U.S.-based organizations and international organizations that result in advancing a technology in the U.S. that is currently employed elsewhere are also possible, however, NIJ is unable to fund foreign companies directly.

## **V. Selection Criteria**

NIJ is firmly committed to the competitive process to make awards. All proposals are subjected to an independent, peer-review panel evaluation. Peer review panelists are academicians, technologists, and practitioners from school law enforcement or corrections agencies, each of whom possess expertise in the subject areas of the solicitation. After the peer review panelists have completed their proposal evaluations, they will provide NIJ staff a determination of each proposal's worthiness of award. NIJ staff will then recommend the award of specific proposals to the NIJ Director. The NIJ Director will make a final decision regarding the issuance of awards to individual proposals.

Selection criteria that will be used by the peer panel reviewers and NIJ staff to evaluate proposals are as follows:

### **1. Quality and Technical Merit**

- Soundness of methodology, analytical, or technical approach.
- Innovation and creativity.
- Feasibility of the proposed project; awareness of pitfalls.
- Awareness of existing research and developmental work currently underway or completed, and related applications.

### **2. Impact of the Project**

- Potential for significant advance in crime prevention in schools.
- Potential for advancement of scientific understanding of the problem area.
- Relevance to school safety and security practices, including development and demonstration in application domains (if applicable).
- The importance of the school safety or security problem to be addressed by the proposed effort.
- Affordability and cost-effectiveness of proposed end products for schools, including acquisition, maintenance, and training costs.

### **3. Capabilities, Demonstrated Productivity, and Experience**

- Relevant qualifications and experience of personnel.
- Demonstrated ability to manage the proposed effort.
- Adequacy of proposed project management plan as evidenced by the specification of project goals and objectives, a breakdown of the various tasks to be undertaken within the project, and the specification of the resources to be expended in each task.
- Adequacy of proposed resources to perform the proposed effort.

#### 4. Budget Considerations<sup>1</sup>

- Total cost relative to perceived benefit.
- Use of existing resources to minimize the costs associated with the project effort.
- Cost-effectiveness of the implementation and operational use of the product(s) derived from the proposed effort.

#### VI. Post-Award Requirements

For each project funded under this program, the recipient will provide NIJ with a final written report containing, as a minimum, sections on the criminal justice problem(s) addressed; goals and objectives; methodology used; results and findings, conclusions; and recommendations. The report should also include the nature and number of discussions with practitioner agencies. In addition to the final report, the recipient may also be required to provide other deliverables (e.g., a prototype device, working model) depending on the nature and goals of the project.

To help ensure that the goals of the program are met, for a proposal to be eligible to receive an award, it must include:

- A description of the deliverables that will result from the proposed effort.
- Acknowledgment of the understanding that the written final report is required as a separate deliverable item. To the extent possible, provide any details of an outline of the final report.

#### VII. Performance Measures

The goal of this program is the study, development, improvement, demonstration, and implementation of technologies and tools with demonstrated value to the creation of a safer school environment. Performance toward that goal is measured by the knowledge gained and the number of technologies or tools successfully developed, improved, demonstrated, or implemented versus the number funded, as evidenced by written reports submitted to NIJ and prototype devices described in the award.

#### VIII. How to Apply

Persons interested in submitting proposals under this solicitation must submit the application materials specified below. (See below for instructions on obtaining application forms and guidelines.) **Please be aware that your application must include the following information or completed forms to qualify for an award of funding:**

- Standard Form (SF) 424—Application for Federal assistance
- Geographic Areas Affected Worksheet
- Assurances
- Certifications Regarding Lobbying, Debarment, Suspension, and Other Responsibility Matters; and Drug-Free Workplace Requirements (one form)
- Disclosure of Lobbying Activities
- Budget Detail Worksheet
- Budget Narrative
- Negotiated indirect rate agreement (if appropriate)
- Names and affiliations of all key persons from applicant and subcontractor(s), including advisors, consultants, and advisory board members. Include the name of the principal investigator, with title, organizational affiliation, department (if institution of higher education), address, phone, e-mail, and fax
- Proposal abstract<sup>2</sup>
- Table of contents
- Program narrative or technical proposal
- Privacy certificate
- Form 310 (Protection of Human Subjects Assurance Identification/Certification/Declaration)
- Environmental Assessment (if required)
- References
- Letters of cooperation from organizations collaborating in the research project
- Resumes for key personnel that will participate in the proposed project effort.
- Appendices, if any (e.g., list of previous NIJ awards, their status, and products).

**Confidentiality of information and human subjects protection.** NIJ has adopted new policies and procedures regarding the confidentiality of

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information and human subjects protection. Please see the *Guidelines for Submitting Proposals for National Institute of Justice-Sponsored Research* for details on the new requirements at <http://www.ojp.usdoj.gov/nij/funding.htm>.

**Page limit.** The number of pages in the “Program Narrative” part of the proposal must not exceed 30 double-spaced pages, no matter the amount of funding requested.

**Due date.** Completed proposals **must be received** at the National Institute of Justice by the 4:00 pm on **April 24, 2002**. Extensions of this deadline will not be permitted.

**Award period.** In general, NIJ limits its grants and cooperative agreements to a maximum period of 12 or 24 months. However, longer budget periods may be considered.

**Applying.** You need to obtain two packets: (1) application forms (including a sample budget worksheet) and (2) guidelines for submitting proposals (including requirements for proposal writers and requirements for grant recipients). To receive them, you can:

- Access NIJ's Funding Opportunities Page on the World Wide Web: <http://www.ojp.usdoj.gov/nij/funding.htm>.
- Access the Justice Information Center on the Web: <http://www.ncjrs.org/fedgrant.htm#nij>
- Request hard copies of the forms and guidelines by mail from the National Criminal Justice Reference Service at 800–851–3420 or from the Department of Justice Response Center at 800–421–6770 (in the Washington, D.C., area, at 202–307–1480).
- Request copies by fax. Call 800–851–3420 and select option 1, then option 1 again for NIJ. Code is 1023.

**Guidance and information.** If you wish to receive additional guidance and information, contact the U.S.

Department of Justice Response Center at 800–421–6770. The Response Center staff can provide assistance or refer you to an appropriate NIJ professional. However, you are expected to obtain and carefully review application forms and proposal guidelines in advance.

## Send completed forms to:

NIJ School Safety Technology Solicitation  
c/o Ann Marie Boyer  
National Institute of Justice  
810 Seventh Street N.W.  
Washington, DC 20531  
[Note that our overnight courier ZIP code is 20001]

Ten (10) copies of fully executed proposals must be received by NIJ by 4:00 P.M. on **April 24, 2002**.

For more information on the National Institute of Justice, please contact:

## National Criminal Justice Reference Service

Box 6000  
Rockville, MD 20849–6000  
800–851–3420  
e-mail: [askncjrs@ncjrs.org](mailto:askncjrs@ncjrs.org)

You can view or obtain an electronic version of this document from the NCJRS Justice Information Center Web site (<http://www.ncjrs.org>) or the NIJ Web site (<http://www.ojp.usdoj.gov/nij>).

## Notes

1. When estimating budget requests, investigators should note that NIJ policy prohibits the use of grant funds for operational, training, or other nonresearch costs of the project.
2. The proposal abstract is meant to serve as a succinct and accurate description of your proposed work. Your abstract must minimally describe: the criminal justice problem to be addressed by the proposed project; the project's goals and objectives; the proposed methodology to be used to achieve the goals and objectives; and the final product(s) to be derived from the project. Descriptions of past accomplishments made by yourself, or your organization, in the relevant field or topic area are to

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be avoided in the abstract. **DO NOT include company proprietary information in the abstract because the abstract WILL be made available to the general public if an award is made based on the proposal.** The total length of the abstract must not exceed 400 words.

**SL#000558**