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The Appropriate and Effective Use of Security Technologies in U.S. Schools

A Guide for Schools and Law Enforcement Agencies

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The Appropriate and Effective Use of Security Technologies in U.S. Schools

A Guide for Schools and Law Enforcement Agencies

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Foreword

Creating safe schools is the responsibility of the entire community in which a school or school system resides, but responsibility for maintaining them on a day-to-day basis lies principally with school administrators and, to a lesser extent, the local law enforcement agency. To assist schools in this task, the U.S. Department of Education and the U.S. Department of Justice have sponsored, often jointly, both research and demonstration programs to collect data and test useful new ideas that will expand understanding of school violence and disorder and lead to new programs to reduce these problems.

This document provides basic guidelines to law enforcement agencies and school administrators and encourages their collaboration as they decide what, if any, security technologies should be considered as they develop safe school strategies. In the wake of recent high-profile school tragedies with multiple homicides, many of this Nation's communities have urged their school districts to incorporate security technology into their safety programs. This guide should help schools, in concert with their law enforcement partners, analyze their vulnerability to violence, theft, and vandalism, and suggest possible technologies to address these problems in an effective manner. This guide describes existing commercially available technologies and urges thoughtful consideration of not only the potential safety benefits that may accrue from their use but also the costs that schools may incur for capital investments, site modifications, additional staffing, training, and equipment maintenance and repair.

Topic areas included in this guide are: security concepts and operational issues, video surveillance, weapons detection devices (walk-through and hand-held metal detectors and x-ray baggage scanners), entry controls, and duress alarms.

Though this document does not replace the use of appropriate expert advice or provide detailed instructions on installing equipment or making cost estimates, it does offer practical guidance that should enable schools and law enforcement agencies to make better informed decisions on security technology.

Safety and security technology can only be one tool in a comprehensive program that each school must develop to create a safe learning environment that is perceived to be safe by all students and staff.

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Preface

A team of security specialists from the Security Systems and Technologies Center at Sandia National Laboratories first talked with local schools in 1991. It was our intent to share what we had learned about the strengths and weaknesses of security technologies through our work with the U.S. Department of Energy (DOE) in many public schools.

After visiting some 120-plus schools across the country, completing our DOE-funded work to improve security at Belen High School in New Mexico and performing additional school security work for the National Institutes of Justice (NIJ), we have learned that school security, like security for other applications, is not simple and straightforward. We have learned a lot about the unique aspects of school security from the many students, parents, and school and law enforcement personnel we met during the course of our work. At any particular school, security is the product of funding, facilities, building age, building layout, administrators, teachers, parents, kids, personalities, campus order, security personnel, procedures, the neighborhood, policies, the school board, local law enforcement, fire codes, local government, politics, and reputation. No two schools will have identical and successful security programs—hence, a security solution for one school cannot just be replicated at other schools with complete success.

What did become clear after working with more than 100 schools during the past 7 years is that school administrators need a good information resource on technologies for physical security problems. This guidebook, *The Appropriate and Effective Use of Security Technologies in U.S. Schools,* is anticipated to be the first in a series of manuals designed and written for use by school administrators and law enforcement agencies. The goals of these documents are to provide nontechnical, nonvendor-specific information on:

- The kinds of security products available on the market.
- The strengths and weaknesses of these products and their expected effectiveness in a school environment.
- The costs of these products, including installation, long-term operational and maintenance expenses, manpower, and training.
- Requirements to include in Requests For Quotes (RFQs) to get a good product for an application.
- Legal issues that may need to be addressed.

Although security products can certainly have many different applications, this document covers products that can be applicable to some of the issues of violence in schools: video surveillance, weapon detection, entry control, and duress alarms. Future volumes are expected to cover issues and products such as bomb threats and explosives detection; drug residue and drug vapor detection; drug use detection; alcohol use detection; interior and exterior intrusion detection sensors; alarm communications; antigraffiti sealers; false fire alarm pulls; glass-break sensors; two-way radios; fencing; antitheft property marking; doors, locks, and key control; Crime Prevention Through Environmental Design (CPTED) principles; and parking lot safety. Most of the issues and philosophies covered in these manuals are geared toward middle schools and high schools, but elementary schools will likely find several of the technologies to have possible applications at their facilities.

Although this document addresses nontechnology measures that we felt were important for the completeness

of the topic, there are many good resources and references available that address these people/policy/procedure/program issues much better. See the Resources section at the back of this book.

Feedback from law enforcement agencies, schools, and product manufacturers/vendors is welcome, especially regarding any oversights or errors on our part. This guidebook is intended to provide an overview of security technology product areas that might be appropriate and affordable for school applications. Appropriate corrections or additions will be included in future updates. (We apologize if our cost estimates for hardware do not reflect current pricing; this document was written more than a year before actual publication.)

I would like to extend our deep appreciation to the many schools who have allowed us to visit them and to assess the security vulnerabilities of their facilities and operations (and to take photos of the good things on their campuses, as well as the bad). I never failed to learn something new at every school we have visited. I found there to be many great schools in this country, with very motivated and hard-working administrators giving 110 percent of their energies to keep their students safe. I was humbled by the intense and stressful hours they worked and the ultimate importance of their jobs.

My thanks to the National Institute of Justice (NIJ) for providing the funding to conduct the research that allowed me to prepare this guidebook. I hope that we have met the high standards NIJ has set for providing the best that science and technologies have to offer in fighting crime in the United States. I owe special gratitude to Dennis Miyoshi, Director of Sandia's Security Systems and Technologies Center; Dennis has always been an advocate for schools and was the greatest ally in accomplishing Sandia's school security work.

Information regarding the availability and ordering process for these manuals and any updates may be obtained at the NIJ Web site: *www.ojp.usdoj.gov/nij;* the Justice Technology Information Network (JUSTNET): *www.nlectc.org;* or by calling 1–800–248–2742.

I would be interested in hearing from readers regarding their successes, as well as their failures, in dealing with school security technology issues.

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Since 1941, Sandia National Laboratories has been a U.S. Department of Energy facility whose primary mission is providing engineering support for the U.S. nuclear weapons program. For the past 30 years, the Security Technologies and Research Division at Sandia has been the principal provider of research, design, development, and testing of leading-edge technologies to solve physical security problems at high-risk U.S. facilities.

Today, the Sandia facility in Albuquerque, New Mexico, employs more than 8,000 scientists, engineers, mathematicians, technicians, and support personnel to provide service in the national interest. More than 150 of these personnel are dedicated solely to research and development of security technologies.

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