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CRIME PREVENTION THROUGH ENVIRONMENTAL DESIGN

FINAL REPORT ON SCHOOLS DEMONSTRATION

BROWARD COUNTY, FLORIDA

NCJRS

SEP 11 1978

ACQUISITIONS

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PREFACE

This report, Crime Prevention Through Environmental Design Final Report on Schools Demonstration, Broward County, Florida, describes the process by which a CPTED demonstration project was carried out in four public high schools in Broward County, Florida. Preliminary results of that project, along with conclusions and recommendations based on the process and the results, also are presented.

A number of CPTED documents previously prepared by Westinghouse provide the basis for much of the material in this report. Additional details can be found in those documents, namely:

- CPTED Schools Demonstration Plan: Broward County, Florida (March 1976).
- CPTED: Report on Implementation Status of Schools Demonstration (January 1977).
- CPTED Process Case Studies Report (March 1977) -- This report analyzed the relationships among the events, participants, and the planning process in each demonstration site, and formulated a theoretical framework of the process.
- CPTED Program Manual (April 1978) -- This multi-volume document was prepared to assist urban designers and criminal justice planners in determining the applicability and feasibility of the CPTED concept to the solution of crime or fear-of-crime

problems in various environments. The three-volume Manual also provides detailed guidance for the planning *and* implementation of a CPTED project. Volume I, the Planning and Implementation Manual, describes the planning framework and related project management activities. Volume II, the Strategies and Directives Manual, presents a catalog of strategies (or solutions to identified problems), together with examples of specific design directives to implement those strategies in a given environment. Appended to Volume II is an annotated bibliography of CPTED-related materials than can be referenced by the Manual user in search of greater detail on the historical and theoretical aspects of the CPTED concept. Volume III, the Analytic Methods Handbook, provides a catalog of analytical techniques covering such topics as the use of police crime data and CPTED project evaluation.

- CPTED Technical Guidelines in Support of the Analytic Methods Handbook (April 1978) -- This document deals with such areas of investigation and analysis as victimization survey methods, behavioral observation methods, quantitative analytical and decisionmaking techniques, and environmental assessment methods.

The Broward County demonstration was supported, in part, by a contract from the Law Enforcement Assistance Administration to a consortium of firms headed by the Westinghouse Electric Corporation. The consortium organizations represented a broad range of public and private interests, and contributed an equally broad range of skills and experience to the effort. A partial organizational list includes:

- Barton-Aschman Associates, Inc.
- Urban Systems Research and Engineering, Inc.
- Mathematica, Inc.
- Linton and Company, Inc.
- Carnegie-Mellon University.
- American Institutes for Research.
- Public Systems Evaluation, Inc.
- Richard A. Gardiner and Associates, Inc.
- Augsberg College.
- National Association of Home Builders/NAHB Research Foundation, Inc.
- Nero and Associates, Inc.
- Public Technology, Inc.
- Council of Educational Facility Planners, International.
- National League of Cities.
- National Association of Counties.
- Paradigm, Inc.

In addition, a number of key consultants were involved almost continuously in the first 2 years' CPTED activities (May 1974 through July 1976) and periodically thereafter. A partial list, with disciplines represented in parentheses, includes:

- Thomas Reppetto (Police Science, Sociology, Public Administration).
- James Tien (Systems Analysis).
- Larry Bell (Architecture, Industrial Design, Urban Planning).
- John Zeisel (Sociology, School Security Design).
- Richard Gardiner (Architecture, Urban Design).
- W. Anthony Wiles (Urban Planning).
- Charles Wellford (Criminology, Sociology).
- W. Victor Rouse (Urban Planning).
- George Rand (Psychology, Urban Planning).

The support of the Law Enforcement Assistance Administration has been a factor throughout and is greatly appreciated. Blair Ewing and Fred Heinzelmann of the National Institute of Law Enforcement and Criminal Justice provided essential support for the CPTED Program. Efforts of Lois F. Mock and other Institute staff are appreciated. Richard M. Rau and Richard M. Titus, initial and current monitors of the Program for LEAA, have contributed substantially to the effort by resolving problems and providing proper perspective between this program and other research activities.

Many members of the Westinghouse CPTED Consortium contributed to the initiation, development, and implementation of the demonstration. Particularly important roles were played by the following Westinghouse staff: Robert A. Carlston, Phase I Project Manager; Timothy D. Crowe, principal developer of the School Demonstration Plan; Larry S. Bell; Lewis F. Hanes; and W. Anthony Wiles; and Joseph W. Fordyce.

The Westinghouse consortium is indebted to many individuals from Broward County, Florida, for their invaluable assistance and support. Foremost among these are Joseph I. Grealy, Administrative Assistant to the Superintendent for Internal Affairs and local Director of the CPTED demonstration, and Charlotte Walker and T. Patterson of his organization; and Leon AlFord, local CPTED Coordinator, and Carol DeLuca of his staff. The list of school administrators, research professionals, staff, teachers, students, and law enforcement officials and other agency and private individuals who contributed would be unduly long. Therefore, they are acknowledged as a group for giving generously of their time and assistance.

In addition, we express our appreciation to James E. Maurer, Superintendent of Broward County Schools and Edward J. Stack, Sheriff of Broward County, for their help in obtaining funding for the CPTED project and for their continuing support. We also thank Ralph Turlington, Commissioner of the Florida Department of Education, for committing State matching funds for the CPTED project.

Many Federal and State of Florida officials provided guidance and assistance to this effort. Gratitude is expressed to all of them and especially to the Florida Department of Education and the Bureau of

Criminal Justice Planning and Assistance. Special recognition is given to the National Association of School Security Directors (NASSD) for providing its research data and close cooperation.

The following special acknowledgements are noted: Imre R. Kohn prepared Appendix A. The evaluation report -- which has been incorporated in Chapters 5 through 8 -- was prepared by Leonard Bickman and Ron Szoc, assisted by Marilyn Berger. Lynne Helfer Palkovitz prepared Appendix B, and helped prepare Chapters 1 through 4. All are Westinghouse staff members.

CHAPTER 1. INTRODUCTION

In May 1974, the National Institute of Law Enforcement and Criminal Justice (NILECJ), the research center of the Law Enforcement Assistance Administration (LEAA), announced the award of a contract to a consortium of firms headed by the Westinghouse Electric Corporation to launch a program known as Crime Prevention Through Environmental Design (CPTED).

From its inception, a major thrust of the Program was the development of real-world projects. Efforts to demonstrate the viability and utility of a wide variety of physical and social strategies for reducing crime and the fear of crime were undertaken. Three sites were selected for the environment-specific demonstration projects:

- Four public high schools in Broward County, Florida, for a CPTED Schools Environment Demonstration.
- A commercial strip corridor in Portland, Oregon, for a CPTED Commercial Environment Demonstration.
- An inner-ring suburban neighborhood in Minneapolis, Minnesota, for a CPTED Residential Environment Demonstration.

This report describes the process by which the schools environment demonstration project was carried out. Some preliminary results of that project, along with a discussion of the project's implications and some conclusions based on that discussion, are also presented. Many of the demonstration's activities were intended to be replicable for similar

schools environments throughout the country; others were specially tailored for implementation in the four specific Broward County, Florida, schools. Consequently, the overall effort was influenced by special requirements and constraints that were imposed by the site, as well as the national Program objectives.

1.1 Background of NILECJ/Westinghouse Program

The mandate for the 2-year, $2-million effort was to demonstrate the usefulness of defensible space concepts (discussed in the next section) in several areas through large-scale demonstration and evaluation projects in schools, residential, commercial, and transportation environments.* Research and dissemination activities were to play major roles throughout.

The principal objectives for the first 2 years of the Program were:

- To modify and expand the concept of defensible space, tailoring it for the unique characteristics of each demonstration.
- To select appropriate and cooperative local demonstration sites for each environment (the NILECJ mandate deliberately precluded the involvement of Federally assisted housing developments as CPTED demonstrations since Oscar Newman and others had focused on these environments).

*The transportation environment was later dropped from consideration as a separate demonstration site, although strategies focused on that environment were incorporated in the plans for the other demonstration projects.

- To develop general strategies for each environment and specific plans for each demonstration.
- To support the implementation of demonstrations and initiate an evaluation process for each.

The CPTED Program did not include the funding needed for implementation at the demonstration sites. Rather, Westinghouse assistance to the demonstration sites included grant development and other funds leveraging activities to help the sites secure implementation funding.

The Program concentrated upon predatory offenses against persons (criminal homicide, forcible rape, robbery, and assault) and property (burglary, auto theft, larceny, and vandalism).

The expectations for the CPTED Program during its first 2 years were overly optimistic. Early in the effort, it became obvious that the amount of scientific knowledge upon which the Program could be based was inadequate. Indeed, similar conclusions were being drawn at about the same time by others working in the field (e.g., T. Reppetto, R. Gardiner, and C.R. Jeffery).

The Westinghouse project team found the concept of defensible space, as defined in Oscar Newman's early work, to be too limited in scope for direct application in the Program environments. (Newman himself was beginning to seek ways to go beyond the narrow focus of his earlier work.) The degree to which physical design alone could be expected to generate strong proprietary attitudes in users of public environments was very questionable. For example, no design directives existed that could be

used to develop territorial feelings in the thousands of individuals briefly passing through a subway station.

When the limitations of the defensible space concept became clear, NILECJ directed the project team to develop an expanded and more comprehensive approach that would be more responsive and useful in a variety of environments. Through this effort, the CPTED concept of crime/environment analysis, comprehensive planning, and community involvement evolved.

There now was a more realistic assessment of what could be accomplished during the 2-year program. As a result of that assessment and a recognition of the merit of the work that had been accomplished in the period 1974-1976, NILECJ awarded Westinghouse a second-phase, 2-year, $2-million contract to carry the CPTED Program through July 1978. A final report will be produced that will build on the first phase's efforts and products but will focus on the policy, research, and programmatic implications of the activities since July 1, 1976. The report will be available in August 1978.

1.2 Background of CPTED

The CPTED concept highlights the interaction between human behavior and the physical environment in the battle against crime and the fear of crime. The two basic aims of CPTED are, first, to reduce opportunities for crime that often are inherent in the structure of buildings and the layout of school grounds and neighborhoods and, second, to promote changes in attitudes among the population at risk. By reducing the apparent opportunity for crime, people should be less fearful of moving freely about their environment. The assumption underlying these aims is that physical

changes can have their maximum impact on crime and the fear of crime only when the user population actively supports and maintains the changes and aids in the detection and reporting of crimes.

The elements that comprise the CPTED concept are not new. They are perhaps as old as the discovery that the environment influences human behavior and perceptions. However, contemporary interest in the role of the manmade environment in creating or reducing opportunities for crime has been stimulated by research and social action policies developed during the past 20 years. In the 1960's, concern about the detrimental effect of urban renewal programs led many to study the psychic and social costs of rebuilding environments, particularly with respect to a diminished sense of security among residents. Elizabeth Wood studied public housing projects and emphasized the importance of physical design in allowing residents to exercise control over their environment. She supported designing for natural surveillance by residents through visible identification of a family and its home, and through enhanced visibility of public spaces.

Oscar Newman supported Wood's ideas by showing that physical design features of public housing affect the rates of resident victimization. These design features included building heights, number of apartments sharing a common hallway, lobby visibility, entrance design, and site layout. His research also indicated that physical design can encourage citizens to assume behavior necessary for the protection of their rights and property. These concepts led, in Newman's terminology, to the development of defensible space design principles for housing complexes.

Jane Jacobs applied many of these same design principles to urban planning. In her view, the essentials for crime prevention were a sense of community cohesion, feelings of territoriality, and responsibility for one's "turf." Continuous street surveillance would be a natural by-product of residents' and shopkeepers' desire to control the nature of use and treatment of their environment. She further contended that neighborhood land uses should be more diversified to create more opportunities for natural surveillance and encourage the development of stonger social control networks.

Since then, several people have focused on urban design and crime. Shlomo Angel, for example, developed the critical-intensity-zone hypothesis: Public areas become unsafe not when there are either few or many potential victims present but when there are just enough people on the scene to attract the attention of potential offenders, but not enough people for surveillance of the areas. He suggested alteration of physical configuration to concentrate pedestrian circulation and, thereby, eliminate critical intensity zones.

In 1969, the U.S. Senate Select Committee on Small Business began the investigation of Crimes Against Small Business, which influenced the course of target hardening, crime insurance, and police patrol for the next 5 years. In 1970, NILECJ funded six major studies that began the integration of the CPTED-related areas of target hardening, architectural and city planning design, and community cohesion. At the same time, criminologists such as C. Ray Jeffery and Thomas Reppetto focused on the role of the physical environment in fostering or discouraging crime. Jeffery

pointed to the need for more research on the relationship between crime and the environment, and Reppetto concluded in his study of residential crime that future research should be directed towards the development of a crime prevention model that would blend together the deterrent effects of the criminal justice system and citizens' anticrime efforts. He suggested that improved environmental design might be the most effective way.

In 1971, the ideas of Jacobs and Newman were expanded upon in the Rand reports, Public Safety in Urban Dwellings and Vertical Policing Programs for Highrise Housing. At the same time, HUD initiated its Federal Crime Insurance Program and NILECJ developed Minimum Building Security Guidelines. In 1972, significant publications and reports included Newman's Defensible Space, NILECJ's Architectural Design for Crime Prevention, Harry Scarr's Patterns of Burglary, and Rand Corporation's Private Police in the United States. The HUD/LEAA interagency committee on Security in Public Housing was also formed.

In 1973, the CPTED approach crystalized with the announcement of NILECJ's intention to inaugurate comprehensive CPTED programs in residential, transportation, public schools, and commercial environments. Additional data and theory contributing to the CPTED framework came from five major NILECJ-supported reports concerning robbery (Feeney), burglary (Part II, Scarr), street crime (Malt), urban housing (Reppetto), and residential security (Sagalyn). Related developments included HUD's conference on security in housing, and Newman's publication, Residential Security.

Finally, as the Westinghouse Consortium began the NILECJ CPTED Program in 1974, project evaluations of a Kansas City streetlighting program indicated successful results; a Hartford CPTED program was pushing forward; and Newman's Design Directives for Achieving Defensible Space was completed.

1.3 The CPTED Approach

The primary emphasis of the Westinghouse/CPTED Program is on strategies (or solutions) that are designed to reinforce desirable existing activities, eliminate undesirable activities, create new activities, or to otherwise support desirable use patterns so that crime prevention becomes an integral part of the specified environment. There are four operating hypotheses that provide the underlying rationale for all CPTED implementation strategies.* They are: Access control, surveillance, activity support, and motivation reinforcement.

Access control strategies focus on decreasing criminal opportunity by keeping unauthorized persons out of a particular locale. In its most elementary form, access control can be achieved in individual dwelling units, school buildings, or commercial establishments by use of adequate locks, doors, and similar target-hardening installations. Access control can also be achieved by the creation of psychological barriers, such as signs, parkways, hedges -- in short, anything that announces the integrity and uniqueness of an area.

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*Appendix A outlines the overall theoretical framework.

The primary aim of *surveillance* strategies is not to keep intruders out but to keep them under observation. Such strategies are hypothesized to increase the perceived risk to offenders, as well as the actual risk *if* the observers are willing to act when potentially threatening situations develop.

A distinction can be made between organized and natural surveillance. Organized surveillance is usually carried out by police patrols in an attempt to project a sense of omnipresence (i.e., to convey to potential offenders the impression that police surveillance is highly likely at any given location). In some instances, surveillance can be achieved by mechanical techniques such as closed-circuit television (CCTV) or alarms.

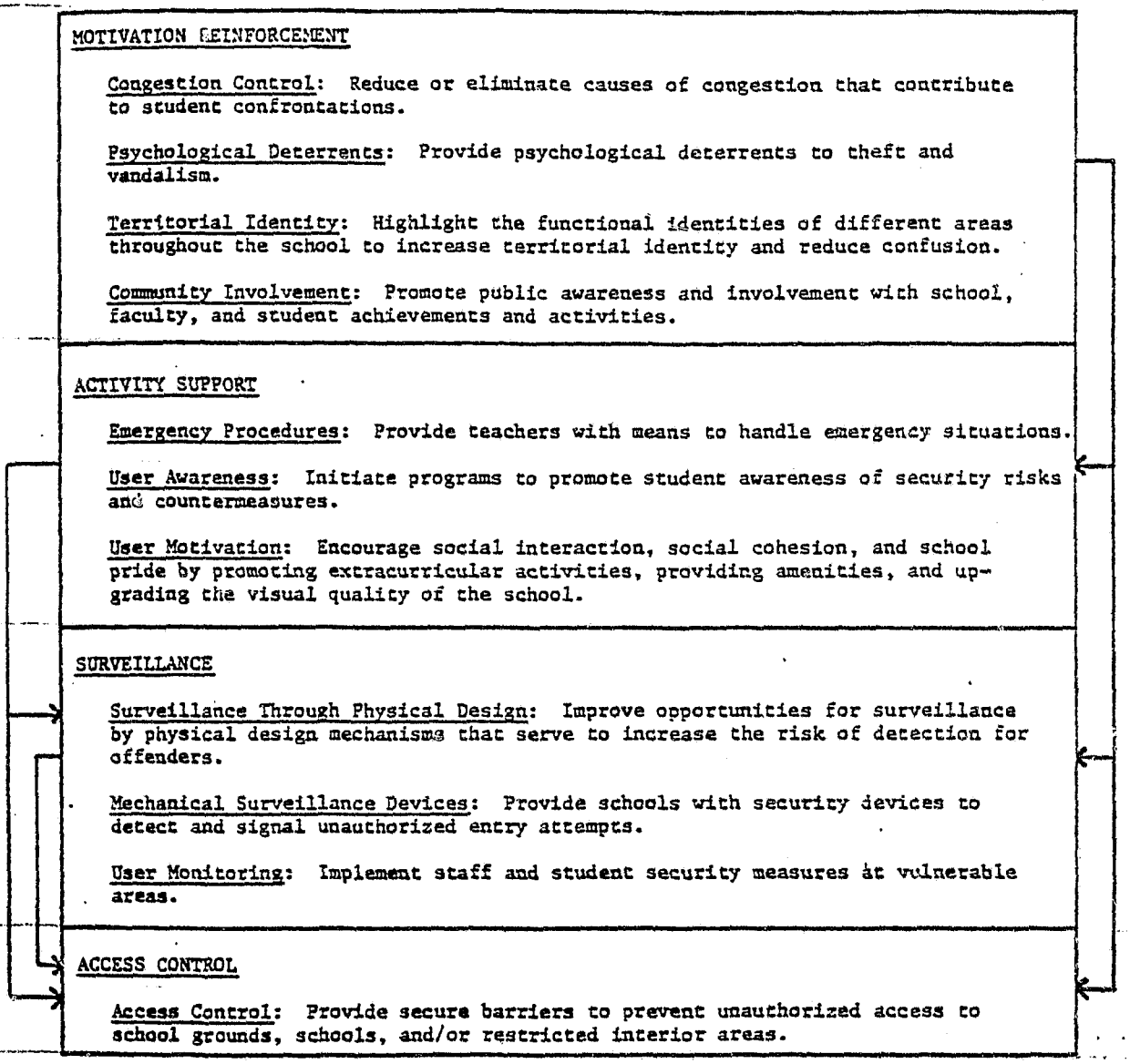
Natural surveillance can be achieved by a number of design strategies, such as channeling the flow of activity to put more observers near a potential crime area or creating greater observation capacity by installing windows along the street side of a building. This technique of defining spaces also is hypothesized to convey a sense of ownership and territorial concern to legitimate users.

Activity support involves strategies for reinforcing existing activities or adding new ones as a means of making effective use of the built environment. This is based on the observation that, in a given school system or community, there are often resources and activities capable of sustaining constructive community crime prevention. Support of these activities is hypothesized to bring a vital and coalescing improvement to a given community and result in a reduction of the vulnerable social and physical elements that permit criminal intrusions.

In contrast to access control and surveillance strategies, which concentrate on making offenders' operations more difficult, *motivation reinforcement* strategies seek to affect offender motivation and, hence, behavior relative to the designed environment by increasing the perceived risk of apprehension and by reducing the criminal payoff. These strategies also seek to positively reinforce the motivation of citizens in general to play a more active role by enhancing the community's identity and image.

Territorial concern, social cohesion, and a general sense of security can result from strategies that alter the scale of a large, impersonal environment to create one that is smaller and more personalized. They also can result from improvements in the quality of an environment by such measures as upgrading the housing stock, the school facilities, or the interiors of subway cars; organizing occupants; or changing management policy. These strategies can improve not only the image the population has of itself and its domain but also the projection of that image to others. The definition and raising of standards and expectations are hypothesized to decrease social estrangement as well as the motivation for criminal behavior.

The four key operating hypotheses provided the basis for specifying project objectives for each of the demonstration environments. Figure 1-1 presents the objectives for a CPTED project that focuses on the schools environment. In turn, the objectives provide the basis for the selection of strategies. Although they cannot be neatly categorized because many strategies include a combination of approaches, the strategy selection process draws upon the following types of proposed solutions:



The four key hypotheses are not mutually exclusive. Surveillance objectives also serve to control access; activity support involves surveillance; and motivation reinforcement provides support for the other three hypotheses.

Figure 1-1. Relationship of Schools Environment Objectives to CPTED Operating Hypotheses

- Physical Strategies -- Create, eliminate, or alter physical features that affect criminal actions, for example, by providing special barriers to impede undetected access. This could be achieved by strategies such as installing grilles on ground floor windows; cutting down concealing shrubs; fencing off bicycle compounds and either locking them or providing monitors to restrict access to students with permits during specified periods.
- Social Strategies -- Create interactions among individuals. An example is to promote extracurricular or activities, to involve the students in creating or constructing amenities and in upgrading the visual quality of the school. Activities that highlight crime prevention awareness can play a major role.
- Management Strategies -- Have a policy and practice thrust. One management strategy is to allocate resources for amenities such as snack facilities and lunch-hour movies or dances, and revoke privileges if breakdown of self-control occurs. Another type of management strategy would be to provide for teachers on monitoring assignments at bus loading zones to direct the movement and limit the number

of students who can enter the areas at a given time.

- Law Enforcement Strategies -- Concern both public police support and private security forces. One strategy in this category is to increase police patrol around the school grounds, particularly the use of private guards especially trained in the unique requirements of the schools environment.

1.4 The CPTED Project

Each CPTED project involves four phases: Site Selection or Policy Determination, Project Initiation and Organization, Project Planning, and Project Implementation. Within each of these phases, a series of planning and implementation guidelines is relevant (see Figure 1-2). Each phase of the process can be viewed as a major decision point that affects decisions to be made during later phases. In actual practice, however, the decisions and activities associated with each phase do not follow any consistent sequence. For example, policies must be reanalyzed continually to take into account changing circumstances. The same holds true with respect to the need for continual reorganization, replanning, and reconsidering implementation strategies for the CPTED activities.

- Site Selection/Policy Determination Phase -- Determines the applicability of CPTED principles for local issues and concerns. Provided that CPTED is applicable, local planners and decision-makers must specify the objectives and scope

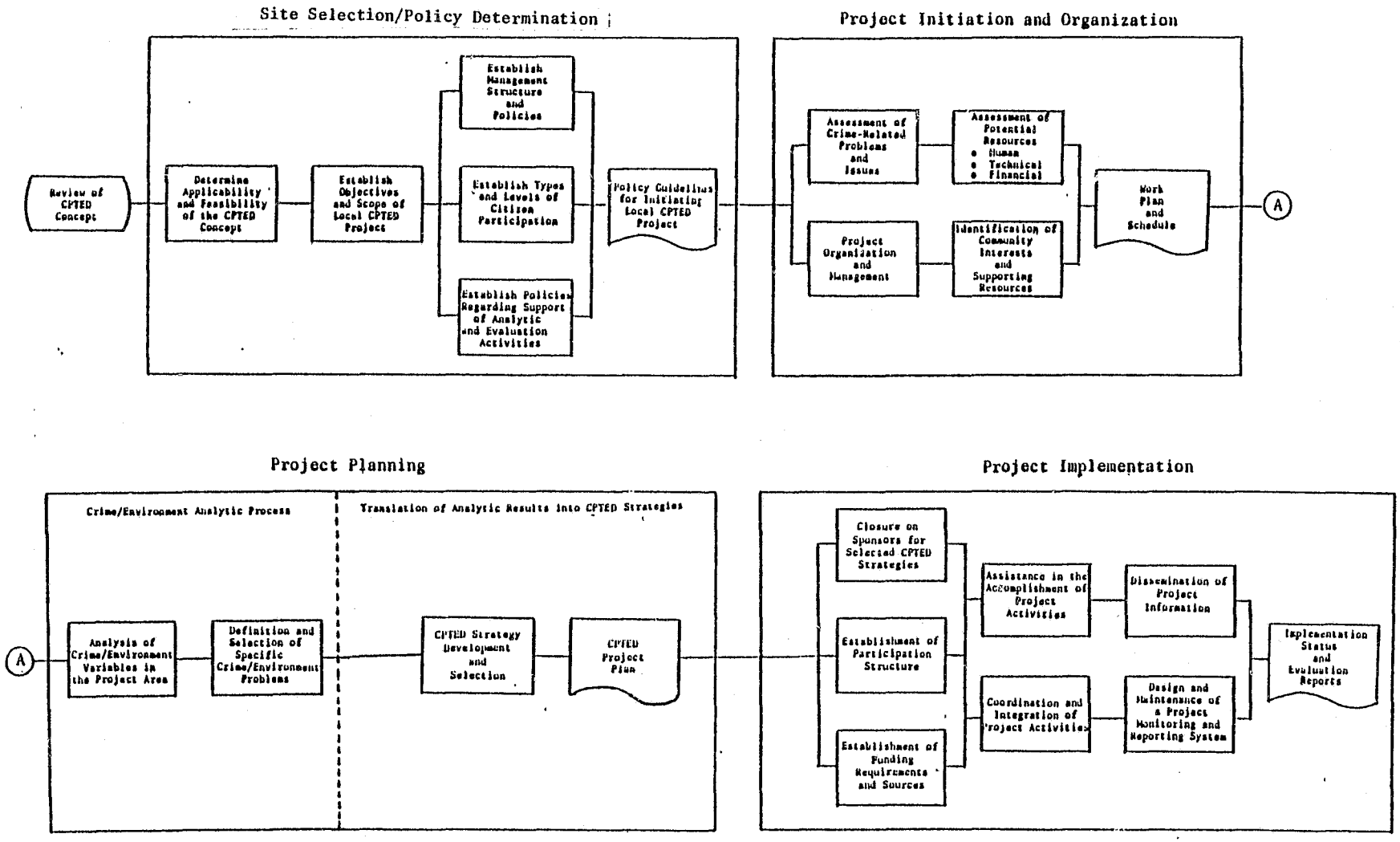


Figure 1-2. CPTED Planning and Implementation Process

of the CPTED project, determine the location and size of the project site, and determine major organizational requirements (e.g., project management, citizen participation, and available resources).

- Project Initiation and Organization Phase -- Defines analytic needs regarding key problems and issues, defines project objectives and requirements, organizes the project planning team and its operating procedures, identifies community interests, and develops the overall work program and schedule.
- Project Planning Phase -- Includes a series of analyses that narrow the crime and fear problems to a point where they can be treated by CPTED, and provides insight into factors that contribute to the defined crime/environment problems. During this phase, a CPTED project plan is produced that specifies the strategies, directives (the means by which a given strategy can be fulfilled), methods of implementation, and funding for the alleviation of selected problems.
- Project Implementation Phase -- Comprises a series of activities that produce the construction of the

physical portion of CPTED strategies and the carrying out of other programmatic activities. Note that project evaluation tasks, initially cited in the Site Selection/Policy Determination Phase, are included in this phase. To be adequate, evaluation considerations must be included throughout the planning and implementation process.

The CPTED evaluation design addresses three general issues:

- Was the project initiated effectively?
- How well were the project plans implemented?
- Did the project meet its stated goals?

The Broward County Schools Demonstration project that is described in the following chapters gives real-world substance to the CPTED conceptual approach and project development.*

*Appendix B presents a chronology of developmental activities and project highlights.

CHAPTER 2. SITE SELECTION

2.1 The Schools Environment

The schools environment was chosen as a general category for the CPTED Program in part because school crime is a recognized national problem engendering increasing concern on the part of governmental, school, public, and media representatives. Analysis of data sources indicated that schools are places where burglary, vandalism, assault, robbery, theft, and extortion are of serious magnitude, and fear of crime has a debilitating influence on the schools population. As such, the objectives of a CPTED Schools Demonstration were to implement and test CPTED strategies in a representative school system, for the purpose of raising the level of personal security and the quality of life in the schools environment through the reduction of crime and fear.

2.2 Site Selection Criteria

In assessing the CPTED potential of a schools demonstration, the consortium used three kinds of criteria: Crime-related, environment-related, and program-related. Table 2-1 lists the topics covered in each of these areas. The following points were considered to be particularly relevant:

- The target site should have a sufficient level of crime and fear to justify a CPTED effort and must be amenable to CPTED time and cost factors.
- The types of crime problems found within the target site should be those than can be alleviated by CPTED.

TABLE 2-1

Demonstration Site Selection Criteria

Crime-Related	Severity (Numerical Incidence, Incidence Rate or Calculated Risk, Dollar Loss)
	Fear (Attitude Surveys, Indirect Measures)
	Environmental Patterns (Temporal, Geographic, Specific Locale, Modus Operandi)
	Offender/Victim Profiles (Individual Background History, Offender/Victim Relationship)
	Displacement Potential (Temporal, Tactical, Target, Territorial, Functional)
Environment-Related	Number of Sites
	Population at Risk (Potential Victims)
	Social Dependency (Provides Essential Services)
	Value at Risk
Program-Related	Amenability (to CPTED Strategies)
	Implementability (within time and cost -- including leverage -- constraints)
	Evaluability (within time and cost constraints)
	Impactibility (with respect to institutionalization and to crime and fear reduction)

- There should be readily available crime and environment data. Generally, the delineation of crime/environment problems will involve analysis of the relationship between various aspects of crime problems and physical, social, and economic variables.
- The selected site should have strong support and interest from school system decisionmakers. There should be an agreement-in-principle with a local school official (e.g., Superintendent or Board of Education member) who is willing and able to be an advocate for the program. In addition, various public or private organizations and agencies should be committed to improvements in the site area.
- Supportive programs should be underway or planned for the target site. These programs could provide funding assistance and expand the scope of CPTED strategies.
- The site selected and the model designed for each CPTED target should facilitate evaluation.
- Lessons learned from the CPTED evaluation should be transferable to other school systems, therefore the site selected should be to some extent physically and demographically typical.

2.3 Public Secondary Schools

Based upon an analysis of crime data and the application of the selection criteria, public secondary schools were selected for the CPTED Schools Demonstration. Elementary schools were eliminated based upon a low degree of crime and fear present; special schools were eliminated because of their relatively few sites and persons at risk; secondary and postsecondary (college and university) institutions were retained as potential Demonstration sites. Of the two, secondary public school systems were given primary consideration since they far outnumber colleges and universities and have a much larger population at risk, and the presence at school of a large portion of the secondary school population is dictated by law.

Both inner-city and suburban school sites were considered for the Demonstration. Although they have the most severe crime problems, inner-city school systems were eliminated primarily because their generally older, two- to three-story construction was deemed less likely to be the model for new construction and, therefore, less likely to provide CPTED results that could be incorporated in new design recommendations. Also, their location in a higher density environment, with its greater variety of nonschool variables impinging on a school's day-to-day activities, would make the development of a CPTED Demonstration with even quasi-experimental controls more difficult.

2.4 The Broward County, Florida, Schools

After the preliminary selection of suburban public high schools had

been approved by NILECJ, and based upon several site visits and other communications, the consortium identified the Broward County, Florida, system as the prime candidate. Its comparative advantages included the following:

- The school system was undergoing rapid but decelerating growth, reflecting the growth patterns of similar suburban counties.
- The Florida Safe Schools Act and the Standard School Facility Construction Act provided opportunities for widespread replication of successful CPTED strategies to optimize program impact. The problem of school crime had been recognized at both the State and local level.
- The school system maintained a superior crime reporting system and data base.
- School administrators and staff representatives interviewed during the course of site visits were open and aware in acknowledging and dealing with crime problems.
- Probably most important, numerous resource people pledged support for a Demonstration effort. (*Cooperation* was an essential ingredient in the site selection process. Since the CPTED Schools Demonstration project was based on improving normal support functions of the schools, increasing

aesthetic appeal, and providing better design support for activities, the users' involvement in the total process was required to gain acceptance and support for the changes. Within CPTED guidelines, the changes had to reflect the interests of the users.)

The Broward County School System has an elected Board and a Superintendent. It is divided into four geographic areas, each headed by an assistant superintendent and supported by an advisory committee of students and parents who participate in goal-setting and program development. The school system has a Department of Internal Affairs, which is responsible for security and safety, and numerous other departments and programs that could support the CPTED Schools Demonstration. The School Board employs more than 14,000 persons and has an annual payroll in excess of $92 million. Its operating fund in 1974-75 was over $162 million.

School enrollment was about 137,000 students, nearly one-third of whom were in secondary schools. Although enrollment forecasts suggested smaller incremental increases than in the past decade, the school population was expected to grow by approximately 10,000 students during the next 4 years. Approximately 22 percent of all students were black, with both black and white students bused to maintain an approximately 80-to-20 white-to-black ratio.

The schools in the system, which reflect design features incorporated in most U. S. schools, are of two types: The open, one-story building on

a large campus, and the standard two-story building with double-loaded corridors and internal stairwells. Twenty-one new schools were proposed for construction, including three middle and four high schools.

Broward County and its principal city, Fort Lauderdale, were areas of increasing crime, with person-to-person crimes growing faster than the State average and property crimes being the largest contributor to total offenses. Crime in Broward County schools had been well-documented since 1969-70, and recent data were computerized. The Internal Affairs department of the school system handles crime reporting and security (and safety) matters. In 1974-75, it handled 3,092 incidents, an increase of 77 percent over 1971-72.

2.5 Local Agreement-in-Principle

September 1974 was an active month in Broward County's selection for the Schools Demonstration. During a September 10 visit, mutual interest was noted and expanded among representatives of the consortium and members of the school system's administrative and security departments. The latter included the Internal Affairs Director whose position as President of the National Association of School Security Directors suggested that a Broward County CPTED Demonstration project could have great potential for nationwide dissemination.

Later that month, the tentative agreement-in-principle was reaffirmed and buttressed. The Broward County School Board approved a recommendation submitted by the Director of Internal Affairs that a CPTED Demonstration be undertaken in the school system.

It is important to understand that, when the Westinghouse-CPTED consortium presented the idea of launching a demonstration program to the Broward County representatives during initial meetings, there was no model to present as an example of what might be expected. CPTED was a new program based largely upon theories and narrowly focused case studies advanced by criminologists, behaviorists, and environmental specialists. The aim was to create a planning model that would take into account local problems, priorities, and resources, as well as opportunities to evaluate the implementation of CPTED strategies. The consortium would provide expertise to develop a plan (reflecting local inputs and interests), supply technical assistance to operationalize the plan, and work to ensure competent and objective evaluation of the results. In other words, the demonstration was to be, in a very real sense, a locally financed and managed program, predicated on reasonable assumptions that CPTED was sound in principle.

Consortium representatives met with a wide variety of people who directly or indirectly affect (or are affected by) educational activities and processes to gain information about perceived problems, conditions, attitudes, and priorities. Included were students, administrators, teachers, physical plant staff, and security personnel. Diverse insights and viewpoints that were expressed during these meetings, coupled with statistical data supplied by school officials and onsite observations by consortium members, provided the foundation for planning and evaluating strategic alternatives for each Demonstration school. The active cooperation confirmed Broward County's preliminary selection for a CPTED

Demonstration and reinforced the consortium's positive appraisal. NILECJ approval soon followed.

2.6 Selection of the Demonstration Schools

Eight of the twenty Broward County high schools were to be selected as Demonstration schools on the basis of three important types of criteria: Representativeness, crime severity, and potential cooperation. With guidance by the consortium, these criteria were applied by staff of the Internal Affairs department and members of the Broward County School Board, leading to the selection of four experimental schools (i.e., Deerfield Beach, South Plantation, Boyd Anderson, and McArthur) as host sites for strategy implementation, and four matched control schools.* Each group would contain one "old," or tropical, architectural style school composed of a one-story building spread out on a large campus connected by open, usually single-loaded, corridors; and three "new" style schools that are a standard style consisting of a two-story structure with double-loaded corridors and internal stairwells.

The Demonstration schools were selected because their designs are *representative* of schools both countywide and nationally in terms of crime, environment, and programmatic considerations. The crime data for the Demonstration schools for school years 1973-74 and 1974-75 were combined with data generated by onsite visits, interviews, and analysis of case

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*Subsequent evaluation considerations resulted in the decision to drop the notion of having four matched control schools. Instead, the 16 non-experimental high schools became comparison schools. The fact that survey data could be collected in all 20 schools was a major factor in this decision.

records to support the selection of CPTED crime environments for the Schools Demonstration project.

2.6.1 Deerfield Beach High School

Deerfield Beach High School is located in a mixed residential area near the western boundary of the City of Deerfield Beach. This area is composed of lower and lower-middle class socioeconomic level families who provide the majority of the high school population.

The Deerfield Beach High School student body, as reported in their June 1977 Progress Report, is comprised of 1 percent American Indians, 26.1 percent Black, non-Hispanics, 2.9 percent Hispanics, and 70.8 percent White, non-Hispanics. Among Broward County high schools, Deerfield Beach ranks sixteenth in percentage of attendance. Three-hundred eighty-eight suspensions were issued in the 1976-1977 school year. Total student population was 2,380.

As measured by a national standard achievement test, the school's academic standing is below average (-.7 for ninth grade, -.4 for tenth grade, and -.6 for eleventh grade). For the ninth grade, results stayed the same between 1976 and 1977; for the tenth grade, scores were higher in 1977 than in 1976; and for the eleventh grade, scores dropped by .2.

Total Deerfield Beach High School expenditures in 1977 were reported to be $2,556,153, with approximately $1,023 spent per pupil.

2.6.2 South Plantation High School

South Plantation High School is located near the southern border of the City of Plantation. The location is isolated on three sides by highways and is separated from a residential area on the fourth side by

a distance of nearly two city blocks. The student body of South Plantation comes primarily from middle to upper class socioeconomic level families, and the student achievement level is above average. In their June 1977 Progress Report, South Plantation High School reported an enrollment of 2,579 students, comprised of .3 percent Asian students, 18.9 percent Black, non-Hispanic students, 1.4 percent Hispanic students, and 79.4 percent White, non-Hispanic students. Ranking eighth in percentage of attendance among high schools in Broward County, South Plantation has an average daily total of 91.8 percent students in attendance, with Whites attending slightly more often than Blacks. In the 1976-1977 school year, 178 students were suspended.

The ninth grade students scored .6 higher than the national averages on standardized achievement tests, while the 10th-graders scored .9 higher and the 11th-graders scored 1.4 higher. Of the four project schools, only South Plantation's averages were above the national average. Ninth and tenth grades dropped slightly in their test scores between 1976 and 1977, while the 11th grade scores remained the same.

The total budget allocation for South Plantation in 1977 was $2,496,422.

2.6.3 Boyd Anderson High School

Boyd Anderson is located in the City of Lauderdale Lakes. The high school shares its physical site with two other county schools--a middle school and an elementary school. The main access to the school is channeled through the middle of the county property housing the three schools, thereby

isolating more than half of the high school from natural surveillance. The side and rear portions of the high school are bordered by mixed residential housing inhabited by lower to lower-middle class families that supply most of the students to Boyd Anderson. Information gathered from the Boyd Anderson High School June 1977 Progress Report indicated that the school is attended by 2,413 students. Boyd Anderson emphasizes curriculum in the basic skills to ninth, tenth, and eleventh graders, in vocationally and career-oriented programs. The student body of Boyd Anderson is comprised of over 30 percent Blacks, and a small percentage of other minorities (.8 percent Hispanic, .3 percent Asian), and 68 percent Whites.

Among all 20 Broward High Schools, Boyd Anderson ranks eighteenth in student attendance. Blacks had better attendance records (90.4 percent) than Whites (87.9 percent).

The school's academic standing, as measured by a national standard achievement test, is slightly below average for the eleventh grade (-.2), drops further for the tenth grade (-.4), and is -.6 below average for the ninth grade. From 1976 to 1977, the test results for ninth and tenth grades dropped, while for the eleventh grade, scores remained the same.

Boyd Anderson employs over 100 faculty and staff pesonnel. In 1977, the Boyd Anderson budget reflected total expenditures of $2,394,720, which equals approximately $967.95 per student.

Boyd Anderson's Advisory Committee, comprised of parents, teachers, and students, meets with the administration each month to encourage improvement in the relationship between school and community and to support betterment of student rapport among themselves.

2.6.4 McArthur High School

McArthur High School is located on the western boundary of the City of Hollywood. McArthur is surrounded by residential areas on three sides and a commercial strip along the fourth side. The majority of the students at McArthur come from middle-class homes within the immediate vicinity of the school.

As noted in the school's June 1977 Progress Report, the 2,453-person student body of the 25-year-old McArthur High School is comprised of 3 percent Asians, 11.2 percent Black, non-Hispanics, 3.3 percent Hispanics, and 85.2 percent White, non-Hispanics. McArthur ranks second in the county in percentage of attendance among high schools, with Whites attending slightly less than Blacks. McArthur's administration credits their attendance project, initiated in 1975, with the success of their ranking status.

Grade 11 scored .5 less than the national average on grade scores (as measured by a national standard achievement test); grade 10 scored .1 less, and grade 9 scored .3 less.

Although total expenditures in 1977 were reported to be $2,683,456, from 1971-1977, only 1.6 percent of the county's total capital outlay expenditures were spent at McArthur. Lack of additional facilities is a major problem due to the large growth in student population since the school was built.

In summary, each of the four project schools is attended by over 2,300 students and has a high percentage in attendance (91.32 percent average). Whites comprise the greatest percentage of students (76 percent

average), and achievement test averages are slightly lower than the national average for Boyd Anderson, Deerfield Beach, and McArthur, while they are slightly higher for South Plantation.

CHAPTER 3. PROJECT INITIATION AND ORGANIZATION

3.1 Introduction

The Project Initiation phase of the Broward County demonstration project was basically concerned with three major areas:

- Assessment of crime-related problems and issues.
- Assessment of potential resources and support programs.
- Organization of the CPTED planning team and effort.

The results of these activities formed a basis for the establishment of project objectives and management. They also formed the basis for determining crime/environment targets, establishing the general scope and direction of the project, and suggesting the human, technical, and financial resources that might be tapped by the project.

The initiation phase got underway in September 1974 when the possibility of a CPTED demonstration project was introduced to the Broward County School System. In early attempts to communicate the CPTED idea, the Consortium had extensive contacts with a number of agencies and offices, including the following: Broward County School System Internal Affairs Office, Broward County Board of Education, Broward County Crime Commission, Florida State Department of Education, Florida State Governor's Commission on Criminal Justice, and the LEAA Regional Office. One of the purposes of these meetings was to generate political and financial support for the CPTED-based crime prevention strategies.

3.2 Crime-Related Assessments

During the same period, consortium members visited the selected schools and formalized their impressions of the crime problems, enabling the development of a preliminary plan. This work plan documented the distribution of criminal activities in the school environments and suggested well-defined crime preventive strategies and design directives to address the problems.

The detailed crime environment analysis conducted at the selected schools led to a preliminary demonstration plan that focused primarily on assault, breaking and entering, theft, and vandalism. In 1974-75, there were 1,776 of these incidents in the secondary schools; of these, 530 occurred in the four demonstration schools. The primary target sub-environments were school grounds, parking lots, lockers, corridors, restrooms, and classrooms.

The *school grounds* crime problems were assaults, bicycle thefts, breaking and entering, and vandalism; the *parking lot* crime problems were assaults, breaking and entering, thefts, and vandalism; the *locker room* crime problems were breaking and entering, and theft; the primary *corridor* crime problem was assaults; the *restroom* crime problems were assaults and extortion; and the *classroom* crime problems were assaults and theft.

3.3 Proposed Activities and Participants

The assessment of crime/environment problems, resources, and potential funding sources was a joint activity. The inputs of Broward County School officials, law enforcement personnel, and the like were pulled together

by the consortium. The result was a preliminary demonstration plan that formalized the project's Initiation and Organization phase. The plan proposed CPTED strategies, project participants, and potential funding sources to support implementation. Some of the highlights of the plan are noted below.

3.3.1 Proposed CPTED Strategies

The preliminary demonstration plan was designed to impact burglary, larceny, vandalism, assault, and extortion, and the fear of crime in the schools environment. Although the majority of the strategies were to focus on the immediate school complex, several strategies were developed that would extend into the neighborhoods surrounding the schools. These areas were included since school crime also involves the locations where students board buses.

Two strategic models were proposed:

- Perimeter Control Model -- This strategic model was designed to secure the school building and internal areas against burglary and larceny of school property, and was expected to impact on vandalism and larceny of personal property. The major features of this model were strategies that would deny or increase the difficulty of entry at diverse points of the schools environment, including the following:
  - External target hardening, e.g., better locks on gates, doors, and windows.

- Intrusion detection alarms, including efficient monitoring and rapid response system.
- Module target hardening.
- Vaults for high-value property.
- 24-hour surveillance.
- TV surveillance.
- Property indentification to increase the difficulty of disposing of stolen goods.
- Student monitors.
- Fenced compounds.

- Social Cohesion Model -- This strategic model was designed to impact on vandalism. The primary thrust of the model was to influence attitudes of students, teachers, other school personnel, and parents regarding their sense of affiliation with the school. It was hypothesized that a change in attitudes reflecting an increased sense of school affiliation would result in a reduced rate of person-to-person crimes. Potential offenders would be less inclined to commit crimes because of increased school spirit, peer pressure, and number of people willing to intervene and report the incident. The actual and perceived reduction in person-to-person crimes and the activities associated with the following social cohesion

strategies were expected to reduce fear and anxiety:

- Extracurricular scheduling.
- Easily surveilled transportation depots for students participating in extracurricular activities.
- Alteration of teacher planning areas to prevent multiple access and increase natural surveillance.
- Safe schools advisory committees.
- Installation of two-way communication system in selected buses.

3.3.2 Proposed Participants

The schools environment, particularly that of Broward County, is characterized by a diverse group of knowledgeable individuals who could provide valuable input and play a major role in the implementation of a CPTED schools demonstration. As such, it was recommended that the majority of the schools demonstration plan be implemented by the Broward County School System, with minimal assistance from other local agencies. The following resources and personnel were available within the system:

- Design -- Architects, planning coordinators, construction supervisors, draftsmen.
- Social -- Exceptional child educators, evaluators and testers, guidance counselors.
- Media -- Instructional television, audio-visual, graphics, and other related disciplines.
- Security -- Office of Internal Affairs and School Resource Personnel.

- Management -- Computer specialists, programmers, key-punch operators, records specialists.
- Participation -- Neighborhood Advisory Committees, PTA, teacher organizations, parents, and student groups.

3.3.3 Potential Funding Sources

The process of identifying potential funding sources for the CPTED project was initiated at the start of the program, when broadly based contacts were made through public interest groups, professional organizations, and through research into State and Federal acts and programs that might provide potential funding. With the narrowing of definition of the schools demonstration to the Broward County School System, possible funding sources at the Federal, State of Florida, and Broward County levels were specified. This type of investigation was expected to be an ongoing process, since funding is responsive to economic activity at all levels of government, and is particularly sensitive to new acts that are created and to old ones that are deleted. The following is a synopsis of then current funding potentials for the schools demonstration in the Broward County School System:

- Federal Level:
  - Law Enforcement Assistance Administration.
    - -- CPTED Project.
    - -- Juvenile Justice and Delinquency Prevention Act.

- Health, Education and Welfare.
  - -- Elementary and Secondary Education Act (Section 825 and Title II).
  - -- Emergency School Assistance Program.
  - -- National Center for Education Statistics.
  - -- National Defense Education Act (Title III), Office of Youth Development.

- State/Regional Level:
  - LEAA Discretionary.
  - State of Florida.
    - -- Department of Education.
    - -- Department of Community Affairs.
    - -- Facility Construction Program.
    - -- Governor's Commission on Criminal Justice Standards and Goals.
    - -- Governor's Crime Commission on Crime Prevention.
  - South Florida Regional Planning Council (Region 10).

- Local Level:
  - Broward County.
    - -- Criminal Justice Planning Council.
    - -- Area Planning Board.
    - -- School System.

-- County Commission.

-- Law Enforcement Agencies.

- Other:
  - Ford Foundation.
  - Kettering Foundation.
  - Key Industries (e.g., Bell Telephone, Florida Power and Light).

3.4 Proposed Project Schedule

Figure 3-1 presents the overall work program and schedule that was proposed to Broward County officials. Its implicit assumption was that the project should be "in place and operating" early enough that an impact evaluation could be completed prior to termination of the NILECJ/Westinghouse Program which, at that time, was scheduled to be a 2-year effort.

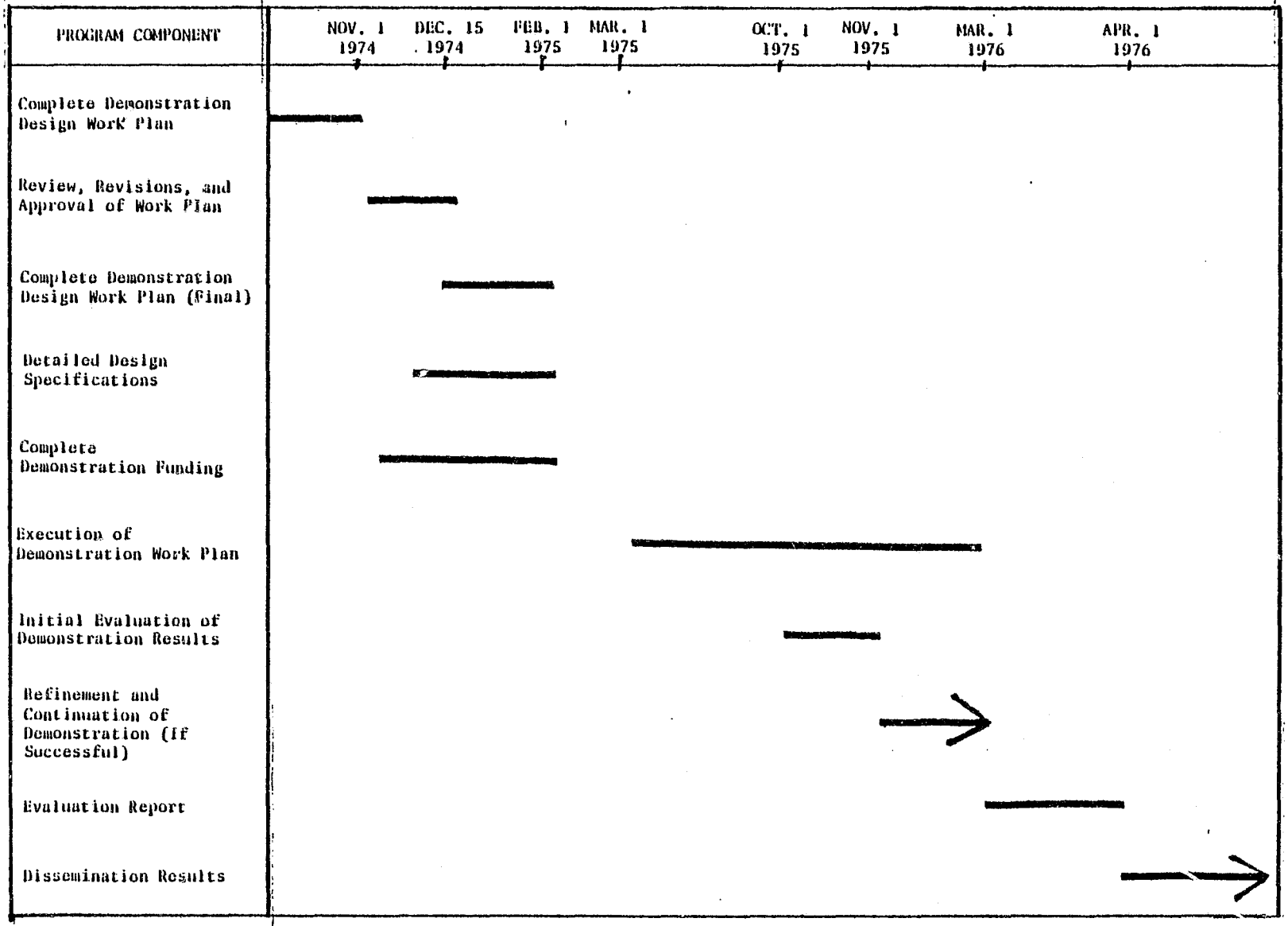

Figure 3-1. Proposed Planning and Implementation Schedule

CHAPTER 4. PROJECT PLANNING

4.1 Introduction

The Project Planning phase of the Broward County demonstration project had similar broad concerns as the Project Initiation and Organization phase, except that now the primary issue was to use the real-world reactions to the preliminary demonstration plan to establish the step-by-step activities and responsibilities that would enable project funding to be obtained.

4.2 Crime/Environment Analyses

4.2.1 Deerfield Beach High School

Deerfield's most serious crime problems were theft and breaking and entering, which were second highest of the eight schools. Interviews with school officials and students indicated that the theft problem was higher than officially reported because of a large number of petty thefts that went unreported. These petty thefts occurred in the physical education locker area. Because of a low clearance rate for this type of offense and low dollar value in losses, most of these cases were handled unofficially. Assaults (and fear of assaults) in exterior fire stairwells and trespassing to sell drugs or to vandalize the school grounds were of concern to school officials and students. Vandalism reporting procedures revealed that this offense occurred more frequently than was officially reported. Petty vandalisms were rarely investigated or reported since they involve small damage costs and their clearance rates are low.

Compared to other schools of like design, Deerfield had a low rate of personal crime -- assaults and extortions. The preliminary evidence gathered by the research team suggested that the social control system at Deerfield was capable of overcoming the physical design impediments (e.g., blind spots, misused and isolated spaces) that supported personal crimes that were occurring in other schools of similar physical design. The strong social control at Deerfield manifested itself in a clear and consistent policy regarding the role of teachers and staff in the supervision process; an apparent open line of communication among teachers, staff, and students; and a high level of morale and school spirit.

However, the social environment at Deerfield did not control the problem of thefts, breaking and entering, and vandalism in the parking lots, physical education locker areas, and bicycle compounds, or the fear of assaults in the stairwells. In the absence of physical design modifications, the social control system appeared ineffective in these crime environments.

4.2.2 South Plantation High School

South Plantation had a moderately high crime rate with the most significant crimes being assaults, thefts of personal property (including bicycles), breaking and entering, and vandalism. Students and administrators indicated a great concern for supervision problems. The administration pinpointed the problems of cutting classes, overcrowding, and poor building design as the causes of their supervision problems.

Students and faculty stated that student involvement and morale were

increasing (i.e., student council has approximately 125 members) and their contact and rapport with the administration was strong. Students were receiving excellent guidance and referral services from the guidance and counseling staff.

Careful reviews of the offense records, school interviews, and maintenance reports showed that vandalism and petty theft were probably much higher than officially reported. The low clearance rates and relatively low cost per offense for petty thefts and vandalisms probably affected reporting and coding decisions. The actual reported vandalisms were partly (50 percent) incident with breaking and entering and theft, with the remainder being high-value property damage. However, a sample site survey indicated many locations that sustained vandalisms -- most of these in isolated or unsurveillable areas.

4.2.3 Boyd Anderson High School

Boyd Anderson had experienced many crime problems -- mostly in the assault, theft, and vandalism categories. Severe racial disturbances were experienced when busing was implemented, but this problem subsided with the coming of a new school administration. Although the new administration was strongly supervision-oriented and had instituted many changes to increase school spirit and cohesiveness of students, the school facility still reflected the design impediments that previously supported the occurrence of criminal behavior.

Despite the strong control and supervision established by the new school administration, there was still considerable concern for problems of assaults (and fear) on school grounds, parking lots, exterior stairwells,

and corridors (highest of the demonstration schools). Thefts were high in the parking lots, locker rooms, and classrooms. Vandalism was also a classroom problem.

4.2.4 McArthur High School

McArthur had a moderately high crime rate. One of the major problems that promoted crime was the size and design of the site. McArthur covers nearly 40 acres of land, and the buildings sprawl over much of this area. Being of the old "tropical style" design, the physical plant was similar to a maze with many isolated and blind areas.

McArthur's main problem areas were the parking lots, school grounds, classrooms, and corridors. Theft and assaults were the most prevalent problems in these areas. Additionally, from interviews with school officials, it was clear that major concern existed regarding fear of assault in the restrooms.

The administration at McArthur attempted to overcome some of the design problems by establishing a zone system where selected teachers would coordinate the handling of problems. Student patio areas were moved to areas with some natural surveillance, and the school resource staff would take turns watching the parking lots during lunch. However, the design problems and distances were impossible to overcome in most situations.

4.3 The CPTED Demonstration Plan

4.3.1 Introduction

In late 1975, the preliminary demonstration plan was revised to reflect concerns that a disproportionate weight had been given to physical,

target-hardening strategies. The second plan highlighted a number of social and behavioral elements in the expanded strategies. Upon local acknowledgement of the plan's acceptability, cost estimates were prepared by the consortium. The final Schools Demonstration Plan incorporated local- and State-level inputs.

4.3.2 Planned CPTED Strategies

In finalizing the Schools Demonstration Plan, the characteristics of the school environment in Broward County were reexamined, including:

- The needs of students, faculty, and other users of the school facilities (physical, social and educational, and psychological needs).
- The normal and intended use of the school facility and its environs, in the specific neighborhood setting.
- The behavior of users and offenders, based on observation, interview, and available data.

This reexamination focused on the numerous opportunities for natural surveillance and access control, with activity support and motivation reinforcement strategies playing important roles as well. The educational function of schools and the attitudes of Broward County students, faculty, and community users were generally opposed to traditional target-hardening mechanisms for crime prevention. Only for expediency, in the absence of any apparent alternatives, were such "fortress-like" mechanisms tolerated in the Broward school system. The clear preference of school users -- and

the thrust of the demonstration plan -- was a maximally open and natural environment that would support the usual social and educational process of a school while, at the same time, reduce the propensity for criminal acts. Therefore, natural access control and surveillance were the primary design concepts of the plan. Through spatial and activity definition, natural social and educational activities were to be directed so that the opportunity for ciminal behavior (e.g., because of blind spots, under-utilized or misused areas) would be decreased, effectuating natural access control. Through spatial and activity definition, opportunities for human observation of trouble-prone areas and potential offenders could be achieved, effectuating natural surveillance. In addition, for comparative purposes, certain organized or mechanical techniques for increasing access control and surveillance also were included in the demonstration plan.

The following illustrations (Tables 4-1 through 4-6) present the Broward County schools crime/environment problems that were detailed in Chapter 3 and their related CPTED design strategies.

4.4 Funding Sources

The approval of the preliminary demonstration plan by the Broward County School Board and their agreement to provide cost-sharing through manpower and fiscal resources led Broward County, along with support from the consortium, to a more intense effort of identifying funding sources and obtaining funding commitments.

Initial contact was established with representatives of the Broward County Metropolitan Planning Unit, the Florida Bureau of Criminal Justice

TABLE 4-1

Schools Grounds Crime Problems and Strategies

Crime/Environment Problems	CPTED Strategies
Design of and procedures for bus loading areas prohibit teacher surveillance, increase supervision ratio, impede pedestrian traffic flow and cause congestion. Confrontations, thefts and vandalisms occur.	Redesign bus loading zone and revise procedures to increase natural surveillance, control pedestrian flow and decrease ratio of students to supervisors.
Location of informal gathering areas (natural and designated) promotes the pre-emption of space, interferes with traffic flow and prohibits natural surveillance. Assaults occur.	Relocate informal gathering areas near supervision or natural surveillance.
	Redesign informal gathering areas to promote orderly flow and breakup the pre-emption of space by groups.
Design, use, and location of facilities has created isolated and blind spot areas that are difficult to survey (due to design and/or nonuse because of fear or avoidance). Assaults, thefts and vandalism occur.	Provide functional activities in unused or misused problem areas to promote natural surveillance, increase safe traffic flow and to attract different types of users.
Design and border definition of campus creates unclear transitional zone definition. B & E, theft and vandalism occur.	Provide clear border definition of transitional zones for access control and surveillance.
Location and positioning of school physical plant prohibit natural surveillance (off hours) by local residents and passerbys. B & E, theft and vandalism occur. (One half of vandalisms are incident with B & E).	Provide functional community activities on school campus (off hours) to increase surveillance through effective use of facilities.
	Overcome distance and isolation by improving communications to create rapid response to problems (and its perception) and more effective surveillance.
Design, use and location of bicycle compounds or parking areas on school grounds prohibit natural surveillance and limit proper use because of students with variable hours. Thefts of bicycles occur.	Redesign bicycle parking areas to provide levels of security consistent with variable access needs of students.

TABLE 4-2

Parking Lot Crime Problems and Strategies

Crime/Environment Problems	CPTED Strategies
Location and design of student parking near bus-loading areas without restricting borders promotes unmanaged pedestrian use of parking areas, promotes preemption of space by groups and prohibits natural surveillance. Assaults, B & E, thefts and vandalism occur (affected by bus-loading procedures).	Relocate and/or redesign bus-loading and parking lot access procedures to reduce necessity for pedestrian use of lot, reduce congestion in transitional zones and support strict definition of parking lot use.
Design and location of parking lots provide unclear definition of transitional zones and unmanaged access by vehicles and pedestrians, students and nonstudents. B & E, thefts and vandalisms occur. (Trespassing also).	Provide natural border definition and limit access to vehicular traffic in student parking to clearly define transitional zones, to reroute ingress and egress during specified periods and to provide natural surveillance.
Location of informal gathering areas designated as smoking zones in open corridors adjacent to parking lots and visible from public thoroughfares prohibits natural surveillance, attracts outsiders and is an impediment to school policies restricting student use of parking lots during school hours; B & E, thefts and vandalisms occur.	Relocate informal gathering areas to places with natural surveillance that are isolated from the view of public thoroughfares and designed to support informal gathering activities.
Isolation of student parking lots (some locations) prohibits any natural surveillance. Variable student hours limit use of fencing and gates. B & E, thefts and vandalism occur.	Relocate student parking (or part of) to areas with natural surveillance and/or relocate safe activities in juxtaposition with student parking to increase natural surveillance.
	Redesign parking lots to provide levels of security consistent with variable access needs of students.

TABLE 4-3

Locker Room Crime Problems and Strategies

Crime/Environment Problems	CPTED Strategies
Design and use of lockers (by multiple assignment)disperses students throughout area, reduces surveillance and increases territory for teacher supervision. B & E and theft occur.	Redesignate use of space to increase territorial concern, to increase the defined purpose of space, and reduce area requiring surveillance.
Similar design of lockers creates confusion and decreases natural surveillance by creating unclear definition of transitional zones. B & E and theft occur.	Provide clear definition of transitional zones and use of space for easy recognition of bonafide users.
Isolation of locker area while class is in gymnasium or on playing field eliminates natural surveillance. B & E and thefts occur.	Provide functional activities in problem areas to increase natural surveillance.

TABLE 4-4

Corridor Crime Problems and Strategies

Crime/Environment Problems	CPTED Strategies
Design and use of corridors provide blind spots and isolated areas that prohibit natural surveillance. Assaults, threats and extortions occur.	Provide functional activities (or redesignate use) in blind spots or isolated areas to increase natural surveillance (or the perception thereof).
	Remove obstacles to natural surveillance (increase perception of openness).
Class scheduling promotes congestion in certain areas at shift changing that decreases supervision capabilities and produces inconvenience. Assaults and confrontations occur.	Revise class scheduling and management procedures to avoid congestion, to decrease supervision ratio and to define time transitions.
Location of benches and/or other amenities in corridors creates misused space and congestion. Corridor locations are lacking in natural surveillance because of design. Assaults and confrontations occur.	Relocate informal gathering areas to areas with natural surveillance and that are designed to support that activity.
Location and use of corridors for functions other than pedestrian passage such as smoking zones promotes pre-emption of space by groups and unsurveillable misused space. This misused space supports behavior that attracts outsiders to the external corridors designated as smoking areas. Assaults, confrontations and other illegal activity occur.	Relocate activities and functions from misused space to areas designed to support these activities and to provide natural surveillance.
Design and definition of corridor areas do not support a clear definition of the dominant function of that space (i.e., passage). Unclear transitional zones produce behaviors conducive to assault and confrontation.	Provide clear definition of the dominant function (and intended use of space) and clearly define transitional zones to increase territorial concerns and natural surveillance.

TABLE 4-5

Restroom Crime Problems and Strategies

Crime/Environment Problems	CPTED Strategies
Location of restrooms near external entrances and exits isolates them from normal school hour traffic flow and prohibits surveillance. Assaults occur.	Limit access to isolated areas during specific times for access control and to reduce the need for surveillance.
Privacy and isolation required for internal design provides blind spots that reduce surveillability on the part of students and supervisory personnel, i.e., exterior door and anteroom wall. Assaults occur.	Remove obstacles to natural surveillance to decrease fear, increase use and increase risk of detection.

TABLE 4-6

Classroom Crime Problems and Strategies

Crime Environment Problems	CPTED Strategies
Design requirements for classrooms produce isolation of individual classes, resulting in high student to teacher ratios and little external natural surveillance (real or perceived) when class is in session. Assaults occur. (Thefts occur when class is empty.)	Remove obstacles to natural surveillance to increase risk of detection and to reduce perception of isolation.
	Overcome distance and isolation by improving communications to create rapid response to problems, the perception of rapid response, and more effective surveillance.
Location and design definition of multiple purpose classrooms produces unclear transitional zones, decreases territorial concern, and decreases natural surveillance. Thefts occur.	Extend the identity of surrounding spaces to multiple purpose space to increase territorial concern and natural surveillance.
	Provide a functional activity in problem areas to increase territorial concern and natural surveillance.
Class shift procedures during lunch hour produce unclear time transition and definition of groups; decreases control and increases student to teacher ratio (many classroom thefts are committed by classcutters).	Revise class scheduling and movement procedures to define time for class shifts making surveillance and supervision of classcutters easier.

Planning and Assistance, the State Departments of Education and Administration, and the Office of the Lieutenant Governor. Although the FY75 State Plan of the Governor's Commission on Criminal Justice Standards and Goals indicated a high priority for projects dealing with environmental design and its deterrent effect on criminal opportunity, circumstances prevented State-level financial support from being committed during FY75. Broward County's intent to develop the CPTED Schools Demonstration occurred late in the planning cycle, and funds had already been tentatively committed to other projects. The magnitude of the funding request ($400,000) made it virtually impossible to divert funds from any of the previously committed projects. As a result, the decision was made to seek other funding sources.

LEAA's Citizens Initiative Program representatives were contacted and demonstration support was obtained. Based upon feedback, steps were initiated to develop a grant request for the $400,000 from the Citizens Initiative Program to be coordinated through the LEAA Regional Office in Atlanta. In addition, support was received from the Florida Department of Education to assist Broward County in obtaining the approximately $44,000 of local matching funds required to request the $400,000 grant.

4.5 Management Plan

Analysis of the project task indicated that the demonstration required a dedicated staff to perform the necessary functions outlined in the Schools Demonstration Plan. It seemed both imperative and desirable that the evaluation effort be performed by employees of the Broward County School System because of economic considerations and because of competency and evaluative

experience of professionals in its Office of Research. Many of the data collection instruments and methods were already in operation as part of the ongoing efforts of that office.

Therefore, the Broward County Schools Demonstration was to be conducted primarily by personnel of the County School System, through the Offices of Internal Affairs and Research, and the District Superintendents and Principals responsible for the selected Demonstration schools. Project activities would require the support of many offices in the Broward County School System, including facilities planning (which houses the architects and building planners), the fiscal offices (which handle purchasing and procurement of services and equipment), and the pupil placement and transportation offices (to assist in conducing pupil and teacher surveys).

4.6 Functional Responsibilities

4.6.1 Project Director

The Project Director would have overall responsibility for the coordination of the demonstration's implementation. Since this individual also was Director of the Office of Internal Affairs, he would provide progress reports directly to the Superintendent.

4.6.2 Project Coordinator

The Project Coordinator would be responsible for assisting the Project Director in demonstration coordination and implementation and for interfacing with the individual principals.

4.6.3 School Coordinators

Each of the four School Coordinators would be individually responsible

for strategy implementation at one of the experimental schools, as well as assisting the evaluation activities by coordinating data collection, survey administration, and observational studies performance.

4.6.4 Evaluator

The school system's Office of Research would be responsible for conducting a process evaluation of the demonstration. An evaluation firm, not associated with either the school system or the consortium would be hired to evaluate the demonstration's impact.

4.6.5 CPTED Consortium Support

The CPTED consortium would provide technical and management assistance to the local program coordinators through the consortium's on-site CPTED Liaison Representative. In addition, the consortium would provide support to the evaluation activities, as well as assistance in seeking funding for implementation.

4.7 Grant Award

In January 1976, an application for an implementation grant was submitted to the Broward County Criminal Justice Planning Council; the regional LEAA office in Atlanta, Georgia; the Florida Department of Education; and the Broward County School Board. The LEAA monies requested totalled $397,105, and matching funds of $9,000 and $35,000 were requested from the State Department of Education and the County School Board, respectively, In February, the Department of Education endorsed the application and committed its portion of the requested funds. In March, the School Board committed its share. (Endorsements for these actions had previously been

offered by the School Board's District Advisory Committee, the Broward County Planning Council, the Chief of Police for Pompano Beach, and the Chief of Police for Ft. Lauderdale.) In June 1976, a slightly revised version of the grant request was submitted to the Broward County Criminal Justice Planning Council by the school system's Director of Internal Affairs. The application was then forwarded to the LEAA Regional Office and funds were awarded in July 1976.

CHAPTER 5. PROJECT IMPLEMENTATION

5.1 Introduction

The Project Implementation phase of Broward County's CPTED demonstration project formally began with the award of the demonstration grant in June 1976, and continued throughout the life of the project. In the broader sense, however, because successful implementation depended to a large extent on the action foundation that was laid in preparation for the anticipated grant approval, the Project Implementation phase began with the first site visit to assess Broward County's feasibility as a potential demonstration site. This chapter examines the problems and successes associated with the attempt to implement the Demonstration Plan.

5.2 The Pre-Grant Phase

The Broward County School System's involvement in the CPTED project began with the September 10, 1974 site visit to discuss the possibility of cooperating with Westinghouse in serving as a demonstration site. Subsequent cooperation was forthcoming, and the week of September 18-27 was spent on-site, developing a work plan. A draft demonstration plan was developed and support for such a plan was indicated by a vote of the Broward County School Board in November 1974.

From November 1974 through February 1976, Westinghouse and officials of the Broward County School System cooperated in seeking funds to implement the Schools Demonstration Plan. During this time, it had become apparent that neither local nor State funding would be feasible, even

through the distribution of Federal funds that had been allocated to the State agencies. Finally, through further negotiations processes, an LEAA discretionary grant was awarded to conduct the Demonstration Plan. By the end of February 1976, Federal support for the grant was assured and State and local matching funds were committed (although funds were not officially awarded until June 1976).

The delay in funding the demonstration caused a variety of problems. Westinghouse had been very active in the fall of 1974 in obtaining data and interviewing individuals in the school system. This had created an expectation that the project would begin shortly. Principals later reported that they had been disappointed when construction did not start soon after Westinghouse left. The initial excitement and concern of students, faculty, and administrators at each of the schools were dissipated by the long delay.

5.3 Preconstruction and Construction Phases

In theory, the method by which a program such as CPTED becomes implemented in a school system dictates an apparently straightforward procedure. This procedure is outlined in Figure 5-1, using the mini-plazas for illustration. In Broward County, that procedure begins with the School Planning Division drawing up a set of plans (for the mini-plazas, an originaal plan was submitted by Westinghouse), which are structurally sound and which comply with city, State, and national building codes. A State-approved architect, hired by School Planning, assures the soundness of the plans and a bid proposal is prepared and sent to the Purchasing

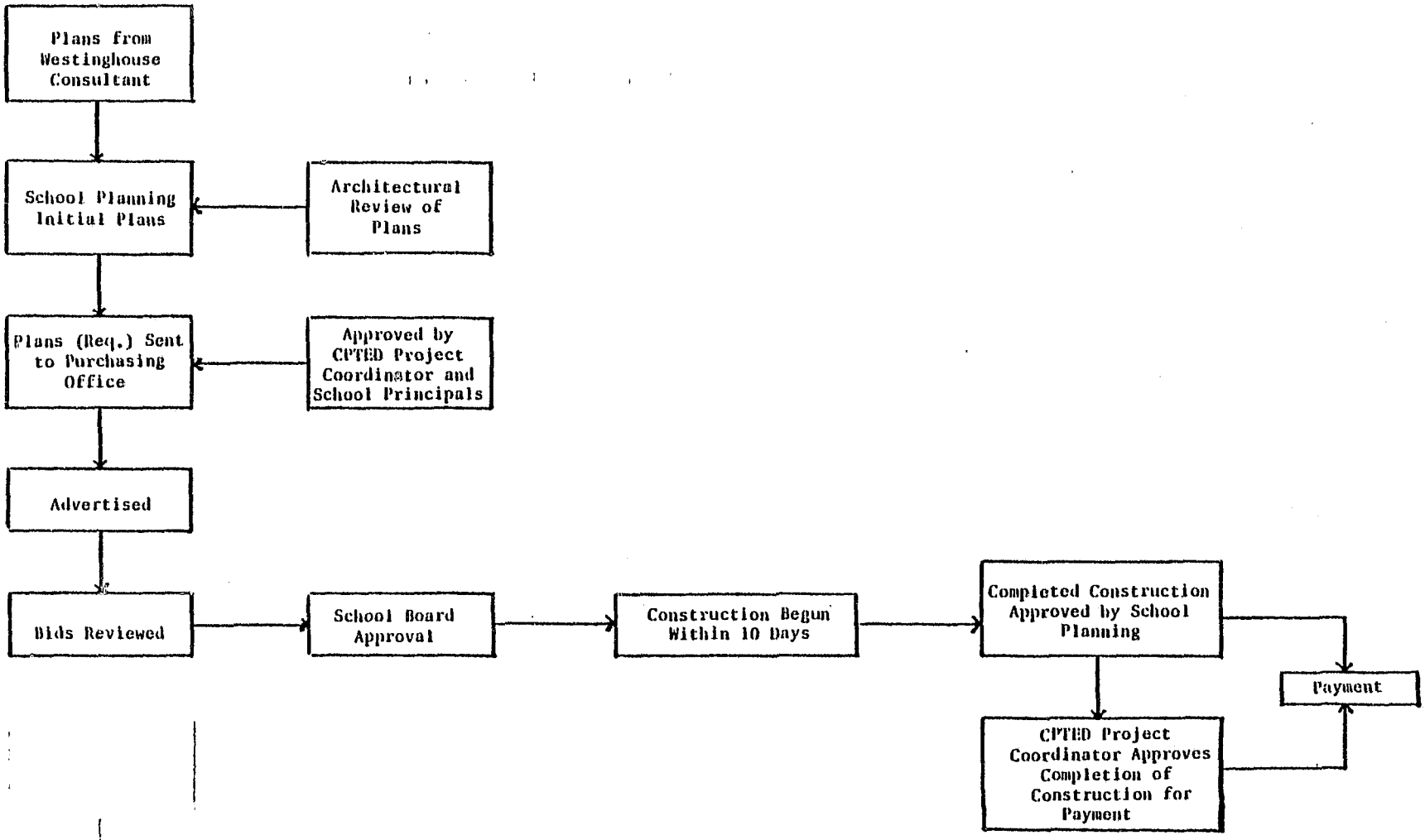

Figure 5-1. Mini-Plaza Construction Process

Department for advertising. Approval of the preliminary drawings by the CPTED Project Coordinator and the school principals is required prior to the School Board's granting approval and prior to the Purchasing Department's letting the bid.

Designated School Planning personnel then review all bids. According to the State law, the lowest bids are to be accepted. Once the bids have been received and reviewed, School Planning recommends to the School Board that the lowest acceptable bid be awarded. The School Board has the responsibility of acceptance or rejection of bids. When the Board accepts a particular bid, School Planning resumes responsibility and personnel from that division oversee construction, which is required to start within 10 days after the award of the contract. School Planning makes the final decision on when construction of a particular strategy is complete, and prior to issuing payment, concurrence of the CPTED Project Coordinator is required.

The following is a description of the above procedure as it applied to the implementation of the specific design directives, including a summary of the construction progress and delays encountered in the development of each strategy for the Broward County CPTED Schools Demonstration Project, along with a brief chronology of events which preceded the construction phase.

The implementation process included seven general strategies, some with substrategies. Strategies were specified for the following areas:

- Courtyards.
- Bicycle Parking Compounds.

- Hallways and External Stairwells.
  - Classrooms
  - Security Office (Teacher Planning Area)
- Restrooms
- Auto Parking Lots.
- School Grounds.
  - School Policing Precinct.
  - Bus Loading Zone.
  - Communications.
  - Portable Ticket Booths.
  - Border Definition.
  - Burglar Alarm.
- Locker Rooms.

As explained earlier, not all strategies were to be implemented in all four schools, and not all strategies were to be implemented in the same way in each school. Courtyard renovations provide examples of the types of differences encountered in implementation process between the four schools.

To illustrate the factors affecting implementation prog ess and delays, the following discussion of the courtyard negotiations -- the most complex physical design modifications called for in the Demonstration Plan -- presents the process in considerable detail. The discussion of the implementation of the other strategies will be less elaborate.

5.3.1 Courtyard Renovations

The directives for the courtyards were to create a mini-plaza in the interior courtyard area, and to organize a student/faculty committee to assist in the design and coordination of each school's mini-plaza activities. The courtyard directives were to be initiated in November 1976, with project completion scheduled by January 31, 1977. Designs developed in August 1976 for Deerfield Beach and South Plantation went from School Planning to the CPTED Project Coordinator for his approval on November 20, 1976, and he received the blueprints on December 10, 1976. On December 15, the principal of Boyd Anderson rejected the plans for his school. New blueprints for Boyd Anderson's courtyard renovations were received on December 17. On December 15 and December 28, for the other three schools, the CPTED Project Coordinator asked that work begin on the plans, and gave his approval.

For Deerfield Beach and South Plantation, the CPTED Project Coordinator requested that the specifications be prepared for bidding on February 23, 1977, while at McArthur, approval of the courtyard renovations (with some changes from the original plan) was given on February 11. A requisition regarding this change was sent to the Purchasing Department by February 18. The requisition for the handicap ramp was sent to Purchasing on February 16. For South Plantation and Deerfield Beach, the completed prints for landscaping (which will be discussed following the description of the other courtyard strategies) and equipment were presented to School Planning. This occurred between February 24 and February 28, after which

School Planning requested work to commence immediately for these two schools.

On March 17, School Planning sent the blueprints for all four schools to Purchasing, which let them for advertising three to five days later. At McArthur, bids for the handicap ramp were received on March 29.

On April 12, 1977, the bids for the mini-plazas at all four schools were received, but on April 14, due to a fund reallocation and a request from the principal, Boyd Anderson requested and was granted exclusion from the mini-plaza plans. They wanted to complete their mini-plaza on their own, without the assistance of the contractor, using some CPTED project funds. For the other three schools, bids were awarded for construction on April 21. Construction began soon afterwards, with the purchase order going out on May 4. The promised delivery date was May 30. After construction had begun, a rescheduled completion date was set for the end of June.

In June at Deerfield Beach, the north retainer wall had been completed, and the south wall was started. In both Deerfield Beach and South Plantation, plaza floors were poured between June 27 and July 1. At South Plantation, all barricades were removed, but due to minor flooding in the south portion, the snack bar had to be rescheduled for completion July 15. At McArthur, graphite nosing for the gym steps was ordered by July 13 and the concrete planters were to be poured July 15, with the benches to be installed at a later date. The graphite nosing was complete on July 22. At Deerfield Beach, the retainer wall, as of July 20, was yet to be stuccoed.

In August, 1977, Deerfield Beach and McArthur experienced individual difficulties, including inadequate sidewalk repair from flooding at Deerfield Beach. The Deerfield Beach patio was completed by September 1977. At McArthur, the courtyard, including the gym steps, kiosk, furniture placement, anchorage, and sprinkler systems, was still incomplete by September.

A bid for the McArthur and South Plantation trash receptacles had not been issued as of March 1978. At McArthur, the bid for refurbishing of the courtyard floor was accepted, and a requisition was sent to Purchasing. At Deerfield Beach, although the patio was complete, a November 1977 report from the CPTED Project Coordinator stated that, regarding the tables and benches, "the contractor failed to comply with bid specifications. New pedestals have to be installed."

By the end of November, the landscaping and receptacles for Deerfield Beach and South Plantation were complete. On the same day (November 30), the handicap ramp, gym steps, and patio wall at McArthur were completed. However, the furniture at South Plantation was showing breakage and there was a problem with their sprinkler system, as well: It had been switched from city to well water, and no one had been consulted on this change. The old system was not capped, rendering drainage inadequate. A similar problem existed at Deerfield Beach. With progress at the point just described, the onsite observer expressed concern over the lack of use by students.

The mini-plaza at South Plantation was considered complete in January of 1978. At McArthur, in a January 1978 report, the CPTED

Project Coordinator stated that they were "continually waiting for the roofing contractor (the gym roof was being redone) to finish in order that the patio floor can be painted." Until the roof was completed, the floor for the patio could not be painted for fear that roof tar would ruin the floor.

Snack bar renovations at McArthur proceeded as follows: Blueprints were received by the CPTED Project Coordinator from School Planning on January 18, 1977. The requisition went out on March 21, and the purchase order was issued on March 28. The renovations had been considered complete since March 21.* On September 19, 1977, the CPTED office called for prices and information for the queuing lane requirements, and the requisition was sent out on September 26. The purchase order went out on September 28, with approval for payment being granted on November 3, 1977.

After Boyd Anderson took on construction of its own courtyard renovations, in April of 1977, 16 different purchase orders, for various needs (e.g., sod, hardware, etc.) were sent out from the CPTED office. These were dated from August 18 to September 30.

A May 25 faculty meeting noted that an "inadequate number of benches for the patio (made) it impractical since so few could be seated, and the tables (had) never arrived." This concern was again observed on

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*In many cases, purchase orders were "confirming" orders and contractors began construction before the official awarding of the bid.

September 26. The final construction of the plaza floor had been completed on November 9. By November 15, the east patio was complete, but the west patio was only 30 percent complete. It was noted that eight plants had died of neglect. By the end of January, although the industrial arts classes had produced all of the needed benches and tables, the horticulture classes had not completed the initial section of the patio. By March of 1978, the west patio was still incomplete.

Landscaping plans were processed as an individual substrategy. The landscaping plans for Deerfield Beach, McArthur, and South Plantation were reviewed between January 24 and January 28, 1977. But between January 31 and February 4, School Planning rejected the consultant's initial plans for all four schools, requesting elaboration on furniture placement on the South Plantation, Deerfield Beach, and Boyd Anderson plans. The expanded designs were submitted between February 7 and February 11 for Boyd Anderson and South Plantation, and blueprints were completed. However, School Planning had not yet selected the furniture which would be used, and the new landscaping plans for Deerfield Beach, McArthur, and South Plantation were drawn up between August 8 and August 12, for the special approval of the superintendent on August 15. The School Board awarded the bid on September 29. Landscaping was completed in November 1977.

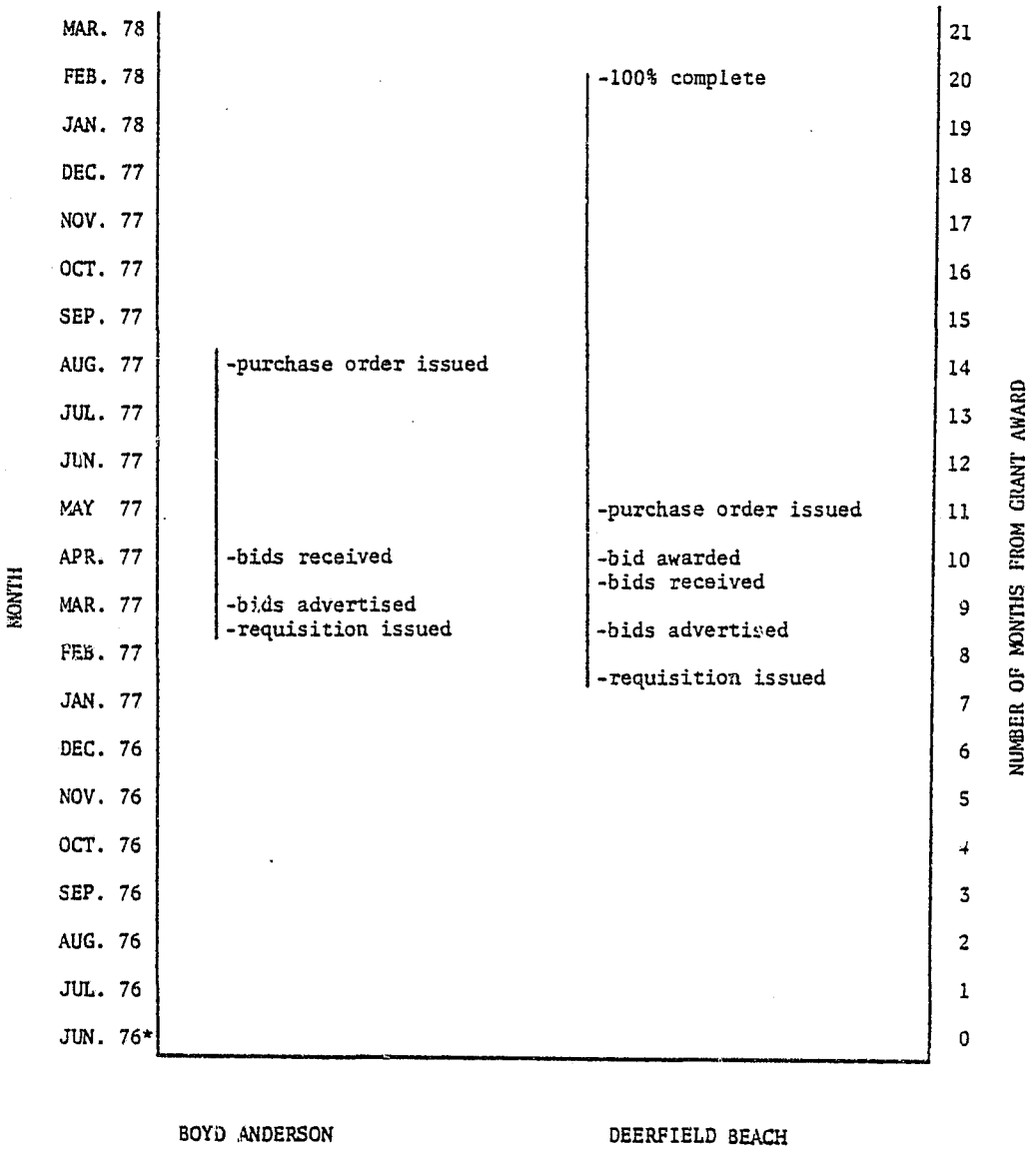
For Boyd Anderson, as of March 15, 1978, courtyard renovations were not complete; for Deerfield Beach, renovations were completed in February 1978; for McArthur and South Plantation, they were completed in January

1978. Figures 5-2 and 5-3 indicate that it took approximately 8 months to develop a plan for courtyard renovations and issue a requisition for the renovations. Thus, it was not until February or March of 1977 that a requisition was issued.

As shown in Table 5-1, approximately half the time taken from the start of the grant to the completion of the courtyards was spent in planning. There was relatively little time spent in advertising and receiving the bids. Except for Boyd Anderson, bids were awarded and purchase orders were issued very rapidly. The actual construction time for the three completed sites was approximately 8 1/2 months.

Special attention should be drawn to the courtyard renovation at Boyd Anderson. As shown in Figure 5-2, as of March 15, 1978, the Boyd Anderson courtyard had not been totally completed. One side of the courtyard was completed at that time, and approximately 50 percent of the other side had been completed. In addition, the time taken to issue a purchase order for Boyd Anderson was almost ten times that taken for the other three schools. These delays were caused by a variety of factors, but, primarily, they must be attributed to funding problems and to the principal's insistence that Boyd Anderson's courtyard be developed to his specifications, utilizing student labor. In fact, this is the only school in which students actively participated in the planning and building of the courtyard.

At this point, it is difficult to determine if the actual construction time, utilizing student help, at Boyd Anderson will be longer than construction time in the other schools. Clearly, inclusion of student participation in the project is strongly supported by CPTED theory.



*LEAA Discretionary Funds were awarded.

Figure 5-2. Courtyard Renovations -- Boyd Anderson and Deerfield Beach

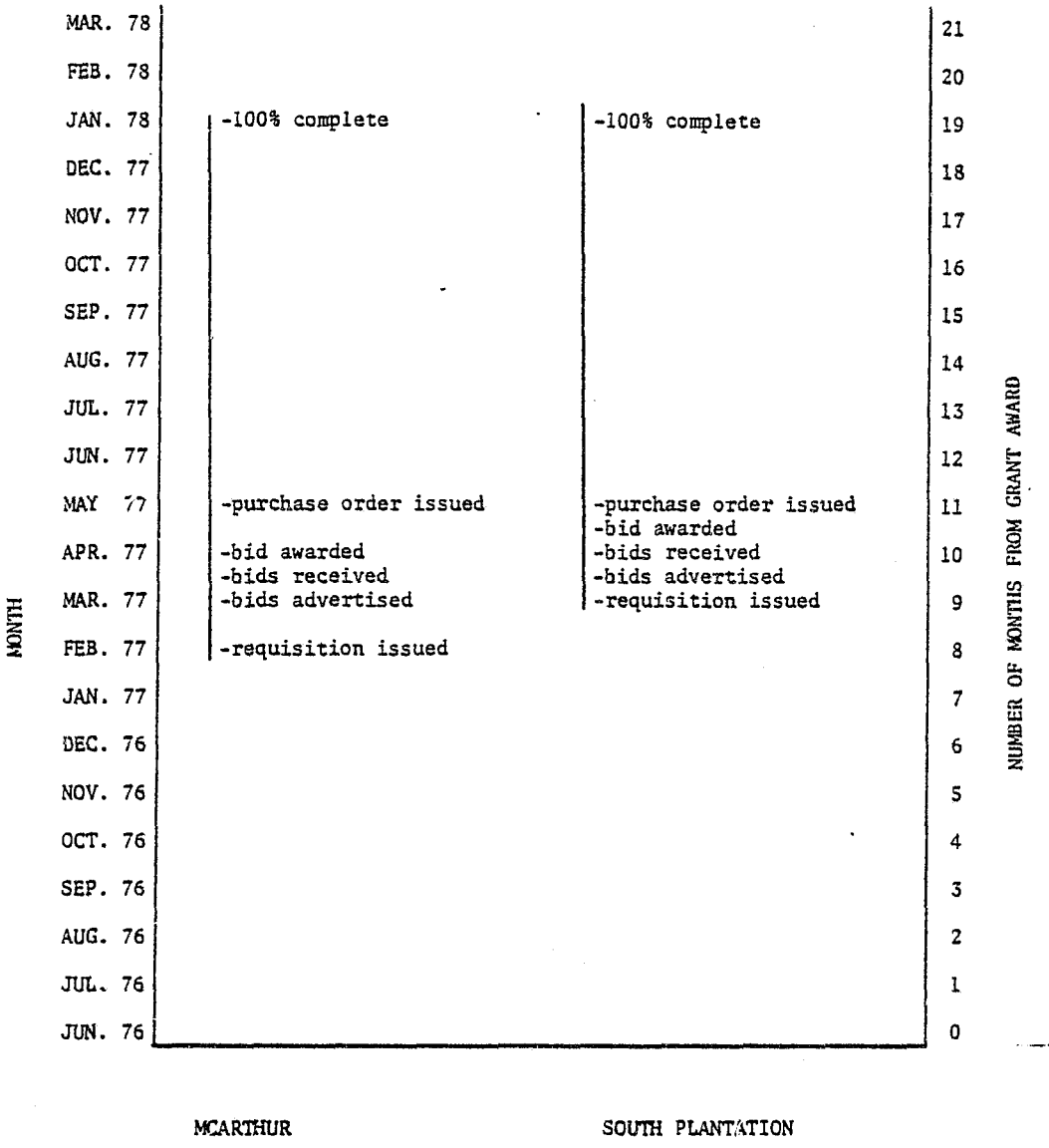


Figure 5-3. Courtyard Renovations -- McArthur and South Plantation

TABLE 5-1

Days Consumed in Each Phase of the Broward CPTED Construction of Courtyard Renovations

SCHOOL	ISSUANCE OF REQUISITION	ADVERTISEMENT OF BIDS	RECEIPT OF BIDS	AWARD OF BIDS	ISSUANCE OF PURCHASE ORDER	COMPLETION	TOTAL DAYS COMPLETION
Boyd Anderson	290	3	23	94	121		
Deerfield Beach	268	25	23	9	13	286	624
McArthur	263	30	23	9	13	241	579
South Plantation	290	3	22	9*	13	241	578
AVERAGE	278	15	23	30	40	256	594

*Estimated

While some of the specifications of tables utilized in Boyd Anderson may not have been appropriate for CPTED strategy (e.g., they allow too many students to sit at one table), the benefits of student participation may outweigh this deviation. As will be noted later, the Boyd Anderson courtyard cost was approximately half of the cost of the other courtyards.

In summary, it is clear that meeting the procedural requirements for developing approved plans took most of the time in initiating implementation of the courtyard strategy. The processing of the plans, once they left the School Planning offices, was accomplished in 2 months. Overall, it took approximately the same amount of time to complete the construction as it did to issue a requisition. Except for one school, Boyd Anderson High School, student participation in planning and in implementing courtyards was minimal. Clearly, the construction of courtyards could not have been completed over the summer of 1976, as originally planned (i.e., when it was thought that grant award would occur in February 1976), with either commercial contractors or student assistance.

5.3.2 Bicycle Parking Compounds

To be implemented in all schools except Boyd Anderson, the bicycle parking compounds were originally designed for use with bike locking cups. However, in December 1976, School Planning rejected the plans for the cups; racks would be used in their place.

The requisitions for all three bike compounds were issued in February of 1977, approximately 8 months after the grant was funded. It then took approximately 3 months to award the bid. While there were some problems which complicated the implementation of the bicycle compounds (e.g.,

drainage problems at McArthur HIgh School), construction activities consisted primarily of some paving, the installation of a fence, and the installation and anchoring of a bicycle rack. This took approximately 6 months to complete (from April 1977 through October 1977). As in the courtyards, the majority of time spent in initiating the implementation of this strategy was in developing and issuing the requisition. The entire project took 16 months to complete from the start of the grant.

5.3.3 Hallways and Exterior Stairwells

A variety of strategies were to be employed inside the school buildings. The planning efforts for these strategies took from 6 to 8 months; the actual implementation, 2 to 3 months.

At Boyd Anderson, the original plans included the installation of a window in the corridor wall adjoining the custodian's office (never implemented) and the placement of multicolored graphic designs, or supergraphics, in corridors to define the intended functions of those spaces. Based on initial renderings provided by a Westinghouse architect, the actual art work would be done by students under the supervision of the art instructor. By November 1977 -- 18 months after the start of the grant -- the corridor supergraphics were considered complete. (It could not be determined when students actually received permission to begin the strategy.)

At South Plantation, the mock-up and mount for a Paladin (school symbol), to be placed between the snack bar and the patio, was complete by the end of January 1977. Another strategy originally called for the

placement of a teacher planning area in a corridor location that would facilitate natural surveillance. However, when it became clear that teachers would not want to utilize such an area, the plans were changed to utilize an area under a staircase in the main school corridor for the construction of a security office. The construction involved building a small, air-conditioned room, approximately 10' x 10', with one-way mirrors on all four sides. This project was started in May of 1977 and completed in July of that year. The security office was, thus, one of the few construction strategies that was completed over the summer vacation.

Two additional South Plantation corridor strategies were delayed by unanticipated problems: At the request of the contractor, the reconstruction of the cafeteria corridor had to be rescheduled to follow the completion of the mini-plaza; and the completion of a corridor door and wall addition was postponed because of repairs necessitated by four separate incidents of student vandalism to the wall.

At McArthur, blueprints for 14 doors with windows were received on February 2, 1977. The requisition was sent out on March 21, and the purchase order for the corridor windows (which were completed March 31) and door windows went out on March 28. While the job had been considered complete as of July 31, one of the doors had been put in the wrong place.

Exterior stairwells strategies were planned for all schools except McArthur. The strategy to install windows in all exterior stairwells was rejected as unsound by the structural engineer. The strategy to install gates to close off the hidden areas underneath the exterior stairwells was ruled out because it was viewed as a potential fire hazard.

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The plan was modified so that the areas would be completely sealed off. Work was completed at South Plantation in February 1977; at Boyd Anderson in April; and at Deerfield Beach in May.

5.3.4 Restrooms

Restroom renovations were unique to McArthur High School. The strategy originally called for the removal of doors and their replacement by gates. This plan was rejected by the Internal Affairs Office. From a security standpoint, it was felt preferable to leave the doors on so that they could be locked in an open position during school hours and closed and locked during nonschool hours, reducing their susceptibility to vandalism. In addition, State law prohibits doorless restrooms near food services areas, as would have been the case for the South Plantation snack bar.

Of all the strategies implemented, this one seemed to be one of the easiest to complete. Sixty-three percent of the restroom modifications were completed as planned within 3 months of requisition issuance.

5.3.5 Parking Lots

Compared to most of the other construction strategies, the requisitions for the parking lot strategies were issued very early in the program: All requisitions had been issued by November 1976.

The implementation of the parking lot strategies was plagued with major difficulties. At Deerfield Beach and South Plantation high schools, the polegates were not installed with enough precision to allow them to lock with the locks that had been ordered.

The parking lot implementation in McArthur High School was completed in March 1977, according to CPTED Program Office records. However, major problems existed with this strategy -- most notably the lack of support by either their principal or their students for a newly constructed transitional safety fence that was designed to make operative a one-way zone. This necessitated the removal of a major part of the fence and the discontinuation of the secure parking lot.

It was planned that Boyd Anderson High School would exchange the location of their student parking lot with the driver's education parking lot. According to the Demonstration Plan, this should have resulted in greater surveillance. The principal of the school did not think this would be a good strategy and, thus, the strategy was not implemented. Instead, the entire student lot was fenced and provided with appropriate gates.

In summary, the parking lot strategies were initiated earlier than most of the other strategies. However, from the perspective of implementation, small but important details detracted greatly from subsequent utilization.

5.3.6 School Grounds

5.3.6.1 School Policing Precinct

Boyd Anderson was the only school to receive funding for this directive. Final drawings were sent to CPTED on September 10, 1976, and, on the same day, a requisition was sent to Purchasing. The job was reported to be complete by March 24, 1977. As a result of the local police

department's being merged with the County Sheriff's Office, occupancy of the precinct did not occur until several months later. Ultimately, a truancy specialist and a police specialist from the Youth Services Division were given space in the precinct so that truants and juvenile delinquents in that area could be brought directly to them rather than having to be transported downtown to the Juvenile Center.

5.3.6.2 Portable Ticket Booths

Except that the plans for McArthur included two ticket booths rather than only one, the progress on the ticket booths for South Plantation and McArthur ran parallel to each other. The requisition went out on November 15, 1976. The job was completed by the end of December 1976.

5.3.6.3 Bus Loading Zone

The bus loading zone strategy was to be implemented in Boyd Anderson only. This job was to be done completely by School Planning, but prior to completing the plans, directional signs were requested from the Maintenance Department. By September 1976, the bus loading zone policy was implemented, but signs were still not delivered as of March 10, 1978.

5.3.6.4 Communications

The implementation of the communications design directive experienced no major problems or delays. To be implemented at McArthur only, the project was conducted by the Office of Internal Affairs. Use of portable, two-way radios comprised the specified requirements. A requisition was sent out on June 7, 1976, and CPTED considered the job complete on August 26, 1976.

5.3.6.5 Border Definition

Border definition was a strategy implemented only at South Plantation and Deerfield Beach high schools. School Planning received the plans from their landscaping group in January 1977, but because the cost escalation of the courtyard had priority, the requisition was not sent out until September 8 for Deerfield Beach and September 23 for South Plantation. The job was completed at Deerfield Beach on September 26. The contractor submitted his invoice for work completed at South Plantation on October 11.

5.3.6.6 Burglar Alarm

Except for completion dates and for the fact that this was South Plantation's second system (its first having been installed by Internal Affairs prior to CPTED's initiation) South Plantation, McArthur, and Boyd Anderson experienced identical progress on the burglar alarm system design directives.

On May 20, 1976, the School Board approved the plans for McArthur and Boyd Anderson, and for South Plantation's second system. On January 11, 1977, the requisition was sent out. This requisition included monitoring services. The recorded completion dates are December 1, 1976 for Boyd Anderson; January 3, 1977 for McArthur; and January 18, 1977 for South Plantation.

5.3.6.7 Summary and Conclusions -- School Grounds

The police precinct construction took 5 months to complete and was not, as anticipated, manned by the police on a 24-hour basis when it was finished. In contrast to the construction items, the nonconstruction aspects of the CPTED school grounds strategies were implemented quickly.

and effectively. The burglar alarms and communications devices were in place within 6 months after the grant was funded and involved very little, if any, delay in purchasing. The ticket booths, while being constructed specifically for the CPTED project, were not built on-site, and thus did not suffer many of the delays that accompanied site renovations. In summary, it appears that the Purchasing Office in the Broward School System acted in an efficient manner in processing nonconstruction items.

5.3.7 Locker Rooms

Originially planned for implementation at Deerfield Beach, South Plantation, and Boyd Anderson, only Boyd Anderson received funding for locker room color-coding, and that was for the boys' locker room only. Had implementation occurred at all three schools, the budget would have been exceeded by over 1500 percent. This cost escalation was caused, in part, by repeated delays in plan approval.

On September 7, 1976, a job order was sent to the Maintenance Department of the School Board. As the job would be performed by this department, no requisitions or purchase orders were required. The project was implemented fairly efficiently, falling less than one month behind its scheduled completion date of January 1977. It should be noted that the painting of the locker rooms was not completed in the fashion envisioned by planners. Instead of painting different sections of the locker room different colors, the lockers were painted by rows -- that is, in a single column, the top locker was painted one color, the second one a different color, and so on -- with an identifying color for each of the six class periods. This modification was made

in conjunction with Athletic Department personnel who felt that this was the best way to obtain increased surveillance opportunities without creating unnecessary congestion.

5.3.8 Educational Strategies

Although no educational strategies were included in the Demonstration Plan, some strategies were included in the grant proposal submitted to LEAA by Broward County. There were no systematic attempts to educate the students about CPTED during the first 18 months of the project. There were some isolated student newspaper articles about the project, but clearly, from pretest survey data, this did not raise the level of awareness of students. On November 12, 1977, a morning workshop was held with approximately 10 teachers from each of the four project schools attending. This workshop presented an overview of CPTED, explained how the various strategies were related to the construction, and suggested that the faculty and students of each school consider attempts to develop curricula units, run essay or poster contests, or explore other avenues that could involve the student body in CPTED efforts. A student leader luncheon, composed of student organization leaders from each of the project schools, was held on December 6, 1977. The purpose of this luncheon was to inform student leaders about the CPTED projects. In the fall of 1976, the advisory committee at South Plantation, and the faculty and administration of Boyd Anderson each received a formal CPTED presentation. In February 1978, Deerfield Beach requested and received a similar presentation.

In an attempt to educate and inform greater numbers of students, handouts describing the CPTED project and highlighting the importance of

student involvement were delivered to each school during the first week of February 1978.

5.3.9 Special Parking Lot

Primarily because of cost overruns in other areas, this strategy was not implemented.

5.4 Cost Analysis

Table 5-2 provides a breakdown of the total project costs assumed under the LEAA Discretionary Grant to Broward County, through early April 1978. It is clear from Table 5-2 that the major expenses incurred in this project were the auto parking lots, the courtyard construction and renovation, school policing precinct, the evaluation, and administrative costs.

Figure 5-4 is a bar graph depicting the percentage of funds used for each strategy. The majority of strategies consumed less than 1 percent of the total project costs. That is, each of these strategies was well under $4,400 in direct costs. The other strategies, such as the supergraphics and the radios, accounted for approximately 2 percent, each, of the total cost. The bicycle parking compounds in the three schools accounted for another 4 percent of the costs, while the evaluation expenses accruing to the contract accounted for approximately 4 percent of the total project costs. The most expensive elements of the strategies utilized in the CPTED project were the auto parking lot and the school policing precinct, each accounting for 8 percent of the total, and the courtyard, the most expensive strategy, which accounted for 26 percent of the total costs.

TABLE 5-2

Project Costs

CONSTRUCTION COSTS

STRATEGY	BOYD ANDERSON	DEERFIELD BEACH	MCARTHUR	SOUTH PLANTATION	TOTAL
Auto Parking Lot	$6,448	$10,032	$6,857	$12,437	$35,774
Bicycle Parking Compound		3,958	4,833	3,958	12,749
Courtyard	14,402	40,763	25,828	33,963	114,956
Exterior Stairwells	650	975		650	2,275
Alarm System	1,215		1,239	1,255	3,709
Supergraphics	9,077			250	9,327
Snack Bar				2,360	2,360
Locker Rooms	2,529				2,529
School Policing Precinct	34,664				34,664
Border Definition		1,560			1,560
Corridor Windows			1,650		1,650
Restrooms			1,190		1,190
Ticket Booths			1,978		1,978
Radios			7,300		7,300
Security Office				3,950	3,950
Corridor Walls				790	790
TOTAL	$68,985	$57,288	$50,875	$60,602	237,750
CONSTRUCTION COSTS TO DATE					237,750
Anticipated additional costs through end of contract					2,335
TOTAL CONSTRUCTION					240,085
OTHER COSTS					
Evaluation					15,400
Estimated Administrative Costs					188,515
TOTAL PROJECT COSTS					$444,000

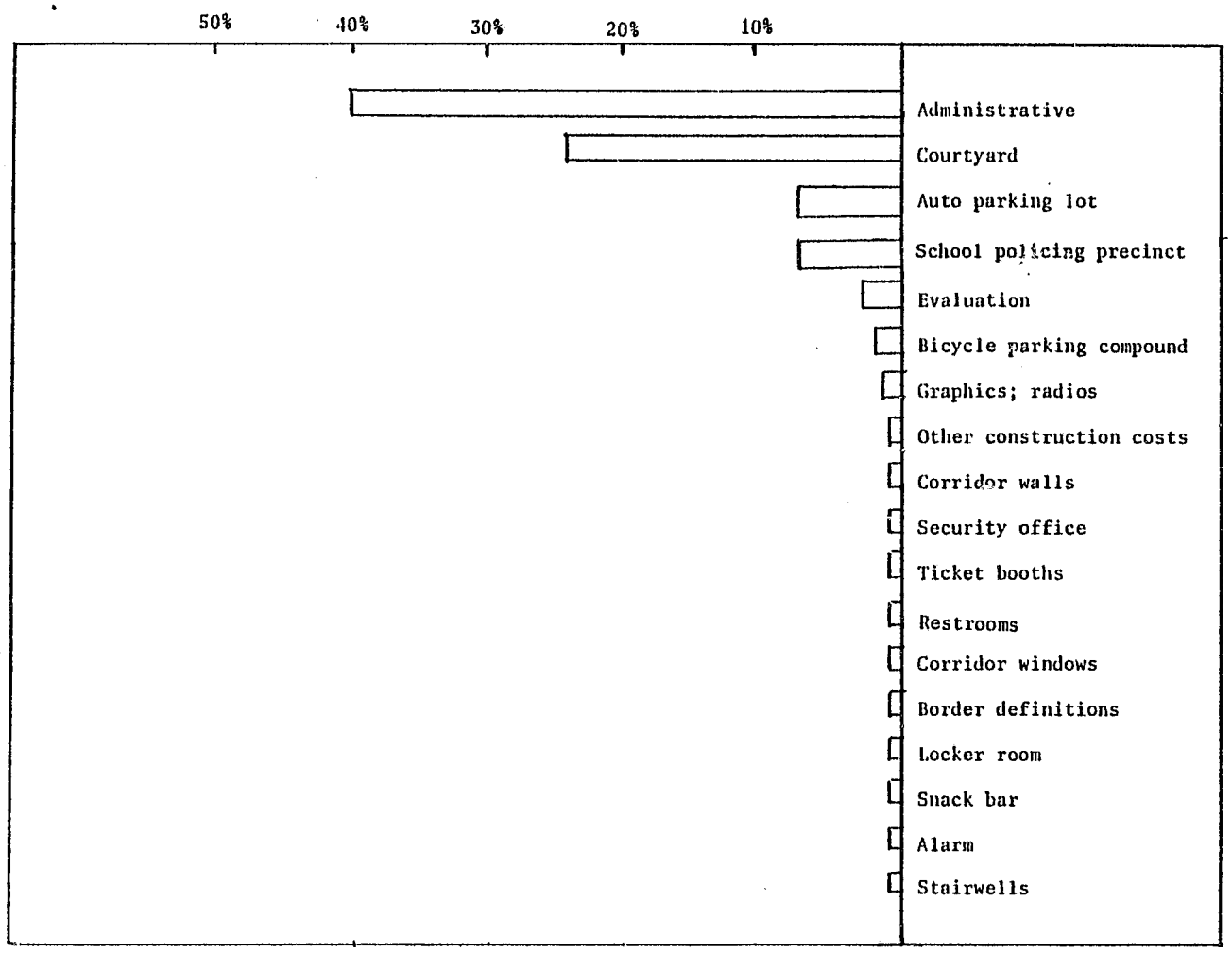

Figure 5-4. Percentage of Funds Spent on Each Strategy

Figure 5-4 also illustrates the costs of administering the project. Administrative costs, which were inflated by a no-cost project extension of 9 months, proved to be the most expensive item (43 percent of the cost of the project). This administrative cost did not take into account costs contributed by the Broward County Schools for time allocated by the Research Department, a school architect, and a facilities planner. The costs of these additional persons were estimated in the original grant to be an additional $46,440.

As noted earlier, the project suffered from cost overruns in the construction of some of the major items. For example, the courtyards were estimated to cost $82,488; in actuality, they cost $114,956. Similarly, the policing precinct was estimated to cost $18,000 and actually cost $34,654. Clearly, some of the other plans had to be modified to absorb these unanticipated costs.

CHAPTER 6. PROJECT EVALUATION

6.1 Introduction

This chapter presents the following:

- The original evaluation plan and subsequent modifications.
- A detailed description of the methodology utilized in the evaluation design actually implemented.

6.2 Evaluation Plan

A plan for evaluating the Broward County Schools Demonstration is provided in the March 1976 Crime Prevention Through Environmental Design Schools Demonstration Plan (Crowe, et al., 1976). The plan was developed by Conrad W. Snyder, Jr., and Charles A. Murray, of American Institutes for Research (AIR), in collaboration with William Meredith and Linda Murray, of the Broward County School District Research Department. It is important to discuss some of the main features of this plan in order to appreciate the reasons for departure from the plan by the current evaluation team.

The evaluation plan notes that the CPTED Project has never been tried in a school setting. Thus, the CPTED project is very much an experiment. In addition, the evaluators felt that the school setting had the greatest potential for applicability, as compared with the other demonstration sites.

The plan provides two major objectives to be examined in the evaluation:

- Description of the process of program implementation and its immediate effects on the environment.
- Impact of the program on crime and fear of crime.

There are a number of criteria by which the evaluators proposed measuring project success. In dealing with the process of implementation, the following criteria were listed:

- Criterion 1 -- To determine the extent to which the planned changes matched the crime and fear of crime problem in specific schools. In other words, the utilization of pretest data to measure the suitability of the program.
- Criterion 2 -- The extent to which the process for administering inputs contributed to achievement of the changes. This is to examine the process of implementation itself, including its problems and its successes.
- Criterion 3 -- The extent to which the actual changes match the planned changes. This may be analyzed by matching the intended inputs with the actual inputs.

The next three criteria are more theoretically based and explicate the development of CPTED theory:

- Criterion 4 -- The extent to which actual inputs have increased surveillance.
- Criterion 5 -- The extent to which the inputs have limited accessibility by persons who are likely to commit crimes.
- Criterion 6 -- The extent to which other aspects of territoriality have been affected in such ways as to expect to reduce crime or fear of crime.

It was expected that the above three criteria would be measured through a teacher survey.

The last two criteria deal with the impact of the program:

- Criterion 7 -- The extent to which inputs have reduced crime. This is to be measured through pre- and post-analysis of:
  - Reported crime data.
  - Data collected through student victimization surveys.
  - Data obtained from the records of deans.
- Criterion 8 -- The extent to which inputs reduced fear of crime. Source of data for this criterion is the pre- and post-scores from the student surveys. It should be noted that evaluators suggested a minimum of one year between the completion of the implementation process and the analysis.

6.2.1 Evaluation Constraints

The AIR evaluators noted a number of constraints in conducting this particular evaluation:

- The length of time available for evaluation is critical. Long-term effects should be measured, but were not part of the original plan.
- Since this is a pilot investigation of CPTED and not a full-blown impact analysis, it will be "impossible to get a convincing grip on impact diagnosis."
- The AIR evaluators felt that the environmental changes were neither exhaustive, nor substantial, in terms of total school design. In their judgment, the relatively modest intervention would be difficult to assess and will be, in part, dependent upon the consistency of the findings in relation to all design directives.
- Crime data, in general, are relatively unreliable. The evaluators indicated that the level of crime might not be sufficient to obtain a statistically significant impact.

6.2.2 Analytic Methodology

The evaluators provided an analytic methodology to use in assessing the criteria. These criteria are as follows:

- Criterion 1 -- Match between inputs and crime problem. This is meant to be a qualitative assessment of the use of preprogram crime data.
- Criterion 2 -- Match between planned inputs and actual inputs. This will be a comparison between the original plan and the actual inputs.
- Criterion 3 -- Process Evaluation: Emphasis in this criterion is on description of the process, establishing change. Again, a qualitative analysis is suggested.
- Criteria 4, 5, and 6 -- (Change in access, surveillability, and other aspects of territoriality.) The evaluators proposed to use the teacher questionnaire to judge the impact of CPTED changes. It was specifically stated that direct observation of usage was considered and judged to be unwarranted by the AIR evaluators.
- Criteria 7 and 8 -- Reduce crime and fear of crime. This was to be assessed using a before-and-after design, victimization data, student survey data, reported crime data, and records from the dean's office.

The evaluators pointed out that the type of design can be defined as a before-and-after imperfect replication. In addition, the evaluators

assumed that the impact of CPTED is dependent upon its effect on crime in the schools, and thus, focused on crime reduction as the main variable. The evaluators suggested the use of an interrupted time series design to assess crime reduction. In addition, they suggested a matrix, composed of crime type by location of crime for each of the individual schools as a way of providing greater sensitivity, since neither crime nor school is a unidimensional concept.

In addition to the within-school comparison, the evaluators proposed to examine the differences between the overall school district and the four experimental schools.

Finally, in terms of assumption of responsibility, the AIR was to provide the evaluation plan. The Broward County research staff was to collect and analyze the data and write the evaluation report containing objectives, program specifications, outcomes, relationships, indicators, and results of recommendations. This evaluation report was to be reviewed by AIR.

6.3 Modifications in Evaluation Plan

There are many factors that have led to changes in the evaluation plan. Some of these changes were due to availability of personnel, some to substantive or methodological issues.

There are many points on which the AIR evaluation plan differs from the plan as implemented by the Westinghouse Evaluation Institute (WEI). Basically, the differences can be described as falling into four categories, discussed below.

The orientation of the WEI plan was to collect more "hard" data than the original AIR plan. It is WEI's evaluation philosophy that direct observation is a key methodology to include in an evaluation. The original plan relied too heavily, in WEI's opinion, on self-reported information. Thus, WEI has added direct observation of changes in the physical environment, and the staging of suspicious incidents, so as to determine how a sample of students would react to witnessing such an event.

It has been our judgment, from the start of this project, that it would be optimistic to expect that the CPTED implementation in Broward would produce a significant impact on crime and fear of crime within the short time period allowed for evaluation. Thus, WEI has emphasized a theory-based approach to the CPTED evaluation. WEI radically altered the nature of the student survey from primarily a victimization survey to one which would reflect changes in access control, surveillance, activity support, and motivation reinforcement. These are both the basic theoretical concepts underlying CPTED implementation and the proximate goals that must be accomplished if CPTED theory is to have a valid test. Without attainment of these proximate goals, there is little reason to believe the CPTED program activities could have an impact on the ultimate goals, i.e., could bring about a reduction in crime and fear of crime. Thus, WEI included questions on the survey relating to how often the students are in a certain area and how aware they think they are of what is going on in that area. In addition, a trained observer has systematically sampled behavior in given geographic areas.

The original plan called for the examination of the deans' disciplinary records in the four demonstration schools. In addition, the AIR plan included surveys of teacher attitudes. The Broward Research Department conducted one teacher survey but concluded that the information collected did not justify further surveys. WEI explored the possibility of assuming responsibility for analyzing the deans' disciplinary records, but it became clear that its resources were not sufficient to undertake such an activity.

AIR's plan called for an interrupted time series design. In WEI's judgment, such a design was not feasible for a number of reasons. An interrupted time series design requires multiple data points, optimally, at equally spaced time intervals. At most, the data available from surveys will be from five points in time. This is not sufficient to conduct a time series analysis. Moreover, an interrupted time series design requires an abrupt implementation. This was certainly not the case for the Broward CPTED project. For example, it took approximately 8 months, from the start of construction, for a courtyard strategy to be completed. Other strategies were also subject to extensive delays. It is most likely the nature of the implementation of physical changes that such time periods are encountered.

The research design employed by WEI is based on a *subenvironmental strategy* approach. Each strategy implemented by a demonstration school will be assessed by relevent data points. For example, one school has implemented changes in a number of restrooms. Survey data will be examined to determine if there were changes in students' behavior or

perceptions vis-a-vis these restrooms. Any changes encountered will be compared to attitudes and behaviors in the other demonstration school restrooms, as well as the other schools in the county where data are available. This approach allows the researcher to logically relate changes in the physical environment with changes in attitudes and behaviors. A total environmental analysis will also be utilized to compare non-environmentally specific behaviors (e.g., student morale, reporting of crimes) of students in the project schools to students in the rest of the county.

6.4 Limitations of Current Evaluation Plan

There are a number of limitations in the current evaluation plan that should be noted. First, the evaluation plan was not formative in its orientation. That is, there was no attempt to set up a systematic feedback network between the evaluators and the program implementers. Thus, the implementation had to take place in the absence of emerging relevant data. This type of formative evaluation would have been useful in the conduct of the program. The evaluation plan did not have a sufficiently long post-implementation phase. As noted in the AIR evaluation plan, a minimum of one year was seen as desirable. For some strategies, post-test data will be collected 3 months after the completion of implementation. Thus, effects which take time to appear in student behavior and decay of effects over time cannot be easily assessed in the current evaluation.

Given the manner in which the evaluation was conducted, there was some ambiguity concerning the sharing of responsibilities among the

Westinghouse CPTED Demonstration Coordinator, Westinghouse Evaluation Institute, the Broward County School Research Department, and the Broward CPTED Project Coordinator. Informal relationships developed over the course of time. However, the evaluation possibly could have been conducted more effectively and efficiently if responsibilities had been more clearly defined. At the start of the evaluation, long-range planning by WEI would have been possible if the eventual level of involvement and responsibilities to be assumed by WEI had been anticipated.

The initial AIR research design called for four control schools and four experimental schools. This design was not implemented, and instead, the four experimental schools were to be compared with the rest of the county. Compared to a true experimental design, which possibly could have been implemented, this is a relatively weak research design. The weaker design hinders the evaluation in that attributions of causality must be made with less confidence and small effects are not as easily detectable.

Neither the administration of the surveys nor the keypunching of the results was under the direct control of WEI. Therefore, the quality control achieved in the collection of these data is unknown. In addition, responsibility for approval of the items to be included in the survey instruments rested with the Broward Research Department, not WEI. As a result, decisions on content reflected the Research Department staff's wish to balance CPTED evaluation needs with the school system's broader educational needs.

6.5 Implementation of Modified Evaluation Design

6.5.1 Introduction

A number of methodologies were chosen to gather data on the effort, proximate goal, and ultimate goal measurement points. This section discusses each of these. Since each of the four experimental schools had some strategies unique to that school, and other strategies were common to all four experimental schools, each school was considered an imperfect replication of the other. This was the structure under which data collection took place.

6.5.2 Reports and Other Documents

Determining the progress of the various physical design strategies, as implemented in each of the four project schools, required an archival review of official documents, correspondences, and files containing requisitions, bids, purchase orders, and other relevant paperwork. To comprehend the pre-start-up phase of the CPTED Schools Demonstration, monthly and quarterly reports dating back to 1974 (from Westinghouse to LEAA) were also reviewed. These reports provided information on early plans for the project and indicated the chronology of events leading to the selection of Broward County as the target area. They also presented the concepts behind the development of the original Schools Demonstration Plan as it was to be implemented in the school system.

A review of weekly reports from the CPTED Project Coordinator to the Project Director, to the Westinghouse Deputy Project Manager, and to the principals provided some insight into the particular delays and problems

that the project encountered. Coupled with this review, an inspection of monthly and quarterly reports from the Broward CPTED office to LEAA provided an historical account of implementation progress, including the problems and delays (and oftentimes their reputed causes), and any changes in the plans which occurred or were to occur, and to what these changes could be attributed.

The data gained from the review of memos sent from the onsite observer to WEI included observations of whether or not certain strategies, which had been reported to be complete, were in fact complete, as well as information on unforeseen behaviors that occurred as results of incorrect construction, such as a parking lot not being used because of delivery of improper locks for gates. This information was then combined with that derived from the above-described reports, with the conceptualization of a total picture of CPTED implementation set as the goal.

The entire process of this facet of the archival search necessitated the rereading of each individual report (covering some 500-700 pages) and creating work calendar charts of "what happened when" (see Chapter 5).

After assimilating the above data into a comprehensible framework of progression and delays, many gaps still remained to be filled in order to reconstruct the history of the project as it actually occurred. For example, it often appeared that the time span between awarding of bids and the actual start of constructions represented an unusually long period, indicating delays which could not be accounted for in the existing documents and correspondences.

The remaining data (i.e., the project construction implementation files) were collected during a 3-day visit to the Broward CPTED office, where each file indicating dates of requisitions, dates plans were received by CPTED and by the School Board, dates the School Board approved the plans or blueprints, dates the plans were sent to the Purchasing Department, dates the Purchasing Department let the plans for bid, dates of bid awards, construction start-up dates, construction progress, contractor invoices, and the like were reviewed. This 3-day procedure included compiling the necessary information for each strategy in each of the four project schools.

In addition to an extensive archival search, interviews were conducted with key individuals involved in the CPTED project. These interviews took place in March 1978.

After compilation of a progression calendar, a narrative report, describing all of the information contained in the archives, as well as noting selective significant events, was written.*

6.5.3 Student Victimization and Attitude Survey

A student victimization survey was developed and distributed by the Broward County Research Department in spring 1976 to approximately 4,800 students. Four hundred were administered in each of the experimental schools and the rest to other high schools. Additional victimization surveys, which included attitudinal items, were distributed in winter and spring 1977, and winter and spring 1978. At the completion of data

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*Material from that written narrative comprises Chapter 5 of this report.

collection, there were four data points for the attitudinal questions and five data points for the victimization data.

The table below shows the number of surveys distributed and returned for each of the five administrations.

	Distributed	Returned	Return Rate(%)
Spring 1976	4,800	2,772	57.8
Winter 1977	2,000	1,428	71.4
Spring 1977	2,000	1,483	74.2
Winter 1978	2,000	1,416	70.8
Spring 1978	2,000	1,264	63.2

Since the attitudinal questions were virtually identical in all four surveys, the surveys are comparable. Such is not the case with the victimization surveys, which changed with each administration. (The survey items are included in Appendix D.)

The winter 1977 victimization survey had identical questions to the spring 1976 survey, but in a different order. The spring 1977 survey differed from the winter 1977 survey in the following respects:

- Questions concerning extortion incidents and dollar amounts of theft and extortion incidents were dropped entirely.
- Questions dealing with fear of theft in various subenvironments were added.

- Questions to obtain overall theft and assault incidents rates were added.
- Scaled response for the fear of theft and fear of assault questions was changed from No or Yes to Never, Almost Never, Sometimes, and Most of the Time. In addition, the wording of the fear questions was changed from "Are you afraid," to "How often are you afraid," thus altering the demand characteristics of the question.
- The number of environments tapped was dropped from 13 to 9. Of these 9, 2 are completely new, not appearing on previous test forms.

These changes negate certain previous data in that some pre/post comparisons can no longer be made.

There are two factors that affect the reliability of the victimization survey: The phrase "counting this year only" could have lead to inconsistent responses on the part of the student respondents, since it is unclear whether the *school year*, or the *calendar year* is being referred to. There are no data presently available to permit an assessment of student interpretation of that phrase. This is important because it permits the establishment of the victimization rates as a yearly rate or 5-month rate, and thus, makes them more comparable to the reported crime data. In addition, the survey had two catch-all categories: "Other places on the school grounds," and "other places inside the school building,"

which could have been misinterpreted by the students so that they responded "Yes" to a subenvironment and "Yes" to one of the catch-all categories, when only one incident was involved.

It is interesting to speculate as to the true victimization rate across all the subenvironments. In other words, the rates for each subenvironment might be somewhat additive, so that if one adds the respective rates, one computes a total victimization rate which is truly awesome, such as 90 percent. This would reflect a high multiple victimization rate or a high overall single victimization rate, making crime a very significant factor in the schools.

6.5.4 Observational Methodology

An integral part of the evaluation strategy was the inclusion of observational measures of student behavior. An observational schedule was developed by WEI and pilot-tested in February and March of 1977. During that time, an onsite observer was trained in the use of that observational schedule (see Appendix E). The observational schedule was developed to monitor program implementation and indicate changes in student utilization of the environment. Observations were to take place at regular intervals at each school.

The observational schedule was developed from the objectives set forth in the School Demonstration Plan. For example, as part of the monitoring function, the observer was to indicate the number of new tables and benches placed in patios, and the completion dates of the school policing precinct, the various graphics, the color-coding, and the locker

room color-coding. The observational form was designed not only to indicate the completion of implementation of the various design directives but their utilization as well.

The observational form also was to provide information concerning the impact of the design directives on student behavior. For example, the development of the patios was designed to increase student use of the patio and decrease student use of undesirable areas (e.g., auto parking lot and smoking corridor). Thus, the observer counted the number of students using the patio and the number of students using these other areas. The student use of the patio was recorded four times for each school during the lunch hours. The average number of students was used in the data analyses. In a similar fashion, the observer counted the number of groups of students in the patio, where groups were defined as two or more persons talking together. The average numbers for those observations were utilized in the data analyses.

In summary, the observational data were to provide indications of implementation of the various design directives, the maintenance and utilization of these design directives, and the immediate impact these design directives had on student behavior.

6.5.4.1 Frequency and Timing

One observation was scheduled at each of the project schools every 2 weeks. Allowances were made for school vacations and inclement weather. These observations began at the onset of the first lunch period and were timed to end with the finish of the last lunch period. No data were collected during the 5-minute class change periods. Any portion of the

observation that did not require student presence was done after the lunch periods had ended.

6.5.4.2 Observation Patterning

To help insure data collection reliability, the observer followed a specific pattern when doing the observation. This allowed each directive to be observed at approximately the same time during each observation. For example, at Deerfield Beach High School, the observation proceeded as follows: The patio was observed first, followed in consecutive order by the student auto parking lot, the bicycle parking area, the transitional zone, the outside smoking corridor, and the exterior stairwells. At this point, the portions that required two separate observations were repeated. The second observations were made during a different lunch period than the first. At Deerfield Beach, the patio, auto parking lot, bicycle parking area, and outside smoking corridor were repeated, in that order. A similar pattern had to be followed at each of the project schools.

6.5.4.3 Observation Form

These forms (presented in Appendix E) are relatively self-explanatory. The forms differ for each of the project schools, covering only those directives that were to be implemented at the specific school.

Because of the student movement on a high school campus, many of the observations required an instantaneous scan sampling procedure. For example, the number of stationary students on a patio could increase or decrease by as much as 50 percent while the counting was being done.

Consequently, it was essential that the observer followed an established pattern, such as counting from left to right and not doubling back to include or exclude additional students.

The information given above covers the observational procedure, but there were also factors not provided for on the observation forms that were essential to note. These factors consisted of anything which would affect the nature of the data being collected on the forms. During nearly every observation, there was at least one unusual situation affecting the data. For example, at South Plantation, there was continuing construction in the student parking lot, and at Boyd Anderson, the patios were still under construction. These conditions were noted on the forms.

6.5.4.4 Summaries

A summary of the progress during each 2-week series of observations, including a detailed explanation of any factors affecting the data, was drafted and submitted with the observational form.

6.5.5 Crime Reports

A computer tape containing 11,093 investigative reports, covering school years from 1973 to 1977, was obtained from the Department of Internal Affairs. The reports pertain to all cases handled by Internal Affairs in elementary and high schools. A filtering process reduced the number of reports to be analyzed to 3,566. These reports involved incidents of assault, breaking and entering, busing extortion, theft, and vandalism.

6.5.6 Staged Suspicious Incidents

In order to measure CPTED's impact on crime reporting, it is important to determine whether the behavior of students has changed as a result of the

introduction of various CPTED strategies. Self-report and attitudinal measures such as the student surveys comprise one method used to do this. However, major limitations are imposed by the survey technique. The primary limitation is the difference between predicted self-report and actual behavior. It is well-established that people do not necessarily behave the way they say they would behave. Thus, an important part of the evaluation strategy is to examine how students behave in response to observing an actual event that could be interpreted as a crime.

The use of an active intervention technique in an evaluative setting poses problems not usually encountered in basic research. There are dangers, as will be noted below, that the incident can precipitate a more serious event. The credibility of the CPTED program also might suffer, if students reacted negatively to a staged incident. When an evaluator takes an active role in eliciting behavior in a contrived situation, an additional danger exists. The evaluator may be seen by others as being responsible for the behavior of others in response to that situation. This contrasts with the more typical passive measurement techniques, such as observations, surveys, and archival analyses. In the present situation, unusual and upsetting events occurred but did not produce any negative effects.

Given the high school environment, and the concern of the administrators, care was taken to develop an incident that would not cause undue concern. School administrators voiced concern about the possibility that staged incidents could cause major disruptions on their school campuses.

Thus, a relatively innocuous event had to be utilized. The suspicious incident chosen for this evaluation was a male stranger entering the student parking lot, walking through that lot, and looking into cars. The individual was not to touch any of the cars nor attempt to break into them. A written procedure was developed with the expectation that the suspicious incidents would be conducted in a standardized manner. Such was not the case.

The behavior followed by the "suspicious character" (an Internal Affairs investigator from another school) was one of increasing provocation, as he waited for students to react to the situation. In some schools, the original plan was followed (i.e., the investigator simply walked through the parking lot looking into cars). When students in one school did not appear to respond to this, he approached some students and asked them which cars had the best CB radios for him to steal. In another school, he asked the observer to park his car in the parking lot, removed a satchel from the back seat of this car, and placed it in the trunk of his car. Thus, the incidents were not staged in precisely the same manner in each school. The investigator used his judgment regarding when to escalate the situation so as to provoke a response from students.

An observer, stationed nearby, recorded the following information:

- Whether a student monitor or an adult was present.
- Number of students present, both in the parking lot and on the perimeter of the lot.
- Number of students who observed the event.
- Sex and race of students who observed the event.

- Number of students who appeared to leave to report the event.
- Number of students who attempted direct intervention.
- Number of students who pointed out the event to fellow students.
- Number of students who observed the event but did nothing.

The observer also asked administrative personnel to complete a data sheet concerning reports of the incident (i.e., describing the student[s] who reported it, the time and nature of the report).

Each incident was designed to occur in a 5-minute period. Ten incidents were to be staged in each school before the planned CPTED educational effort (described in Section 5.3.8) began, and 10 were to be staged after that effort was initiated. Events were also to be staged in four comparison schools.

The research design planned to use reactions to the staged incidents as a measure of the effectiveness of the educational effort, which was to be implemented in two of the comparison schools as well as the four project schools. However, the educational strategies were not implemented as scheduled, and all suspicious incidents were staged prior to any significant educational efforts in any of the schools.

It had been expected that the suspicious incident could be staged in a relatively unobtrusive manner. This assumption was a key factor

in the plan to utilize these incidents and student response in a quantitative manner. However, it became clear that the incidents were not as unobtrusive as first anticipated. In each school, the knowledge that the incident was staged became widespread. In some schools, a large number of students were attracted by the incident and it was reportedly widely talked about by the students. The incident was staged only once in each school.

In conclusion, the results of the staging of the incidents serve to supplement the self-report data obtained from the survey. Because of the problems in standardizing the manner in which the events were staged, and the small number of events that were eventually staged, the data must be interpreted qualitatively.

6.5.7 Interviews

Interviews were performed as follows:

- Paradigm, Inc. (under subcontract to Westinghouse) conducted primarily group interviews with administrators, faculty, and students at each of the four experimental schools in May of 1977. These interviews focused on the school users' awareness of the process of CPTED planning and implementation.
- The local CPTED observer regularly performed key-person interviews as part of the observational methodology.
- Market Facts, an external evaluator, was contracted by the Broward County School Board to perform

interviews of faculty and students as part of an impact assessment (specific survey not available at this time).

- Interviews of key-persons in the Broward County School System were conducted by WEI in March of 1978 (see Appendix F for format).

6.6 Methodology Summary

The need for the large array of methods utilized in this evaluation arises from the complexity of the CPTED program and the evaluators' attempts to measure that complexity. A variety of methodologies were employed to compensate for the weakenesses in any individual methodology. For example, because data obtained from the survey responses may not accurately reflect what students would do if they were confronted by a crime, suspicious incidents were staged to examine actual student response. While both methodologies have their weaknesses, their strengths clearly add weight to any conclusions drawn.

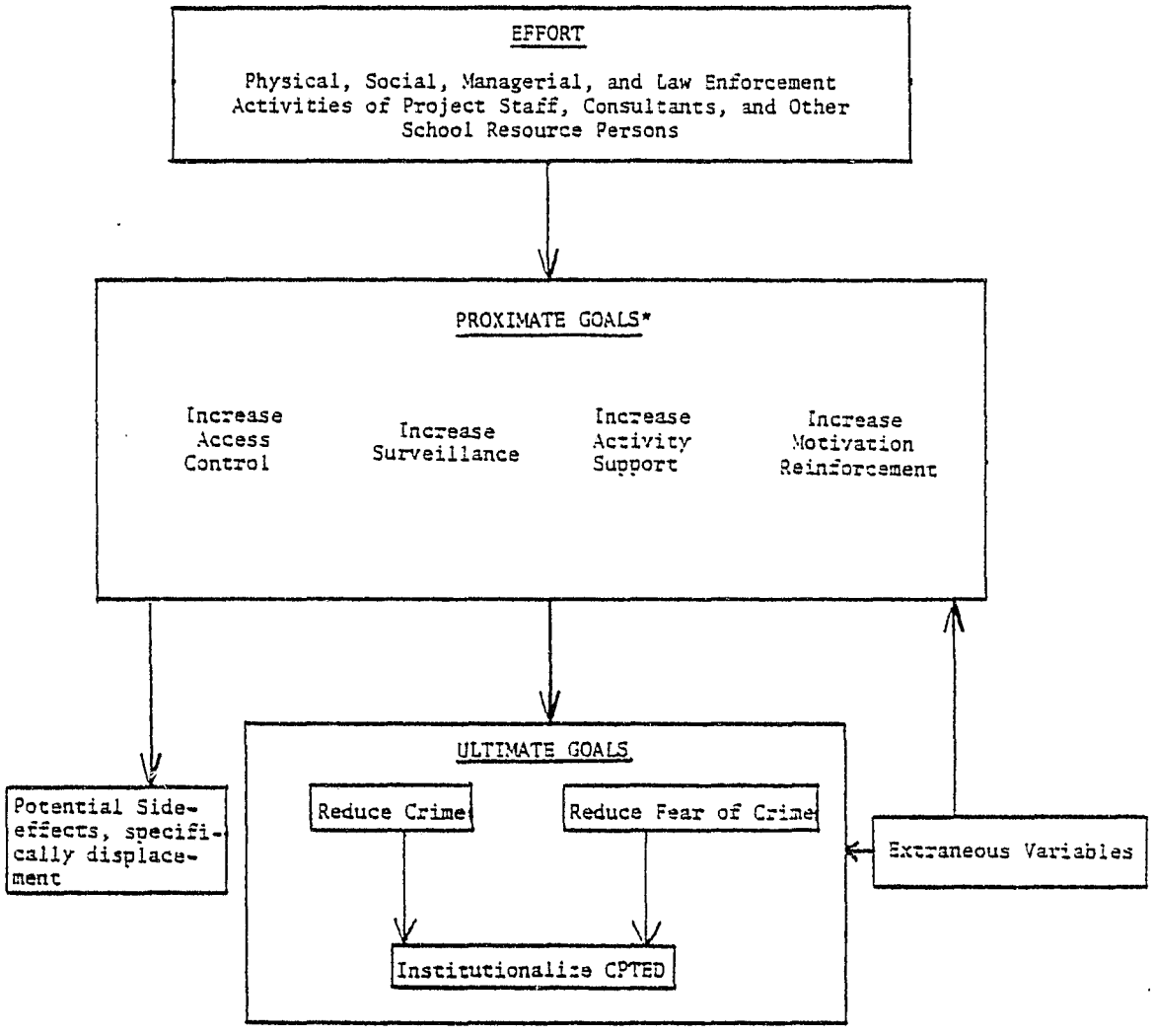
CHAPTER 7. RESULTS AND DISCUSSION

7.1 Organization of Results

Evaluation of this project was designed to provide answers to four questions:

- Was the project adequately designed (i.e., does the design incorporate the results of an adequate crime/environment analysis and appropriate strategy selection)?
- To what extent were the effort goals attained (i.e., were the physical, social, managerial, and law enforcement strategies implemented as planned)?
- To what extent were the proximate goals attained (i.e., were access control, surveillance, activity support, and motivation reinforcement increased)?
- To what extent were the ultimate goals attained (i.e., were crime and the fear of crime reduced)?

Figure 7-1 illustrates the framework within which the evaluation's results are organized.



*The four proximate goals are not mutually exclusive. Surveillance increases also serve to increase access control; increased activity support promotes increased surveillance and access control; and increased motivation reinforcement provides support for increases in the other three.

Figure 7-1. CPTED Conceptual and Evaluation Framework

7.2 Adequacy of Project Design

7.2.1 Crime/Environment Analysis

The analysis incorporated in the demonstration plan indicated that the four demonstration schools had common crime/environment problems. However, each school was unique and there were different manifestations of the crime/environment problems. A wide range of design strategies was proposed, based on the relevant needs of each school. Within the scope of each strategy, design directives were developed to maximize the existing opportunities for crime prevention available at each location. As a result, the strategies and design directives selected represented the most complete response to the crime/environment problems possible within the CPTED framework and the resources available to the project.

This section presents the crime environment data that were most relevant for the selection of appropriate strategies. Note, however, that much of these data were not available to the demonstration planners. The demonstration planners did have access to the following:

- The reported crime data from the Office of Internal Affairs for the 1974-75 school year.
- Interviews conducted by CPTED team members with selected students, administrators, faculty, and other school personnel.

They did not have access to:

- The reported crime data for the 1975-76 school year (although the implementation was not scheduled to begin until the summer of 1976, the demon-

stration plan and Broward County grant application had to be completed well before that time).

- Student victimization or fear data (the first survey was not administered until May-June 1976).

7.2.1.1 Reported Crime Data and Crime Environments

The Westinghouse Evaluation Institute received computer tapes of investigator's reports filed with the Broward County Office of Internal Affairs for September 1973 to June 1977. These reports contained the following information for each incident:

- Date of incident.
- Date case opened.
- Whether the school had an alarm system.
- Whether the incident was reported by security personnel, by a telephone call, or by other means.
- Type of incident (assault, theft, etc.).
- Time of day of the incident.
- Whether law enforcement officials were notified.
- Whether legal charges were placed.
- Whether money or property was recovered.
- Dollar value of the items stolen or destroyed.
- Type of equipment involved.
- Whether restitution was made.
- Dollar amount of the restitution.
- Whether any insurance coverage was applicable in the incident.

- Dollar amount of insurance
- Case closing date.
- Sex, race, and age of the offender.

There were 11,093 reports on the tape. A filtering process resulted in a subset of 5,750 reports. Excluded were those reports which did not apply to the high schools, involved no property damage or were "victimless" crimes (such as possession or use of alcohol or marijuana) or contained erroneous filing dates. The subset was further reduced by excluding the reports of those incidents that occurred during the summer months and during the first semester of the 1977-1978 school year, and those incidents that occurred very infrequently in the school subenvironments that were of greatest interest. This process netted a final number of 3,566 reports that were examined.

Tables 7-1 to 7-5 present the number of incidents for theft, assault, extortion, breaking and entering, and vandalism by location, by school (the four experimental schools and the remainder of the county high schools), and by school year (through 1975-76). Marginal totals for each school across subenvironments and for each subenvironment across schools are also shown.

7.2.1.1.1 Theft

Theft was the most frequently reported crime. Table 7-1 shows that there was a dramatic increase from the 1973-74 to the 1974-75 school year, and a smaller increase in the following school year. Considering all three school years, Boyd Anderson showed the largest net increase (463 percent), followed by the County (154 percent), McArthur (120 percent), South

TABLE 7-1

Theft Incidents by Location, School, and School Year

1973-1974 School Year

Subenvironment	BA*	DB	MA	SP	CO	TOTAL
Cafeteria	0	0	1	1	2	4
Classroom	5	2	3	4	25	39
Corridor	0	1	0	0	0	1
Locker Room	5	3	0	7	20	35
Auto Parking Lot	8	28	21	11	41	109
Portable Classroom	0	0	0	0	0	0
Restrooms	0	0	0	1	0	1
School Grounds	1	2	3	3	15	24
Off School Grounds	0	2	2	0	1	5
TOTALS	19	38	30	27	104	218

1974-1975 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	0	1	5	1	7	14
Classroom	6	3	12	4	65	90
Corridor	0	1	0	0	3	4
Locker Room	16	1	7	12	107	143
Auto Parking Lot	9	40	42	11	96	198
Portable Classroom	0	0	0	0	0	0
Restrooms	1	0	0	0	3	4
School Grounds	2	5	12	7	26	52
Off School Grounds	0	2	1	0	8	11
TOTALS	34	17	79	35	315	480

1975-1976 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	5	0	3	0	6	14
Classroom	30	7	7	15	67	126
Corridor	0	1	1	1	0	3
Locker Room	37	8	2	10	61	118
Auto Parking Lot	15	14	26	2	55	112
Portable Classroom	0	0	0	0	0	0
Restrooms	5	0	1	0	4	10
School Grounds	15	9	24	18	62	128
Off School Grounds	0	2	2	0	10	14
TOTALS	107	41	66	46	265	525

*BA = Boyd Anderson; DB = Deerfield Beach; MA = McArthur; SP = South Plantation; CO = Other county high schools.

TABLE 7-2

Assault Incidents by Location, School, and School Year

1973-1974 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	6	0	0	1	3	10
Classroom	9	1	2	2	12	26
Corridor	9	0	1	1	13	24
Locker Room	1	0	0	1	3	5
Auto Parking Lot	2	0	0	0	4	6
Portable Classroom	0	0	0	0	0	0
Restrooms	6	0	1	0	3	10
School Grounds	29	0	6	5	58	98
Off School Grounds	1	0	1	3	9	14
TOTALS	63	1	11	13	105	193

1974-1975 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	2	0	2	2	5	11
Classroom	18	0	0	8	12	38
Corridor	38	1	8	6	18	61
Locker Room	1	0	1	0	2	4
Auto Parking Lot	8	1	2	0	10	19
Portable Classroom	0	9	0	0	0	2
Restroom	9	1	1	3	10	24
School Grounds	40	0	9	6	60	115
Off School Grounds	5	0	2	2	13	27
TOTALS	111	3	25	27	130	296

1975-1976 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	1	0	5	2	3	11
Classroom	7	0	9	3	18	37
Corridor	6	4	9	1	16	36
Locker Room	0	0	2	1	1	4
Auto Parking Lot	1	0	2	1	6	10
Portable Classroom	0	0	1	0	0	1
Restroom	1	1	3	1	11	17
School Grounds	11	3	31	8	78	131
Off School Grounds	3	0	3	0	10	16
TOTALS	30	8	65	17	143	263

TABLE 7-3

Extortion Incidents by Location, School, and School Year

1973-1974 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	0	0	1	0	0	1
Classroom	2	0	0	0	0	2
Corridor	1	0	0	0	0	1
Locker Room	2	1	0	2	1	6
Auto Parking Lot	0	0	0	0	0	0
Portable Classroom	0	0	0	0	0	0
Restrooms	1	0	0	0	2	3
School Grounds	4	0	0	1	4	9
Off School Grounds	0	0	0	0	1	1
TOTALS	10	1	1	3	8	23

1974-1975 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	1	0	0	0	0	1
Classroom	1	0	0	0	1	2
Corridor	2	0	1	0	1	4
Locker Room	0	0	1	0	1	2
Auto Parking Lot	0	0	0	0	0	0
Portable Classroom	0	0	0	0	0	0
Restrooms	3	0	0	0	3	6
School Grounds	3	0	2	0	7	12
Off School Grounds	0	0	0	0	0	0
TOTALS	10	0	4	0	13	27

1975-1976 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	0	0	0	0	0	0
Classroom	0	0	0	0	0	0
Corridor	0	0	0	0	0	0
Locker Room	0	0	0	0	0	0
Auto Parking Lot	0	0	0	0	0	0
Portable Classroom	0	0	0	0	0	0
Restrooms	1	0	1	0	1	3
School Grounds	0	0	0	0	6	6
Off School Grounds	0	0	0	0	1	1
TOTALS	1	0	1	0	8	10

TABLE 7-4

Breaking and Entering Incidents by Location, School, and School Year

1973-1974 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	0	0	1	0	1	2
Classroom	0	0	2	1	4	2
Corridor	0	0	0	0	0	0
Locker Room	0	1	1	0	1	3
Auto Parking Lot	1	2	0	0	2	5
Portable Classroom	0	0	0	0	0	0
Restrooms	0	0	0	0	0	0
School Grounds	0	0	2	0	1	3
Off School Grounds	0	0	0	0	0	0
TOTALS	1	3	6	1	9	20

1974-1975 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	0	0	6	0	7	13
Classroom	0	0	3	0	7	10
Corridor	1	0	0	0	2	3
Locker Room	1	4	1	0	7	13
Auto Parking Lot	0	4	1	0	9	14
Portable Classroom	0	0	1	2	2	9
Restrooms	0	0	0	0	0	0
School Grounds	0	0	3	3	3	9
Off School Grounds	2	0	1	0	0	3
TOTALS	4	8	16	5	37	74

1975-1976 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	0	0	0	0	5	5
Classroom	1	0	1	1	16	19
Corridor	0	0	0	1	0	1
Locker Room	1	1	1	0	10	13
Auto Parking Lot	1	6	0	0	11	18
Portable Classroom	0	0	0	0	2	2
Restrooms	0	0	0	0	0	0
School Grounds	0	0	1	0	0	1
Off School Grounds	0	0	2	0	2	4
TOTALS	3	7	5	2	46	63

TABLE 7-5

Vandalism Incidents by Location, School, and School Year

1973-1974 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	0	0	1	0	1	2
Classroom	2	0	1	1	1	5
Corridor	0	1	0	1	0	2
Locker Room	0	0	0	0	1	1
Auto Parking Lot	1	1	1	3	3	9
Portable Classroom	0	0	0	0	0	0
Restroom	0	0	0	0	0	0
School Grounds	3	0	1	1	4	9
Off School Grounds	0	0	0	0	1	1
TOTALS	6	2	4	6	11	29

1974-1975 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	0	0	0	0	1	1
Classroom	6	0	3	2	6	17
Corridor	2	0	1	1	6	10
Locker Room	0	0	1	0	3	4
Auto Parking Lot	1	5	3	3	20	32
Portable Classroom	1	0	1	0	1	3
Restroom	0	0	0	1	3	4
School Grounds	3	0	2	2	13	20
Off School Grounds	0	0	2	1	3	6
TOTALS	13	5	13	10	56	97

1975-1976 School Year

Subenvironment	BA	DB	MA	SP	CO	TOTAL
Cafeteria	0	0	0	0	2	2
Classroom	4	0	3	0	14	21
Corridor	1	0	0	0	6	7
Locker Room	0	0	1	0	3	4
Auto Parking Lot	6	4	7	1	10	28
Portable Classroom	0	0	1	0	2	3
Restroom	0	0	1	0	2	3
School Grounds	6	1	1	1	12	21
Off School Grounds	0	0	0	0	1	1
TOTALS	17	5	14	2	52	90

Plantation (70 percent), and Deerfield Beach (7 percent). An examination of reported thefts at the subenvironment level indicates a gradual shift in some schools with respect to the degree to which crimes occurred there. For example, in the 1973-74 school year, thefts were the most serious in the auto parking lot at all four schools and the rest of the county, with the classroom and the locker rooms as the next most serious. By the 1975-76 school year, the pattern shifted:

- The total number of thefts had risen dramatically.
- The number of subenvironments where thefts had become a problem had risen.
  - Boyd Anderson sustained a 600 percent increase in thefts in the locker room and the classroom. Thefts in the auto parking lot and on the school grounds also increased, resulting in four subenvironments with serious crime problems.
  - Deerfield Beach experienced a net reduction (by 50 percent) in auto parking lot thefts, with slight increases in classroom, locker room, and school ground thefts.
  - McArthur experienced a large increase in thefts on school grounds, thus making the school grounds and the auto parking lots the most frequent subenvironments for thefts.
  - South Plantation experienced the greatest increase

in reported thefts in the classroom and the school grounds subenvironments, although the number of thefts was still small compared to Boyd Anderson and McArthur.

- The county, as a whole, experienced a reduction in reported thefts from the 1974-1975 school year to the following school year, although the number was still appreciably higher than the 1973-1974 school year. In fact, between 1974-1975 and 1975-1976, the county exhibited large decreases in reported thefts in the locker rooms and the auto parking lots, with increases in thefts occurring on school grounds.

In the 1973-1974 school year, the grestest number of reported thefts occurred at Deerfield Beach, followed by McArthur, South Plantation, and Boyd Anderson. Two years later, however, the greatest number of thefts were reported at Boyd Anderson, followed by McArthur, South Plantation, and Deerfield Beach. The relative rankings of Deerfield Beach and Boyd Anderson had been reversed.

7.2.1.1.2 Assaults

Table 7-2 shows the reported assaults by location, school, and school year. It is obvious that assaults were reported most frequently at Boyd Anderson for the first two school years shown. The large number of assaults at Boyd Anderson obscures the fact that McArthur showed a consistent, approximately twofold increase over the previous year. Conversely,

by 1975-1976, Boyd Anderson had exhibited a threefold decrease in number of reported assaults. This was due to the fact that during the first two school years shown in Table 7-2, racial tension was high at Boyd Anderson and assaults were typically racially motivated. By the 1975-1976 school year, the racial tensions had been eased, thus contributing to the decline of reported assaults.

The number of reported assaults increased at both Deerfield Beach and, as mentioned previously, at McArthur. South Plantation also showed a slight increase. The most common subenvironment for assaults was the school grounds, with the corridors and classrooms being the next most common sites.

7.2.1.1.3 Extortion

The most remarkable aspect of reported extortions (see Table 7-3) is the small number of them, relative to reported thefts and assaults, and their reduction over the three school years. By the 1975-1976 school year, there were no reported extortions at Deerfield Beach and at South Plantation, while Boyd Anderson and McArthur had just one each. The county, as a whole, experienced some fluctuation (from 8 to 13 to 8 reported extortions), but this is a very small number of reported extortions, given the fact that there are about 80,000 students in the Broward County high schools. The most common subenvironment for reported extortions was the school grounds.

7.2.1.1.4 Vandalism and Breaking and Entering

Whereas theft, assault, and extortion are crimes directed against persons, breaking and entering and vandalism are directed against

property. Tables 7-4 and 7-5 show the reported incidents of breaking and entering, and vandalism. What is immediately evident is the large increase for both types of offenses from the 1973-1974 to the 1974-1975 school years. Here again, there are substantial differences among the four project schools: Boyd Anderson showed an increase each year in vandalism and an increase followed by a very large decrease for breaking and entering. Deerfield Beach showed a "plateau" effect for both types of offenses, with an initial increase and maintenance at that level. McArthur exhibited a "plateau" effect for vandalism, but a rise and then a fall for breaking and entering. South Plantation showed a rise, followed by a fall, for both vandalism and breaking and entering. The county, as a whole, showed a "plateau" effect for vandalism and a steady increase in breaking and entering. Boyd Anderson and McArthur had the most frequent reports of vandalism, while Deerfield Beach and McArthur had the most frequent reports of breaking and entering.

7.2.1.2 Student Victimization Data

The victimization survey developed by the Broward County Research Department and the American Institute for Research covered the following:

- Fear of assault in 13 subenvironments.
- Whether the students stayed home because of fear of assault.
- Theft victimization in 13 subenvironments.
- Extortion victimization in 13 subenvironments.
- Assault victimization in 13 subenvironments.

- Frequency of fear of assault, theft, and extortion.
- Dollar value of thefts involving the respondent as victim.
- Dollar value of extortions involving the respondent as victim.

The initial survey was distributed to a stratified random sample of Broward County high school students during the spring semester of 1976. (The survey was administered at four later dates for evaluation purposes, as discussed in Chapter 6.) The sample was drawn by computer from the enrollment files and was stratified by sex, race, and grade. The survey was distributed to 400 students in each of the four experimental schools and to 200 students in each of the other county high schools, for a total of 4,800 distributed surveys. A total of 2,772 were returned to the Broward CPTED office, were keypunched, and analyzed. The results from this survey were used to augment the information from the Office of Internal Affairs in assessing the crime environment needs of the four experimental high schools. Table 7-6 displays the victimization rates for 13 subenvironments in the schools.

The rates for theft reflect "Yes" and "More than Once" responses to the question: "Counting this year only, did anyone steal things (pick your pocket, take things from your desk or locker, steal your bike, etc.) from you at any of the following places?" The rates for extortion reflect "Yes" and "More than Once" responses to the question: "Counting this year only,

TABLE 7-6

Victimization Rates for Theft, for Assault, and for Extortion for the Four Project Schools and the County

(Page 1 of 2)

ENVIRONMENT	BOYD ANDERSON	DEERFIELD BEACH	McARTHUR	SOUTH PLANTATION	COUNTY
Theft:					
Streets Outside School	5.1%	5.1%	2.7%	4.1%	5.1%
School Bus	5.7%	3.8%	2.1%	.6%	4.7%
Auto Parking Lot	6.6%	7.1%	7.1%	5.4%	6.6%
Bicycle Compound	3.0%	4.3%	5.4%	7.9%	5.4%
School Grounds	12.0%	9.6%	15.9%	12.3%	14.7%
School Entrance	3.6%	.8%	1.9%	2.5%	3.1%
Hallways	5.5%	5.6%	5.1%	5.3%	6.0%
Restrooms	7.8%	3.9%	10.8%	6.3%	9.3%
Stairways	3.6%	2.1%	.8%	1.5%	2.3%
Classrooms	25.5%	23.9%	22.6%	25.5%	19.9%
Cafeteria	5.1%	4.8%	6.7%	8.2%	6.0%
Locker Room	19.5%	34.5%	32.4%	27.8%	32.5%
Inside School Building	7.2%	7.4%	6.8%	8.5%	9.4%
Assault:					
Streets Outside School	2.1%	2.4%	1.1%	0.9%	3.3%
School Bus	2.4%	1.3%	.8%	1.3%	4.1%
Auto Parking Lot	2.1%	1.3%	2.4%	0.0%	2.3%
Bicycle Compound	0.6%	1.1%	0.8%	0.3%	2.0%
School Grounds	4.8%	2.1%	3.8%	4.4%	5.3%
School Entrance	0.9%	1.1%	1.3%	1.9%	3.1%
Hallways	3.6%	4.8%	7.6%	4.7%	5.6%
Restrooms	3.9%	2.4%	3.5%	1.6%	3.7%
Stairways	2.1%	1.3%	0.3%	0.3%	2.4%
Classrooms	4.5%	3.5%	3.9%	3.5%	5.7%
Cafeteria	3.0%	1.0%	1.4%	1.0%	2.6%
Locker Room	5.4%	3.7%	4.9%	3.5%	5.3%
Inside School Building	2.1%	1.4%	1.1%	1.3%	3.0%

TABLE 7-6

Victimization Rates for Theft, for Assault, and for Extortion for the Four Project Schools and the County

(Page 2 of 2)

ENVIRONMENT	BOYD ANDERSON	DEERFIELD BEACH	McARTHUR	SOUTH PLANTATION	COUNTY
Extortion:					
Streets Outside School	2.7%	1.6%	.8%	.6%	3.5%
School Bus	1.5%	1.6%	1.0%	.3%	3.0%
Auto Parking Lot	2.7%	1.1%	3.0%	.9%	2.7%
Bicycle Compound	1.5%	.8%	0.5%	.6%	2.4%
School Grounds	3.0%	1.9%	3.2%	3.8%	5.4%
School Entrance	1.8%	1.0%	1.1%	.9%	3.4%
Hallways	2.7%	2.1%	3.2%	3.8%	5.0%
Restrooms	5.4%	2.4%	3.5%	4.1%	5.3%
Stairways	3.3%	1.4%	.5%	.3%	2.4%
Classrooms	3.0%	3.2%	2.1%	1.3%	3.5%
Cafeteria	2.7%	1.9%	1.6%	.9%	3.3%
Locker Room	3.6%	3.5%	2.7%	1.5%	4.7%
Inside School Building	1.5%	1.3%	1.7%	2.5%	3.5%

did anyone force you by weapons or threats to give money or other things to them at any of the following places?"

7.2.1.2.1 Theft

The highest victimizations were for theft occurring in three of the 13 subenvironments: Locker rooms, classrooms, and school grounds. There were individual school differences. For example, at Boyd Anerson, the highest rate was for the classroom, while in the other three schools and in the county, the highest rate was in the locker room.

7.2.1.2.2 Assaults

The assault victimization rates were, in general, lower than the theft victimization rates. In addition, each school had subenvironments differing as to severity of victimization. For Boyd Anderson, the most troublesome spots were the locker room, the school grounds, the restrooms, and the hallways. For Deerfield Beach, the environments with the highest rates were the hallways, the locker rooms, and the classrooms. For McArthur, the most troublesome spots were the hallways, the locker rooms, the classrooms, the school grounds, and the restrooms. For South Plantation, they were the hallways, the school grounds, the classrooms, and the locker rooms. It is interesting to note that the county, as a whole, had higher assault victimization rates than any of the project schools. The most troublesome county subenvironments were the classrooms, the hallways, the locker rooms, and the school grounds.

7.2.1.2.3 Extortion

Extortion victimization rates, in general, were lower than either

theft or assault. There were slight differences in the subenvironments. For Boyd Anderson, most extortions occurred in the restroom, locker room, and stairways. In Deerfield Beach, most extortions occurred in the locker room, classroom, and restrooms. In McArthur, most extortions occurred in the restrooms, school grounds, and hallways, as they did in South Plantation. In the county, as a whole, extortion rates were typically higher for a given subenvironment than in any of the four experimental schools.

7.2.1.2.4 Summary

Table 7-7 shows the rank ordering of five subenvironments within each experimental school and the county as a whole. Rates and types of crime differ for the various subenvironments. A number of specific conclusions can be drawn from this table:

- The rates for personal thefts are, in every case, much higher than for either assault or extortion.
- The classrooms and locker rooms have the highest rates for personal property thefts.
- The hallways, school grounds, and locker rooms have the highest victimization rates for assaults.
- The restrooms, hallways, and locker rooms have the highest rates for extortions.

In estimating the victimization rates from these surveys, certain subenvironments (hallways, classrooms, locker rooms, and restrooms) have the highest victimization rates of all the 13 areas in the surveys. This points to a homogeneity of subenvironments within the four experimental

TABLE 7-7

Rank Order of Five Highest Subenvironment Victimization Rates by Type of Crime

SCHOOL	THEFT	ASSAULT	EXTORTION
Boyd Anderson	Classrooms (25.5%) Locker Rooms (19.5%) School Grounds (12.0%) Inside Building (7.2%) Auto Parking Lot (6.6%)	Locker Room (5.4%) School Grounds (4.8%) Classroom (4.5%) Restroom (3.9%) Hallways (3.6%)	Restroom (5.4%) Locker Room (3.6%) Stairways (3.3%) Classrooms (3.0%) School Grounds (3.0%)
Deerfield Beach	Locker Room (34.5%) Classroom (23.9%) School Grounds (9.6%) Inside Building (7.4%) Auto Parking Lot (7.1%)	Hallways (4.8%) Locker Room (3.7%) Classroom (3.5%) Restroom (2.4%) Streets Around School (2.4%)	Locker Room (3.5%) Classroom (3.2%) Restrooms (2.4%) Hallways (2.1%) Cafeteria (1.9%)
McArthur	Locker Room (32.4%) Classroom (22.6%) School Grounds (15.9%) Restrooms (10.8%) Auto Parking Lot (7.1%)	Hallways (7.6%) Locker Room (4.9%) Classroom (3.9%) School Grounds (3.8%) Restrooms (3.5%)	Restrooms (3.5%) Hallways (3.2%) School Grounds (3.2%) Auto Parking Lot (3.0%) Locker Room (2.7%)
South Plantation	Locker Room (27.8%) Classroom (25.5%) School Grounds (12.3%) Inside Building (8.5%) Cafeteria (8.2%)	Hallways (4.7%) School Grounds (4.4%) Classroom (3.5%) Locker Room (3.5%) School Entrance (1.9%)	Restrooms (4.1%) Hallways (3.8%) School Grounds (3.8%) Inside Building (2.5%) Locker Room (1.5%)
County	Locker Room (32.5%) Classroom (19.9%) School Grounds (14.7%) Inside Building (9.4%) Restroom (9.3%)	Classroom (5.7%) Hallways (5.6%) Locker Room (5.3%) School Grounds (5.3%) School Bus (4.1%)	School Grounds (5.4%) Restrooms (5.3%) Hallways (5.0%) Locker Room (4.7%) Classrooms (3.6%)

schools with respect to the severity of the crime problem.

7.2.1.3 Fear of Crime by Crime Environment

As part of the student victimization survey, students were asked: "Are you afraid to go to the following places because someone might hurt or bother you?" Table 7-8 shows the percent of "Yes" responses for all 13 subenvironments and Table 7-9 shows the five subenvironments in each school and the county that elicited the highest fear of assault responses. These results were striking.

- In each of the four experimental schools and the county, restrooms, by far, elicited the greatest number of responses, while each school and the county had diverse ranking for the other subenvironments.
- The rank-orderings based on fear of assault are not in agreement with the rankings based on actual victimization as reported by the schools.

It is apparent from these data that students' fear of crime had relatively little to do with their actual victimization.

7.2.2 Subenvironment Focus and Strategy Selection

The subenvironments that were the object of CPTED strategies and directives in each school were as follows:

- Boyd Anderson -- Auto parking lots, school grounds, corridors, and locker rooms.
- Deerfield Beach -- Auto parking lots, schools grounds, external

TABLE 7-8

Fear of Assault for the Four Project Schools and the County

ENVIRONMENT	BOYD ANDERSON	DEERFIELD BEACH	McARTHUR	SOUTH PLANTATION	COUNTY
Street Outside School	6.3%	7.9%	3.5%	3.8%	8.7%
School Bus	2.7%	2.4%	11.1%	4.8%	5.2%
Auto Parking Lot	4.5%	4.0%	5.7%	3.5%	6.5%
Bicycle Compound	1.5%	1.9%	3.0%	2.2%	3.8%
School Grounds	7.8%	7.4%	14.9%	8.0%	12.2%
School Entrance	7.2%	1.9%	7.0%	5.4%	5.9%
Hallways	3.9%	3.2%	14.9%	4.7%	9.0%
Restrooms	22.2%	14.3%	34.5%	20.8%	23.1%
Stairways	8.7%	4.5%	3.8%	12.1%	4.9%
Classrooms	4.5%	3.4%	3.2%	1.9%	6.0%
Cafeteria	5.7%	2.9%	4.9%	1.6%	4.4%
Locker Room	7.8%	7.7%	10.5%	6.3%	8.7%
Inside School Building	7.9%	5.1%	7.0%	7.0%	7.3%

TABLE 7-9

Rank-order of the Five Highest Subenvironments for Fear of Assault

Boyd Anderson	Restrooms	(22.2%)
	Stairways	(8.7%)
	Inside School Building	(7.9%)
	Locker Room	(7.8%)
	School Grounds	(7.8%)
Deerfield Beach	Restrooms	(14.3%)
	Streets Outside School	(7.9%)
	Locker Room	(7.7%)
	School Grounds	(7.4%)
	Inside Building	(5.1%)
McArthur	Restrooms	(34.5%)
	School Grounds	(14.9%)
	Hallways	(14.9%)
	School Bus	(11.1%)
	Locker Room	(10.5%)
South Plantation	Restrooms	(20.8%)
	Stairways	(12.1%)
	School Grounds	(8.0%)
	Inside School Building	(7.0%)
	Locker Room	(6.3%)
County	Restrooms	(23.1%)
	School Grounds	(12.2%)
	Hallways	(9.0%)
	Locker Room	(8.7%)
	Streets Outside School	(8.7%)

stairwells, and locker rooms.

- McArthur -- Auto parking lot, school grounds, classrooms, hallways, and restrooms.
- South Plantation -- Auto parking lots, school grounds, corridors, locker rooms, and restrooms.

To assess whether the strategies chosen were appropriate, consideration must be given to the reliability and/or validity of the data on which the decisions were based. Many crimes, especially personal ones, are not reported to the appropriate authorities. When the reported crime incidents were converted to per capita rates, these rates were much lower than the student victimization survey rates. However, the patterns were roughly the same overall (e.g., there were more reported thefts than either assaults or extortions). At the subenvironment level, auto parking lots, locker rooms, and school grounds shared both high reported crime and high victimization rates.

In determining whether the strategies and directives were sensitive to the crime problems in each of the four experimental schools, the first question to be considered is: What constitutes a crime problem? If the answer is that even one criminal incident indicates a crime problem, then every subenvironment mentioned in the victimization survey could have been the object of a CPTED strategy and directive. Obviously, every school could not be totally redesigned and rebuilt because of the limited funds available.

Considering the limited funding available, access to complete data would have enabled the planners to adopt a structured approach to strategy

selection. Such an approach should include the following steps.

Determine what constitutes a crime problem, given that all locations in the school are the sites of some criminal incidents.

Prioritize the subenvironments as to severity of crime and fear of crime. For example, restrooms were the object of the highest fear of assault in each of the four project schools, yet a restroom strategy was applied only at McArthur. Hallways and classrooms ranked among the top five subenvironments for thefts and assaults in all of the experimental schools, yet classroom and hallway strategies were not implemented consistently.

There are three problems implicit in the prioritization process: (1) The discrepancy between crime reports and victimization surveys; (2) the lack of correspondence between crime and fear of crime; and (3) the fact that the educational mandate of the school system occasionally conflicted with the CPTED priorities. With respect to the first problem (offical crime reports vs. victimization surveys) the school grounds are the areas that consistently showed the highest theft and assault in Broward County. This would indicate that school grounds should have been a top priority for CPTED planning. However, based on student victimization data for thefts, the classrooms and locker rooms should have been the top CPTED planning priority. If the fear of assault data were considered, then the restrooms would have been given top priority. The problem for the Westinghouse CPTED planners, then, would have been to decide on which data source to use (crime reports, victimization rates, fear of

assault rates, or a combination of all three) and then to prioritize the subenvironments accordingly.

As noted earlier, the planners did not have any systemmatic data concerning victimization or fear. The hope was that implementers would be able to modify the plans in light of new data. Unfortunately this never occurred.

Finally, the decision to accept the planned strategies and to facilitate their implementation rested heavily with the principals of the individual schools. For example, the unorthodox restroom strategy was viewed as a calculated risk by some of the principals -- a risk not all wanted to take. On the other hand, the construction of a mini-plaza was very attractive to all of the principals and accepted/requested in all four schools.

Compare the potential cost-effectiveness of each design directive. This would have been a critical element in deciding on which strategies and directives to employ in the four experimental schools. Since the amount of money for strategy implementation was limited, the potential cost-effectiveness of each strategy might have been estimated. For example, considering the information about fear of assault from interviews with students and faculty, the restroom strategy (locking the restroom doors open) should have been implemented at every experimental school, since a significant fear-of-crime problem was associated with that subenvironment, and the cost would have been between $1000 and $2000 for each school.

7.2.3 Summary

The net results of the lack of data availability and the reality of

conflicting priorities in Broward County were;

- The strategies and design directives were scheduled to be implemented in each school in a manner which, in retrospect, could have been more systematic.
- The diffusion of resources into duplication of strategies across all four schools was a less than optimum use of money for the demonstration.
- The process by which the decisionmaking took place regarding strategy and design directive planning was complicated by the lack of much relevant data and by the agendas and concerns of each school principal. As a result, the design directives were not optimally sensitive to each school's crime and fear-of-crime problems.

In assessing the final impact of CPTED, all of the above points will be taken into account. One last point needs to be mentioned here, and that is the low victimization rates for some of the subenvironments for which design directives were planned. While on one level, any crime rate other than zero constitutes a crime problem, on another level, some crime is acceptable since it would take a great amount of resources to reduce it further. For example, if the cafeteria has a 5 percent rate for personal thefts and, as a result of CPTED implementation, the rate drops to 4 percent, that represents a 20 percent decrease in criminal

activity. Yet, that difference is difficult to discover statistically because of the low rates and the relatively small sample size for each survey. In other words, the choice of some design directives may make ascertaining whether the Broward demonstration is a success statistically difficult.

7.3 Attainment of Effort Goals

Table 7-10 summarizes the implementation status of the planned strategies. The conclusions reflected in this table are based on data from the onsite observer, interviews with key Broward persons, and an examination of official records. The table indicates that most of the strategies were implemented essentially as planned. Nevertheless, the strategies that were not implemented as planned could limit the demonstration's potential impact. Some of these strategies are discussed below.

Cost overruns caused several strategies to be dropped. These strategies included parking lot landscaping at both schools for which it had been planned and locker room painting at three of the four schools. In addition, restroom modification in South Plantation was not permitted because of the close proximity of the restroom to a food service area.

Two strategies were constructed according to specifications but never became functional: Portable ticket booths and the queuing lanes for South Plantation's snack bar modifications. According to the principals, the ticket booths never were taken out of storage because their heavy wood construction made them clumsy to handle. Additionally, they were fitted with wheels and it was feared that students would move them about campus

TABLE 7-10

Summary of Implementation Status
(Page 1 of 2)

Strategy	School	Essentially Implemented As Planned	Partially Implemented	Modified	Not Implemented
Parking lot fence gates	Boyd Anderson			X	
	Deefield Beach		X		
	McArthur		X		
	South Plantation		X		
Parking lot landscaping	Deerfield Beach				X
	South Plantation				X
Courtyard	Boyd Anderson		X		
	Deerfield Beach	X			
	McArthur	X			
	South Plantation	X			
School policing precinct	Boyd Anderson	X			
Burglar alarms	Boyd Anderson	X			
	McArthur	X			
	South Plantation	X			
Locker rooms	Boyd Anderson			X	
	Deerfield Beach				X
	McArthur				X
	South Plantation				X
Restrooms	McArthur		X		
	South Plantation				X
Communications	McArthur	X			

TABLE 7-10

Summary of Implementation Status
(Page 2 of 2)

Strategy	School	Essentially Implemented As Planned	Partially Implemented	Modified	Not Implemented
Bicycle parking compound	Deerfield Beach	X			
	McArthur	X			
	South Plantation	X			
Border definition	Deerfield Beach	X			
	South Plantation	X			
Bus loading zone	Boyd Anderson	X			
Ticket Booths	McArthur				X
	South Plantation				X
Hallways	Boyd Anderson	X			
	McArthur		X		
External stairwells	Boyd Anderson			X	
	Deerfield Beach			X	
	South Plantation			X	
Educational component		X			
Special CPTED Demonstration Strategies: Parking lot	South Plantation				X
Teacher planning area	South Plantation			X	
Snack bar modifications	South Plantation			X	

without permission. The poles and ropes for the queuing lanes were not installed because it was felt that the poles themselves would be more hazardous than the congestion they were designed to alleviate.

Some strategies were implemented in modified form, with varying implications for the anticipated impacts. For example, the elimination of windows in the external stairwells because of possible building code violations probably minimized that strategy's potential impact, while the modification of South Plantation's teacher planning area into a security office may have increased that strategy's impact on natural surveillance and access control.

Another possible outcome is suggested by the planned versus actual implementation of the Boyd Anderson locker-room strategy where color-coding by area of the room was modified to color-coding by row. It is possible that this type of color-coding still could enable teachers or students to observe students near lockers where they should not be, but the dispersion throughout the locker room would make this discrimination more difficult. On the other hand, by preventing the congestion that would have resulted from the original plan, this modification may increase the strategy's functionality for assault prevention.

7.3.1 Summary

The major problem with strategy implementation, as noted earlier, was the excessive time taken to complete a number of strategies. In spite of the delays encountered, it is the judgment of the evaluators that the effort goals of modifying the schools' physical, social,

managerial, and law enforcement characteristics were, for the most part, achieved as designed. Therefore, the Broward County schools project can be evaluated as a demonstration of the CPTED approach.

7.4 Attainment of Proximate Goals

As stated previously in this report, the success of CPTED in reducing crime and fear of crime is predicated on the attainment of the proximate goals of gaining a greater degree of access control, increasing surveillance and activity support, and reinforcing crime prevention motivation. In developing an evaluation plan, the evaluators identified specific proximate goal measurement points for the physical and social environment. The measurement points related to the physical environment include:

- The state of the physical security of the school environment (i.e., target hardness).
- The potential surveillability of the school environment (i.e., how well can one see or hear what is going on).
- The potential usability of the school environment (i.e., what is in the physical environment and how it can be used by students).
- Specific psychological dimensions of the school environment related to CPTED design concepts (e.g., aesthetic quality, degree of personalization, and clarity of defined spaces).

Those measurement points associated with the proximate goals for the social environment are:

- The degree to which students are committed to watch for suspicious/criminal activities and the degree to which they are committed to report suspicious/criminal activities.
- Actual student crime reporting behavior.
- The extent of social networks and the degree of social cohesiveness.
- The actual use of the school environment by students.
- Student identification with the environment (i.e., to what extent is there a sense of belongingness).

These proximate goals are the bridges that link the project's activities to its ultimate goals of reduction in crime and fear among students.

Insights into the degree to which the proximate goals were attained -- for some of the subenvironments and overall -- were drawn from several data collection methods, including structured observations, fear and victimization surveys, and staged suspicious incidents.

7.4.1 Subenvironments

7.4.1.1 Bus Loading Zone

The bus loading zone was implemented before pretest observational data could be collected. After implementation, it was observed that an average of 21 buses loaded at the zone, with a range of 4 to 28. Drivers

used the zone a high percentage of the time, and students entered the bus loading zone in an orderly fashion 100 percent of the time. However, in one-third of the cases, students entered the buses outside of the zone. Adult monitors were present at all observation periods, with an average of 2.5 monitors per observation period. The monitors directed buses 33 percent of the time, and student loading 40 percent of the time. According to the observer, the adults in charge appeared to be aware and cognizant of student behavior during the loading. In summary organized surveillance (via the monitors) and activity support (i.e., the revised zone loading policy) appeared to be controlling access as well.

7.4.1.2 Bicycle Compounds

Fenced bicycle compounds were installed in McArthur, Deerfield Beach, and South Plantation high schools. Table 7-11 illustrates the relevant observational data collected concerning student utilization of the bicycle compounds. The second column indicates that South Plantation had a substantially smaller percentage of bicycles parked within its compound than did the other schools. However, observer records indicate that there was severe overcrowding in the bicycle compound at South Plantation. Thus, the 47 percent rate indicates almost 100 percent utilization of that bicycle compound. Clearly, the bike compound was not of sufficient size to hold the number of bikes on campus. If the implementation of the bike compound strategy were to reduce bicycle theft substantially, we would expect that such a reduction would be more likely to take place in McArthur and Deerfield Beach, as opposed to South Plantation. Note that

TABLE 7-11

Observational Data
Bicycle Compound Utilization

School	Average Number of Bicycles on Campus	Percentage of Bicycles in Compound	Percentage of Bicycles Locked in Compound
South Plantation	113	47	95
Deerfield Beach	46	96	94
McArthur	62	80	92

practically all the bikes in each easily surveilled compound were locked. In summary, within the size limitations, the natural surveillance associated with the site selection for each compound appears to be controlling access.

7.4.1.3 Courtyards

Courtyards or patios were constructed in all four project schools. The basic purpose of these courtyards was to attract students from other parts of the campus, where surveillance was difficult, to an easily surveilled area where they would feel comfortable and be able to gather in small groups. However, an unanticipated event affected the courtyards' potential for fulfilling their purpose. Beginning in September 1977, a countywide policy was instituted forbidding smoking anywhere on campus.

The onsite observer noted the following information for each courtyard: Number of students, percentage of tables and benches utilized, number of students using the newly constructed space, and the cleanliness of the area.

Figure 7-2 shows the number of students present during observation periods in the Boyd Anderson patio. This figure does not indicate a substantial increase in students utilizing the patio. Indeed, a major decrease occurred at the time that smoking was banned. It should be noted that, as of the last observation period, the patio has not been completed. Figure 7-3 does show that there is an increase in the use of the newly developed area. This figure indicates that, prior to construction, there had been very little use of the large area of the courtyard, but, as construction proceeded, 70 to 80 percent of the students were using this

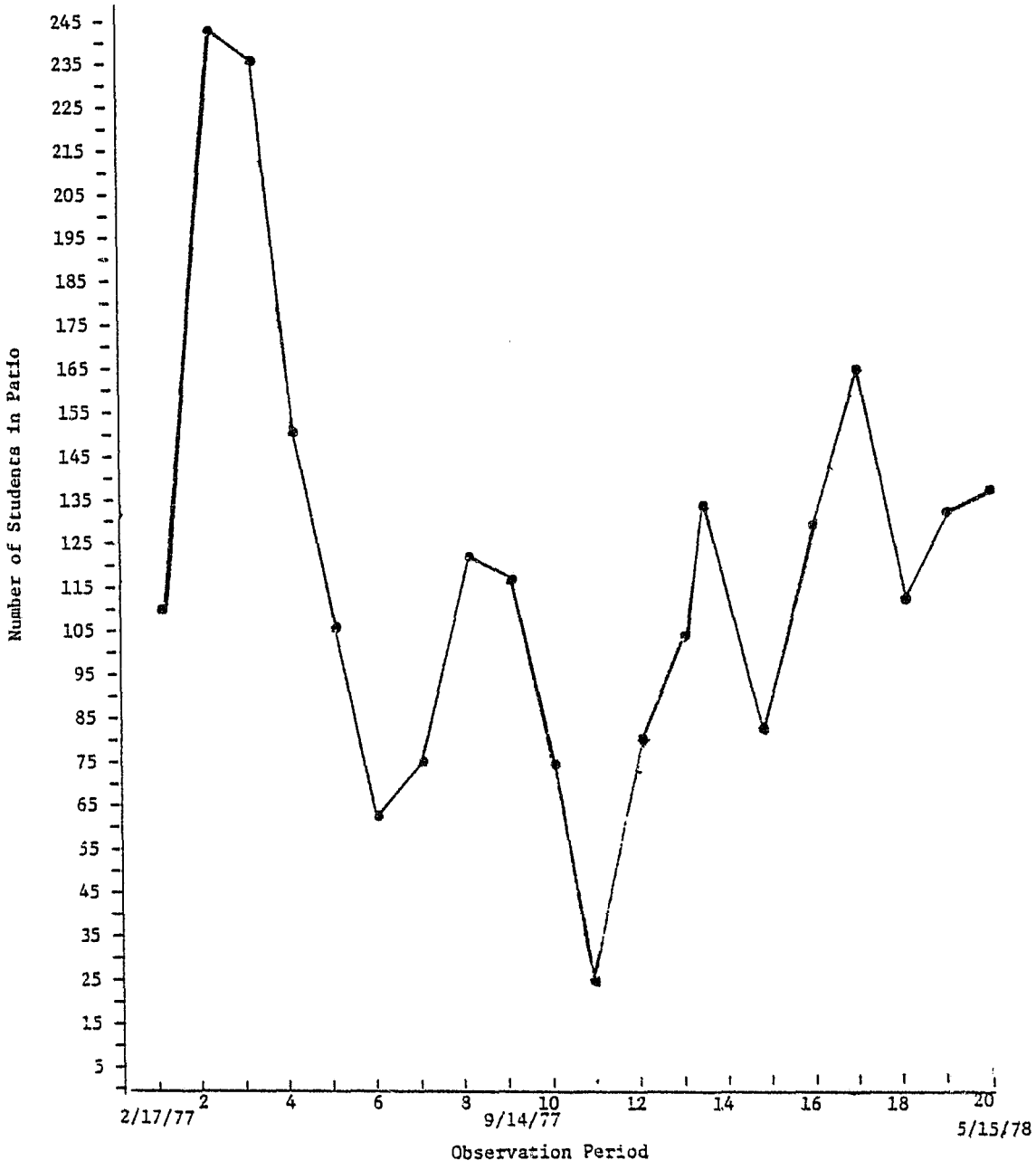


Figure 7-2. Patio Observations at Boyd Anderson: Number of Students

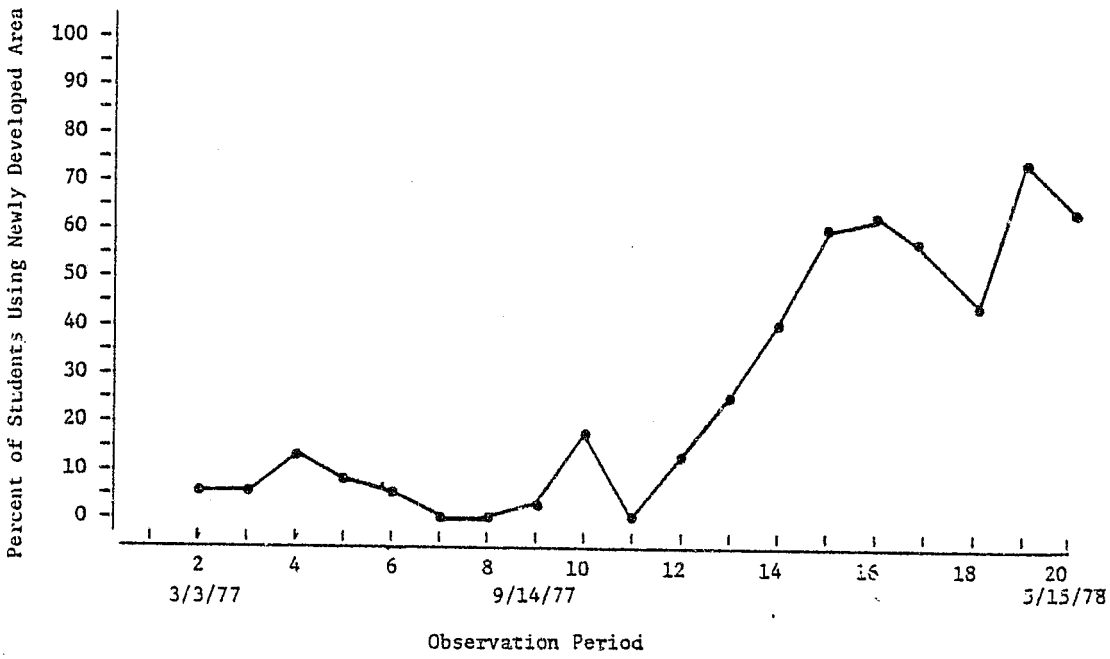


Figure 7-3. Patio Observations at Boyd Anderson· Percentage of Students

area as opposed to other areas of the patio. Figure 7-4 shows the percentage of new tables and benches used by the students. This figure indicates that 100 percent of the tables and benches were being used during the last two observation periods. The figure also demonstrates an increasing utilization rate for these amenities.

Figure 7-5 shows the number of students in the patio during the evaluation period at South Plantation. There was a decrease in the number of students using the patio during the construction period. Subsequent to the completion of the construction, the number of students using the patio appears to have risen to the previous usage level. However, the number of students using the patio did not exceed the preconstruction usage.

An in the case of Boyd Anderson, the percentage of students using the redesigned space has increased from approximately 10 percent to about 70 percent. Since completion of the construction, 80 to 100 percent of the tables and benches are being used.

One of the objectives of the patio construction was to attract students away from less desirable areas, such as the outside smoking corridor. To gauge this objective, the number of students utilizing this corridor was measured. Figure 7-6 shows the number of students in the smoking corridor during observation periods. Note the precipitous decrease associated with the September 1977 smoking ban. Figure 7-7 illustrates the percentage of students who were seen smoking in the corridor.

The data from Deerfield Beach and McArthur paralleled those from the other two schools suggesting that, within the severe limitations

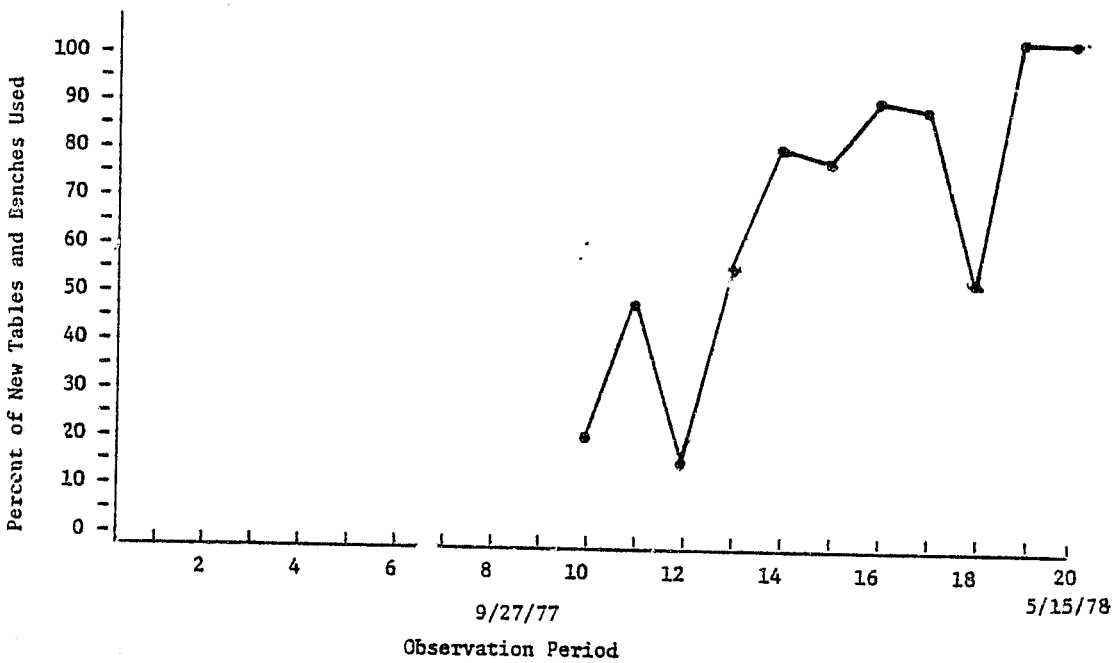


Figure 7-4. Patio Observations at Boyd Anderson: Percentage of Amenities Used

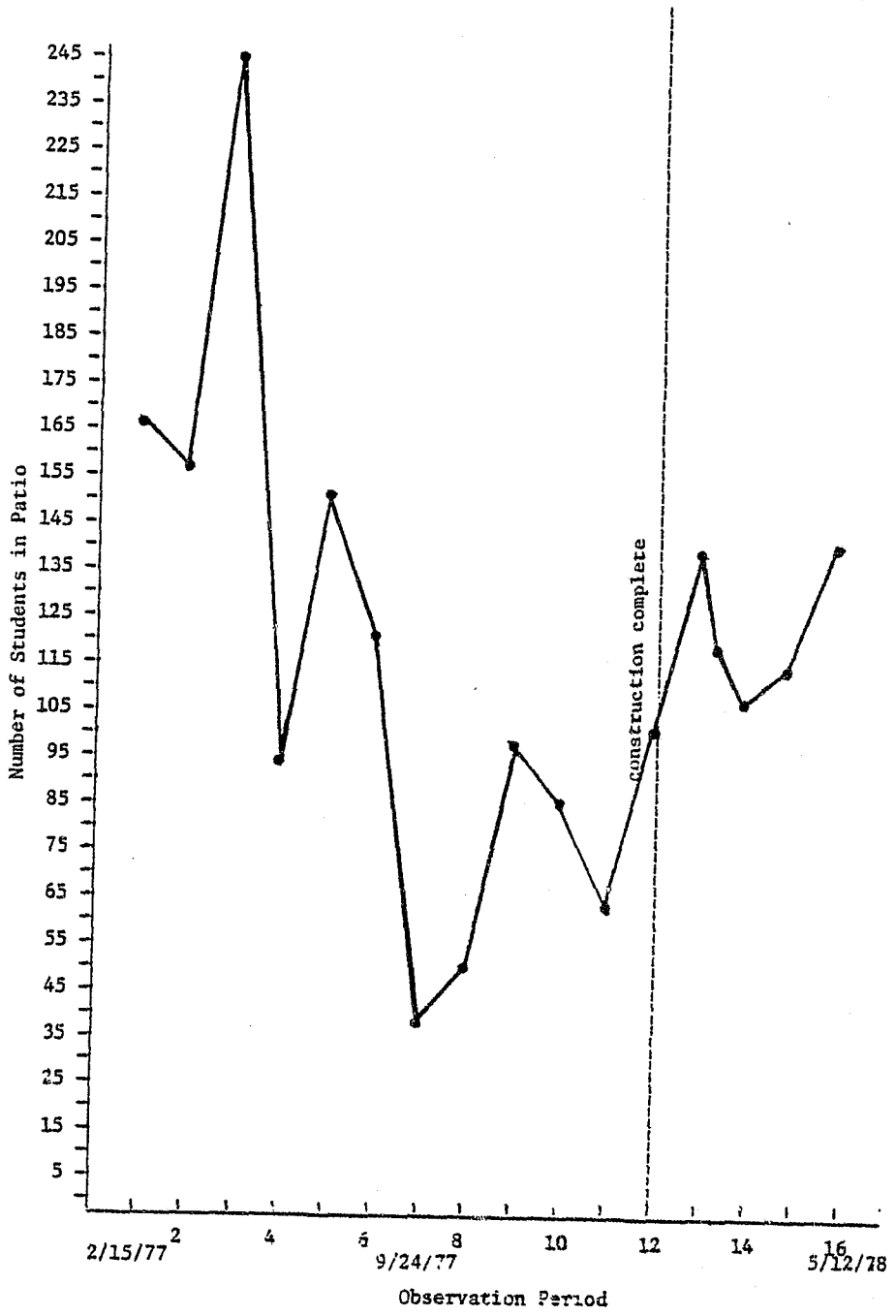


Figure 7-5. Patio Observations at South Plantation: Number of Students

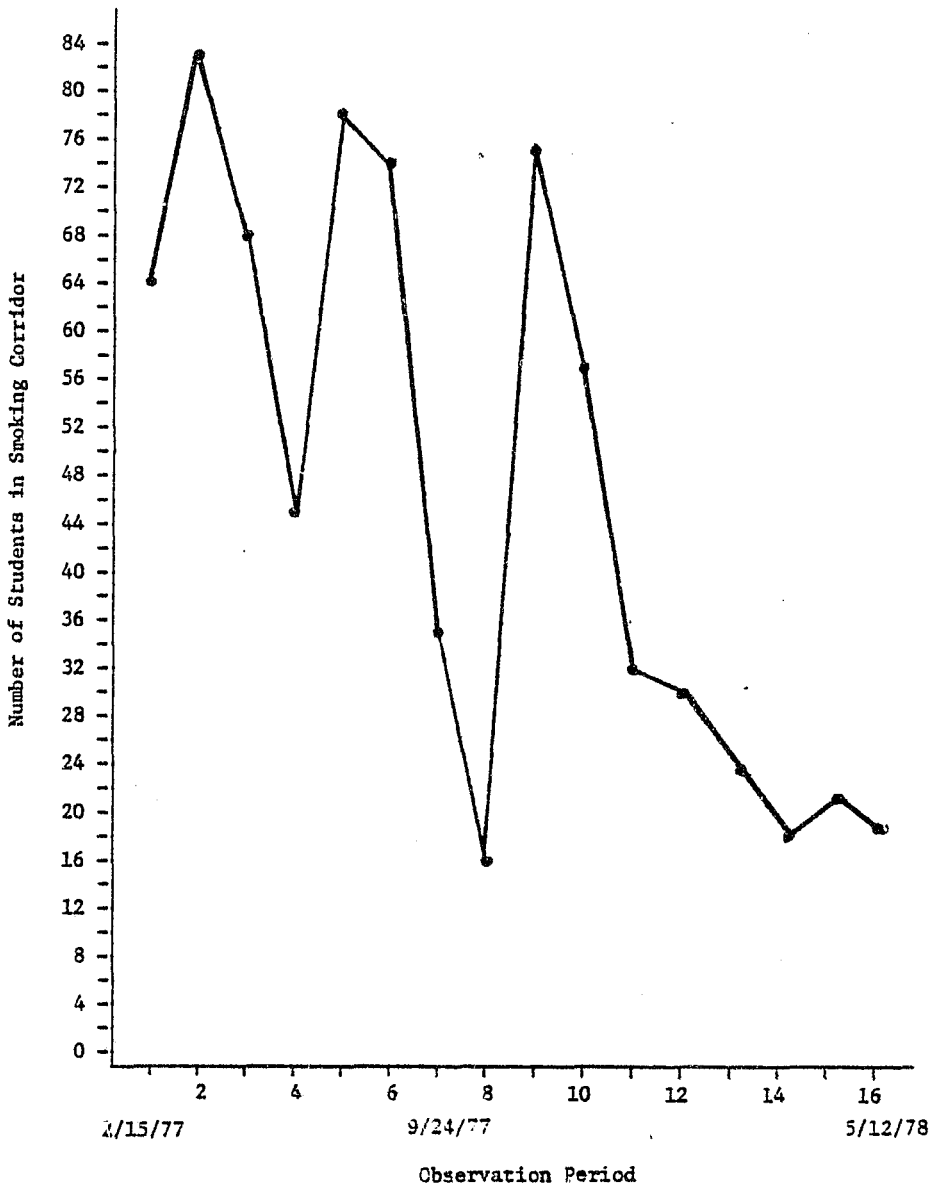


Figure 7-6. Corridor Observations at South Plantation: Number of Students

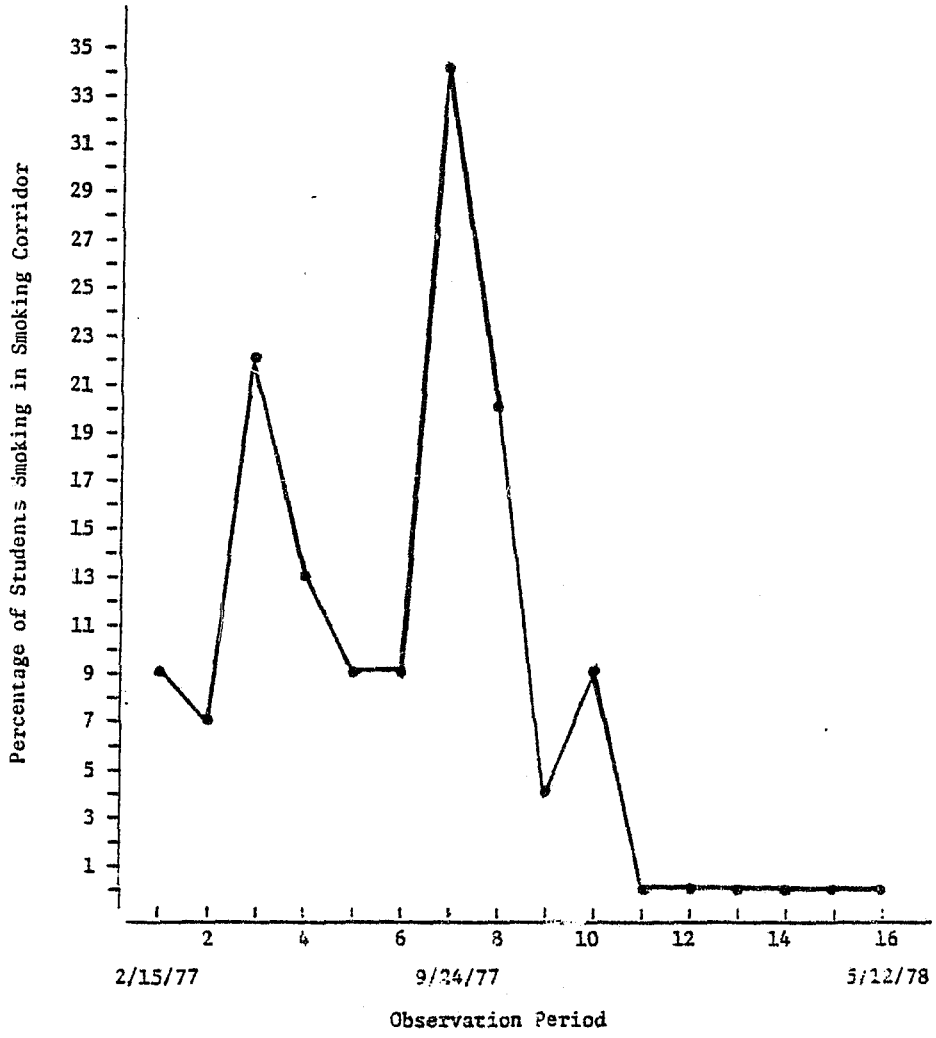


Figure 7-7. Corridor Observations at South Plantation: Percentage of Students Smoking

introduced by the smoking ban, the patio was successful in attracting students into an easily surveilled, access controlled area. In addition, the fact that the completed areas were being utilized by more students than the other areas suggests patios are motivation reinforcing amenities.

7.4.1.4 School Policing Precinct

The main purpose of Anderson's School Policing Precinct was to provide police presence under nonemergency conditions. Police were observed in the building 57 percent of the time. In addition, during a 5-minute observation period, an average of 1.66 police officers were observed in the area surrounding the building (i.e., entering or leaving the building or standing nearby). This activity support increased the potential for surveillance and access control.

7.4.1.5 Hallways

A major strategy in Boyd Anderson was the painting of graphic designs in the hallways. The only data collected concerning this strategy were observations of the physical condition of these graphics. Throughout the evaluation of this project, these graphics were judged to be in excellent or very good condition by the observer. The graphics were not defaced or vandalized during this time, indicating that this amenity had good potential for enhancing motivation reinforcement.

At McArthur, an enclosed hallway was altered to increase surveillance between the corridor and the classrooms. This was accomplished by installing four large windows in the walls between some of the classrooms and the corridor and enlarging 16 door windows. For each observational

period, the observer noted the number of door windows covered (rendering them ineffective), the number of students passing by in the hallway, and the percentage of students who looked into the classroom. An average of 12 students walked by these windows, with approximately 31 percent looking into the classroom. During the observation periods, an average of 49 percent of the door windows were covered. There appeared to be no trend over time in percentage of windows covered. Data concerning the four large wall windows indicated that teachers often blocked the view of these windows through the use of movie screens and globes and other large objects. Although there were attempts by the administration to remove objects from the wall and door windows, these were not always successful.

Key-person interviews indicated that some teachers were annoyed by the implementation of this strategy. They felt that their privacy was invaded and that the classroom was disrupted by student activity in the hallway. Their negative reactions indicate marginal utility for this strategy.

The student surveys provided additional data on hallway strategies. There was a significant increase in the perceived likelihood of identifying an interloper in the hallway at McArthur, relative to the rest of the county high schools over the preimplementation/postimplementation period. The final average perceived likelihood was on par with the rest of the county ($F\ [1,5254] = 9.305$, $p < .002$). It is interesting to speculate about whether the reported difference could have been larger if the maintenance of the design directive had been more consistent.

For the questions about the perceived likelihood of an interloper committing a theft or an assault without being detected, the results show a significant difference only for assault ($F\ [1,5254] = 4.147$, $p < .042$). One possible explanation is that design strategies that are supposed to increase the surveillability of an environment only affect peoples' perceptions about assault and not theft, a distinction that herefore was not made very explicit.

Students' ratings of teachers' surveillance of the hallway area show an increase at McArthur, reflecting the impact of CPTED on teacher surveillance ($F\ [1,5254] = 14.376$, $p < .001$). This contrasts with the ratings of students in the rest of the county, which show a decrease in the perceived quality of surveillance of the hallways by teachers.

The perceived difficulty of entry of an interloper into a hallway increased significantly at McArthur relative to other schools in the county. Apparently the design directive for the hallway was effective in achieving the proximate goals of increased access control as well as surveillance.

7.4.1.6 Restrooms

The doors to the restrooms at McArthur were reported to be locked in an open position throughout the evaluation effort. Thus, this strategy can be considered to have been implemented and utilized successfully. However, only two-thirds of the restrooms were modified.

To assess the impact of the restroom strategies on the identification of someone in the restroom who does not belong there, students were

asked: "Suppose a person who did not belong there was in the restroom area. How likely is it that people would know he did not belong there?" An analysis of variance highlighted a significant difference between the "pre" and the "post" surveys. Students at McArthur perceived an increase in the likelihood of identifying an interloper, while the perceptions of the students in the rest of the county schools stayed at the same level ($F\ [1,5278] = 4.875, p < .027$). The increase on the part of the McArthur students brought the mean level of their responses to the same level as that of the county. This result indicates that the crime problem in the restrooms at McArthur was perceived as being worse than in the rest of the county and illustrates the effectiveness of CPTED in creating a change in students' perceptions.

In order to assess the possibility of crime detection in the restrooms, students were asked: "How likely is it that a person could steal something in the restroom without being seen?" and "How likely is it that a person could physically attack another person in the restroom without being seen?" There were no statistically significant differences.

The students' assessment of teachers' surveillance was that the teachers did not watch what was going on in the restrooms very well. Depending on the survey, from 75 percent to 91 percent of the students rated teacher surveillance as poor.

The proximate goal of access control was measured by asking the students: "How difficult is it for someone who does not belong there to get into the restroom." Survey results were encouraging. A pre-post

difference was found for McArthur in that the perceived difficulty of entry increased (i.e., entry made more difficult) and this difference was statistically significant ($F\ [1,5254] = 16.788$, $p < .001$). This difference was not found in the rest of the county.

In summary, at least one indicator of both access control and crime prevention awareness was positively affected by the restroom strategy.

7.4.2 Overall Impacts

7.4.2.1 Student Crime Reporting Behavior

An important aspect of crime prevention in schools is the willingness of students to report questionable or illicit behavior. Two questions were asked in the last four surveys about students' intentions regarding crime reporting. In addition, a series of "suspicious events" were staged at each of the project schools to provide an indication of whether students' intentions are consistent with their actions. The questions were:

- If you saw someone stealing something at school, do you think you would:
  - Do nothing, it is none of my business.
  - Do nothing, it would not do any good.
  - Do nothing, the trouble-maker might take it out on me.
  - Do nothing, I would not tell on another.
  - Try to stop it myself.
  - Report it.

- If you saw someone physically attack another student at school, do you think you would:
  - Do nothing, it is none of my business.
  - Do nothing, it would not do any good.
  - Do nothing, the trouble-maker might take it out on me.
  - Do nothing, I would not tell on another.
  - Try to stop it myself.
  - Try to get other students to stop it.
  - Report it.

For both the project and county schools, the response most frequently given for the first question concerning theft was "Report it." In the case of assault, it was "Report it" followed by "Try to stop it myself." In short, many students, and in some cases, the majority of students, indicated they would either report it or try to stop it themselves. They would get involved, rather than do nothing. There were no consistent pre-post differences for either item.

7.4.2.2 Staged Suspicious Incidents

To assess the actual crime reporting behavior of the students, at least at a qualitative level, a series of "suspicious" incidents was staged at each of the four project schools and at two comparison schools. (The procedure is described in Section 6.5.6.)

At Boyd Anderson High School, most of the students in the parking lot where the incident was staged appeared to pay little or no attention

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to it. It was assumed that students would attempt to halt or report a suspicious person, but instead some students seemed willing to assist by providing information on security arrangements. The event took almost 15 minutes -- a great deal longer than anticipated. The parking lot monitor eventually did report the intruder to a school security officer.

McArthur High School has a security system that is different from any of the other project or county schools. There is a monitor on duty in the student parking lot during each lunch hour, and this individual has a specific procedure to follow if anything suspicious occurs. The procedure involves a telephone report to the main office, which uses radios provided by the CPTED Program to contact the two campus security officers, who proceed to the scene of the incident.

For this staged event, the intruder entered the lot on foot through the front main entrance, which opens on a public thoroughfare. The monitor spotted him immediately, but waited to observe further before reacting. Two students also observed the suspicious person, but took no action. Security personnel arrived less than 12 minutes after the incident was reported by the monitor.

The staged incident was greatly embellished at South Plantation, including the use of a decoy car and the removal of a satchel from it by the purported thief. Substantial student interest was aroused and there was some attempt at intervention. In fact, further incidents could not be staged at the school because knowledge of the event rapidly spread throughout the student population.

At Deerfield Beach, students had been warned to be attentive to unusual activities around the campus. The evaluators thought that this might bias student reaction and increase the level of involvement in the staged event. However, Deerfield Beach proved to be the most apathetic school in terms of student response.

A decoy car was also used at Deerfield Beach and the intruder and an observer both attempted to provoke student reaction. One student eventually reported the incident; a number of others obviously observed it and showed some concern, but never actually intervened or contacted school personnel.

The comparison schools showed even poorer results. At Hollywood Hills, three students (two of whom were monitors) observed the event, and none reported it. At Miramar, six students observed the incident but did not report it. Security personnel and administrators were dismayed by the apathy shown, particularly since parking lot monitors observed the incidents at both schools.

Table 7-12 shows the student reaction to the suspicious events, as recorded by an observer. The observer noted how many students were in the lot, what percentage of these students were judged to have observed the theft, and the number that directly intervened or left the lot as if to report the thief. The number of students observed in the lot ranged from 16 to 69, with an average of 50 students. The student parking lot at McArthur is farthest from the main campus and thus had the fewest number of students present.

TABLE 7-12

Student Reaction to the Suspicious Event

	Demonstration Schools				Comparison Schools	
	DEERFIELD BEACH	MCARTHUR	SOUTH PLANTATION	BOYD ANDERSON	MIRAMAR	HOLLYWOOD HILLS
Present in lot	46	16	69	42	69	58
Observed "theft"	17%	50%	68%	19%	7%	5%
Left as if to report	1	1	10+	0	3	0
Directly intervened	0	0	1	0	1	0
Present in lot perimeter	45	0	110	50	54	35
Observed	13%	--	55%	6%	2%	0%
Left as if to report	1	--	0	0	0	--
Monitors present	1	1	0	1	3	3
Actually reported	Yes, two	Yes, monitor reported	Yes, many	Yes, monitor reported	Observer reported a stranger but not a thief	No

An average of 39 percent of the students in the parking lot at the project schools apparently observed the theft, as compared to 6 percent at the two comparison schools. Although the sample of staged incidents is very small, it does appear that the students at the project schools were more alert than the students at the county schools.

At all schools except Hollywood Hills and Boyd Anderson, at least one student was judged to have left to report the incident. At South Plantation and at Miramar, one student directly intervened. Data concerning the students in the perimeter of the lot parallel that of the students in the lot. The major difference is that no students intervened, and the observer noted only one student leaving to report.

The presence of more than one monitor seemed to have an inhibitory effect on reporting. At Miramar and Hollywood Hills, there were three monitors present, with none reporting the incident. At the other schools, the monitors, who were alone, reported the theft. Interestingly, the one school without monitors, South Plantation, had the greatest involvement by the student population. As noted earlier, most of the students there observed the theft, and a great many of them reported it or attempted to intervene.

While the majority of the students indicated on the survey that they would report a crime being committed, they did not do so with these staged events. The increased student involvement in the project schools as compared with the student reactions in the two nonproject, comparison schools may be attributed to increased student awareness as a result of CPTED's overall impact.

7.4.2.3 Concepts Concerning the School and Social Responsibility

To assess the student's feelings about the school and his or her sense of responsibility toward crime prevention, a number of questions were included in the last four surveys. The results are presented in Table 7-13.

The first question dealt with the student's opinion of the student body as a whole. It can be seen that the students are evenly split as to whether students help each other or go their own way. There are no significant changes from survey to survey. With respect to difference among schools, South Plantation, in three of the four surveys, was rated the lowest (i.e., a place where students tend to go their own way). This finding is interesting given that this school demonstrated the most concern and collective action about a possible "thief" in the parking lot during the staged incident.

The next question deals with a student's sense of territoriality within the context of the school; that is, whether they feel a part of the school. A rank ordering of the schools in terms of the percentage of students indicating that they do feel a part of the school again showed that South Plantation ranked the lowest. This school was consistently below the other schools, including the county schools, by 20 to 30 percent. There were no significant changes across surveys, however.

The question dealing with the students' perceptions of the degree to which students, in general, are concerned with preventing crimes resulted in statistically nonsignificant differences among schools or

TABLE 7-13

Student Survey: Feelings About the School and Sense of Responsibility

Question	School	Pre-CPTED W1977	Pre-CPTED S1977	Post-CPTED W1978	Post-CPTED S1978
		Percent "most students help each other"			
In general, which kind of school would you say this is mostly -- one where most students help each other or one where most students go their own way?	BA	60.7	53.5	49.2	53.1
	MA	59.7	49.3	57.1	51.0
	SP	44.9	44.6	54.9	43.1
	DB	60.0	61.6	51.5	58.8
	CO	58.4	53.4	58.0	55.3
		Percent "feel a part of its school"			
Would you say that you really feel a part of the school -- or do you think of it as just another place to spend time?	BA	67.2	64.4	74.2	59.7
	MA	73.4	60.8	75.6	66.7
	SP	40.0	53.7	59.5	46.6
	DB	71.4	80.2	67.7	65.3
	CO	67.7	65.5	65.8	66.1

between surveys. However, Boyd Anderson and McArthur showed positive changes in the spring 1978 survey (Table 7-14).

For the students' rating of the crime-prevention efforts of teachers and other adults (Table 7-15), there was a significant interaction term in the analysis of variance of the spring survey data ($F\ [4,2262] = 2.807$; $p < .024$), indicating a relationship between the CPTED project and perceptions of improved efforts in the project schools. These improvements in attitudes, however, appear to be limited to Boyd Anderson and McArthur High Schools.

The last three questions dealt with students' intuitive understanding of the concepts underlying CPTED, such as personal efficacy in anti-crime activities and perceptions of whether the offenders in a school environment might be many of the other students or just a small group of "trouble-makers."

Most students either agreed or strongly agreed with the statement that there are certain areas in the school that make it easy for persons to commit crimes without being seen. The students were evenly split concerning the issue of whether they as individuals could do anything to help stop the school's crime problem. And most students agreed that a relatively small group of trouble-makers is responsible for most of the crime problems. However, with respect to these questions, the statistical analysis showed no significant differences among schools or between survey periods.

TABLE 7-14

Student Survey Responses: Student Concern

Question	School	Response	Pre-CPTED W1977 (%)	Pre-CPTED S1977 (%)	Post-CPTED W1978 (%)	Post-CPTED S1978 (%)
How much do you think students at your school are concerned with preventing crimes from happening to other students?	BA	A Great Deal	10.3	20.3	6.5	21.7
		Somewhat Concerned	51.7	54.1	56.5	58.0
		Not Much Concerned	37.9	25.7	37.1	20.3
	MA	A Great Deal	5.1	14.5	11.5	13.4
		Somewhat Concerned	58.2	47.4	51.3	59.8
		Not Much Concerned	36.7	38.2	37.2	26.8
	SP	A Great Deal	7.5	5.9	16.9	8.8
		Somewhat Concerned	56.3	47.1	59.6	61.4
		Not Much Concerned	36.3	47.1	23.6	29.8
	DB	A Great Deal	11.9	14.8	10.8	11.5
		Somewhat Concerned	65.5	51.1	64.5	60.1
		Not Much Concerned	22.6	34.1	24.7	28.4
	CO	A Great Deal	21.2	13.4	11.4	11.8
		Somewhat Concerned	50.8	55.1	58.3	56.7
		Not Much Concerned	28.0	31.5	30.2	31.4

TABLE 7-15

Student Survey Responses: Teacher Concern

Question	School	Response	Pre-CPTED S1976 (%)	Pre-CPTED S1977 (%)	Post-CPTED W1978 (%)	Post-CPTED S1978 (%)
Overall, how would you rate the job the teachers and other adults are doing in protecting students from crime at your school?	BA	Very Good	20.8	11.1	16.0	22.0
		Good Enough	32.1	38.9	42.0	49.2
		Not So Good	47.2	50.0	42.0	28.8
	MA	Very Good	9.7	7.1	12.2	14.5
		Good Enough	34.7	38.6	39.2	38.6
		Not So Good	55.6	54.3	48.6	47.0
	SP	Very Good	9.2	9.3	12.7	8.5
		Good Enough	46.2	42.6	50.6	29.8
		Not So Good	44.6	48.1	36.7	61.7
	DB	Very Good	11.0	13.3	7.9	9.7
		Good Enough	49.3	53.0	44.7	49.3
		Not So Good	39.7	33.7	47.4	41.0
	CO	Very Good	14.4	9.6	11.6	11.3
		Good Enough	45.4	45.6	47.3	47.2
		Not So Good	40.2	44.9	41.1	41.5

7.4.3 Summary

At both the subenvironment level and overall, there were numerous indications that the CPTED demonstration project had impacted upon the proximate goals of access control, surveillance, activity support, and motivation reinforcement.

7.5 Attainment of Ultimate Goals

This section examines the extent to which the ultimate goals of crime and fear reduction were attained in the modified restrooms and hallways* and in the overall school environment. The analysis is based on the results of the five student fear and victimization surveys.**

The victimization questions asked the respondent whether he or she had been physically attacked, hurt, or bothered (assault) or had something stolen (theft) during the past year in specified subenvironments or elsewhere in the school. Fear was measured first by asking the respondent how safe or unsafe he or she felt in the same subenvironments, and then, with respect to each subenvironment, to assess how safe or unsafe people are in general. (See Appendix D for more information about these surveys.)

7.5.1 Subenvironments

7.5.1.1 Restrooms

Since the modifications to the restrooms at McArthur were not completed until after the spring 1977 survey, the first three surveys

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*Due to the timing of the surveys and/or the wording changes in the relevant items, survey data on the other subenvironments are too ambiguous to justify even tentative analysis.

**School crime report data have not yet been compiled for the 1977-78 school year, the first in which overall CPTED impacts might be reflected.

(spring 1976, winter 1977, and spring 1977) can be treated as pre-data points and the last two (winter 1978 and spring 1978) as post-data points. For the sake of comparability, the two winter surveys and the three spring surveys were treated as separate pre/post studies (the 1976 and 1977 spring surveys were combined to represent the spring pre-condition).

The spring pre/post comparison showed a substantial decline in theft in the restrooms (from 12.2 to 2.1 percent). The winter pre/post comparison showed a smaller decline (from 7.6 to 5.1 percent). The assault rate, which ranged from 3.1 to 5.4 percent for all five surveys, was too low to show a significant difference.

The same analysis was made for the county schools with somewhat contradictory results. The spring pre/post comparison showed no change in assault or theft, but the winter comparison showed a decrease in thefts (from 12.6 to 8.2 percent).

It seems reasonable to conclude that the restroom modifications attained the ultimate goal of theft reduction, given that the reduction in the county schools was much less.

The same analytic strategy was applied to the fear questions. An additional pre/post comparison was made with the three pre-surveys compared to the two post-surveys. No statistically significant pre/post differences emerged from the three tests, indicating that the restroom treatments have not reduced the students' perceived lack of safety in the restrooms.

7.5.1.2 Hallways

McArthur was the only school where the interior hallway had windows installed between the corridor and the classrooms. The same pre/post analysis showed no significant change in theft or assault rates. Analysis of the fear data revealed an increase in judgments of safety of people in general from being assaulted in the hallway (see Table 7-16), but did not show a change in perceived safety of people in general from theft. There was also no pre/post change in judgments of personal sense of safety for either assault or theft. The fact that some of the teachers occasionally covered the new windows with papers and posters may have attenuated the potential benefits of the strategy.

7.5.2 Overall Impact

In the last three surveys,* students were asked the following questions:

- Overall, counting this year only, did anyone hurt, bother, or physically attack you at school?
- Overall, counting this year only, did anyone steal anything from you at school this year?
- Overall, how often are you afraid that any of the following things might happen to you at school:

*The first two surveys did not include these questions.

TABLE 7-16

Judgments of Safety of People in General from Being Assaulted in the Hallway*

	Pre-CPTED* (%)	Post-CPTED (%)
Very Safe	5.7	14.3
Safe	40.7	41.5
Somewhat Safe	43.2	38.4
Not Very Safe	10.4	5.8

*Does not include the Spring 1976 survey.

- Someone might hurt, bother, or physically attack you.
- Someone might steal something from you.

The victimization rates at the project and county schools were as high as 33.3 percent for assault and 52.2 percent for theft (see Table 7-17). These rates were many times greater than those for the individual subenvironments. No specific area experienced a disproportionate amount of crime, with the exception of the relatively high theft rates for restrooms.

For the sake of comparability, the pre/post examination was limited to a comparison of the spring 1977 survey with the spring 1978 survey. As shown in Table 7-17, there was a slight post-CPTED reduction in assaults at all but one school, including the county schools. However, the only notable change is at Boyd Anderson, where the assault rate decreased from 33.3 to 22.4 percent. The finding that Boyd Anderson experienced the largest reduction is consistent with the fact that this school received the largest CPTED effort.

There was a reduction in theft at all project schools, ranging from 5 percent at Boyd Anderson to 12 percent at South Plantation. Although there was also a reduction for the county schools, it was not as large (4 percent mean).*

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*Tests of the difference between the pre- and post-CPTED percentages of victimizations reported in the spring 1977 and spring 1978 surveys showed a significant reduction in thefts (50.5 to 41.8 percent) among the project schools ($z = 2.51$, $p < .02$) but not among the county

TABLE 7-17

Student Survey: Overall Incident Rates

Question	School	Spring 1977 Percent Reporting "Yes"	Spring 1978 Percent Reporting "Yes"
Overall, counting this year only, did anyone hurt, or bother, or physically attack you at school this year?	BA	33.3	22.4
	MA	16.0[1]	17.5
	SP	20.0	18.2
	DB	25.6	20.9
	CO	20.7	18.1
Overall, counting this year only, did anyone steal anything from you at school this year?	BA	50.7	45.7
	MA	52.6	42.9
	SP	46.3	34.3
	DB	52.2	42.8
	CO	50.0	46.0

Note: These questions were not included in the first two surveys. Winter 1978 is excluded to permit comparisons within season.

Tables 7-18 and 7-19 give the results of the two fear questions. No statistically significant pre/post-CPTED changes emerged with respect to students' perceptions of safety from assault or theft. All schools showed a high percentage of students reporting that they were afraid of assault and theft sometimes or most of the time. As observed with the subenvironments, concern about theft is more prevalent than assault. However, these overall percentages are much higher than those obtained for the subenvironments, thus indicating that perceived lack of safety is a problem throughout the school environment and not limited to a few locations.

7.5.3 Summary

Thefts were reduced significantly in the restrooms and throughout the project schools. Assaults were reduced significantly in the project schools, with Boyd Anderson -- the school receiving the most extensive CPTED effort -- accounting for the bulk of the reduction. No other significant reductions in fear or victimization could be documented. No reliable conclusions could be drawn regarding the institutionalization of the CPTED concept.

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schools. At the 95 percent confidence level, the pre-CPTED and post-CPTED theft victimization rates for the project and county schools are less than 5 percent, plus or minus, of the "true" population rates. For example, in the case of the spring 1978 theft rate for the project schools (41.8 percent), the 95 confidence range is from 37.0 to 46.6 percent. The confidence ranges for the theft rates obtained with the other samples are approximately the same. However, the range for the sampled assault rates is generally wider.

TABLE 7-18

Student Survey: Overall Fear of Assault

Question	School	Response	Pre-CPTED S1976 (%)	Pre-CPTED S1977 (%)	Post-CPTED W1978 (%)
Overall, how often are you afraid someone might hurt, bother, or physically attack you?	BA	Never	47.0	27.6	41.2
		Almost Never	28.4	32.4	25.0
		Sometimes	22.9	31.0	27.9
		Most of the Time	1.8	7.0	5.9
	MA	Never	41.4	29.3	37.8
		Almost Never	32.1	45.3	30.6
		Sometimes	24.7	24.0	27.6
		Most of the Time	1.9	1.3	4.1
	SP	Never	51.0	40.3	50.7
		Almost Never	32.2	43.3	22.4
		Sometimes	16.2	11.9	20.9
		Most of the Time	0.6	4.5	6.0
	DB	Never	51.1	36.0	33.1
		Almost Never	27.6	37.1	38.4
		Sometimes	12.5	23.6	25.2
		Most of the Time	0.8	3.4	3.3
	CO	Never	46.5	38.4	42.2
		Almost Never	32.0	35.7	34.9
		Sometimes	19.6	23.1	20.0
		Most of the Time	1.9	2.8	2.9

Note: The winter survey results are not included, to facilitate comparisons within season.

TABLE 7-19

Student Survey: Overall Fear of Theft

Question	School	Response	Pre-CPTED S1976 (%)	Pre-CPTED S1977 (%)	Post-CPTED W1978 (%)
Overall, how often are you afraid that that someone might steal something from you?	BA	Never	35.4	14.3	24.3
		Almost Never	22.2	31.4	22.9
		Sometimes	33.8	37.1	41.4
		Most of the Time	8.6	17.1	11.4
	MA	Never	32.3	17.1	22.4
		Almost Never	20.3	30.3	26.5
		Sometimes	38.1	39.5	36.7
		Most of the Time	9.3	13.2	14.3
	SP	Never	32.3	16.4	25.4
		Almost Never	26.6	35.8	23.9
		Sometimes	34.8	46.3	38.8
		Most of the Time	6.3	1.5	11.9
	DB	Never	36.2	20.0	23.8
		Almost Never	23.9	28.9	34.4
		Sometimes	33.2	34.4	35.1
		Most of the Time	6.7	16.7	6.6
	CO	Never	30.4	21.4	24.9
		Almost Never	28.1	29.4	26.2
		Sometimes	32.9	37.9	38.7
		Most of the Time	8.6	11.3	10.1

CHAPTER 8. CONCLUSIONS AND RECOMMENDATIONS

This report summarizes the process by which the Broward County CPTED schools demonstration project was initiated, planned, implemented, and evaluated. Although there were problems and difficulties encountered at each stage, it can be concluded that the demonstration project was, for the most part, implemented as designed but not as scheduled. There were moderate increases in access control, surveillance, activity support, and motivation reinforcement. The brief post-implementation period available for assessments of crime and fear reduction precluded extensive documentation of ultimate goal impacts. Nevertheless, some reduction in crime victimization was detected.

The following discussion highlights key lessons learned during implementation of the various strategies and directives and offers recommendations. The topics discussed include:

- Funding support.
- Bureaucratic problems.
- Resistance to change.
- Gaps in experience.
- Input from real constituency.
- Assessing and sustaining priorities.
- Relationship of strategies to crime/environment problems.

8.1 Funding Support

Major efforts were required to secure funding support for implementation of the CPTED strategies. As a result, significant delays were experienced.

In the fall of 1974, Westinghouse began data collection, including interviewing individuals in the school system. According to later key-person interviews, this resulted in an expectation that the project would begin shortly and disappointment when it did not. The initial interest and enthusiasm at each of the schools was dissipated by the long delay which followed. In addition, a number of key participants -- including the principals of two of the four demonstration schools -- left the schools.

It was difficult to anticipate that it would take almost 2 years to obtain funding. The attempt to develop total local funding was not successful for this site. LEAA ultimately provided the direct support.

It is recommended that funds for implementation be included in the initial grant or contract for future demonstration projects.

8.2 Bureaucratic Problems

The CPTED Program did not exist independent of the school system bureaucracy. Discussions with administrative officials in the system indicated that it was difficult to initiate change. This is not unusual in a system as large and as complex as that in Broward County. A more realistic time frame might have been developed if planners had studied the schedule of previous construction projects handled through the School Planning

Office. CPTED experience indicated that the proposed schedule was unrealistic. It is recommended that schedules be developed based on the previous performance of grantees, instead of being established to fit the proposed grant period.

8.3 Resistance to Change

There is some evidence that a "not invented here" syndrome existed in the early stages of the CPTED project. For example, an outside architect provided the initial sketches and preliminary drawings for several strategies. This may have created some initial resistance on the part of local individuals responsible for implementing these plans. A cooperative and well-coordinated relationship never was established between the Westinghouse architect and the School Planning Office. In future projects. a greater effort should be made to have key local resource persons -- including students, faculty, and principals -- play key decisionmaking roles. There is no substitute for highly visible key local advocates in minimizing resistance to change.

8.4 Gaps in Experience

Based on conversations with the Director of School Planning, it appears that his office did not have extensive experience with any projects similar to CPTED. The development and supervision of many small projects, located in different schools, was a relatively new experience. This lack of background may have been partially responsible for the delays in implementation.

There was also confusion associated with the fact that construction of a new high school coincided with early CPTED planning. School Planning

had the responsibility for handling that construction and the implementation of a number of CPTED strategies concurrently. Most of the contractors with whom School Planning had previously worked would not bid on what they considered to be the smaller-scoped CPTED projects. Therefore, School Planning had to deal with some unfamiliar contractors on the CPTED projects, and since CPTED-type construction had not been done in a school setting before, the problems that developed could not be foreseen.

It is recommended that more attention be given to CPTED capacity-building activities for personnel who have direct responsibility for strategy implementation. Workshops and training sessions conducted by CPTED consultants should be considered.

8.5 Input from Real Constituency

There was no local advisory committee that had a strong, vested interest in seeing the Broward County CPTED project implemented in a timely and efficient fashion. The real constituency for this program consisted of principals, teachers, and students. No formal mechanism was developed to allow them to voice concerns about the progress of CPTED implementation. It is suggested that, in projects of this nature, a strong local input mechanism and continued interaction be programmed.

8.6 Assessing and Sustaining Priorities

It is the impression of the evaluators that crime in the Broward County School System is not a high priority concern. This judgment is derived from discussions with principals, the school superintendent, and other officials involved in the CPTED project. A system that faces a $10 million deficit and the potential dismissal of hundreds of teachers

obviously has other pressing concerns, and, as noted earlier, the crime problem in Broward is not extraordinary. If the assumption is correct that the CPTED project did not have high priority within the administration, then it is understandable that delays in implementation were tolerated.

One individual in the School Planning Office had responsibility for CPTED implementation. This individual was eventually dismissed, but poor administration of the project's construction phase was tolerated for a long period of time. This "benign neglect" adds support to the low priority hypothesis. It is not clear whether the initial administrative support for the project was dissipated in the face of more severe problems or whether that support never really was as strong as the CPTED planners had assumed.

Determining the degree of local support before funding a project is a difficult process. On paper, the Broward grant proposal appeared to have strong support by the administration and the School Board. The grant proposal indicated that in-kind support would be forthcoming from the Research Department in the equivalent of one full-time person, at an estimated cost of $32,000. Similarly, the grant proposal indicated that a School Planning person would be provided, without cost, to help support the project at a half-time load. Neither in-kind contributions met the anticipated level of effort.

There is no simple solution to this problem, but it is suggested that maximum attention should be given to eliciting widespread

commitment to the project as a locally conceived and locally run effort. In addition, attention should be given to sustaining and enhancing the initial local commitment throughout the project.

8.7 Relationship of Strategies to Crime/Environment Problems

It was found that the Demonstration Plan had been developed without benefit of several sets of crime and fear data, with the result that the appropriateness of several strategies later seemed questionable. It was initially expected that some of these data -- notably those resulting from the initial fear and victimization survey -- would lead to limited modifications in the planned strategies. The funding delays and scheduling requirements precluded this. Nevertheless, there never was a plan to incorporate emerging data on an ongoing basis. Because issues of strategy appropriateness, coordination, scheduling, monitoring, and utilization are likely to arise throughout CPTED-type projects, it is strongly recommended that the project plan call for formative as well as summative evaluation. That is, there should be procedures for incorporating emerging information to improve the project throughout its development.

APPENDIX A

CPTED Theoretical Framework

APPENDIX A. CPTED THEORETICAL FRAMEWORK

1. Introduction

The purpose of this appendix is to familiarize the reader with the program rationale of Crime Prevention Through Environmental Design (CPTED). There are three major parts. The first part describes the purview of the Program, the second part introduces some key theoretical postulates, and the last part discusses OTREP (opportunity, target, risk, effort, and payoff) as one approach to studying crime/environment problems.

2. The Purview of CPTED

CPTED seeks to reduce crime and fear of crime through the proper and effective use of the built environment. The CPTED Program is based on three beliefs: First, the security of one's surroundings is critical to achieving and maintaining a cohesive, stable, and optimally used environment; second, opportunities for crime can be minimized through architectural design and urban planning, either by imposing real structural constraints on criminal behavior or by creating psychological barriers; and third, crime and fear can be prevented by augmenting existing social control processes.

Social control is enhanced by supporting established covenants and shared perspectives that have evolved and are maintained by users for the protection of their environment. Such social protective mechanisms can be reinforced through law enforcement activities, the

formation of community organizations explicity charged with the responsibility of deterring antisocial behavior and discouraging unwarranted intrusion, and environmental improvement programs that are aimed at raising the physical and social quality of that setting. The key premise is that design and effective use of physical space can lead to better citizen control over their environment and, at the same time, to an improvement in the quality of urban life.

2.1 CPTED Target Crimes

The offense categories addressed by the CPTED Program are those classified by the Federal Bureau of Investigation as Part I crimes against persons (criminal homicide, forcible rape, robbery, aggravated assault) or property (burglary, larceny, and auto theft), as well as some Part II crimes (simple assaults, arson, and vandalism). These offenses receive attention because they are destructive to the social and physical environment, they engender public fear of crime, and the opportunity for their commission can be eliminated or minimized through environmental design. Excluded from consideration are the so-called "white collar" crimes (fraud, embezzlement), "victimless" crimes (drug abuse, prostitution), crimes against government, organized racketeering, morals offenses, family and juvenile offenses, and disorderly conduct.

2.2 Prevention Concepts and CPTED

The term *prevention* as it is used throughout this paper refers to measures adopted to forestall the commission of a crime. Lejins*

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*Peter Lejins. "The Field of Prevention." In W. E. Amos and C. R. Wellford (eds.). Delinquency Prevention: Theory and Practice. Englewood Cliffs, NJ: Prentice-Hall, 1967, p. 4-5:

posited three types of prevention -- punitive, mechanical, and corrective -- and, to varying degrees, CPTED strategies involve all three. In punitive prevention, threat of punishment discourages the potential offender. A key CPTED planning objective is to create an environment in which it is apparent that anyone who commits a crime is likely to be detected, apprehended, and punished. This will occur because legitimate users assume a large responsibility in policing their environment and have an effective working relationship with the police.

With mechanical prevention, obstacles are placed in the way of the potential offender to make it more difficult for him to commit an offense. Thus, while punitive prevention increases risk, mechanical prevention increases the level of effort required for criminal activity. It is important to note that mechanical prevention involves more than controlling access through physical design. Traditional target-hardening prevention techniques (such as dependable locking systems and window bars) are included among CPTED strategies. Also included are a broad range of urban design principles concerning the form of the buildings, the layouts of streets, the location of community facilities, the juxtaposition of social and functional activity areas, and other elements that affect the design and use of the environment.

Corrective prevention is perhaps the most fundamental of the three because it focuses on strategies aimed at the elimination of criminal

motives. Although the CPTED purview does not include broad-based education and employment programs, CPTED is corrective to the extent that environmental design can affect the quality of life in a community, and is a social as well as a physical planning process.

2.3 Environmental Design

The term *environmental design* refers to problem-solving activities that encompass more than architectural solutions but are still specific to geographically bounded environments. Design is viewed not only as an element in the environment but as a process through which plans are developed to influence how environments are used and treated.

3. Four Key Postulates

There are four general CPTED theoretical postulates that provide the underlying rationale for all of the crime prevention strategies. They are access control, surveillance, activity support, and motivation reinforcement. While conceptually distinct, these postulates tend to overlap in practice (that is, each CPTED strategy is based on principles derived from more than one postulate). For example, strategies designed to increase surveillance also tend to control access to a given environment. Similarly, if they are to work, activity support programs must involve surveillance strategies.

3.1 Access Control

Access control is primarily directed at decreasing criminal opportunity. In essence, it operates to keep unauthorized persons out of a particular locale if they do not have legitimate reasons for being

there. In its most elementary form, access control can be achieved in individual dwelling units or commercial establishments by use of adequate locks, doors, and the like (i.e., the group of design strategies known as target hardening). Many burglars and robbers display environmental preferences -- both physical and social -- that can also be frustrated by the creation of psychological barriers. These barriers may appear in the form of signs, parkways, hedges -- in short, anything that announces the integrity and uniqueness of an area.

3.2 Surveillance

Although similar to access control in some respects, the primary aim of surveillance is not to keep intruders out but to keep them under observation. Surveillance increases the perceived risk to offenders, as well as the actual risk if the observers are willing to act when potentially threatening situations develop.

A distinction can be made between organized surveillance and spontaneous or natural surveillance. Organized surveillance is usually carried out by police patrols in an attempt to project a sense of omnipresence (i.e., to convey to potential offenders the impression that police surveillance is highly likely at any given location). In some instances surveillance can be achieved by non-human techniques such as closed-circuit television (CCTV) or alarms.

Natural surveillance can be achieved by a number of design techniques such as channeling the flow of activity to put more observers

near a potential crime area, or creating a greater observation capacity by installing windows along the street side of a building, enclosing a staircase in glass, or using single-loaded corridors. The technique of defining spaces can also convey a proprietary sense to legitimate users, inducing a territorial concern.

3.3 Activity Support

The concept of activity support involves methods of reinforcing existing or new activities as a means of making effective use of the built environment. This perspective originates in the observation that, in a given community, social and physical networks and nodes exist as latent, often underused, resources capable of sustaining constructive community activities. Support of these activities can bring a vital and coalescing improvement to a given community, together with a reduction of the vulnerable social and physical gaps that permit criminal intrusions. Such an approach might focus on a geographic area (e.g., block, neighborhood, or city sector), a target population (e.g., vulnerable elderly victims or opportunistic youthful offenders), or an urban system (e.g., health delivery, transportation, or zoning).

3.4 Motivation Reinforcements

In contrast to the more mechanical concepts of access control and surveillance that concentrate on making offenders' operations more difficult, motivation reinforcement seeks not only to affect offender behavior relative to the built environment but to affect offender

motivation by increasing the risk of apprehension and by reducing the payoff to him.

The motivation reinforcement concept also seeks to positively reinforce the motivation of potential victims. Territorial concern, social cohesion, and a general sense of security can result from such positive reinforcement strategies as altering the scale of a large, impersonal environment by such measures as upgrading the housing stock, the school facilities, or the interiors of subway cars; organizing occupants; or changing management policy.

Territorial concern, social cohesion, and a general sense of security can be reinforced through the development of the identity and image of a community. Recognized consciously, this approach can improve not only the image the population has of itself and its domain but also the projection of that image to others. With a definition and raising of standards and expectations, patterns of social estrangement decline, together with opportunities for aberrant or criminal behavior.

4. OTREP

Although all CPTED strategies may appear to run the gamut of prevention options, they do not. CPTED strategies have one feature in common: Crime and fear-of-crime problems are examined in terms of environmental characteristics that foster or impede the commission of crimes. Thus, a crime problem is viewed as a crime/environment problem

because the focus is on solutions that treat the environment in such a way as to lessen the vulnerability of potential victims, increase the level of effort involved in committing a crime, reduce the potential payoff to the offender, and improve the chances of apprehension.

In order to study crime/environment relations in a way that is useful for the selection of appropriate CPTED intervention strategies, a comprehensive theoretical perspective is needed to understand the complex manner in which elements of the physical and social environment interact to affect levels of crime and fear.

If CPTED strategies are to be effective, they must serve a dual function. First, as indicated earlier, they must instill a sense of confidence and security in the use of the environment on the part of legitimate users; the second function is that they must create an impression for potential offenders that opportunities for crime in the target environment are not worth the effort or risk involved. Thus, CPTED strategies are designed to affect the perceptions of both legitimate users and potential offenders, as well as to bring about actual changes in the environment. The remainder of this section focuses on OTREP, a conceptual scheme to be used for defining crime/environment problems in such a way as to aid in the selection of appropriate strategies.

The OTREP concept proposes that the opportunity for crime to occur in an environment is a function of four factors: Target, risk, effort,

payoff. These four basic factors are of central importance to the criminal when selecting a site for a criminal act. It is assumed that criminals avoid low opportunity environments (e.g., those that require much effort to commit a crime, where the risk of apprehension or punishment is high, where few targets exist, and where only a small payoff can be obtained). Similarly, it is assumed that criminals prefer an environment where opportunity is high targets are available that allow crimes to be committed easily and quickly for large rewards, with little or no risk of apprehension.

No setting or place exists where crimes cannot be committed. Burglary, larceny, vandalism, and crimes of violence can occur anywhere. Faced with a wide array of available sites, the potential criminal must select a site for his act. If no logic or rationale for this choice existed, one would expect crimes to be randomly distributed in the environment.* However, such is not the case.

Crime occurs very frequently in certain areas, while it is almost unheard of in other areas. Geographic areas characterized as "high crime" or "dangerous" are well known to the residents and police of any municipal locality. Additionally, certain situations involving,

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*One offender option is not to commit a crime in that or any other site. Although OTREP attempts to simulate the decisionmaking process of criminals, it is not based on the assumption that the potential offender has already decided to act and simply has to decide where to act. If this were the case, then the most that CPTED could hope to accomplish would be crime displacement. However, considering what is known about the nature of opportunistic crimes, it appears that the environment can be manipulated so that a large proportion of potential offenders do not even recognize sites as potential targets.

for example, the time of day, type of people, nature of the task, and so on are readily perceived as more dangerous than others ("I'd never let myself get into *that* situation!"). For some reason or set of reasons, crime tends to occur more frequently in some environments than in others.

Two approaches can be used to examine more closely the spatial distribution of crime. One approach is to study different environments to uncover dimensions that vary among them. The other apprcach is to examine the spatial distribution of crime from the perspective of the criminal. This approach assumes that criminal acts stem from individual decisionmaking processes occuring inside the potential offender.

Although both the environmental and cognitive approaches seem individually inadequate, a viable method of investigation emerges when both perspectives are simultaneously used. The questions to be addressed then become:

- What aspects of the environment are the most important to a potential criminal?
- How does the potential offender evaluate the available environments?
- What set of environmentally based dimensions is used in a criminal's decisionmaking process that distinguishes one environment from another?

Before further discussion of the four factors, a fifth factor -- which has purposely been excluded -- merits comment. This factor represents an individual, motivational, perceptual, and cognitive element. With this factor, the model would be sensitive to organismic variables that mediate environment/behavior relationships. To illustrate the operation of this factor, for example, one could suggest that individuals in greater need of a reward (e.g., a dope addict in need of a fix) will run higher risks for smaller payoffs than those with less immediate needs. Individuals who perceive an opportunity for a crime may attempt a criminal act, even though no opportunity in fact exists. A criminal might think that the risk of apprehension in a specific environment is low when, in fact, it is quite high.

The mediation of environment/behavior relationships by human predispositional variables is acknowledged. However, this factor is presently excluded from OTREP because the emphasis of CPTED is towards the environment. Project managers must manipulate environments and physical design elements to reduce crime, and the orientation of OTREP reinforces the emphasis. The intent is to avoid shifting the emphasis from design variables that can be controlled and manipulated to motivational and cognitive factors over which the manager has little control. At some future date, however, the OTREP model may be expanded to include motivational and cognitive factors if their utility for CPTED programming efforts can be demonstrated.

OTREP conceptualizes four attributes that relate to criminal behavior. The first factor, *target*, can be said to exist whenever a potential victim and a potential offender are in proximity. However, many opportunities are lost because a potential offender does not perceive the individual or property as a potential target. As the salience of a potential target increases, criminal action by the potential offender becomes more likely.

The concept of target allows the same environment to be characterized by different degrees of opportunity for different crimes. If an elderly lady carrying a purse is walking next to a young woman on a semi-crowded street, the opportunity for pursesnatch would be much higher than the opportunity for rape.

The concept of *risk* implies that, as the risk of punishment or apprehension increases, the attractiveness of an environment (to a potential offender) decreases. This is precisely the notion of deterrence. From a CPTED viewpoint, perhaps the principal mechanism for increasing risk would be surveillance, although certain access control methods would also contribute.

The third factor, *effort*, assumes that an environment becomes less attractive as the physical effort required to commit a crime increases. The effort necessary to execute a crime may be increased through CPTED tactics, expecially access control or target-hardening approaches. This is an area in which CPTED should be expected to have a large impact.

The final OTREP concept is *payoff*, or the anticipated benefits of crime to the offender. As the payoff grows larger in an environment, the attractiveness of that environment to the criminal is assumed to increase. It should be noted that the payoffs of acquisitive crimes (e.g., robbery and burglary) are more susceptible to reduction through CPTED than are the payoffs of other types of offenses (e.g., murder, drug abuse, and prostitution).

Some examples of the interplay of these elements are worth noting briefly. If a target is not perceived, no crime will occur. If an actual target is perceived, then payoff must be subjectively greater than both effort and risk for a crime to occur. Effort and risk are not completely independent in that risk can decrease somewhat as the amount of time (the effort) required to commit a crime decreases.

APPENDIX B

CPTED Schools Demonstration: A Chronology*

*Based upon a consolidation of contractually required monthly and quarterly reports.

August - October 1974

- CPTED team members met with Joseph Grealy, Director of Internal Affairs for Broward County School System and President of the National Association of School Security Directors, and with Administrators in the Broward Country School System to discuss a possible school CPTED demonstration. Broward County's crime data were excellent and the level of interest was extremely high. As a result, project representatives returned to Broward County for a more comprehensive investigation of the area as a possible site for a school demonstration. The CPTED team met with school officials, security people, and staff who expressed strong interest in cooperating with the program. They were also helpful in identifying crime problems in Broward County schools. This second visit to Broward County reaffirmed the CPTED team's earlier assessment that the school district had excellent potential for a successful demonstration. Therefore, a preliminary (mini) demonstration plan was prepared. This plan was submitted to NILECJ and Broward County school officials for review and comment. It was reviewed with (and approved informally by) William Drainer, Superintendent, Broward County Schools.

- Evaluation personnel participated in the Broward County site visits to review data and other evaluative requirements; the evaluation portion of the plan for the Broward County School demonstration was prepared.

November 1974 - January 1975

- The first draft of the plan for the schools demonstration was completed, and a meeting was held with local officials in Fort Lauderdale, Florida, to review the plan and to discuss funding. The plan was later presented to the new Broward County School Board, who reaffirmed the previous Board's resolution approving the planning and implementation work involved in the CPTED demonstration, as well as cost-sharing through contributions of staff time and other resources.

- The Deputy Program Manager for Demonstration Execution assumed responsibility for administration of the Broward County demonstration. The administrative tasks included following up on funding commitments and requisite approvals, as well as planning for translation of the work plan into a comprehensive demonstration.

- An outline of progressive tasks was prepared for the schools environment with associated target dates for each task. Recognizing that the potential success of these efforts would be tied to political and attitudinal factors, a series of sub-steps was also identified. These sub-steps took the form of briefing sessions to familiarize technical staff supportive to the policymakers with the objectives of CPTED and the specific strengths of the proposed work plan. These sessions were designed to accommodate participation feedback and were pursued with the objective of expeditiously identifying key funding issues.

- A presentation on CPTED and the schools demonstration plan was made before the Governor's Commission on Criminal Justice Standards and Goals for the State of Florida on December 6. This Commission is charged with the "establishment of priorities for the improvement of Criminal Justice throughout the State." In this regard, environmental design (and its deterrent effect on criminal opportunity) appeared high on the list of priorities, supporting the request for consideration of action grant funding.

- Initial contact was established with representatives of the Broward County Metropolitan Planning Unit, the Florida Bureau of Criminal Justice Planning and Assistance, the State Department of Education, the State Department of Administration, and the Lt. Governor's Office. Ongoing communication with these contacts would be used to develop further awareness of the CPTED Program and to identify follow-up funding sources.

February - April 1975

- The demonstration design for the schools environment was completed.

- A presentation was made to the Florida Crime Prevention Task Force by representatives of the CPTED team and the Broward County Schools. After establishing the merits of the planned demonstration, the Task Force was urged to lend their endorsement to the request for financial support at the State level. In a subsequent session of the full Commission, the 1975 Florida Comprehensive State Plan was adopted subject to review and potential amendment by Lt. Gov. Williams, Commission Chairman. The Plan, as adopted, no longer included funding for the CPTED schools demonstration. A statement summarizing the potential implications of the failure of the Florida State Plan to include CPTED funding was prepared at NILECJ's request. This paper outlined the support (including financial commitment) of local Broward County organizations and agencies that would be jeopardized by State curtailment. It also described the effect upon achievement of CPTED goals that could be foreseen if the funding was not restored.

May - July 1975

- CPTED team members held a series of discussions with administrative, security, and guidance personnel in the Broward County school system. The overall purpose was to determine effort needed prior to startup of the demonstration to ensure that baseline data for the CPTED evaluation could be reconstructed by the evaluator.

- Additional documentation concerning the school demonstration was requested by and prepared and submitted to the Florida Bureau of Criminal Justice Planning and Assistance. The Broward County Municipal Planning

Unit was provided assistance in developing two preapplications, one for reallocated 1974 action funding at the State level and one for discretionary funds at the Regional level, to support the two sets of strategies that were identified for test in Broward County. The preapplication for State-level (action funds) support sought funding for the social cohesion model, designed to impact on person-to-person crimes and the fear of such crimes, with a secondary impact on burglary and vandalism. The preapplication for Federal assistance sought funding for the Perimeter Control model, designed to impact on crime against school and personal property. The Florida BCJP&A and the LEAA regional office in Atlanta were consulted during the preparation of these preapplications to keep these offices fully aware of progress and to coordinate the information provided.

- CPTED team members met with key Florida officials in Broward County and Tallahassee to determine the funding support status for the schools demonstration. The Florida SPA representatives confirmed that the FY75 State action program had been committed too early in the year to accommodate the funding support requested for the demonstration. The FY76 action program was identified as the target for obtaining State LEAA fund support. State planning for the FY76 program would occur during August 1975. Local support in Broward County for the implementation of the demonstration plan continued to be strong. Because of the CPTED Program's need for a long-term funding commitment, executive and funding support at the State level was critical. Although the State's budgetary problems created an atmosphere of reluctance to fund new programs, the positive attitude of the State Planning Agency, coupled with local support, offered encouragement for generating executive support at the State capitol for the schools demonstration on the FY76 State Program. Therefore, action was taken to plan key State-level contacts to obtain a funding commitment for the demonstration.

- Contacts were pursued in Tallahassee and Washington to identify short-term funding support for the Broward demonstration. While the FY76 Florida action program was available for funding support, the delay in securing funds would unduly compromise the development schedule of the demonstration. Therefore, Dr. R. Rau and Dr. F. Heinzelmann, both of NILECJ, and Mr. E. Pesce, representing the contractor, met with Mr. Mike Dana of LEAA's Citizens Initiative Program to determine whether that program would support the demonstration. Mr. Dana responded positively and instructed the contractor to prepare a grant application under the direction of the LEAA Regional Office in Atlanta, indicating he considered this a high priority for his office. Accordingly, steps were initiated to develop a grant requesting the identified sum of $400,000 from the Citizens Initiative Program. The contractor later consulted with Ms. Carol Blair (Florida State Representative in the Atlanta Regional Office), Mr. Chuck Davoli (Bureau head of the Florida SPA), Mr. John Woodward (Chief of the Broward County Metropolitan

Planning Unit), and Mr. Joe Grealy (Director of Internal Affairs for the Broward School System). These contacts led to coordination of the effort required to process the grant application.

August - October 1975

- The Commissioner of the Florida Department of Education, Mr. Ralph Turlington, expressed his support of the proposed demonstration in Broward County and agreed to assist in developing a source for the approximately $44,000 of local matching funds required to request the $400,000 Office of National Priority Programs (ONPP) grant. At subsequent meetings held with officials of the Florida Department of Education (DOE), school-related crime/environment problems and how they could be eliminated or reduced through the use of CPTED strategies were discussed. As a result of those discussions, it was agreed that the revised school demonstration plan should be submitted for review by the Research Division of DOE prior to final commitment of the State's match contribution.

- In a series of interviews conducted with representatives of the four Broward County demonstration schools, first-hand information was obtained from individuals representing various segments of the school population about their views on the crime problem in Broward schools, as well as potential crime prevention/reduction strategies.

- A revised and expanded set of CPTED school strategies was developed by the CPTED team in conjunction with Broward County school personnel. This activity supported the objective of revising the earlier school demonstration plan to reflect recommendations from Federal, State, and local agencies concerned with approval of the grant application being developed in the County.

- Representatives of the evaluation effort participated in discussions with local representatives of the Broward County school system in order to determine the availability and scope of data on crime/environment problems.

November 1975 - January 1976

- CPTED team members were onsite in Broward County to confirm school system commitment to the specific strategies to be implemented. The visit was most successful in that (1) a variety of CPTED strategies were selected for implementation, (2) strategies were detailed for implementation on a school-by-school basis, and (3) commitments of full support for the execution of these strategies by the administration of each school (i.e., Boyd Anderson, Deerfield Beach, McArthur, South Plantation) and other County level school officials were obtained.

In a subsequent visit, CPTED members coordinated with local representatives of the School System details and costs of strategies to be implemented in the school demonstration. A draft grant request was then prepared to assist local officials in their preparation of the official document.

- A report, indicating the status of the schools plan revision, funding and grant application plans, and grant match commitments, was prepared and sent to LEAA offices in Washington and Atlanta, various Florida State officials, and several Broward County schools and law enforcement officials.

- Drs. F. Heinzelmann and R. Rau of LEAA/NILECJ were briefed on the contents of the revised "Concept Plan for the School Environment." Their comments and recommendations would be incorporated in the final draft. A briefing on the status of the Broward County Demonstration and the contents of the Concept Plan was also given to Mr. G. Alprin, Director of the Office of Research Programs, NILECJ; Mr. R. Maurer, Broward County Superintendent of Schools; Broward County Sheriff E. Stack; and the Vice-Chancellor of the Florida Board of Regents.

- The revised and coordinated Broward County, Florida, Schools Demonstration Plan was submitted to NILECJ. The plan provided the rationale supporting the request for a grant submitted by Mr. Gerald Thompson, Chairman, Broward County, Florida, Board of Commissioners.

- During a visit to Broward County, conduct of the evaluation of the schools demonstration was discussed with the Research Office of the Broward County School System. Based upon their apparent skills, desire, and potential objectivity, it was felt that this office should be designated to conduct the evaluation under the guidance of the CPTED Program evaluation component.

February - April 1976

- Contacts were made (by mail or telephone) with Broward School Board officials, the Broward County Office of Criminal Justice Planning, the State Planning Agency and Department of Education of Florida, the LEAA Atlanta Regional Office, the Community Crime Prevention Office of NILECJ, and the Grants and Contract Management Division and Special Programs Division of the Office of Regional Operations, to facilitate the processing of the Broward County Schools Demonstration Grant Application, which was submitted to LEAA Central Headquarters by direction of the GPM. Mr. R. Burkhardt of the LEAA Office of Regional Operations (ORO) advised that the grant was being referred to the Atlanta Regional Office for processing and approval.

- The requisite cash match for the Schools grant of approximately $44,000 was approved. It would be provided by the Florida Department of Education ($9,000) and Broward County ($35,000).

- Mr. Richard Velde, LEAA Administrator, approved transfer of $400,000 in discretionary funds to the Atlanta RO for support of the Schools Demonstration.

- The Atlanta Regional Office indicated that there were some financial questions regarding the Broward County Schools grant request. Approval of the grant request would be delayed pending completed responses to those questions by Broward County personnel.

- Candidates for the position of Broward County Coordinator for the CPTED program were identified and the selection process initiated.

- Meetings were held between CPTED consortium representatives and the Office of Research for the Broward School System to discuss evaluation implementation. The evaluation plan was completed with the assistance of Drs. Linda Murray and William Meredith of the Broward County Department of Education, Research Division. Plans were made to conduct a baseline student victimization survey using questions adopted from the Research Triangle Institute's National Institute of Education's Safe School Study.

May - July 1976

- The LEAA grant award to the Broward County School Board for implementation of the Schools Demonstration was announced. As a result, the CPTED Program received press coverage nationally in several criminal justice publications and in the daily newspapers of the Ft. Lauderdale and Miami, Florida, areas.

- Local activity dealt with the issues of project coordination and security approval for implementing the design directives in the four experimental schools. These activities were led by the newly hired CPTED team On-Site Coordinator and the Broward County Schools Project Coordinator, in concert with officials of the School Board and the individual schools' representatives.

- A draft graphics/color coding work plan for the Boyd Anderson High School was prepared.

- The Evaluation Plan was completed, representing an overall approach that was agreed upon by members of the CPTED team and the Broward County Schools, who would be conducting the evaluation.

- The fear and victimization survey for the Broward County Schools Demonstration was administered and preliminary analyses were conducted.

- Work proceeded on the collection of crime-environment information from the Dean's records at South Plantation High School.

August - October 1976

- The school facilities planning section of the Broward County School Board submitted a time schedule for drawing blueprints and bidding the contracts for implementation of the physical design directives in the CPTED demonstration schools.

- The School Board accepted the low bid to build the portable police precinct.

- Mini-plaza designs were developed and blueprints were completed.

- The graphics/color coding were completed for three of the six design areas in Boyd Anderson High School.

- Drawings were begun for the bicycle locking cups to be used in the bicycle parking areas.

- Two-way radios were provided to key staff at McArthur High School.

November 1976 - January 1977

- One of the four school coordinators was hired.

- CPTED team support of the design and application of supergraphics was completed.

- All major work was accomplished for establishing a Model School Police Precinct in Boyd Anderson High School.

- Delivery of the portable ticket booths was made to McArthur High School.

- A restriction was placed on the color-coding strategy to consist only of the boys' lockers at Boyd Anderson High School. Inclusion of color coding at Deerfield Beach and South Plantation High Schools would have caused a substantial cost overrun in the budget allocation for color coding.

- Federal, State, and local officials met in Broward County to review the status of the LEAA grant.

- A draft observation form for monitoring and assessing impact of the Broward Demonstration was prepared, and a fear and victimization survey was designed and distributed to the Broward Schools.

February - April 1977

- During the quarter, much progress was made toward implementation of the strategies at the four demonstration schools:

  - Boyd Anderson

    -- Students completed all pictograms.

    -- Student parking lot completed.

    -- Stairtower renovations completed.

    -- Police Precinct ready for occupancy.

  - Deerfield Beach

    -- Bids approved for construction of student parking lot, bicycle compounds, and mini-plazas.

    -- Workshop held on the pictograph technique attended by the principal, media personnel, and members of the Art Department.

  - McArthur

    -- Student parking lot completed.

    -- Bids approved for construction of bicycle compounds and mini-plazas.

    -- Classroom and restroom renovations well underway.

  - South Plantation

    -- Stairtower renovations completed.

    -- Bids approved for construction of student parking lot, bicycle compounds, mini-plazas, and Security Office, and renovation of snack bar.

- Budget revisions that were requested for reallocating funds for strategy implementation were approved by the LEAA Office of Regional Operations.

- Returns from the student survey begun in late January were completed, as were the survey reruns for South Plantation and Boyd Anderson.

- Final revisions were made to the observational inventory and administration interview questionnaire. The latter was subsequently administered in a number of schools.

May - July 1977

- The following activities occurred at the four demonstration schools:

  - Boyd Anderson

    -- Lettering of the pictograms, restrooms, and stairwells, and colorcoding of the corridors were completed.

    -- Police Precinct occupany occurred by members of the Lauderdale Lakes Police Department (which merged with the Broward County Sheriff's Office).

  - Deerfield Beach -- Except for minor touch-ups and repairs, the following were essentially completed:

    -- Mini-plaza construction, including furniture installation.

    -- Construction of the pole gates for student and teacher parking lots.

    -- Construction of the patio gates.

    -- Fencing and blacktopping of the bicycle compound, along with installation of the bicycle racks.

  - McArthur

    -- Classroom and restroom renovations were completed.

    -- Mini-plaza construction, including furniture installation, was completed except for minor touch-ups and repairs.

    -- Student parking lot renovation neared completion.

    -- Bicycle compound construction was completed; anchoring of the racks imminent.

  - South Plantation

    -- Security Office construction was completed.

    -- Snack bar renovation was completed.

    -- Mini-plaza construction was completed except for minor touch-ups and repairs; anchoring of furniture is imminent.

-- Installation of pole gates for student and teacher parking lots neared completion.

-- Bicycle compound construction was completed, except for minor touch-ups and repairs.

- Request for a no-cost extension of the Broward County grant through June 30, 1978, was submitted to the LEAA ORO.

- Technical support was initiated for the School Security Guidelines Manual and Records System Design being developed by the Broward County CPTED Office.

- CPTED team members were onsite at various times. Highlights of those visits include:

  - Plans were initiated for student and faculty orientation and involvement programs during the 1977-78 school year.

  - Keypunching of the data from the February student survey was completed.

  - Major gains were made in expanding the cooperative evaluation effort, resulting in tighter controls and greater access available to CPTED team evaluators.

- The June 1977 student survey was conducted. The tape containing the raw data (n = 1400) was delivered to the Evaluation team.

- Analysis of the May 1976 and January 1977 student questionnaires were initiated.

- The onsite observer completed his report and forwarded the draft to the Evaluation team.

August - October 1977

- Receipt of a no-cost extension of the Broward County grant from LEAA (stipulated for evaluation activities only) enables CPTED team support of the evaluation effort to extend through the 1977-78 school year. (The grant termination date was extended from September 30, 1977, to June 30, 1978.

- CPTED team members were on site to view implementation status, review procedures for photographic documentation of strategy implementation, help develop press release material and other components of a campaign to raise local public awareness of the demonstration, and help to develop and finalize plans for generating student and faculty awareness and involvement.

- Evaluation highlights included the following:

  - Arrangements were made to obtain tapes of reported crime data collected by the schools to help interpret the victimization data collected previously.

  - The observational data, collected during the spring, were coded and placed on punchcards for analysis.

  - Additional ancillary analyses were performed on the student incident survey data and on the attendance data.

November 1977 - January 1978

- With landscaping of all miniplazas in November, all physical design strategies were completed. As a result, CPTED activities focused on student/faculty awareness and evaluation; awareness activities that occurred are as follows:

  - Over 50 faculty members for the four demonstration schools attended a CPTED orientation workshop. Following presentation by Broward County and Westinghouse CPTED staff, there was limited feedback on how the faculty and students can help sustain and expand the CPTED strategies.

  - Forty student leaders from the four demonstration schools, along with nine faculty sponsors, attended a CPTED orientation luncheon that was hosted by South Plantation High School. Broward County CPTED staff made a brief slide presentation and coordinated the discussion. Feedback during and since the luncheon was quite positive. Some of the students who attended pressed for increased CPTED involvement at their own schools. For example, a service club at Deerfield Beach encouraged the Principal to implement the pictogram strategy there, and as a result, by the end of the quarter, a pictogram was being done on one corridor wall.

  - CPTED handouts, describing the overall program and the continuing role for students, were printed; and enough handouts for every student in the four demonstration schools were distributed to the four principals.

- Highlights of the evaluation activities that occurred are as follows:

  - Reported crime data, collected by Broward County school security personnel, were obtained and analyses begun.

  - Photographic documentation of the status of the physical changes in three of the four schools was obtained.

- A new onsite evaluator/observer was hired and trained in the use of the observation forms.

- The staging of "suspicious incidents" was discussed with project schools administrators, who were very cooperative, and agreed to allow data to be collected in this fashion. A data observation sheet and a detailed procedure were established. Mr. J. Grealy, CPTED Director and Director of Internal Affairs, agreed to assist in this evaluation effort by loaning one of his security officers to help in staging the incidents. This procedure would permit examination of the impact of the physical changes produced by CPTED and the additional effect of the educational program. The first wave of "suspicious incidents" was staged in the demonstration schools during December.

- Forms for the first post-implementation survey were distributed to all 20 Broward County Schools.

- An RFP was issued for an outside evaluator to conduct an independent impact evaluation between February and the June 30 termination of the LEAA grant. While limited in scope (less than $10,000 was allocated for this effort), the statement of work was designed to ensure that the outside effort will complement the ongoing local evaluation being supported by the CPTED Program Evaluation Team.

February 1978

- Student/faculty awareness and evaluation activities comprised the major efforts.

  - CPTED handouts, describing the overall program and the continuing role for students, were distributed to approximately 2,500 students at each of the four demonstration schools.

  - Efforts continued in further analysis of pretest data and a detailed description of the implementation process.

  - A key-person interview schedule was developed for a site visit during mid-March.

March 1978

- Evaluation activities comprised the major efforts.

  - The observational assessment of strategy implementation was completed.

  - A draft evaluation report that provides an effort and process evaluation of the demonstration was prepared.

- The Broward County School Board awarded a contract to an outside firm to conduct an impact evaluation of the demonstration, which is to complement the CPTED team's assessment.

- A penalty was imposed against a local contractor for inadequate performance of the terms of its contract to construct the physical design components of several CPTED strategies.

APPENDIX C

Public Relations Materials Used in the
CPTED Demonstration in Broward County, Florida

Public Relations Materials

Following are two examples of public relations efforts aimed at increasing citizen (i.e., students and staff) participation in the CPTED project in Broward County. The first is a copy of a student handout that explains the CPTED project and its purposes in simplified language. This was distributed to students in February 1978. The second example includes suggestions for the administration and faculty of schools using the CPTED method as the means of incorporating CPTED into existing activities at the school.

SCHOOL CRIME IS YOUR PROBLEM TOO!

The Broward County School System is part of a nation-wide experiment to reduce crime. It is known as CPTED (pronounced SEP-TED). You are being asked to aid in this effort by becoming aware of crime prevention opportunities and the program now underway in four Broward County high schools. We offer you this fact sheet as introduction.

WHAT IS CPTED?

CPTED stands for Crime Prevention Through Environmental Design. It is a new concept in crime prevention which tries to reduce the opportunities for crime, in other words, make it difficult for the criminal to get away with committing a crime. This can be accomplished by changing some elements of the environment which now make it easier for the criminal to act: for instance, tall bushes and shrubs can be trimmed so that they no longer provide hiding places and rest room doors can be locked open (with a privacy wall) so that any disturbances can be heard from the hall. (As part of the experiment, the changes vary in each school.) Even improving the school's appearance can help prevent crime because a better looking school just seems more worth protecting.

HOW DOES THIS AFFECT ME?

First of all, you could be the victim of a crime in your school, perhaps threatened by a fellow student or an outsider or having property stolen. It is, therefore, in your interest to help any crime prevention effort. Second, CPTED involves more than just making physical changes. Another way of reducing opportunities for crime in an area is to increase the activity in an area, making it more likely that a criminal would be seen in the act. So people are an important element in this program. Student activity will be encouraged in certain areas by means of such additions as student plazas. Students and staff will also be encouraged to keep their eyes open to possible criminal activity and to report it immediately. An alert student body is one of the best possible crime prevention tools.

WHERE ELSE ARE THESE CPTED PROJECTS UNDERWAY?

The CPTED experiment is being tried in four Broward County high schools: Deerfield Beach, Boyd Anderson, McArthur, and South Plantation. Similar experiments are also underway elsewhere in the country. An experiment in reducing crime in a commercial area is underway in Portland, Oregon, and a residential crime prevention project is now in effect in Minneapolis, Minnesota.

WHY SHOULD I BE CONCERNED ABOUT CRIME IN THE SCHOOL?

Let us repeat: you could be a victim. In fact, whenever a crime occurs in or around your school, you are a victim. You spend an important part of your life in the school. So when a part of it is destroyed or torn up, or when another student or teacher is threatened or victimized, an important part of your life is made less pleasant than it ought to be. The money to repair the destruction and investigate the crimes, of course, comes from your educational programs and sports and other activities. And your school, like most schools across the country, does have problems with crime, including vandalism, theft, extortion, and assault. A survey recently taken of students in the four Broward County experimental schools

found that a significant number of your fellow students do feel some fear of being threatened or having property stolen in certain areas of your school.

WHAT ARE THE CRIME-PRONE AREAS OF MY SCHOOL?

Restrooms are one of the major areas where students who were surveyed felt some apprehension. Any student who drives a car or a bicycle to school must also feel some apprehension about leaving it all day, wondering if the bicycle or the tape deck will be there when school is over. Student lockers present a similar problem: how many friends do you know who have had things taken from their lockers? There are other crime-prone areas of the schools which are receiving special attention -- science labs, cafeterias, libraries, band rooms, audio visual equipment areas -- all these areas are popular targets of theft and vandalism.

HOW CAN I HELP?

The main thing is to keep your eyes and ears open to any suspicious activity and encourage your friends to do the same.

WHAT SHOULD I WATCH OUT FOR?

By any suspicious activity, we mean such things as students lurking in areas where they should not be or hanging around school buildings long after school is out. You can also watch out for any strangers who appear in the school or on the school grounds who are not escorted or do not seem to have a legitimate purpose there. Automobile and bicycle parking areas should also be watched for suspicious activity, strangers among students' cars or a student taking a bicycle which doesn't belong to him or her. And, of course, watch out for the more obvious problems of fighting or threats to students or staff.

WHAT SHOULD I DO IF I SEE OR HEAR SOMETHING SUSPICIOUS?

First, look and listen carefully and get as much information as possible. Then report the incident to the nearest teacher, administrator, or security officer. Avoid becoming involved in the incident -- unless, of course, it is the only way to keep someone from getting badly hurt -- or you might become a victim. Let the school authorities handle it. They will appreciate your help.

HOW LONG DOES THIS PROGRAM GO ON?

Now that the physical changes have been made in your school, the people part of the program will go on as long as the school does. Each new class of students must be informed of the program and encouraged to do their part to prevent crime in the school and make it a pleasant place for everyone. A safe school is the legacy each succeeding graduating class should pass on to future students.

If you have any more questions about the CPTED program, see your student or faculty representative on the Crime Prevention Committee. Their names are on the bulletin board.

SUGGESTIONS FOR STUDENT & STAFF INVOLVEMENT IN CPTED PROGRAMS

We have included in this package a number of suggestions for further involving students, faculty, and staff in ongoing CPTED activities and awareness. CPTED should be a continuing process whose basic concept of awareness and concern about the environment must be constantly reinforced.

School Watch Committees: These may be informal or formal groups composed of responsible students and/or staff whose responsibility it is to keep an eye on activity in specific school areas, particularly parking lots, plazas, gymnasium, cafeteria, library, and halls. Monitoring could be done informally through existing student clubs, service organizations, Student Council, or the Honor Society. Some problem areas which have been identified in your particular school may require actual scheduled observation by students on a rotating basis during their free time. The same policy, either informal or formal, could be used for school sports activities or special events such as plays or dances.

Student Clubs and Organizations: As stated above, existing clubs and organizations can be the focus of informal monitoring activities or the school might wish to consider a newly created crime prevention club, directing its major effort to that purpose. A new club would not only aid monitoring but could also serve as a dissemination and suggestion point and take up such projects as meeting with residents and merchants near the school concerning student nuisance problems.

Existing clubs and organizations can also be the focal point for special crime prevention efforts such as Operation ID, labeling school

property, as well as encouraging students to label their own property. Appropriate school clubs may also aid in beautification projects which enhance school pride.

Art clubs or classes can play a special role in crime prevention activities by contributing posters reminding students of CPTED or by enhancing the school walls with murals designating functional areas.

STUDENT PUBLICATIONS

Students should be encouraged to include crime prevention activities in their newspaper, with articles written by students themselves when possible. Such articles might include:

- o an editorial on the importance of CPTED,
- o cartoons depicting suspicious activities one should watch out for,
- o general feature article on CPTED activities in the school,
- o informal student survey of fear-producing areas of school or of persons who have been victimized in the school,
- o student suggestions for CPTED.

INCORPORATING CPTED IN THE CLASSROOM

Social studies, English, history classes, and possibly others can incorporate CPTED concepts into regular class sessions. Special classes could also be planned on crime and its problems with an emphasis on its effect and prevention. For instance, English classes might study a major work on crime such as Dostoevski's Crime and Punishment or a short story such as Hemingway's "The Killers," or the innumerable instances of crime found in contemporary fiction. History classes have numerous examples to choose from, or, as in social studies classes, daily articles from newspapers can serve as focal points for discussion. A special class session might focus on the pervasiveness of crime(using local examples), its social and economic consequences, the public perception of crime, and the public responsibility for it, i.e., crime prevention measures.

APPENDIX D

Student Surveys

STUDENT SURVEYS

Student victimization surveys were administered on five occasions in the Broward County Schools: Spring 1976, winter 1976-77, spring 1977, winter 1977-78, and spring 1978. The survey forms used for spring 1976 and winter 1976-77 are reproduced in this appendix. A short discussion follows, noting the changes in the survey forms, particularly the latter three which are not reproduced.

The questions in the spring 1976 survey were greatly expanded for the winter 1976-77 survey. The original eight questions were retained but placed in a different order in the winter survey and nearly 80 questions were added, seeking such information as 1) how often one is in a certain area, 2) opinions on how safe one is in certain areas, 3) how likely it is that an offender would be seen in the act, and 4) a number of "what would you do if..." questions. The winter survey also included a one-page explanation of the survey's purpose plus some definitions of terms that appear in the survey.

The basic format of nearly 90 questions was retained in the spring 1977 survey, with some notable exceptions. The number of environments in questions 1 through 4 in the winter 1976-77 survey were reduced from 13 to 9, and some other changes were also made. Those environments dropped were bicycle stand, streets around the school, school bus, any entrance into the school building, stairs, classrooms, and cafeteria. Several environments were added that had not been included in the two

previous surveys. These included bus-loading zone, courtyard area, and bike parking area. Two questions were added to obtain overall incident rates:

- Overall, counting this year only, did anyone hurt, bother, or physically attack you at school this year?
- Overall, counting this year only, did anyone steal anything from you at school this year?

Other changes included a change in the order of some questions and the deletion of questions number 7 and 8 from the previous winter survey. These questions had sought information concerning the dollar amount of cash or items either stolen or taken by extortion.

The spring 1977 survey also had a major change in the first question from the preceding winter survey. This question was divided into two questions concerning theft and assault and reworded from "Are you afraid?" to "How often are you afraid?" In addition, the 2-point answer scale, formerly "Yes" and "No," was replaced by a 4-point answer scale, reading "Never," "Almost Never," "Sometimes," and "Most of the Time."

The winter 1977-1978 and spring 1978 surveys were identical to the spring 1977 survey.

STUDENT QUESTIONNAIRE

SPRING 1976

Certain locations within the school have been considered problem areas for students. Please note how much of a problem you think each of the following items actually is in each of the areas specified.

1. Are you afraid to go to the following places because someone might hurt or bother you?

CIRCLE ONE NUMBER ON EACH LINE		NO	YES
a.	the streets around the school	1	2
b.	the school bus	1	2
c.	the parking lot	1	2
d.	the bicycle stand	1	2
e.	other places on the school grounds	1	2
f.	any entrance into the school building	1	2
g.	the hallways	1	2
h.	the restrooms	1	2
i.	the stairs	1	2
j.	any classrooms	1	2
k.	the cafeteria	1	2
l.	the locker room	1	2
m.	other places inside the school building	1	2

2. Did you stay home from school anytime this year because you were afraid someone might hurt or bother you?

CIRCLE ONE NUMBER	NO	YES
	1	2

3. Counting this year only, did anyone steal things (pick your pocket, take things from your desk or locker, steal your bike, etc.) from you at any of the following places?

CIRCLE ONE NUMBER ON EACH LINE		NO	YES ONCE	MORE THAN ONCE
a.	the streets around the school	1	2	3
b.	the school bus	1	2	3
c.	the parking lot	1	2	3
d.	the bicycle stand	1	2	3
e.	other places on the school grounds	1	2	3
f.	any entrance into the school building	1	2	3
g.	the hallways	1	2	3
h.	the restrooms	1	2	3
i.	the stairs	1	2	3
j.	any classrooms	1	2	3
k.	the cafeteria	1	2	3
l.	the locker room	1	2	3
m.	other places inside the school building	1	2	3

4. Counting this year only, did anyone force you by weapons or threats to give money or other things to them at any of the following places?

CIRCLE ONE NUMBER ON EACH LINE		NO	YES ONCE	MORE THAN ONCE
a.	the streets around the school	1	2	3
b.	the school bus	1	2	3
c.	the parking lot	1	2	3
d.	the bicycle stand	1	2	3
e.	other places on the school grounds	1	2	3
f.	any entrance into the school building	1	2	3
g.	the hallways	1	2	3
h.	the restrooms	1	2	3
i.	the stairs	1	2	3
j.	any classrooms	1	2	3
k.	the cafeteria	1	2	3
l.	the locker room	1	2	3
m.	other places inside the school building	1	2	3

5. Counting this year only, did anyone physically attack and hurt you at any of the following places?

CIRCLE ONE NUMBER ON EACH LINE	NO	YES ONCE	MORE THAN ONCE
a. the streets around the school	1	2	3
b. the school bus	1	2	3
c. the parking lot	1	2	3
d. the bicycle stand	1	2	3
e. other places on the school grounds	1	2	3
f. any entrance into the school building	1	2	3
g. the hallways	1	2	3
h. the restrooms	1	2	3
i. the stairs	1	2	3
j. any classrooms	1	2	3
k. the cafeteria	1	2	3
l. the locker room	1	2	3
m. other places inside the school building	1	2	3

6. How often are you afraid that any of the following things might happen to you at school?

CIRCLE ONE NUMBER ON EACH LINE	NEVER	ALMOST NEVER	SOMETIMES	MOST OF THE TIME
a. someone might hurt or bother you	1	2	3	4
b. someone might steal something from you	1	2	3	4
c. someone might make you give them money or things	1	2	3	4

7. Counting this year only, about what dollar value would you place on cash and/or other things stolen from you at school?

CIRCLE ONE NUMBER	ZERO	UNDER $10	$10-$50	MORE THAN $50
	1	2	3	4

8. Counting this year only, about what dollar value would you place on cash and/or other things you were forced to hand over to someone at school?

CIRCLE ONE NUMBER	ZERO	UNDER $10	$10-$50	MORE THAN $50
	1	2	3	4

STUDENT INCIDENT SURVEY

WINTER 1976-1977

There are no right or wrong answers to these questions. We want to learn more about how to prevent incidents which may happen in certain parts of the school. One thing we want to know is if it is easy or hard to spot someone doing something wrong in different places. For example, are there places where students might get beat up or robbed without being seen by other people?

When we ask about someone stealing something in certain places, we mean both stealing something <u>from someone</u> or <u>something in that place</u>. In some places like hallways there may not be anything there to steal. If something is stolen from a person or he is attacked, of course the person it happened to would see it. The question is always would <u>anyone else</u> be likely to see the crime? Remember that this is the purpose of some of the questions which you may wonder about.

No one will see your answers to these questions. The computer selected you at random (that means "by chance") to fill out this questionnaire. Enough pupils were selected so that we will get a good idea of the places where incidents are likely to happen at your school.

As you go through the questionnaire you may be unsure what is meant by "courtyard area" and "bicycle parking area." For clarification, the courtyard area describes any places on the school grounds which the school officials have set aside for students to meet and talk together before and after school and at lunch. Your school may call this the patio or mini-plaza. Bicycle parking area refers to the place or places which are officially reserved for bike parking.

1. Are you afraid to go to the following places because someone might hurt or bother you?

Circle one number on each line	NO	YES
a. the streets around the school	1	2
b. the school bus	1	2
c. the parking lot	1	2
d. the bicycle stand	1	2
e. other places on the school grounds	1	2
f. any entrance into the school building	1	2
g. the hallways	1	2
h. the restrooms	1	2
i. the stairs	1	2
j. any classrooms	1	2
k. the cafeteria	1	2
l. the locker room	1	2
m. other places inside the school building	1	2

2. Did you stay home from school <u>anytime this year</u> because you were afraid someone might hurt or bother you?

Circle one number	NO	YES
	1	2

3. <u>Counting this year only</u>, did anyone force you by weapons or threats to give money or other things to them at any of the following places?

Circle one number on each line	NO	YES	MORE THAN ONCE
a. the streets around the school	1	2	3
b. the school bus	1	2	3
c. the parking lot	1	2	3
d. the bicycle stand	1	2	3
e. other places on the school grounds	1	2	3
f. any entrance into the school building	1	2	3
g. the hallways	1	2	3

3. (Continued from following page)

Circle one number on each line	NO	YES	MORE THAN ONCE
h. the restrooms	1	2	3
i. the stairs	1	2	3
j. any classrooms	1	2	3
k. the cafeteria	1	2	3
l. the locker room	1	2	3
m. other places inside the school building	1	2	3

4. Counting this year only, did anyone steal things (pick your pocket, take things from your desk or locker, steal your bike, etc.) from you at any of the following places?

Circle one number on each line	NO	YES	MORE THAN ONCE
a. the streets around the school	1	2	3
b. the school bus	1	2	3
c. the parking lot	1	2	3
d. the bicycle stand	1	2	3
e. other places on the school grounds	1	2	3
f. any entrance into the school building	1	2	3
g. the hallways	1	2	3
h. the restrooms	1	2	3
i. the stairs	1	2	3
j. any classrooms	1	2	3
k. the cafeteria	1	2	3
l. the locker room	1	2	3
m. other places inside the school building	1	2	3

5. Counting this year only, did anyone physically attack and hurt you at any of the following places?

Circle one number on each line	NO	YES	MORE THAN ONCE
a. the streets around the school	1	2	3
b. the school bus	1	2	3
c. the parking lot	1	2	3

5. (Continued from following page)

Circle one number on each line	NO	YES	MORE THAN ONCE
d. the bicycle stand	1	2	3
e. other places on the school grounds	1	2	3
f. any entrance into the school building	1	2	3
g. the hallways	1	2	3
h. the restrooms	1	2	3
i. the stairs	1	2	3
j. any classrooms	1	2	3
k. the cafeteria	1	2	3
l. the locker room	1	2	3
m. other places inside the school building	1	2	3

6. How often are you afraid that any of the following things might happen to you at school?

Circle one number on each line	NEVER	ALMOST NEVER	SOMETIMES	MOST OF THE TIME
a. someone might hurt or bother you	1	2	3	4
b. someone might steal something from you	1	2	3	4
c. someone might make you give them money or things	1	2	3	4

7. Counting this year only, about what dollar value would you place on cash and/or other things stolen from you at school?

Circle one number	ZERO	UNDER $10	$10-$50	MORE THAN $50
	1	2	3	4

8. Counting this year only, about what dollar value would you place on cash and/or other things you were forced to hand over to someone at school?

Circle one number	ZERO	UNDER $10	$10-$50	MORE THAN $50
	1	2	3	4

9. About how often are you in the bus loading area?
(Put an X by your answer on the following items.)

1 _____ more than once a day
2 _____ about once a day
3 _____ a few times a week
4 _____ about once a week
5 _____ a few times a month
6 _____ almost never

10. About how often are you in the courtyard area?

_____ more than once a day
_____ about once a day
_____ a few times a week
_____ about once a week
_____ a few times a month
_____ almost never

11. About how often are you in the locker room area?

_____ more than once a day
_____ about once a day
_____ a few times a week
_____ about once a week
_____ a few times a month
_____ almost never

12. About how often are you in the restroom area?

_____ more than once a day
_____ about once a day
_____ a few times a week
_____ about once a week
_____ a few times a month
_____ almost never

13. About how often are you in the hallway area?

_____ more than once a day
_____ about once a day
_____ a few times a week
_____ about once a week
_____ a few times a month
_____ almost never

14. About how often are you in the parking lot area?

_____ more than once a day
_____ about once a day
_____ a few times a week
_____ about once a week
_____ a few times a month
_____ almost never

15. About how often are you in the bike parking area?

_____ more than once a day
_____ about once a day
_____ a few times a week
_____ about once a week
_____ a few times a month
_____ almost never

(Place an X in the box under your answer on the following items)

	Very Safe	Safe	Somewhat Safe	Not Very Safe
16. How safe from being physically attacked is a person in the bus loading area?				
17. How safe from being physically attacked is a person in the courtyard area?				
18. How safe from being physically attacked is a person in the locker room area?				
19. How safe from being physically attacked is a person in the restroom area?				

	Very Safe	Safe	Somewhat Safe	Not Very Safe
20. How safe from being physically attacked is a person in the hallway area?				
21. How safe from being physically attacked is a person in the parking lot area?				
22. How safe from being physically attacked is a person in the bike parking area?				
23. How safe from theft is the bus loading zone?				
24. How safe from theft is the courtyard area?				
25. How safe from theft is the locker room area?				
26. How safe from theft is the restroom area?				
27. How safe from theft is the hallway area?				
28. How safe from theft is the parking lot area?				
29. How safe from theft is the bike parking area?				

	Very Difficult	Difficult	Easy	Very Easy
30. How difficult is it for someone who does not belong there to get into the bus loading area?				
31. How difficult is it for someone who does not belong there to get into the courtyard area?				
32. How difficult is it for someone who does not belong there to get into the locker room area?				
33. How difficult is it for someone who does not belong there to get into the restroom area?				
34. How difficult is it for someone who does not belong there to get into the hallway area?				
35. How difficult is it for someone who does not belong there to get into the parking lot area?				

	Very Difficult	Difficult	Easy	Very Easy
36. How difficult is it for someone who does not belong there to get into the bike parking area?				

	Very Likely	Likely	Unlikely	Very Unlikely
37. Suppose a person who did not belong there was in the bus loading zone. How likely is it that people would know that he did not belong there?				
38. Suppose a person who did not belong there was in the courtyard area. How likely is it that people would know that he did not belong there?				
39. Suppose a person who did not belong there was in the locker room area. How likely is it that people would know that he did not belong there?				
40. Suppose a person who did not belong there was in the rest room area. How likely is it that people would know that he did not belong there?				
41. Suppose a person who did not belong there was in the hallway area. How likely is it that people would know that he did not belong there?				
42. Suppose a person who did not belong there was in the parking lot area. How likely is it that people would know that he did not belong there?				
43. Suppose a person who did not belong there was in the bike parking area. How likely is it that people would know that he did not belong there?				
44. How likely is it that a person could steal something in the bus loading area without being seen?				
45. How likely is it that a person could steal something in the courtyard area without being seen?				
46. How likely is it that a person could steal something in the locker room area without being seen?				

	Very Likely	Likely	Unlikely	Very Unlikely
47. How likely is it that a person could steal something in the restroom area without being seen?				
48. How likely is it that a person could steal something in the hallway area without being seen?				
49. How likely is it that a person could steal something in the parking lot area without being seen?				
50. How likely is it that a person could steal something in the bike parking area without being seen?				
51. How likely is it that a person could physically attack another student in the bus loading area without being seen?				
52. How likely is it that a person could physically attack another student in the courtyard area without being seen?				
53. How likely is it that a person could physically attack another student in the locker room area without being seen?				
54. How likely is it that a person could physically attack another student in the restroom area without being seen?				
55. How likely is it that a person could physically attack another student in the hallway area without being seen?				
56. How likely is it that a person could physically attack another student in the parking lot area without being seen?				
57. How likely is it that a person could physically attack another student in the bike parking area without being seen?				

	Very Well	Well	Fairly Well	Not Very Well
58. How well do teachers watch what is going on in the bus loading zone?				
59. How well do teachers watch what is going on in the courtyard area?				
60. How well do teachers watch what is going on in the locker room area?				
61. How well do teachers watch what is going on in the restroom area?				
62. How well do teachers watch what is going on in the hallway area?				
63. How well do teachers watch what is going on in the parking lot area?				
64. How well do teachers watch what is going on in the bike parking area?				

65. Have you heard of any new program your school is using to help prevent crime at school? _____ yes _____ no

66. Have you heard of any student/faculty committees that are being organized to help plan crime prevention activities at your school? _____ yes _____ no

67. If <u>you</u> saw someone stealing something at school, do you think you would (choose the <u>one</u> most appropriate response). (Place an X by your answer on the following item)

_____ Do nothing, it is none of my business
_____ Do nothing, it would not do any good
_____ Do nothing, the troublemaker might take it out on me
_____ Do nothing, I would not tell on another person
_____ Try to stop it myself
_____ Try to get other students to try to stop it
_____ Report it

68. If <u>you</u> saw someone physically attack another student at school, do you think that you would (choose the <u>one</u> most appropriate response). (Place an X by your answer on the following item)

_____ Do nothing, it is none of my business
_____ Do nothing, it would not do any good
_____ Do nothing, the troublemaker might take it out on me
_____ Do nothing, I would not tell on another person
_____ Try to stop it myself
_____ Try to get other students to try to stop it
_____ Report it

69. What do you think other students would do if they saw someone suspicious at school. Do you think they would probably: (Place an X by your answer on the following item)

_____ ask the person what he was doing there
_____ report the person to a teacher or other adult
_____ probably ignore it

70. How many of the students at your school do you think would report a crime that they saw happening to someone at school? (Place an X by your answer on the following item)

_____ all of them
_____ some of them
_____ almost none
_____ most of them
_____ a few of them

71. How many students do you think would be willing to answer questions to help the authorities find a person who had committed a crime at school? (Place an X by your answer on the following item)

_____ all of them
_____ some of them
_____ almost none
_____ most of them
_____ a few of them

(Place an X in the box under your answers)

	Very Concerned	Concerned	Unconcerned	Very Unconcerned
72. How concerned do you think persons are of being reported if they steal something at school?				
73. How concerned do you think persons are of being reported if they physically attack other students at school?				
74. How concerned do you think persons are of being punished for stealing things at school?				
75. How concerned do you think persons are of being punished for physically attacking other persons at school?				

For the following questions place an X by your answer

76. In some schools students do things together and help each other — in other schools students mostly go their own ways. In general, what kind of school would you say this is mostly — one where most students help each other or one where most students go their own ways?

_____ most students help each other
_____ most students go their own ways

For the following questions place an X by your answers.

77. Would you say that you really feel a part of the school — or do you think of it as just another place to spend some time?

_____ feel a part of the school
_____ just another place to spend some time

78. How much do you think students at your school are concerned with preventing crimes from happening to other students.

_____ a great deal
_____ somewhat concerned
_____ not much

79. Overall how would you rate the job the teachers and other adults are doing in protecting students from crime at your school.

_____ very good
_____ good enough
_____ not as good as I would like
_____ not good at all

80. There are certain areas at this school that are built in a way that makes it easy for people to commit crimes and not be seen.

_____ strongly agree
_____ mildly agree
_____ mildly disagree
_____ strongly disagree

81. As a student I really can't do very much to help stop this school's crime problem.

_____ strongly agree
_____ mildly agree
_____ mildly disagree
_____ strongly disagree

82. Only a small group of troublemakers are responsible for the crimes that we have at this school.

_____ strongly agree
_____ mildly agree
_____ mildly disagree
_____ strongly disagree

PLEASE PROVIDE THE FOLLOWING DESCRIPTIVE INFORMATION ABOUT YOURSELF

1. How many years have you been at this school? _____ years

2. What grade are you in? (Circle one) 9 10 11 12

3. What is your age? _____ years old

4. What is your sex? (Check one) _____ female _____ male

5. What is your race? (Check one)
_____ Black
_____ White
_____ Other

APPENDIX E

Observational Forms

OBSERVATION AND INTERVIEW SCHEDULE

		OBSERVATION DATE	OBSERVATION SCHOOLS
Week:	1		SP_____ BA_____
	2		MA_____ DB_____
	3		BA_____ SP_____
	4		DB_____ MA_____
	5		BA_____ MA_____
	6		SP_____ DB_____
	7		BA_____ MA_____
	8		DB_____ SP_____

BA = Boyd Anderson
DB = Deerfield Beach
MA = McArthur
SP = South Plantation

		INTERVIEW
Week:	1	DB_____
	2	SP_____
	3	MA_____
	4	BA_____
	5	DB_____
	6	SP_____
	7	MA_____
	8	BA_____

Following are observational questions applied to all four schools.

Patio

1. Number of groups of students in patio at start of observation.

   _____

2. Have new tables and benches (other than picnic) been installed in patios?

   Yes _____ No _____

   (IF NO, SKIP TO #5.)

   a. IF YES, list number of tables _____ and benches _____.

   b. IF YES, do students use these tables and benches?

      Yes _____ No _____

      (1) IF YES, percentage used. _____%

   c. IF YES, do these tables and benches physically divide spaces?

      Yes _____ No _____

   d. IF YES, do these tables and benches physically divide the size of groups?

      Yes _____ No _____

3. Does traffic flow into patio without impediment?

   Yes _____ No _____

   a. Does traffic flow within patio without impediment?

      Yes _____ No _____

4. Is patio isolated from view of public thoroughfares?

   Yes _____ No _____

Patio (Cont.)

5. Is entire patio surveyable from points outside its perimeter?

   Yes _____ No _____

   a. IF NO, explain why not. _____

   _____

6. Is entire patio surveyable from points within its perimeter?

   Yes _____ No _____

   a. IF NO, explain why not. _____

   _____

7. Is there a student smoking zone located in the patio?

   Yes _____ No _____

   a. IF YES, count the number of students smoking at this instant in zone.

      Male _____
      Female _____

   b. IF YES, count the number of students smoking at this instant in other parts of patio.

      Male _____
      Female _____

8. Is behavior in patio area orderly? Yes _____ No _____

   a. IF NO, explain. _____

   _____

9. Do students in patio appear aware of behavior occurring throughout patio?

   Yes _____ No _____

   Explain. _____

   _____

Patio (Cont.)

10. Number of students in patio at end of observation. _____

11. Number of groups of students in patio at end of observation.

---

12. Are any supervisors present during the observation period?

    Yes _____ No _____

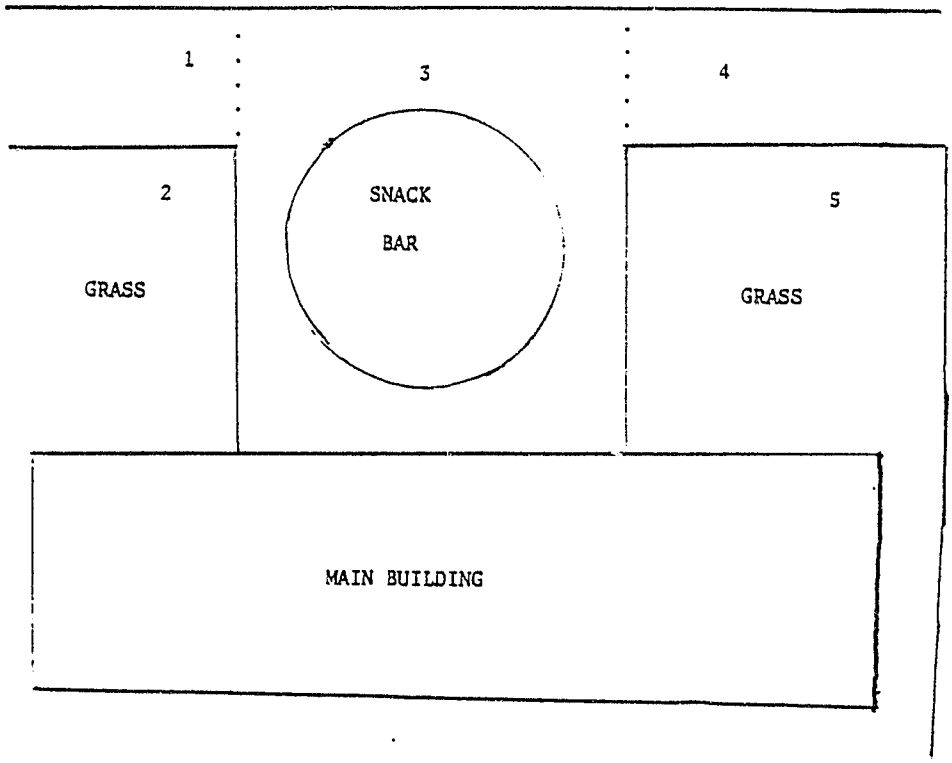
    a. IF YES, how many? _____

CONTINUED

3 OF 4

Patio (Cont.) (BA, DB, SP)

(mark locations of stationary students at start of observation.)



Following are observational questions applied to three of the schools (the schools are indicated in parentheses).

Bicycle Parking Areas

1. Count the number of persons in the bicycle parking area at this time. (SP, MA, DB)

   Male Students _____ Female Students _____ Adults _____

2. Do persons in the bicycle parking area appear aware of behavior occurring throughout bicycle parking area? (SP, MA, DB)

   Yes _____ No _____

3. Is entire area surveyable from outside perimeter? (SP, MA, DB)

   Yes _____ No _____

   a. IF NO, explain. _____

   _____

4. Is entire area surveyable from within perimeter? (SP, MA, DB)

   Yes _____ No _____

   a. IF NO, explain. _____

   _____

5. Does area have racks? Yes _____ No _____ (SP, MA, DB)

   a. IF YES, do students use these racks? Yes _____ No _____

   b. IF YES, how many locked _____ unlocked _____.

6. How many bicycles not in specified bicycle parking area? _____ (SP, MA, DB)

Exterior Stairwells

1. Is bottom area walled off? (SP, BA, DB)

   Yes _____ No _____

2. Is bottom door locked? (SP, BA, DB)

   Inside _____ Outside _____ Both _____ Neither _____

3. Is top door locked? (SP, BA, DB)

   Inside _____ Outside _____ Both _____ Neither _____

Auto Parking Lot

1. Count number of persons in lot at start of observation. (SP, DB, BA)

   Male Students _____ Female Students _____ Adults _____

2. Count number of groups of persons in lot at start of observation. (SP, DB, BA)

   _____

3. Do there appear to be pedestrians in lot who do not belong there? (SP, DB, BA)

   Yes_____ No _____

   a. IF YES, count how many. _____

4. Do vehicle access points to parking lot have gates installed? (SP, DB, BA)

   Yes _____ No _____

   a. IF YES, are the gates closed at times of this observation?

      Yes _____ No _____

   b. IF YES, are the gates at external access points locked?

      Yes _____ No _____

   c. IF YES, are internal access gates open during school hours?

      Yes _____ No _____

Auto Parking Lot (Cont.)

5. Is there a student monitor observing parking lot? (BA, MA, DB)

   Yes _____ No _____

Patio

1. Number of stationary students in patio at start of observation. (SP, DB, BA)

   Total number of students _____.

2. Traffic flow.

   Very Heavy _____ Heavy _____ Medium _____ Light _____ Very Light _____.

3. Do student groups congregate in a manner that interferes with orderly flow and/or preempts space?

   Yes _____ No _____

   a. IF YES, how? _____

   _____

4. Does traffic flow into patio area without impediment? (SP, DB, BA)

   Yes _____ No _____

   a. IF NO, why? _____

5. Cleanliness. (BA, SP, DB)

   Very Clean ____ Clean____ Dirty ____ Very Dirty ____

Following are observational questions applied to two of the schools (the two are indicated in parentheses).

Corridors

1. Do corridors have graphics on them? (BA, SP)

   Yes _____ No _____

2. Name of graphics? _____ (BA, SP)

   _____

   _____

3. In what physical condition are the graphics? (BA, SP)

   Excellent_____ Very Good _____ Good _____ Fair _____ Poor _____

Outside Smoking Corridor

1. How many students at this instant are in the corridor? (SP, DB)

   Male _____ Female _____

2. How many of these students are smoking? (SP, DB)

   Male _____ Female _____

3. Are students in position to survey the parking lot? (SP, DB)

   Yes _____ No _____

4. In general, how many students have you observed smoking in other areas in the last half hour? (SP, DB)

   Male _____ Female _____

Transitional Zone (Front of School)

1. Check any of the following that are present between _____ and _____.

   _____ low hedging

   _____ flower beds

   _____ ornamental fencing

   a. IF PRESENT, do any of the border defining objects provide a clear definition of the transitional zone?

      Yes_____ No _____

   b. IF PRESENT, do any of the border defining objects obstruct surveillance?

      Yes _____ No _____

2. While this observation is being made, have any persons violated the integrity (i.e., crossed) of transitional zone borders?

   Yes _____ No _____

   a. IF YES, how many? _____

   b. IF YES, for what purpose? _____

      _____

Bicycle Parking Area

1. Are there bicycle parking areas? (SP, MA)

   Yes _____ No _____

   a. IF YES, how many? _____

SOUTH PLANTATION

Following are observational questions unique to South Plantation High School.

Day_____

Date_____

Temperature_____

Precipitation_____

Wind_____

Pleasurable_____

Routing Sheet

Auto Parking Lots

Patio

Gym Snack Bar

Bicycle Parking Area

Transitional Zone

Outside Smoking Area

Corridors and Stairwells

Locker Rooms

Snack Bar

1. Number of students at snack bar at start of observation.

   Male_____ Female_____

2. Does snack bar obscure surveillance of any area?

   Yes_____ No_____

   a. IF YES, describe obstruction._____

   _____

3. Do persons using snack bar appear aware of behavior occurring in vicinity?

   Yes_____ No_____

4. Do persons operating snack bar appear aware of behavior occurring in vicinity?

   Yes_____ No_____

5. Does snack bar have multiple accessways by which to approach it?

   Yes_____ No_____

6. Are there queuing lanes for snack bar?

   Yes_____ No_____

   a. IF YES, do students stay in queues while waiting?

      Yes_____ No_____

DEERFIELD BEACH

Following are observational questions unique to Deerfield Beach High School.

Day_____

Date_____

Temperature_____

Precipitation_____

Wind_____

Pleasurable_____

Routing Sheet

Auto Parking Lots

Patio

Bicycle Parking Area

Transitional Zone

Exterior Stairwell

Locker Room

Smoking Area

Bicycle Parking Area

1. Are there specified bicycle parking areas?

   Yes _____ No _____

   a. IF YES, how many? _____

   b. IF YES, are they fenced? _____

      (1) Is it locked? Yes _____ No _____

Outside Smoking Corridor

1. What percentage appear to be looking at the parking lot?

_____%.

BOYD ANDERSON

Following are observational questions unique to Boyd Anderson High School.

Day_____

Date_____

Temperature_____

Precipitation_____

Wind_____

Pleasurable_____

Routing Sheet

Bus Zone - Afternoon

Patio

School Policing Precinct

Corridor

Stairwells

Locker Rooms

Bus Zone (Afternoon)

1. Is there a bus zone for loading that has a clearly defined border?

   Yes_____ No_____

   a. IF YES, explain how defined._____

   _____

2. How many buses are in zone at the start of this observation?

   _____

3. Are there any physical structures within bus zone that obscure surveillance of entire zone?

   Yes_____ No_____

   a. IF YES, list structures._____

4. Will bus zone accommodate more than 5 buses?

   Yes_____ No_____

   A. IF YES, estimate number._____

5. Is there a bus queuing zone for waiting buses?

   Yes_____ No_____

   a. IF YES, are drivers using this zone?

      Yes_____ No_____

      (1) IF NO, explain._____

      _____

6. Do students enter bus zone in orderly fashion?

   Yes_____ No_____

7. Do students wait for boarding of buses in orderly fashion?

   Yes_____ No_____

8. Do students enter buses only in bus zone? Yes_____ No_____

   a. IF NO, explain._____

   _____

9. Does loading of students proceed in an orderly fashion?

   Yes_____ No_____

10. Are adults on monitor assignment at bus zone during departures?

    Yes_____ No_____

    a. IF YES, count number._____

    b. IF YES, do they:

       (1) Direct movement of buses? Yes_____ No_____

       (2) Direct loading of each group of students before allowing another group to load?

           Yes_____ No_____

       (3) Appear cognizant of behavior occurring throughout bus zone?

           Yes_____ No_____

School Policing Precinct

1. Is policing precinct completed?

   Yes_____ No_____

2. During a 5-minute observation period, do you observe any police officers in the area surrounding the building (e.g., coming into building, going out of building, standing, etc.)?

   Yes_____ No_____

   a. IF YES, how many?_____

3. Are there any police in building?

   Yes_____ No_____

Locker Rooms - Male

1. List number of students in locker room at start of observation.

   _____

2. Do students in a class have a section of separately assigned lockers?

   Yes_____ No_____

   a. IF NO, explain._____

   _____

3. Have locker sections been uniquely-color coded for each class?

   Yes_____ No_____

   a. IF NO, explain._____

   _____

4. Do lockers provide vision through to other areas of locker rooms?

   Yes_____ No_____

5. Do students appear aware of behavior occurring in locker room?

   Yes_____ No_____

6. Do teachers appear aware of behavior occurring in locker room?

   Yes_____ No_____

McARTHUR

Following are observational questions unique to McArthur High School.

Day_____

Date_____

Temperature_____

Precipitation_____

Wind_____

Pleasurable_____

Routing Sheet

Auto Parking Lots

Ticket Booths

Patios

Bicycle Parking Areas

Classrooms

Restrooms

Ticket Booth Areas (by portable classrooms)

1. Are ticket booths in areas that would otherwise constitute isolated areas or blind spots that would be difficult to survey?

   Yes_____ No_____

2. Are ticket booths in other types of areas?

   Yes_____ No_____

   a. IF YES, where?_____

3. How many ticket booths are there in all?_____

4. Are ticket booths staffed during observation? Yes_____ No_____

5. Do students congregate around ticket booths?

   Yes_____ No_____

6. Does person staffing ticket booth appear aware of behavior occurring in nearby vicinity?

   Yes_____ No_____

7. During 5-minute period, list number of students at ticket booth.

   Male_____ Female_____

Classrooms (Corridors)

1. Do classroom walls have windows?

   Yes_____ No_____

2. Do classroom doors have new (bigger) windows? Yes_____ No_____

   a. IF YES, how many_____?

   b. IF YES, are windows covered? Yes_____ No_____

      (1) IF YES, how many_____?

3. Designate each window that is covered._____

   _____

   _____

4. Do persons in classrooms appear aware of behavior occurring in corridors?

   Yes_____ No_____

5. During observation period does anyone pass by windows in hallway?

   Yes_____ No_____

   a. IF YES, how many people_____

   b. IF YES, how many look in_____

Restrooms

1. Does restroom have entrance doors?

   Yes_____ No_____

   a. IF YES, are they locked at time of observation?

      Yes_____ No_____

2. Is there unobstructed access to restrooms?

   Yes_____ No_____

   a. IF NO, explain._____

      _____

3. Does restroom have anteroom walls?

   Yes_____ No_____

4. Do persons in restroom appear aware of behavior occurring?

   Yes_____ No_____

5. During 5-minute period, count number of persons entering

   Men's_____ and Women's_____restrooms.

6. Is there any anti-social obscenity in bathroom?

   Yes_____ No_____

Secure Auto Parking Lot

1. Is there a secure parking lot?

   Yes _____ No _____

   a. IF YES, is it fenced? Yes _____ No _____

      1. IF YES, is fence intact? Yes _____ No ____

      2. IF YES, is it locked during observation? Yes _____ No _____

2. Is entire lot surveyable from outside perimeter? Yes _____ No _____

   a. IF NO, explain _____

      _____

3. Is entire lot surveyable from within perimeter? Yes _____ No _____

   a. IF NO, explain _____

      _____

4. During 5-minute period list number of persons entering secure parking lot.

   Male Students _____ Female Students _____ Adults _____

5. Do persons in lot appear aware of behavior occurring throughout lot?

   Yes _____ No _____

Nonsecure Auto Parking Lot

1. Is there a nonsecure parking lot?

   Yes _____ No _____

   a. IF YES, is it in an area with good natural surveillance?

      Yes _____ No _____

2. Is entire lot surveyable from outside perimeter? Yes _____ No _____

   a. IF NO, explain. _____

      _____

Nonsecure Auto Parking Lot (Cont.)

3. Is entire lot surveyable from within perimeter? Yes _____ No _____

   a. IF NO, describe why not. _____

   _____

4. During 5-minute period, list number of persons entering nonsecure parking lot.

   Male Students _____ Female Students _____ Adults _____

5. Do persons in lot appear aware of behavior occurring throughout lot?

   Yes _____ No _____

6. Do vehicles have access to nonsecure parking area only through internal parts of school grounds?

   Yes _____ No _____

Patio

1. Number of students in patio at start of observation.

   Male _____ Female _____

2. Do student groups congregate in a manner that interferes with orderly flow and/or preempts space?

   Yes _____ No_____

3. Are amenities positioned so as to create multiple entranceways/exitways?

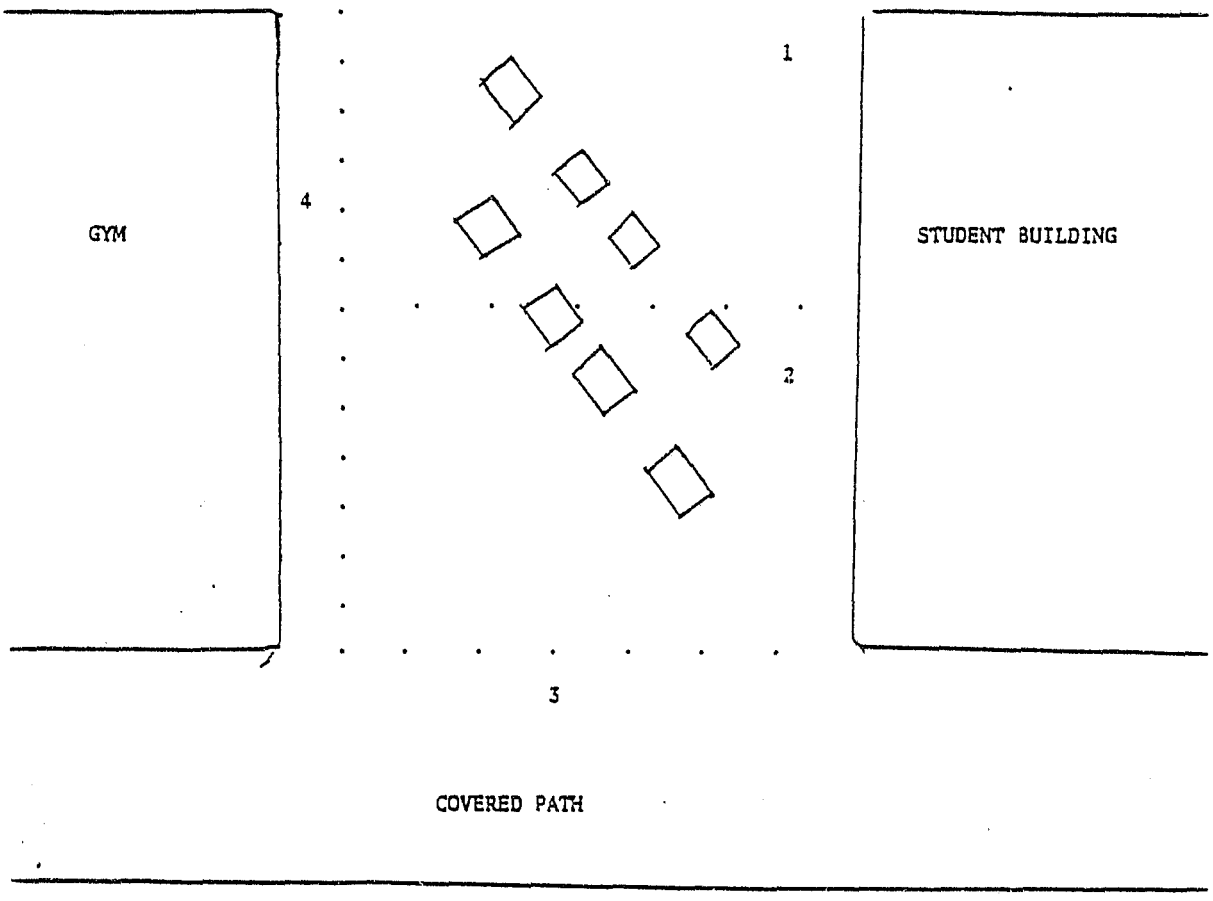
   Yes _____ No _____

   a. List number of accessways into patio. _____
   b. Does traffic flow into patio without impediment? Yes _____ No _____

4. Are amenities positioned so as to create multiple passageways within patio?

   Yes _____ No _____

McArthur



APPENDIX F

Key-person Interview Form Used by Westinghouse Evaluation Institute

BROWARD COUNTY KEY-PERSON INTERVIEW

Interviewee:_____ Date:_____

1. What do you think were some of the advantages of CPTED?_____

2. What were some of the disadvantages of CPTED?_____

3. Can you comment on how CPTED was implemented: efficiently? involvement of students, faculty administration? timeliness?

4. Was there any difference in the way the CPTED program was implemented as compared to any other (a) school program and/or (b) building program?

5. Do you think CPTED had some effect on any or all of the following, and if so, how?

   Crime

Fear of Crime

Student Morale

Faculty Morale

Use of Space

6. Is there anything that happened in the past two years, other than CPTED, which could have affected any of the above, for example, change in school administration, composition of student population, discipline, other rules and regulations?

Crime

Fear of Crime

Student Morale

Faculty Morale

- Use of Space

7. Principals: How would you rate the degree of safety and security in your school?

How attractive do you think your school is?

What do you see as the major crime and safety problems which currently exist?

What sort of reputation do you think your school has?_____

In five years, do you think this school will be:

a better place_____

no change_____

a worse place_____

8. What aspects of CPTED will remain in each (your) school?_____

9. What do you think will be adopted by other schools?_____

10. If the CPTED program was to be done in some other school system, what would you suggest they should do?

11. Do you think a CPTED program should be started in (a) other schools in the county and/or (b) schools elsewhere?

END