

**PUBLIC VIDEO SURVEILLANCE: IS IT
AN EFFECTIVE CRIME PREVENTION
TOOL?**

**By
Marcus Nieto**

June 1997

**PUBLIC VIDEO SURVEILLANCE: IS IT
AN EFFECTIVE CRIME PREVENTION
TOOL?**

By

Marcus Nieto

CONTENTS

DIGEST	1
HISTORICAL OVERVIEW	2
The Evolution of U.S. Military and Civilian Intelligence Operations and Public Safety	2
IMPORTANT LEGAL ISSUES	4
Silent Video Surveillance	4
Fourth Amendment Implications	4
Chilling Effects	5
Potential Tort Liability Under California Law	6
INTERNATIONAL DEVELOPMENT	7
United Kingdom CCTV Video Surveillance System Operations	8
Civil Liberty Concerns	9
Public Video Surveillance in Other Countries	10
CONTEMPORARY USE IN THE UNITED STATES	12
Commercial and Private Use	12
State and Local Law Enforcement	14
<i>Initial Projects</i>	14
Potential Pairing With Other Technologies	14
California Research Bureau Survey of Public Video Surveillance in U.S. Cities	15
<i>Baltimore, Maryland</i>	16
<i>Newark, New Jersey</i>	17
<i>St. Petersburg/Tampa Bay, Florida</i>	17
<i>Virginia Beach, Virginia</i>	18
<i>Memphis, Tennessee</i>	19
<i>Dover, New Jersey</i>	20
<i>South Orange, New Jersey</i>	20
<i>Tacoma, Washington</i>	21
<i>Hollywood, California</i>	22
<i>Anchorage, Alaska</i>	23
<i>San Diego, California (Park District)</i>	24
Selected Other Cities	24
<i>Future Plans of California Cities</i>	25
Public Housing, Transit Authorities, and Schools	26

<i>Public Housing CCTV Video Surveillance Programs</i>	26
<i>Public Transit</i>	27
<i>School Districts</i>	28
LEGISLATIVE AND ADMINISTRATIVE OPTIONS	32
Option I. Should The Legislature Develop a Framework for Public CCTV Surveillance Technology?	32
Option II. Other Crime Prevention Technologies	33
Option III. Commercial Business and City Partnerships	33
Option IV. Residential and City Partnerships	34
Option V. Public Schools and CCTV Video Surveillance	35
Option VI. CCTV Video Surveillance in Public Housing	36
Option VII. Video Surveillance as a Traffic Safety Tool	36
Option VIII. Evaluation Studies	37
ENDNOTES	38

DIGEST

“Welcome! Surveillance cameras and music are for your enjoyment,” is the greeting pedestrians receive upon entering the underpass under I-5 between “Old Town” Sacramento and the downtown area. For over 20 years, businesses, individuals and commercial and residential associations have embraced video surveillance technology as a means to protect residential privacy and property against intrusion and other forms of crime. During the last decade, law enforcement agencies in Great Britain, France, Monaco, Spain and other countries have increasingly relied on Close Circuit Television (CCTV) surveillance to enhance public security. According to the survey presented in this report, an increasing number of U.S. municipalities (mostly outside California) have begun using CCTV public video surveillance as a law enforcement tool to monitor public areas, schools, and residential districts.

CCTV video surveillance systems can either *passively* record and play back video at certain intervals, be *actively* monitored by security personnel, or use a combination of these methods. Law enforcement personnel actively monitor most U.S. municipal-operated systems, although volunteers and private security are also involved in some projects. School-based CCTV surveillance systems employ active, passive, and combined monitoring methods, depending on the financial resources and number and type of personnel available.

This report examines the various uses of video surveillance and other visual technology by public and private entities to prevent and discourage crime, including law enforcement practices, the conditions which many warrant public video surveillance, the associated legal and constitutional implications, and whether the technology has been effective in preventing crime. Use of other new and innovative technologies, such as computerized mapping for crime control and non metallic weapon surveillance, show potential for targeting public video surveillance activities. In addition, the report considers the role that public video surveillance might play within the context of community policing and other elements of the 1994 Violent Crime Control and Law Enforcement Act.

Generally, the data suggest that CCTV video surveillance is successful in reducing and preventing crimes and is helpful in prosecuting individuals caught in the act of committing a crime. In addition, there may be public law enforcement cost savings. Critics argue that public video surveillance conflicts with the U.S. Constitution’s Fourth Amendment prohibition against unreasonable searches and seizures. These concerns and other related issues are discussed in this paper.

HISTORICAL OVERVIEW

The Evolution of U.S. Military and Civilian Intelligence Operations and Public Safety

The Civil War marked the first American use of systematic military intelligence collection methods such as aerial reconnaissance, signal intercepts, and the establishment of intelligence as a distinct organizational unit within the army. However, these techniques and organizations were soon forgotten after the cessation of hostilities, and a permanent intelligence unit was not established by the United States military until the turn of the century.¹

By the beginning of America's entry into World War I in 1917, American intelligence gathering had grown dramatically. A new Military Intelligence Section was created within the U.S. War College, modeled after the British Secret Intelligence Service. The intelligence unit promoted new concepts such as "espionage and counterespionage," or what was called *positive* and *negative* intelligence (collecting intelligence about the enemy and denying the enemy intelligence about oneself). Before the end of World War I, this unit would transform itself into a new civilian counterespionage organization (the Federal Bureau of Investigation) with ties to the US Justice Department, Secret Service Department, and State Department.

In November of 1919, the new Federal Bureau of Investigation (FBI) began a nationwide surveillance and dragnet against suspected communists and anarchists, known as the Palmer Raids. By January 20, 1920, some 4,000 people in 33 cities had been arrested, of whom 600 were eventually deported. These activities resulted in the arrest of several thousand innocent people.²

In 1938, the FBI was reorganized under J. Edgar Hoover and given the responsibility to enforce criminal investigations and espionage laws. President Roosevelt authorized the FBI to investigate all subversive activities carried on by communists, fascists, and other agents of foreign governments within the U.S. With the approach of World War II, the FBI's investigation of espionage cases jumped dramatically from an average of 35 per year during 1933-37, to 634 in 1938. The FBI's surveillance workload during World War II was enormous: over 1 million registered "enemy" aliens were living in the U.S.; many were nationals from Axis power nations awaiting citizenship.

At the conclusion of World War II, the need for extraordinary national security surveillance measures decreased. However, concerns about communists and their associates increased during the 1950s, leading to widespread use of wiretapping by law enforcement.

In the 1960s, Congressional proposals to regulate and clarify wiretapping for a national security mission applied to investigating organized crime. The Kennedy administration endorsed legislative proposals for a wiretapping law authorizing federal agencies to

wiretap in cases involving national security, organized crime, and other serious crimes. State wiretapping, except in certain cases involving serious crimes, was not allowed.³

In 1968, Congress passed the first major electronic surveillance law (*Title III of the Omnibus Crime Control And Safe Streets Act of 1968*). The purpose of the law was to define the proper use of electronic surveillance. Congress sought to balance the privacy interests of the individual with the legitimate law enforcement and intelligence needs of the state.⁴ Title III did not specifically address video surveillance. However, in *United States vs. Torres*, 751 F. 2nd 875, 876 (7th Circuit, 1984) challenging the legality of video surveillance, the Circuit Court found that although Title III did not include video surveillance, its principles could be adapted to determine if evidence obtained by that method had been obtained legally.⁵

In 1986, Congress passed the Electronic Communications Privacy Act which allowed law enforcement to use rapidly expanding technologies such as video surveillance. The law sought to balance an individual's right to privacy with law enforcement's need to collect information for public safety. The New York Trade Center bombing is a recent example applying the 1986 Act. A key confidant of the defendant became a government witness. As a result, the FBI was able to conduct extensive video surveillance (April to June of 1993) of the defendant at his home, collecting the evidence that was used to convict him.⁶

IMPORTANT LEGAL ISSUES

In the opinion of most legal scholars, the continuous video surveillance of public areas does not present significant legal obstacles. Although no court has directly addressed this issue, under current interpretations of the First and Fourth Amendment and California tort law, video surveillance appears to represent a valid use of the state's power to protect its citizens. In this view, continuous video surveillance is analogous to a mechanical police officer. It does not intrude upon an individual's sphere of privacy, but rather records events occurring in public space for which individuals do not have reasonable expectations of privacy.⁷

Silent Video Surveillance

Title I of the Electronic Communications Privacy Act of 1986 (18 U.S.C. Section 2510), limits the ability of law enforcement to execute wiretaps. Under Title 1, police departments must obtain warrants prior to secretly intercepting some communications. In contrast, *silent* video surveillance (involving no recording of sounds) on public streets does not have to comport with Title 1 because the Act concerns itself only with devices which capture audio signals.⁸ The U.S. Senate report on the Act noted that:

“If law enforcement officials were to install their own cameras and create their own CCTV picture of a meeting, the capturing of the video image would not be an interception under the statute because there would be no interception of the contents of an electronic communication.”⁹

Title 1 limits video surveillance with audio capabilities;¹⁰ it covers orders “authorizing or approving the interception of a wire or oral communication.”¹¹ Thus, any continuous video surveillance that also has an audio component must comport with Title I. If a continuous video surveillance device can intercept sound, and the surveillance constitutes a search, the police must first obtain a warrant prior to the installation of the device.

Fourth Amendment Implications

The U.S. Supreme Court in *Katz vs. United States* 389 U.S. 347 (1967), defined modern “search and seizure” law under the Fourth Amendment.¹¹ The Court declared that “What a person knowingly exposes to the public, even in his own home or office, is not a subject of Fourth Amendment protection, but what he seeks to preserve as private, even in an area accessible to the public, may be constitutionally protected. Generally, a person walking

¹ The U.S. Supreme Court in *U.S. vs. New York Telephone Company*, 434 U.S. 159 (1977), recognized that all audio surveillance falls within the ambit of Title III, the predecessor statute to Title I. The Court, in holding that pen registers do not implicate Title III, stated pen registers “do not hear sound...They do not accomplish the ‘aural acquisition’ of anything [and they] present the information in a form to be interpreted by sight rather than by hearing.” In contrast, a device with audio capabilities falls within the guidelines established by Title I.

along a public sidewalk or standing in a public park cannot reasonably expect that his activity will be immune from the public eye or from observation by the police.¹² As recognized by the Supreme Court in *United States vs. Knotts* 368 U.S. 276, 281-82 (1983):

A person traveling in an automobile on public thoroughfares has no reasonable expectation of privacy in his movements from one place to another. When [an individual] traveled over the public streets he voluntarily conveyed to anyone who wanted to look the fact that he was traveling over particular roads in a particular direction, and the fact of his final destination when he exited from public roads onto private property.¹³

Following this reasoning courts, for the most part, have allowed police to videotape individuals on public roads.¹⁴

Transactions in plain view in a public forum generally do not raise Fourth Amendment issues. This is known as the *plain view rule* and *open field doctrine*. If a person does something illegal in plain view (e.g. in front of a video camera), an officer would not need a warrant to search that person to find the incriminating evidence. Court decisions interpreting and applying the Fourth Amendment do not classify this situation as a person, house, paper, or effects that are protected against unreasonable search and seizures.¹⁵ In a recent unpublished opinion, *United States vs. Sherman*, 990 F. 2d 1265 (9th Cir. 1993), the Court of Appeals for the Ninth Circuit held that individuals videotaped in public view have no reasonable expectations of privacy, and could not challenge the government's use of videotape at trial as violating the Fourth Amendment.¹⁶ When this test is applied to video surveillance of public streets, the prevailing legal view is that it does not violate the Fourth Amendment.

In contrast, surveillance by the government of activities occurring within an individual's house may violate the Fourth Amendment. The Supreme Court has developed a test to determine if such surveillance violates the Constitution:

1. Does the surveillance occur from publicly navigable airspace?
2. Is the surveillance conducted in a physically non-intrusive manner?¹⁷

No cases have been adjudicated under the Fourth Amendment testing the use of rotating video surveillance cameras in a public setting. If a video camera monitored by police has an infrared filtering device with the capability to view activities that a reasonable person might expect to not be visible from public view, Fourth Amendment concerns might arise.

Chilling Effect

Some commentators have argued that public video surveillance has a "chilling effect" on First Amendment rights. Most federal appeals courts have required proof of actual mental anguish or distress as a result of the surveillance before finding First Amendment

violations.¹⁸ Several courts have recognized video surveillance as one of the most mentally disconcerting forms of monitoring performed by government.¹⁹ For example, the U.S. Fifth Circuit Court noted that “this type of surveillance provokes an immediate negative visceral reaction: indiscriminate video surveillance raises the specter of the Orwellian State.”²⁰

However, since police officers already patrol the streets, it seems unlikely that a court would consider a video camera which “observes” the same public area as harming an individual.²¹ The protection of individuals from crime is a paramount concern of the state, and legislatures have broad powers to protect communities from such harm.²²

Potential Tort Liability Under California Law

Legal analysis suggests that public video surveillance probably does not give rise to a cause of action for the invasion of an individual’s privacy under current California law. California courts have been reluctant to expand tort liability to cover an individual who knowingly exposes himself to the public view.²³ A California court held in *Aisensio vs. American Broadcasting Co., Inc.*, 220 Cal. App. 3rd 146 (2nd Dist. 1990), that the videotaping of an individual on a public street does not constitute an unreasonable intrusion into that person’s solitude.²⁴ The *Aisenson* court further noted that video cameras with sensory enhanced devices (zoom lenses for example) do not give rise to tort action if the use of video taping occurs in a public forum, such as a city street. Since the cameras do not physically intrude into a person’s sphere of privacy, any invasion of privacy is minimal. Thus, it would appear that since public video surveillance occurs in a public forum (such as a city street) and because the surveillance is physically non-intrusive, tort liability is precluded under current California tort law.

In summary, past Supreme Court and lower court decisions strongly suggest that within certain limitations, continuous video surveillance is a valid exercise of a state’s police powers.

INTERNATIONAL DEVELOPMENT

Many European countries now employ public video surveillance as a primary tool to monitor population movements and to prevent terrorism. The United Kingdom (UK) in particular relies extensively on video surveillance as a tool to fight crime and prevent terrorism. According to some researchers, the camera surveillance systems in the UK are discouraging and thus preventing crime.

Public video surveillance in the UK began very unassumingly in 1986, on a single square mile industrial estate outside the English town of King's Lynn. Three CCTV video surveillance cameras were used and their impact was immediate. In the years before the cameras were installed, there had been 58 crimes (mostly vandalism) recorded on the estate. In the two years following the installation, there were no crimes reported. Subsequently, cities and towns across Great Britain began using this crime prevention measure. By 1994, over 300 jurisdictions in the country had installed some form of public video surveillance.

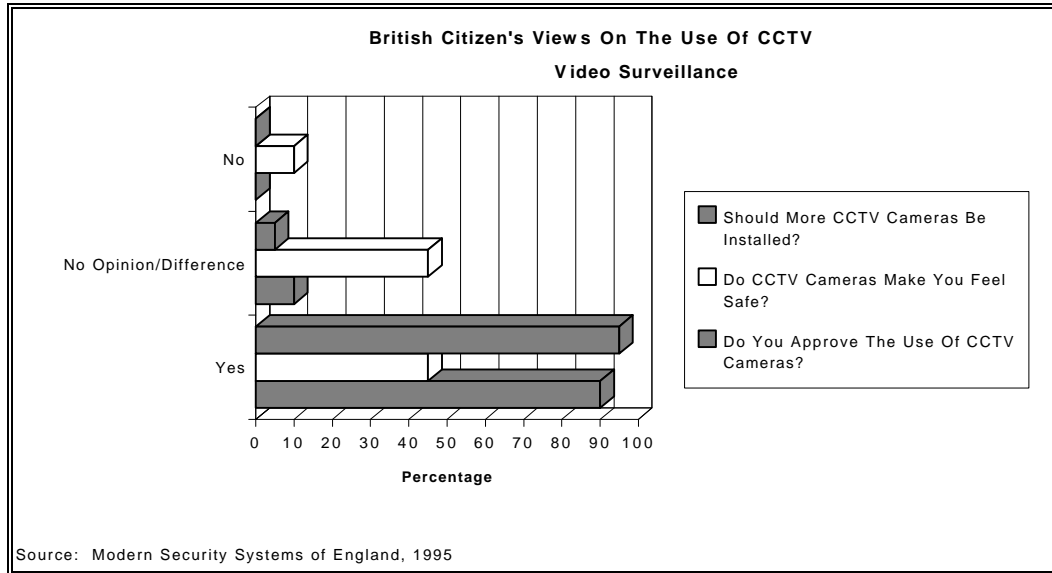
In 1995, the national government made available up to \$3.1 million in matching grants available to cities and towns to establish CCTV video surveillance programs. According to the police superintendent of a large metropolitan area, "public video surveillance has been very helpful in making arrests, and perhaps more important, helping to allocate resources to where they're most necessary." Although most municipal systems have been operational since 1990, there is little longitudinal data indicating how effective CCTV surveillance systems actually have been in reducing crime rates. Recent British government reports cite CCTV surveillance as a major reason for declining crime rates: in the small town of Berwick burglaries fell by 69 percent; in Northampton overall crime decreased by 57 percent; and in Glasgow, Scotland crime decreased by 68 percent.²⁵

In Liverpool, crimes such as shoplifting, prostitution, graffiti, and other nonviolent crimes have decreased by 25 percent over the last 3 years. The city has installed one of the largest CCTV surveillance systems in Great Britain. Liverpool residents report that they feel safer downtown, even at night.²⁶ There is anecdotal information that in the face of videotape evidence, a higher percentage of those charged with crimes plead guilty.

There are currently nearly 800 local public video surveillance programs in operation in the UK. The British government provides \$22 million annually in matching grants.

Reports suggest that most people in Britain are aware of public video surveillance. According to one English newspaper, if a person goes shopping, takes a train, buys gasoline, visits a post office, bank, or building, attends a soccer game, or just strolls down the street, chances are that person's image will be recorded on several videotapes.²⁷ People apparently notice the cameras but do not appear to be concerned about them. One recent study conducted by a British research firm found surprising support among citizens for CCTV video surveillance (see Chart 1).

Chart 1



However, not all commentators are as sanguine. One researcher recently stated that United Kingdom streets now resemble Orwell's *1984*, and that the public should be howling against these "electronic stasi" proliferating like poison ivy across the buildings and streets.²⁸

Advocates of CCTV video surveillance emphasize the technology's value in quickly apprehending criminals. Two recent well publicized events confirm this point. In mid-February 1996, the UK media broadcast a harrowing set of pictures taken in a shopping centre in Bootle, near Liverpool, and outside a builder's yard less than a mile away. They showed the grainy images of a small child being led away by two youths. Two-year old James Bulger, who had wandered from his mother's side in the shopping centre, was later found murdered. The second case involved a terrorist bombing. Video images of two men recorded on security cameras at Harrods and Victoria Station before a bomb exploded were shown on television. In both cases, arrests followed shortly after the images were broadcast to the public.²⁹

CCTV surveillance is also helping UK officials to clean up the country's tarred international soccer image. At the recent Euro '96 soccer championships, up to 50 British soccer hooligans who had disrupted games in previous soccer matches were barred from attending the championship matches after being identified by video surveillance cameras.

United Kingdom CCTV Video Surveillance System Operations

Most CCTV surveillance system in the UK are jointly operated and managed by law enforcement and the private sector. Typically CCTV surveillance systems are installed by British Telecom, using fiber-optic cables in strategically positioned downtown business districts or in new shopping centers. Additionally, some townships are beginning to install videotelephony, a new technology which allows transmission of video images from a

monitoring site to another location via telephone lines. This allows law enforcement quick and easy remote access to the video images. Generally, the cameras are perched atop 20-foot poles or 4-6 story buildings at intervals next to an area that is to be watched. Most systems are actively monitored by a single operator, or in some cases multiple operators, in continuous 8 hour shifts. Pictures from all cameras are visually recorded by time-lapse recorders which take one frame from each of a group of cameras in turn. If an operator sees anything suspicious, a camera can be switched to continuous recording, thereby capturing the action in more detail.

Nearly all video surveillance systems are linked to police stations. They may also be monitored by private security guards at a centrally located area within the boundaries of the surveillance area. Should a private security guard notice an illegal act taking place, he or she can instantly send the image to local police monitors so the police can observe the crime and dispatch officers.

Civil Liberty Concerns

According to English civil libertarians, there is no control in the UK over the commercial use of public video images recorded by CCTV. Since the country has more video surveillance per capita than any other country in the world, it is relatively easy to find footage from parking garages, housing developments, department stores and offices that may have commercial value. Cameras may record couples intertwined in office stockrooms, elevators or cars; women undressing in department store changing rooms; or husband and wives engaging in domestic squabbles. Such scenes are sold commercially in UK video stores. One video, entitled "Really Caught in the Act," has prompted modest outrage in Parliament and protests from civil liberties groups. A spokesperson for one such group said: "There are no controls at all. We think it's quite appalling that members of the public can be caught like this."³⁰ In the United States, this would be considered a slanderous and liable act, subject to court action.

The United Kingdom does not have a Bill of Rights that protects individuals from government intrusions on privacy. Individuals have limited recourse against local government agencies that provide revealing tapes to commercial producers. While invasion-of-privacy lawsuits can be filed against the producers, they often protect themselves by making the footage sufficiently fuzzy to prevent clear identification of individuals. Britain's Local Government Information Unit, an umbrella group representing city and county authorities, has proposed a voluntary Spy Camera Code that would restrict access to CCTV footage. However, such a code would not be legally binding and would have a limited effect.³¹

Public Video Surveillance in Other Countries

Canada began operating CCTV video surveillance on public streets and areas 5 years ago. Although its use is not as widespread as in the United Kingdom, CCTV surveillance is utilized by Canadian banks, restaurants and convenience stores, and at industrial sites, offices, apartment buildings, and public transit stations. In 1995, 70 percent of all bank robberies in Canada were recorded on CCTV surveillance systems. CCTV surveillance tapes captured 75 percent of all crimes which were investigated by law enforcement or private security. CCTV video cameras in commercial areas have also been instrumental in helping to find missing persons.³²

Canadian customs agents systematically record by video the license number of every car crossing the busier boarder crossings to the United States. The British Columbia Highway Ministry even keeps video records of every car that passes through its highway toll booths. Commentators predict that CCTV surveillance will grow dramatically as a crime prevention tool in Canada in the coming years.

The type of surveillance (active or passive) makes an important difference. Several Canadian studies show that unmonitored cameras are one of the least effective deterrents to robberies in banks and convenience stores. A spokesperson for the Peel Regional Police in Brampton, Ontario questions whether unmonitored CCTV will deter burglaries on school property (the presence of expensive and easily removed computer equipment is attractive to professional burglars).³³

In *France*, wiretapping and electronic and video surveillance are illegal if used to uncover information about a person's sexual life or personal finances, but are permissible for spying on a person's business or political activity.³⁴ Because of recent terrorist activity, the French government now permits electronic and CCTV surveillance in public places, including monitoring major roads and city and urban public areas. For example, police officers have established a station in the Parisian suburb of Levallos-Perret to monitor 18 television screens connected to hundreds of CCTV cameras around the city.³⁵ In the business and financial district of Paris, police monitor over 160 CCTV surveillance cameras which scan area streets 24 hours-a-day. The French cities of Enghein-Les Bains, Roubaix and Saint-Gratien also plan to install their own CCTV video surveillance systems.

The French transportation system uses video surveillance on streets to regulate traffic flows, detect traffic jams, and to observe roadside disturbances. In Paris, for example, the Metro has installed 2,500 video cameras on municipal buses to identify criminal acts as they occur. A similar video surveillance system is operating on the national rapid transit (RATP), which has detected 83 percent of all criminal incidents; petty crime has declined as a result. French department stores now use video surveillance to observe all entering shoppers. Security at airline terminals includes monitored CCTV surveillance.

In *Ireland*, CCTV video surveillance has been used by private companies since the mid-1980's to monitor post offices, shops, banks, building societies, and shopping malls. A

privately owned security firm (Group 4 Securities) relies on CCTV video surveillance to protect the country's public and commercial rail system and its storage facilities, which have been subject to armed raids by local bandits. In an attempt to reduce increasing criminal activity, the Irish Department of Justice recently authorized CCTV surveillance cameras in several high profile downtown areas of Dublin and other selected town centers.³⁶

In *Spain*, the threat of terrorist attacks has caused extraordinary security measures to be taken by federal authorities, especially in tourist areas. The Spanish Interior Minister has also begun installing video surveillance equipment in public areas in the Basque region in an effort to combat street violence and politically motivated vandalism. According to news reports, a new law will regulate how police and judges may use CCTV surveillance to prosecute offenders. The law also gives citizens more information about surveillance methods and creates standards for access to video tapes.³⁷

The principality of *Monaco* (500,000 inhabitants) is monitored 24 hours-a-day by CCTV camera surveillance installed on buildings, rooftops, and street poles. A police spokesperson contends that if a crime is committed in Monaco and is not caught on camera, then the police are not doing their job. Ideally, video surveillance allows a crime to be prevented before it can be accomplished.³⁸

Russia relies on public video surveillance to protect private and state property such as banks, ATM teller machines, and state ministry buildings. *Italy* utilizes a limited form of CCTV video surveillance in public areas and government buildings in Rome, the Vatican, and other high profile tourist areas. Research indicates that public video surveillance is also used in *China*, *Iran*, and especially *Iraq*. In *Iraq*, video surveillance cameras are even hidden in public statues.³⁹

Commercial and Private Use

Public video surveillance for commercial and private purposes is not a recent phenomenon. The private sector began using CCTV surveillance in banks in the early 1960s, as mandated by federal law, and later in commercial buildings. By the 1970s, CCTV surveillance was also in use in hospitals, all-night convenience stores, art galleries, and in many other commercial locations. Video technology at the time was limited to *passively* record events, with little or no means for remote active monitoring. On many occasions, police officials were unable to use remote video cameras images to prosecute criminals because quick movements by the criminals resulted in blurred pictures.⁴⁰

Video technology improved during the mid-1980s with the introduction of camcorder technology, and in the 1990s with digital and multiflexer technology. These powerful new advances in video technology extend its range and law enforcement/surveillance applications. Video cameras have powerful zoom lenses which can tilt and pan to offer a 360-degree coverage. They also are able to gather sharp, clear images in extremely low light. Moreover, new digital video technology requires less labor intensive monitoring. Digital video surveillance cameras can link computer data processing power with sensor or motion detectors to filter out unrelated activities. Such systems can search through a video database of events, allowing the user to isolate only those details in which a particular image occurs. This technology helps police with criminal investigations in order to solve crimes. An executive for a major security firm contends that, "new surveillance cameras document indisputable events with incredibly high resolution."⁴¹

Many businesses in the United States have invested heavily in the new video surveillance technology to protect products and to promote safe workplace and consumer environments. A recent nationwide survey of a wide variety of companies found that 75 percent utilize CCTV surveillance.⁴² Private sector CCTV surveillance technology is operated in a wide variety of industries: industry/manufacturing, retailing, financial/insurance/banking, transportation and distribution, utilities/communications, health care, and hotels/motels.

The popularity of CCTV security systems has not gone unnoticed by the manufacturers of camera surveillance systems. Commercial sales of CCTV camera surveillance equipment in 1995 reached record levels. A leading CCTV manufacturer reported net earnings of \$120 million in 1995, compared with net earnings of \$16 million the previous year.⁴³ According to one security official, American businesses are now spending nearly \$100 billion a year on high security products and equipment to help counter \$200 billion in annual losses due to crime.⁴⁴ Over 50 percent of all CCTV surveillance equipment sales are to industrial and commercial clients.

CCTV surveillance is also very common in the American workplace. According to the publisher of *Privacy Journal*, an employer, manager, board member, or supervisor can legally videotape employees with hidden cameras if they suspect wrongdoing. CCTV surveillance is one of 5 legally approved methods to observe suspected employees. Businesses also rely on CCTV video surveillance to detect sexual harassment in the workplace and to observe employees outside the workplace who may be involved in medical malpractice or worker compensation lawsuits.⁴⁵ Some research suggests that American workers feel safer in the presence of security camera equipment.⁴⁶

Events such as the World Trade Center bombing, the Oklahoma City bombing, and the closure of Pennsylvania Avenue at the White House have raised public concerns about security. This in turn has made the video surveillance industry more acceptable to the general public. A leading security industry spokesperson asserts, “years ago shoppers objected to electronic eyes recording their moves; today it’s not only accepted, it’s preferred.”⁴⁷

A 1995 study asked armed convenience store robbers serving time in Washington state prisons to rank the most important factors that would deter them from robbing a convenience store. Their answers were compared to responses given 10 years earlier by a different group of robbers.⁴⁸ As shown in Table 1, video recording or camera systems were of little consequence to the robbers.

<u>Factor</u>	<u>Rank Order 1985</u>	<u>Rank Order 1995</u>
Amount of Money	1	2
Escape Route	2	1
Anonymity	3	3
Interference	4	6
Active Police Patrol	5	4
Armed Clerk	6	5
Number of Clerks	7	7
Number of Customers	8	9
Camera System	9	10
Alarm System	10	8
Video Recording	11	11

Source: Rosemary Erickson, Athena Research Corp., 1995

In contrast, a 1991 nationwide study of CCTV surveillance in convenience stores showed promising results in deterring robberies. A sample of 81 stores were studied for 1 year before and 1 year after the installation of state-of-the-art CCTV camera surveillance

systems. The number of robberies decreased by 53 percent after the first year.⁴⁹ Longer term data is needed for a full evaluation.

A study conducted in Long Island, New York, found that serious crimes, except rape, dropped after CCTV surveillance systems were installed by businesses and homeowners in 1993. There were 8,000 burglaries reported in Long Island in 1994, compared to about 15,000 in 1975. There were also fewer robberies in 1994 than in 1975. Although other factors such as changing demographics and community policing had some impact on the drop in robberies and burglaries, according to one criminologist, “Long Island is almost like a fortress, and security firms have had a tremendous impact on crime in this area.”⁵⁰

State and Local Law Enforcement

Initial Pilot Projects

The first two documented instances of public video surveillance by American police departments were in the cities of *Hoboken, New Jersey*, in 1966, and *Mount Vernon, New York*, in 1971. Other cities soon followed their lead. However, many of these early systems were technically and financially deficient, and lacked local public support. According to a police officer, “Cops weren’t thrilled with the cameras.” Police staff often had to sit in a room to monitor the CCTV cameras, which frequently broke down.⁵¹

These early systems generally consisted of cameras either located in downtown business districts or in shopping centers. According to researchers, the Hoboken CCTV system produced only two arrests during the five years it was in operation. The system was dismantled because the city police department considered it an ineffective law enforcement device. In Mount Vernon, the system lasted for three years and did not produce a single arrest. A system in *Miami Beach, Florida*, was dismantled due to manpower shortages to monitor the cameras and because criminals were moving out of the camera’s range. In *Charleston, West Virginia*, a reduction in crime was attributed to the a gradual gentrification of the area, not the cameras. The federal grants which funded many of these early systems were discontinued because of poor results.⁵²

Detroit, Michigan used the occasion of the 1980 Republican National Convention to finance and install a video surveillance system in parts of the downtown area. Six years later in 1986, the system was expanded with financial help from local area businesses and the city (\$640,000). However by 1994, city officials had disbanded the CCTV surveillance program citing high maintenance and personnel costs and mixed results.

Potential Pairing With Other New Technologies

The 1994 Violent Crime Control and Law Enforcement Act authorizes federal funding for state and local law enforcement crime prevention programs. Among other activities, the U.S. Department of Justice funds innovative programs to combat criminal activities of

gangs and juveniles with firearms. Recently, Salinas, California received federal funding for a Geographic Information System (GIS) crime tracking system for gangs.

GIS is a computer software used by academic and government demographers to locate, for example, socio-economic characteristics of the population within census tracts or other geographic boundaries. GIS software can generate street maps that pinpoint specific criminal activity and gang characteristics, drugs, firearm use, robberies, and burglaries. Criminal investigators can then use the information to map gang territories and correlate them with crime-related incidents. The information allows law enforcement to anticipate crime problems and direct resources to respond quickly. Since the Salinas GIS project began in October 1995, homicides have decreased by 62 percent, drive-by shootings by 31 percent and gang-related assaults by 23 percent.⁵³

It is intriguing to consider how the Salinas GIS project might be complimented by video technology. For example, CCTV video surveillance could be targeted at areas of criminal activity identified by the GIS crime tracking system. Video surveillance also allows police officers to be less visible during “stake-outs” and thus exposed to reduced risk.

The 1994 federal crime bill also established Regional Law Enforcement Technology Centers to provide information on technology for public safety purposes, along with guidelines and standards for use. For example, the Western Regional Law Enforcement Center located in El Segundo, California, provides technical assistance to state and local law enforcement interested in new surveillance technology. The focus of the Center’s current research is on the development of technology to protect law enforcement personnel in the field. In particular, a new form of video imaging under development has the potential to detect concealed metallic and non-metallic weapons. When this video imaging system is perfected, it could be used in conjunction with CCTV surveillance cameras, for example to detect weapons at the entrance to public buildings. Fourth Amendment concerns about unreasonable searches may not arise if the technology enables law enforcement to formulate a reasonable suspicion that a person is carrying an illegally concealed weapon.⁵⁴

Public Video Surveillance in U.S. Cities

There are at least 13 American cities in which law enforcement officials are operating or implementing CCTV video surveillance as a way to prevent crime and promote public safety. In some cities, the videos are passively recorded and played back at certain intervals, while other cities actively monitor the surveillance images.

The following survey describes public CCTV surveillance systems currently operating in the United States. The majority are located on the east coast. This may be because most eastern cities have higher density populations than in the West, facilitating surveillance.

Baltimore

In late September, 1995, the Baltimore Police Department (in conjunction with the Downtown Partnership of Baltimore and the Mass Transit Authority) applied for and received a \$75,000 federal “Byrne Memorial” grant to implement a “Video Patrol Project.”⁵⁵ The program’s goal is to reduce violence in the downtown business district, and thereby reverse the area’s declining attractiveness for shoppers. Aggressive panhandling, prostitution, street dealing of drugs and larcenies from vehicles are the most notable nuisance crimes found by consumers.⁵⁶ The initial installation cost of cameras, monitors, recorders, and wiring for the project was \$47,000. Sixteen fixed-position exterior surveillance cameras provide coverage across the “Howard Street/Lexington Market corridor,” an open air farmer’s market and business district near the heart of the city. The cameras are positioned to capture activities in public places such as streets, sidewalks and public parks. The CCTV system is monitored from a “Korban” (an 8-by-12 foot kiosk) located in the heart of the corridor, staffed by police officers who are part of the federally-funded community oriented policing services program (COPS). Only authorized police officers can review the tapes. Video tape from the CCTV is changed every 24 hours and is indexed and stored in the Korban for up to 96 hours. During this time period, tapes are reviewed for evidence of criminal or suspicious activity. If an original tape contains potentially probative evidence in criminal or civil litigation, it is retained until a final judgment has been entered and all appeals have been exhausted in that case. If the tapes contain no potential probative evidence, they are discarded or reused.

As part of the grant, crime statistics are being gathered to determine the impact of the project on the amount and types of crime occurring in the project area. Factors such as criminal displacement, location of crimes, and arrests within the project are to be considered. At the time of this writing, no useful data has been published. Anecdotal information from businesses and consumers suggests that the system is providing a certain degree of comfort. One Baltimore citizen says, “From time to time, thanks to surveillance cameras, crooks are caught in the act. It helps put down some of the crime that’s going on in the area.”⁵⁷

Table 2	
CCTV Program Information-Baltimore, Maryland	
Site	Downtown Baltimore
Dated Installed	June 1996
Hours of Surveillance	7 a.m. to 11 p.m.
Type of Surveillance	Active Monitoring
Funding Source	Private and Public Grants
Implementation	Cooperative with Police and Community Groups
Reasons For Its Use	Drug Dealing and Street Crime
Results	Anecdotal Evidence Suggests the System is Working
Source: California Research Bureau/California State Library, 1996	

Newark, New Jersey

In 1991, the city of Newark, New Jersey, installed a CCTV system called “Video Patrol” that provides 24 hour surveillance of a two square mile area in the city’s business district. The project was funded through a federal block grant to the Newark Economic Development Corporation. The system is composed of 6 CCTV cameras which are enclosed and protected by environmental housing and connected by fiber optic cables. The cameras have zoom and tilt lenses and a turning radius of 360 degrees. The system is maintained by a private security system but is monitored by the police. All video tape is erased or used again every 72 hours. Only those portions of a tape linking a crime to a person are kept in storage for court purposes.

Both the police department and the downtown business association support the project. According to a spokesperson for the project, the CCTV surveillance system was designed to provide greater security for consumers and to encourage them to return to the area: “I think Video Patrol is an idea whose time has come in an environment where cities are asked to provide more services with less resources. This project demonstrates the role that technology can play in this situation.”⁵⁸

No official crime-related data measuring the effectiveness of the system has been kept since the system was installed. According to a police spokesperson for Newark, car theft in the downtown district has declined significantly since the CCTV system has been in operation. There has also been steady commercial growth in the business district of Newark over the last four years.⁵⁹

Table 3	
CCTV Program Information-Newark, New Jersey	
Site	Downtown Business District
Dated Installed	June 1991
Hours of Surveillance	24 Hours a Day
Type of Surveillance	Active Monitoring
Funding Source	Federal Economic Development Grant
Implementation	City Police Downtown and Business Community
Reasons For Its Use	Discourage Crime and Promote Safety
Results	Commercial Growth Continues in Video Surveillance Areas
Source: California Research Bureau/California State Library, 1996	

St. Petersburg/Tampa Bay, Florida

In 1994, an area between St. Petersburg and Tampa Bay known as Gateway experienced increasing numbers of car thefts. Of the 10,000 auto thefts that occurred in the area between the two cities, 3,000 took place in the Gateway area. The State of Florida provided St. Petersburg a \$42,000 grant to purchase mobile video equipment and night scopes for police officers in a surveillance vehicles. Within months, the number of auto

thefts had decreased. According to police officials, the video surveillance combined with police officers with night scopes had a major impact.

Tampa Bay is purchasing a CCTV video surveillance system with city funds to promote safety in a growing suburban business and entertainment district known as Ybor City. This 2 by 10 square block pedestrian mall is primarily occupied by clubs, restaurants, and shops. According to a Tampa Bay Police Department spokesperson, CCTV surveillance helps to meet the growing security needs of entertainment districts which attract large crowds. It is also an economic necessity, since Tampa Bay's ability to hire new police officers has not kept pace with population and commercial growth. CCTV surveillance meets the security needs of the public at an affordable cost.⁶⁰

The Tampa Bay surveillance system operates state of the art pantilt\zoom cameras capable of rotating 360 degrees which are monitored from a centrally located kiosk. The project will be completed over three phases, at an estimated cost of \$150,000, by 1998.

Table 4	
CCTV Program Information-Tampa, Florida	
Site	Ybor City District
Dated Installed	September 1996
Hours of Surveillance	24 Hours a Day with Monitoring from 8 a.m. to 2 p.m.
Type of Surveillance	Active Monitoring
Funding Source	Cooperative Public/Private Initiative
Implementation	Tampa Police Depart. and Ybor Development Agency
Reasons For Its Use	Safety of the Ybor City District, Mainly on Weekends
Results	Preliminary Results Show That Crime is Down in Video Surveillance Areas But Other Factors May be Contributing
Source: California Research Bureau/California State Library, 1996	

Virginia Beach, Virginia

The Virginia Beach CCTV video surveillance program began in 1993, when 5 remote cameras were installed along the beachfront residential and business areas of the city. The concept of video surveillance was heavily supported by citizen advisory groups as well as local business associations. In 1994, an additional 5 cameras were added to the system. The system cost \$240,000, including operation and maintenance, and is paid for through drug asset forfeiture funds and city contingency funds.

The Beach area covers 42 blocks of which cameras currently cover 27 blocks. The cameras are mounted on existing signal devices and street light poles and are enclosed in weather-proof housing. The cameras can rotate 360 degrees and are equipped with motorized pan and tilt devices and zoom lenses.

The Second Police Precinct controls the cameras and monitors the images, from 8 a.m. to 3 a.m. during the summer months and until 11 p.m. in the winter. The system has

provided video evidence for criminal prosecution, has been used to monitor narcotics investigations, track and apprehend suspects, and monitor vehicular and pedestrian foot traffic. “According to a police spokesperson, they have made hundreds of observations that have led to arrests.”⁶¹ However there is very little hard statistical data to support the effectiveness of the CCTV system.

Table 5	
CCTV Program Information-Virginia Beach, Virginia	
Site	Beachfront Property
Dated Installed	August 1993
Hours of Surveillance	13 Hours a Day on Average
Type of Surveillance	Active Monitoring
Funding Source	Cooperative Between the Business Community and the City
Implementation	Virginia Beach Police Department
Reasons For Its Use	Overall Safety of Residents and Visitors
Results	Anecdotal Evidence of Increased Effectiveness of Police
Source: California Research Bureau/California State Library, 1996	

Memphis, Tennessee

In 1996, Memphis initiated a \$450,000 CCTV video surveillance program for its downtown business and entertainment district in order to discourage and prevent crime. This area was chosen because of its high visibility and increased business growth. The surveillance system consists of 10 pantilt\zoom cameras which are mounted on buildings covering a 12 square block area. The CCTV cameras are linked to police dispatch centers via fiber optic cable. Volunteers and police staff monitor the CCTV system as part of a public/private partnership.

The downtown project is the first stage of a planned citywide video crime prevention network which will link police with as many as 72 CCTV surveillance cameras installed on buildings and in parking lots. Police officials believe the CCTV system will give the general public a sense of safety and will assist in identifying and apprehending criminals much faster. “The goal of this project is not to substitute officers for cameras. Rather, this equipment will be an addition to the patrol officers to help with their effectiveness. The overall objective of this surveillance program is to make the city a safer place for tourists and business owners.”⁶² According to Memphis police, crime has decreased 10 percent in the downtown area where the cameras are located since the program was initiated.

Table 6	
CCTV Program Information-Memphis, Tennessee	
Site	Downtown Memphis
Dated Installed	Early 1996
Hours of Surveillance	24 Hours a Day
Type of Surveillance	Active Monitoring
Funding Source	City Government and Private Business
Implementation	City Government and Private Business
Reasons For Its Use	To Prevent Crime and Provide Increased Safety
Results	Crime is Down 10 Percent and Data Collection is in Place
California Research Bureau/California State Library, 1996	

Dover, New Jersey

In 1993, the town of Dover funded (\$30,000) the installation of 4 video surveillance cameras in its downtown and city flea market areas. The cameras are monitored 24 hours-a-day by the police department. The initial goal was to deter loitering but the cameras now serve as a general crime deterrent. According to observers, the public initially was not very supportive of CCTV video surveillance, but opinion changed when loitering disappeared. Dover officials may expand the CCTV cameras to other areas, such as the railroad station and downtown shopping district.

Table 7	
CCTV Program Information-Dover, New Jersey	
Site	Downtown Dover
Dated Installed	September 1993
Hours of Surveillance	24 Hours-a-Day
Type of Surveillance	Active Monitoring
Funding Source	Public Funding
Implementation	Local Government and Police Department
Reasons For Its Use	Loitering and General Crime Deterrent
Results	Reduction In Loitering and General Crime
Source: California Research Bureau/California State Library, 1996	

South Orange, New Jersey

In 1994, the South Orange municipality approved the installation of 7 CCTV surveillance cameras to promote public safety in parking lots, intersections, and parks. The project cost \$10,000 and was funded through a combination of federal grants and municipal funds. Currently the system is monitored 6 hours per day, but police are preparing a federal grant application in order to fund 24 hour-a-day monitoring.

According to South Orange officials, crime has decreased since the cameras' installation. Police Chief Thomas Andrew states that as a result of the surveillance cameras, auto theft

is down 40 percent in the district and people in the community generally feel much safer walking the streets. South Orange officials are considering expanding CCTV video surveillance to the city business district, much like their neighbors in Newark.

Table 8	
CCTV Program Information-South Orange, New Jersey	
Site	Downtown Area Parking Lots, Streets, and Parks
Dated Installed	1994
Hours of Surveillance	6 Hours a Day
Type of Surveillance	Active Monitoring
Funding Source	Federal Grant And Municipal Funds
Implementation	City Officials and Local Police
Reasons For Its Use	General Crime Prevention
Results	Auto Thefts Are Down 40 Percent
Source: California Research Bureau/California State Library, 1996	

Tacoma, Washington

In 1993, Tacoma became the first city in the country to install a CCTV video surveillance system to address neighborhood crime in residential rather than commercial business districts. This unique approach to fighting residential crime was initiated by the neighborhood residents. “Before the cameras were put in, there were drug dealers selling drugs and prostitutes hooking anywhere they can hide; behind tresses, bushes, even under the steps of buildings,” said one resident. According to a member of the Hilltop Action Coalition, an ethnically diverse community, residents organized a series of meetings with the police department and city officials and jointly decided that a video surveillance system should be pursued. The city promptly applied for and received a federal grant of \$125,000 to install 3 pantilt\zoom cameras on neighborhood light poles.

Police officers monitor the cameras from a substation located near the area. If no identifiable crime is recorded, the tape is reused after a 24 hour period. According to Tacoma police, there has been a dramatic drop in the number of crimes in the Hilltop neighborhood. Crimes detected by cameras such as assaults, trespassing, prostitution and vandalism dropped from 244 reported incidents in 1993 to 87 in 1994, and 125 in 1995.⁶³ Many of the drug dealers and prostitutes that once filled the street corners have left, having been arrested or seen their customers drift away.

The success of the Tacoma neighborhood system has led to development of a CCTV video surveillance system in the nearby community of Tukwila to combat robbers and prostitution. A recently installed 6 camera CCTV system covers an 8 block area. Police and trained volunteers monitor the images from a centrally located storefront as part of Tukwila’s community-policing program. Residents and local merchants support the high-tech strategy: “This is a very tough neighborhood, especially at night,” said the manager of a Kentucky Fried Chicken store.⁶⁴

Table 9	
CCTV Program Information-Tacoma, Washington	
Site	Hilltop Neighborhood
Dated Installed	August 1993
Hours of Surveillance	24 Hours a Day
Type of Surveillance	Active Monitoring
Funding Source	City of Tacoma
Implementation	Community Residents and the Police Department
Reasons For Its Use	Drug and Prostitute Crimes
Results	Reduction In Criminal Activity in the Area
Source: California Research Bureau/California State Library, 1996	

Hollywood, California

In 1995, crime was rampant along the Yucca Street corridor in the heart of Hollywood. Hollywood police could not contribute more resources to fight this problem because of a shortage of funds and personnel. Building owners and landlords collectively pooled their resources (\$15,000) to purchase and install CCTV cameras atop apartment buildings and business entrances, in order to conduct 24 hour-a-day surveillance of the streets. Following the initial success of this effort, the Los Angeles Community Redevelopment Agency contributed an additional \$25,000 to purchase and install 3 more CCTV cameras linked to a police substation.

The entire system is currently monitored 24 hours-a-day by volunteers who are local residents and Los Angeles Guardian Angels. Some local advocates contend that CCTV surveillance gives them a sense of empowerment to confront their own crime problems. As people enter the Yucca Street corridor, signs proclaim "Entering Video Tape Surveillance Zone." According to supporters, this proclamation has driven away gang members and prostitutes from the area.⁶⁵

The Yucca corridor project has attracted interest in other areas of Los Angeles. In mid-1995, business tenants of a large urban shopping mall (Northridge Shopping Center) pooled resources and installed 64 CCTV cameras to scan the 72 acre complex. The immediate benefit was a sharp reduction in auto theft and burglaries. Other Los Angeles community-based groups and businesses are also interested in replicating the Yucca and Northridge CCTV approach. The Los Angeles City and County governments have expressed support for resident-initiated CCTV video surveillance systems, but are not currently planning to fund such an activities.

Table 10	
CCTV Program Information-Hollywood, California	
Site	Yucca Street Corridor
Dated Installed	Early 1995
Hours of Surveillance	24 Hours-a-Day
Type of Surveillance	Active Monitoring
Funding Source	Private Funds
Implementation	Community Association and Local Police
Reasons For Its Use	Drugs, Prostitution, and Gangs
Results	Criminal Activity in the Area Has Diminished
Source: California Research Bureau/California State Library, 1996	

Anchorage, Alaska

Anchorage has 7 mobile community patrols whose primary purpose is to videotape illegal activity in the residential and commercial areas of the Spenard section of the city. The volunteer video patrol effort began in 1992 to assist the middle-class neighborhood to rid itself of gambling and prostitution. Funding is provided by the business community and state grants. Video images are transferred via cable to a resident's 486-PC, where the images are digitized. The tapes are edited for clarity to identify perpetrators, printed on paper and given to the police and local businesses.

A spokesperson for the Anchorage Police Department states that video patrols are beneficial because they provide police with the basic information and physical evidence to build a case against potential felons. "They have definitely assisted in capturing criminals. I would characterize Spenard as a better community today than it was 5 years ago. Crime definitely went down in Spenard and I would attribute that somewhat to the video patrol."⁶⁶

Table 11	
CCTV Program Information-Anchorage, Alaska	
Site	Spenard Section of Anchorage
Dated Installed	Early 1992
Hours of Surveillance	Nightly From 7 p.m. to 4 a.m.
Type of Surveillance	Passive Monitoring From Mobile Units
Funding Source	Private and Public Grants
Implementation	Through the Spenard Community Patrol
Reasons For Its Use	To Reduce Drugs, Brothels, and Illegal Gambling
Results	Anecdotal Reduction In Drugs, Prostitution, and Gambling
Source: California Research Bureau/California State Library, 1996	

San Diego, California (Park District)

The San Diego CCTV surveillance program is unique because it is operated by the city's park system, an important tourist destination. In 1993, after a series of crimes (including two murders in Balboa Park), park rangers began a successful campaign to persuade local businesses to donate CCTV surveillance equipment to the park. The Balboa Park CCTV surveillance system consists of 5 cameras which monitor the pedestrian mall and museum buildings. The CCTV runs 24 hours a day and is actively monitored during regular business hours.

According to park officials, in the 3 years since the surveillance system went into effect, park crowds have increased and visitors feel an enhanced sense of security. In the first nine months after the system's installation, crime decreased in almost every category in Balboa Park.⁶⁷ Expanding the CCTV surveillance system would require public funding.

Table 12	
CCTV Program Information-San Diego, California	
Site	Balboa Park
Dated Installed	Summer 1993
Hours of Surveillance	24 Hours a Day
Type of Surveillance	Actively Monitored During Business Hours Only
Funding Source	Equipment Donated
Implementation	Balboa Park Security
Reasons For Its Use	Car Theft and General Crimes
Results	Reduction In Criminal Activity in the Park Area
Source: California Research Bureau/California State Library, 1996	

Selected Other Cities

During the 1996 *Atlanta* Olympic games, thousands of surveillance cameras were installed to protect Olympic athletes and spectators. High-speed programmable zoom cameras feed information to a central command post, recording the movements of some of the two million Olympic visitors. The cameras were located atop the scoreboard in Olympic Stadium, mounted on walls and hung from poles in Olympic Park. According to security officials, the cameras were so well concealed that many visitors thought they were lights. Although surveillance camera were operating in Centennial Park on the night of the Olympic bombing, they were not focused on any particular area nor were they actively monitored at the time.

Many of the Atlanta Olympics security measures were funded by the Atlanta Olympic Committee. According to a spokesperson for the Atlanta Police Department, most of the CCTV surveillance cameras systems used for the games were provided by private companies and will not continue to monitor pedestrian foot traffic in the busy downtown venues. However, the CCTV surveillance cameras used to monitor vehicle traffic during the games are still in operation.⁶⁸

Fort Lauderdale recently installed CCTV video surveillance cameras along a popular river trail that was plagued by vandals, and in high visibility downtown pedestrian areas. Due to its relative newness, no hard data has yet been collected to evaluate the impact of CCTV video surveillance on local crime.

The *San Francisco* Police Department recently began a passive CCTV video surveillance program to monitor vehicle traffic at busy intersections of the city. According to a police department spokesperson, the surveillance program was prompted by public demand to crack down on “speeders” who consistently run red lights and endanger other vehicles and pedestrians.⁶⁹ The surveillance cameras are electronically activated once a red light change occurs at an intersection and record the front and rear license plate of all cars in view. A moving violation ticket is sent to the registered owner of vehicles involved in infractions.

New Orleans and *Portland* are in the process of seeking local approval to install CCTV surveillance systems. The *New Orleans* system would use CCTV camera surveillance in the business and entertainment districts. The *Portland* CCTV surveillance system is designed as a crime prevention centerpiece for the downtown transit mall area, which is experiencing robberies, thefts, storefront vandalism and drug dealing. According to a *Portland* police spokesperson, the new CCTV system would be used mainly to monitor pedestrian traffic.

Other major cities such as *Phoenix*, *Cleveland*, and *New York* are also considering setting up similar video surveillance programs.⁷⁰

Future Plans of California Cities

The California Research Bureau conducted a telephone survey of all the major city police departments in California to determine the extent to which they plan to utilize public CCTV surveillance in the future. Most police officials indicated that CCTV video surveillance of public areas is not in use at this time (with the exception of *Hollywood* and *San Diego*; see above). When asked why not, most departments expressed the view that video surveillance is not as effective in deterring crime as community policing and other prevention strategies.

While some police officials believe CCTV video surveillance could be a useful crime prevention tool, many are unsure of how it could be used effectively in their city. For example, in urban California cities where commercial and entertainment venues are spread out and where mobility is at a premium, it could be difficult to effectively rely on a fixed CCTV surveillance system to cover a vast area. Police officers might have difficulty in responding in a timely manner to crimes viewed on monitors. Some police officials believe, however, that as urban build-out occurs and destination venues such as entertainment districts become more defined, it will be easier to use CCTV video surveillance in the future. For example, police officials in *Oakland* and *Sacramento* are

exploring the potential use of CCTV video surveillance. Two Sacramento business associations currently fund and operate passive CCTV surveillance systems in public downtown mall areas.

Table 13 briefly summarizes public CCTV surveillance programs in California.

CCTV Public Surveillance Use By California City Police Departments			
City	Active CCTV Surveillance	Location of System	Future Consideration
Sacramento	Two surveillance cameras are passively operated by local business associations.	Old town and downtown plaza areas.	Yes
San Francisco	Yes-to improve traffic safety and reduce traffic violations	Various traffic intersections	Yes-as the necessity dictates
Oakland	Currently proposed	High crime area of downtown	Yes
San Jose	No	None	Not at this time
Fresno	No	None	Not at this time
Los Angeles	Funded privately and limited to the Hollywood Division.	Yucca Street corridor	Yes
Riverside	No	None	Not at this time
Stockton	No	None	Not at this time
Bakersfield	No	None	Not at this time
San Diego	Yes-in the park system	Balboa Park	Not at this time
Source: California Research Bureau/California State Library, 1996			

Public Housing, Transit Authorities and Schools

Public Housing CCTV Video Surveillance Programs

Neighborhood activists and police have teamed up over the past several years to address crime concerns in public housing projects by incorporating video surveillance with other crime prevention measures. The most effective projects combine video surveillance in a large collaborative effort involving the community and community policing.

In *Boston*, a major collaborative effort was recently undertaken to improve the quality of life in the public housing projects of Roxse Homes, Camfield Gardens, and Grant Manor. Trained security officers have the power to make arrests, monitor CCTV surveillance cameras and respond to illegal activity captured on the video. The project, known as Safe Neighborhood Action Plan (SNAP), cost \$1.3 million to implement and has reduced crime in the 3 projects by 30 percent.⁷¹

In *Kinston, North Carolina*, the local housing authority installed 20 CCTV surveillance cameras on street poles at a cost of \$35,000 in spring 1996. There is no statistical information available yet to determine whether the project has been successful in reducing crime. According to the Kinston Housing Authority Director, the CCTV cameras have already served to deter street crime in the projects.

In spring 1994, *Camden, New Jersey* public housing officials installed CCTV surveillance cameras to help fight drugs and vandalism. Prior to the installation, residents in the housing projects felt they were hostages to the criminal elements. The cameras are mounted on street poles which cover the entire 18 building complex, and are monitored by police at a local substation. Results of the project over the 2 year period have been mixed. Housing authority officials report no significant decrease in arrests but there has been a drop in violent crime and domestic violence.

In 1993, the *Garfield, New Jersey* Housing Authority installed the first of 33 CCTV surveillance cameras to enhance public safety and deter drug-related crime, at a cost of \$30,000. The cameras are located in 5 housing sites inside domes and under eaves, and their viewing range encompasses 23 buildings, parking areas, playgrounds, and housing corridors. Signs are posted throughout the complex that read "Surveillance cameras videotaped 24 hours every day." The CCTV cameras are not actively monitored but passively tape activities, with all tapes reviewed for suspicious behavior or to identify a person caught in the act of committing a crime. According to the Housing Authority, more CCTV cameras are scheduled for installation in other areas of public housing once federal grants are secured.

Public Transit

Some public transit systems have been using video cameras on buses and in rail stations for several years. In Portland, for example, CCTV surveillance cameras have been operating in all 3 of the city's rail stations since 1992. The cameras are monitored from a centrally located area at each rail station. The Portland public rail system is considered a model for the country.

Municipal bus systems in San Francisco, Cleveland, and Portland rely on video cameras mounted on bus ceilings to record passenger activity. Public transit systems in Philadelphia, Chicago, and Sacramento also use video surveillance cameras inside of buses to help prevent fraudulent claims and reduce incidents of passenger harassment and vandalism. Other cities are contemplating similar uses.

The California Department of Transportation (Caltrans) utilizes video cameras on many of the state's major freeway systems to monitor and regulate traffic flow. Caltrans also has an "Automatic Vehicle Identification" system operating at certain toll plazas in Southern California which identifies cars as they pass roadside sensors. Transponders located in license plates identify a car's registration as it passes through the toll, triggering road user

billing accounts.⁷² Toll road systems in Florida and in New Jersey use CCTV surveillance cameras to identify moving violators and prevent traffic jams.

Amtrak has begun operating an “interactive video” system (PFA Flex 300) at major rail stations in Chicago, New York, and Washington D.C. for information and ticketing. This system allows agents to serve customer needs more efficiently and perform other tasks. The system is being tested in select low-volume stations for other uses including video surveillance, public announcements, lighting and door locking, credit card reading, and train status information.⁷³

School Districts

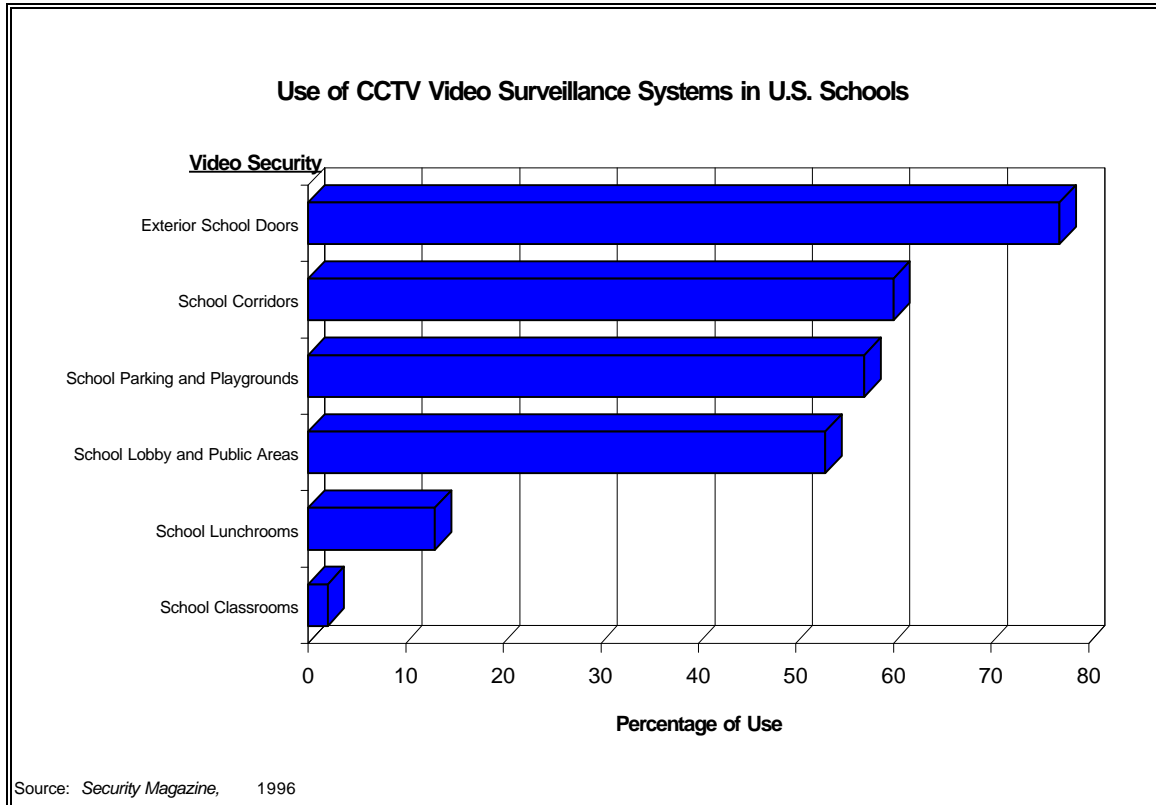
Schools are increasingly targets of burglaries due to the expensive computer equipment on site. In California, the Department of Education and the Attorney General’s office recently developed a model plan for school safety, emphasizing prevention and interagency cooperation. CCTV or video surveillance is not part of the crime prevention plan. According to a California Department of Education spokesperson, CCTV video surveillance was not considered as part of the crime prevention strategy. When asked why not, the spokesperson did not have an explanation.

However, school districts in other states are experimenting with CCTV video surveillance as a principal security measure to reduce campus violence and prevent crimes such as theft and graffiti. The CCTV surveillance systems either passively record activities and are played back at certain intervals, or are actively monitored by personnel. According to a 1996 survey of secondary school administrators conducted by the American Society for Industrial Security, schools which use either passive or active CCTV surveillance systems, contend that the systems have contributed to reduced property crimes such as break-ins, theft, and vandalism. Advocates point out that schools are well designed for effective video surveillance since they have a captive student population and staff in a restricted campus area.

Nationwide, 31 percent of all elementary and secondary public school classrooms use CCTV for classroom education. In addition, 49 percent of all elementary and secondary public school administrative offices rely on CCTV to monitor classroom activities.⁷⁴

In a recent nationwide telephone survey of public schools, 47 percent of the respondents indicated that CCTV video surveillance is being used in some capacity in a school as a crime prevention measure. According to the survey, most schools use the CCTV video surveillance to monitor entranceways and parking lots, hallways, stairways, and cafeterias (see Chart 2).

Chart 2



The following discussion examines a sample of school districts in the United States which operate passive or active CCTV video surveillance at elementary, middle or high school campuses. Many schools and city and county school boards are considering installing video surveillance systems to enhance school safety and prevent crime and violence. According to educational researchers, no one has evaluated the effectiveness of video surveillance in schools or on school buses. In addition, many schools which use CCTV video surveillance do not undertake professional security assessments, which serve as a proactive approach to prevention and intervention⁷⁵. Most of the literature describes programs which district administrators claim have positive results.⁷⁶

- The *Huntsville* School District in Alabama has installed an active microwave-based camera surveillance system in over 40 schools to combat campus burglaries and other crime. This “integrated digital network” for video surveillance delivers images from school locations to monitoring personnel at a centralized security facility. It was developed and installed by Bell-South Telecommunications. A Huntsville school district spokesperson states that the CCTV system has had a positive impact on students by providing a sense of security which was missing before the installation of the cameras. In the five years prior to the installation, the school district lost \$6 million to theft, fire, and vandalism. Since 1995, these type of losses have nearly disappeared and the district’s insurance premium has yielded a \$700,000 savings.⁷⁷

- In *Indianapolis*, the largest high school campus (North Central High School) uses 90 CCTV video surveillance cameras inside and outside campus buildings to protect against car theft, arson, and violence. School personnel monitor the CCTV surveillance cameras during school hours.
- *Oregon's* Centennial School District recently placed CCTV surveillance cameras at high school and middle school campuses to curb thefts of school property, personal property, and vandalism and to enhance after-school activity safety. The system is actively monitored by school personnel.
- *Santa Fe* public schools use hidden video surveillance cameras on some school buses to prevent vandals and graffiti artists from destroying or damaging school property.⁷⁸ The video is reviewed at the end of each day and after weekends and holidays. A proposal was recently presented to the school board to extend CCTV surveillance to school sites but was defeated.
- The *Lafayette* Parish School Board in Louisiana installed video surveillance cameras on district school buses in 1994 to protect the safety of bus drivers who were being threatened by students. Within a year, camera surveillance was expanded to schools within the district which had student behavioral problems. No data has been kept to determine the impact of CCTV video surveillance on the incidence of behavioral problems at the schools.⁷⁹
- The *Austin* Independent School District has installed CCTV surveillance in one high crime area middle school. The system is actively monitored by school staff to prevent fights and destruction of school property. Four of the district's high schools also use CCTV surveillance cameras to actively monitor all students and other persons entering the campus. In addition, the school district recently approved a \$369 million bond which includes purchasing CCTV surveillance cameras for all school campuses.⁸⁰ School districts in Dallas, Fort Worth, and Houston also operate CCTV surveillance at certain schools.
- *Chicago's* Farragut High School was a notoriously violent campus prior to the installation of a CCTV surveillance system and the introduction of other security measures in 1995. According to the school's administrator, within one year of the installation of the CCTV system, major acts of violence, locker break-ins, and vandalism have ceased almost entirely. The system is monitored by trained personnel.⁸¹
- Independence High School in *Columbus, Ohio*, installed CCTV monitors in 1995, and within one year break-ins decreased from 10 to none. Euclid High School in *Cleveland* uses 30 CCTV surveillance cameras to monitor hallways, stairwells, and entrances for its 2,000 students. Both systems are actively monitored by school personnel. The *Reynoldsburg, Ohio* school district began using CCTV video surveillance in school buses and in the high school's main buildings in 1995.

- The *Renton* School District in the state of Washington relies on 4 CCTV surveillance cameras in each of its 3 schools to combat trespassing, drug dealing, and graffiti. The systems are actively monitored by school personnel.
- *Prince Georges County*, Maryland has 400 CCTV surveillance cameras monitoring student activity on 20 high school campuses. The CCTV system is mostly passive but some cameras are actively monitored by campus personnel. The surveillance activity is the result of a 1995 campus shooting in which a student died.
- In *Clark County (Las Vegas)* Nevada, 2 CCTV surveillance cameras are in place at each elementary school, while up to 10 CCTV cameras are operating on the high school campuses. According to security experts, the Las Vegas school CCTV system is the most sophisticated in the country, primarily because it was designed by casino security personnel.
- Martin Luther King High School in *Philadelphia* installed CCTV surveillance cameras in 1995 after a teacher was raped on campus. Students and faculty at the campus supported the installation and suggested locations based on their knowledge of where crimes and illegal acts had taken place. All cameras are actively monitored by personnel.
- *Norfolk* public schools use CCTV surveillance to give students a sense of security on campus. The CCTV system actively screens people entering and exiting campus. The cameras are located only in public areas of the campus.

As noted above, some school districts have installed video cameras on buses to curtail violence and particularly the use of weapons. They generally are passive systems which record but are not monitored. Some districts mount boxes in all their buses and rotate surveillance cameras among them so the students never know whether they are being taped. This is less expensive than spending \$1,000 per bus for a surveillance camera.

At least 15 universities have installed CCTV surveillance systems which are monitored by campus police. Most systems are designed to improve safety and security against robberies, muggings, and sexual violence. According to one research report, most of the campuses have recorded sharp drops in crime as a result of the CCTV surveillance systems.⁸²

LEGISLATIVE AND ADMINISTRATIVE OPTIONS

While not necessary the recommendations of the author or the Bureau, the following are potential options for action.

Close Circuit Television (CCTV) video surveillance is an emerging security technology utilized by law enforcement to monitor commercial districts, schools, and residential areas and by business to enhance workplace security. It is a useful tool for community policing programs, as demonstrated in many cities in the United States. In California, only the Hollywood Division of the Los Angeles Police Department currently operates a video surveillance program, through a local community-funded initiative. It is only a matter of time before other California law enforcement agencies and parks and school districts utilize CCTV surveillance technology. The State Legislature may want to consider the implications, benefits, safeguards and standards which might ensure that California communities benefit from this and other related technologies.

I. Should The Legislature Develop A Framework For Public CCTV Surveillance Technology?

The Legislature could review the role that CCTV video surveillance technology might play as a component of the state's comprehensive crime prevention strategy. Factors to be considered for a statewide framework might include: community participation in establishing projects; minimum standards for implementation; training requirements for monitoring personnel (including volunteers); criteria to ensure confidentiality; and clearly articulated links with community policing. The goal of the framework would be to provide for the appropriate and beneficial use of public video surveillance in California. The framework might also provide the means by which other new technologies could be evaluated and introduced in California for law enforcement purposes.

Funding Strategies

The 1994 federal crime bill has been a funding source for CCTV video surveillance in many communities.⁸³ A state framework which clearly defines the role technology may play in enhancing public safety might facilitate California communities' ability to gain grant funds. It might also encourage local school bond funding for safety purposes.

- The Legislature could direct the Office of Criminal Justice Planning (OCJP) to provide assistance to local communities to help develop appropriate grant applications for selected local law enforcement, commercial and neighborhood pilot projects incorporating CCTV video surveillance technology.
- The Legislature could create a state matching grant program to encourage and supplement private and local funding for public safety projects utilizing CCTV video surveillance and other technologies.

Training

- The Legislature could direct the Department of Justice to consult with local law enforcement, and neighborhood activists, and school, transit, park and housing authorities to develop regulations and standards for personnel training. This could include surveillance and monitoring activities. Standards for peace officer and private security and volunteer participation might also be included.

Confidentiality

- The Department of Justice could be charged with developing guidelines for how video surveillance tape will be reviewed, handled and disposed. This might include recommended penalties (civil and criminal) for breach of confidentiality and commercial misuse. The models developed in Baltimore and Tacoma could be useful starting points (see pages 15 and 21).

II. Other Crime Prevention Technologies

Innovative crime prevention projects using new technologies are operating across the country, including one in Salinas, California (see page 16). The Western Regional Law Enforcement Technology Center located in El Segundo, California provides technical assistance to state and local law enforcement agencies interested in new surveillance technology, (see page 27) among other activities.

- The Legislature could establish a program to fund innovative local projects that combine, for example, a GIS crime mapping pilot which identifies high crime areas with CCTV surveillance to prevent crime and productively target community policing response measures.
- The Legislature could investigate newly developed concealed weapon surveillance technology which could be installed in high crime area neighborhoods where gun violence and gang activity are prevalent. State matching funds might encourage local law enforcement activity. The Office of Criminal Justice Planning (OCJP) could assist local jurisdictions to apply for federal funding.

III. Commercial Business and City Partnerships

The popularity of CCTV video surveillance as a crime prevention tool is an important component of the re-emergence of downtown entertainment and commercial business districts. Business partnerships composed of retailers and various agencies of local governments have been created in cities such as Baltimore, Tampa Bay, and Memphis to provide the funding capital for CCTV video surveillance crime prevention projects. Community-oriented policing programs help monitor the surveillance systems and respond to criminal activity.

The California Property and Business Improvement District Law was created in 1994 to promote economic revitalization within city or county business districts through a levied assessment. A “management district plan” is required with approval, by either a city council or county board of supervisors, prior to the formation a business district.

- The Legislature could modify the law where appropriate to specify that local governments may create partnerships with commercial business associations for public safety and other associated purposes. The goal would be to enhance public safety of business and entertainment districts. Federal, state, and local public and private funds could purchase CCTV video surveillance equipment to monitor public street and sidewalk areas. Operational guidelines for active or passive monitoring by volunteers and private security personnel could be developed by the Department of Justice, based in part on the Baltimore model (see page 15).

IV. Residential and City Partnerships

Residential neighborhood initiatives to improve public safety using CCTV video surveillance have been undertaken in the cities of Tacoma and Hollywood (see pages 21 and 22).

- The Legislature could create a Residential Neighborhood Security Act which would empower local organizations and neighborhood associations to participate in Office of Criminal Justice Planning and funding projects. A framework for volunteer participation would be useful. The plans might specify how CCTV video surveillance will be coordinated with community policing, neighborhood watch programs, and volunteer staffing of surveillance monitors.

Local residential security districts could be created upon meeting standards specified by the OCJP or the Department of Justice. The community security districts could be given authority to install and operate CCTV video surveillance within the district’s defined geographical boundary, consistent with state guidelines. Some related activities might include:

1. Identify juveniles who violate local curfews or are loitering in the neighborhood. Work with the police to ensure that their activities are consistent with any parole and probation orders.
2. Improve truancy enforcement.
3. Look for and identify people who display firearms in the community. This might include pilot projects using new concealed weapons identification surveillance technology.

4. Identify speeding vehicles to enhance the effectiveness of traffic laws.

V. Public Schools and CCTV Video Surveillance

Information presented in this study suggests that CCTV video surveillance is widespread in schools across the country. Its primary purpose is to serve as a deterrent against acts of vandalism, graffiti, fights or gang-related activities, drug use, and thefts. However California schools do not currently employ CCTV video surveillance as a security measure. Instead, metal detectors and school district police personnel are the primary mechanisms used by California schools to prevent acts of violence, especially gun violence. For example, school districts in Los Angeles spend about \$12 million annually for campus security.

CCTV video surveillance in schools raises some important questions, including:

1. Who would be responsible for monitoring the video tapes (school police, school staff, volunteers or a combination)?
 2. Under what conditions should CCTV surveillance be used?
 3. Where would the surveillance cameras be located?
 4. Does CCTV video surveillance send a message to students and parents that they are not trusted?
- The Department of Education could study schools in other states which utilize CCTV surveillance to determine how the technology might best be used in California, and provide “lessons learned” information to school districts.
 - The Legislature could create a state matching grant program (school bonds for safety and security projects) to supplement local funding for public safety projects utilizing CCTV video surveillance and other technologies. Telephone companies might assist in developing an integrated digital school network (see discussion of Huntsville schools, page 29). Federal grants could also be a promising funding source.
 - California school districts could be encouraged by the State Department of Education and the Attorney General to consider using CCTV video surveillance in selected schools. This would require an amendment to their recent model plan for school security and violence prevention.
 - CCTV surveillance systems could supplement security personnel in selected schools which are experiencing high rates of vandalism, theft, and graffiti. These schools might be targeted for pilot project funds and technical assistance. If school or volunteer personnel monitor the video, school security personnel could productively use their time to actively prevent drug use, after-school fighting and vandalism.

- The state could contract for a controlled study to compare schools with CCTV surveillance to schools that rely on metal detectors or security personnel. Variables such as incidence of vandalism, theft, and graffiti, student safety, and operational costs could be developed to measure the preventive success of one form of security to another.

VI. CCTV Video Surveillance in Public Housing

Security in public housing projects in the United States has been a major concern of residents and housing officials for years. In California, gang-related activity is a major concern in most housing projects located throughout the state and particularly in Los Angeles, Oakland and San Francisco. Some recent efforts by housing officials in other states to incorporate CCTV video surveillance overall with other crime prevention measures have proven to be successful in reducing criminal activity sometimes (see pages 26-27).

- The Legislature could direct the Department of Housing and Community Development to work with local housing authorities to develop CCTV video surveillance systems. At-risk housing projects with high crime activity could be ear-marked as pilot projects for CCTV surveillance implementation perhaps with state matching grants.
- Local housing authorities could develop master security plans which incorporate CCTV video surveillance systems in a cost effective manner along with other security strategies. Ideally, the strategies would compliment each other.

VII. Video Surveillance As A Traffic Safety Tool

Urban video surveillance systems are essential components of traffic regulation in France and England. These systems are successful in assisting authorities to regulate traffic flow through busy inner city streets, detecting traffic jams and roadside disturbances. In the U.S., Florida operates video surveillance on busy inner state roads for traffic safety purposes. San Francisco has begun video surveillance on busy surface streets to detect drivers who violate traffic lights.

- The Legislature could direct Caltrans to assist California cities and towns to develop video surveillance systems when appropriate, in order to identify and fine traffic violators who would otherwise go unpunished. The potential benefits could be substantial: local governments lose up to 30 percent in collection fees from undetected traffic violators. Furthermore, video surveillance could help jurisdictions effectively utilize surface streets by preventing traffic jams.

VIII. Evaluation Studies

Given the important role that crime prevention plays in law enforcement, surprisingly little is known about the effectiveness of new technologies such as CCTV video surveillance to prevent or discourage crime.

- The Legislature could request the University of California to design efficient and effective data collection methods by which localities could measure the impact of CCTV video surveillance on crime and public safety. The local projects could forward their data to the OCJP for analysis and report.
- Local community policing programs established with the help of federal grants could evaluate the value of associated surveillance programs. Federal grants might be available to fund the evaluations.

Endnotes

¹G. J. O'Toole, *The Encyclopedia of American Intelligence and Espionage: From the Revolutionary War to the Present*, Page 121, 1985.

² *Ibid.*, Page 133.

³U.S. Senate Crime Control Hearing, "Controlling Crime Through More Effective Law Enforcement," U.S. Senate Committee on the Judiciary, 90th Congress., 1st Session. 909, 1967.

⁴Lisa Ann Wintersheimer, "Privacy Versus Law Enforcement: Can The Two Reconciled?," *University of Cincinnati Law Review*, 57 U. Cin. L. Rev. 315, 1988.

⁵*United States vs. Torres*, 751 F. 2nd 875, 876 (7th Circuit, 1984). The government secretly entered a building to televise activities in the building's interior. Although the video equipment had no sound track, an audio recording was made on separate equipment for the purpose of monitoring the assembling of bombs. The court only considered Title III as a model in applying the 4th Amendment to the use of videotape equipment. Relying on the principles and procedures of Title III, the court found that the evidence obtained by the video equipment should be admissible and did not violate the 4th Amendment.

⁶John Goldman, "FBI Arrests Man Accused of Training Bomb Suspects," *Los Angeles Times*, February 22, 1995.

⁷Scott Sher, Public Law Research Institute, "Continuous Video Surveillance and Its Legal Consequences," University of California, Hastings College of the Law, San Francisco, Ca, November, 1996.

⁸ 18 U.S.C. Section 2511 (1) (a).

⁹ S. Rep. No. 541, 99th Congress., 2nd Session. 16-17.

¹⁰ 18 U.S.C. Section 2510 (emphasis added).

¹¹ 389 U.S. 347 (1967).

¹² *California vs. Ciraolo*, 476 U.S. 207, 213-14 (1986); *Illinois vs. Andreas*, 463 U.S. 765, 771 (1983); and *McCray vs. State*, 581 A. 2nd 45 (Ct. App. Md. 1990).

¹³468 U.S. 276, 281-82 (1983).

¹⁴ *USA vs. Taketa*, 923 F. 2nd 665, 677 (9th Cir. 1991); *USA vs. Broadhurst*, 805 F. 2nd 849, 855-56 (9th Cir. 1986).

¹⁵*Dow Chemical Co. vs. United States*, 106 S. Ct. 1819 (1986); *People vs. Mackey*, 121 Michigan App. 748, 329 N.W. 2nd 476 (1982).

¹⁶ *USA vs. Sherman*, 990 F. 2nd 1265 (9th Cir. 1993), 990 F.2d at 1265 (internal quotations omitted) (citing *United States vs. Taketa*, 923 F. 2d 665, 677) (9th Cir. 1991).

¹⁷ *Florida vs. Reilly*, 488 U.S. 445 (1989); *California vs. Ciraolo*, 476 U.S. 207 (1986).

¹⁸ *Laird vs. Tatum*, 408 U.S. 1, 11 (1972).

¹⁹ *USA vs. Cuevas-Sanchez*, 821 F. 2nd 248, 50-51 (5th Cir. 1987); *Ricks vs. State*, 537 A. 2nd 612 (Md. 1988).

²⁰ *Cuevas-Sanchez*, 821, F 2nd 50-51; see also *USA vs. Torres*, 751 F. 2nd 875, 877 (7th Cir. 1984).

²¹Courts have never sustained a First Amendment claim when law enforcement makes use of undercover agents in public areas. Granholm, *supra* note 20 at 708.

²² *Accord Jacobson vs. Massachusetts*, 191 U.S. 11, 25-29 (1905); *Hawaii vs. Standard Oil Co.*, 405 U.S. 251, 257-59 (1972); and *Mormon Church vs. USA*, 136 U.S. 1, 56-58 (1890).

²³ *People vs. Triggs*, 26 Cal. App. 3rd 381. (1972).

²⁴ 220 Cal. App. 3rd 146 (2nd Dist. 1990).

²⁵William Montalbano, "Public Cameras Change Crime Picture in Britain," *Los Angeles Times*, Section A, Page 10, June 6, 1996.

²⁶Richard Stevenson, "They're Capturing Suspects on Candid Camera," *New York Times*, Saturday, Late Edition, Section 1, Page 4; Foreign Desk, March 11, 1995.

²⁷ John Naughton, *The London Observer*, "Video Eyes Are Everywhere: Big Brother in Britain," Reprinted in the *World Press Review*, Vol. 42; No. 4, Page 13; November 13, 1994.

²⁸Marjorie Bulos, "Unpublished Study of the Effects of Video Surveillance on the Citizens of Sutton, England," 1995. Copyrighted 1995 Newspaper Publishing PLC, *The Independent*, Sunday Edition of Real Life, Page 3, December 3, 1995.

-
- ²⁹ Elisabeth Geake, "The Electronic Arm of the Law: Electronic Surveillance Systems," IPC Magazines Ltd. (UK), *New Scientist*, Vol. 138; No. 1872; Page 19; May 8, 1993.
- ³⁰ Duncan Lustig-Prean, British Civil Liberties Group, Liberty, Testimony before Parliament's Media Committee, March 10, 1996.
- ³¹ Fred Barbash, Washington Post Foreign Service, "The Latest From Britain: Sex, Private Lives and Videotapes," *Washington Post*, Sunday Edition, Section A, Page 27, March 17, 1996.
- ³² Daniel Drolet, "Plastic, Paper Trail Makes Vanishing Act Tough To Pull Off," *The Ottawa Citizen*, Citylife Section, Page A-6, February 19, 1995.
- ³³ Constable Henri Berube, Peel Regional Police, Ontario, Canada, Interview with Security Magazine regarding the ineffective use of CCTV video surveillance in catching bank robbers, March 18, 1996.
- ³⁴ Edward A. Tomlinson, "The Saga of Wiretapping in France: What It Tells Us About the French Criminal Justice System," *53 Louisiana Law Review*. 1091, 1092 (1993).
- ³⁵ Paul Webster, "French Minister Condoned Police Shooting of Aliens," *The Guardian Newspaper*, Page 11, October 12, 1994.
- ³⁶ Nuala Haughey, "Should Electronic Eyes be Watching Over Us?," *The Irish Times Newspaper*, City Edition, Home News, Page 7, April 18, 1995.
- ³⁷ Tunku Varadarajan, "Spain Braced For More Blasts After Arrest of Eta Trio," Overseas News, Times Newspapers Limited, *The Times*, July 25, 1996.
- ³⁸ *National Geographic Magazine*, 1996.
- ³⁹ Paul Williams, "Why Punish Saddam's Children Because You Can't Catch Saddam?," *Toronto Star Newspaper*, Section F-1, June 2, 1996.
- ⁴⁰ Rosemary J. Erickson, Athena Research Corporation, "Cameras and Silent Alarms: A Study of Their Effectiveness as a Robbery Deterrent," January 31, 1984.
- ⁴¹ Telephone conversation with Ken Darby, Chief Executive Officer, Vicon Industries, regarding video surveillance, October 1996.
- ⁴² Cahners Publishing Company, A Division of Reed Publishing USA, "Nationwide Survey of Companies With Security Expenses," Karen Hallberg, Research Director, September, 1996.
- ⁴³ Long Island (LI) Commercial Review, Inc., "Press Statement by Ken Darby, Executive Director, Vicon Industries, Regarding Sales of CCTV Surveillance Equipment in 1995," *LI Business News*, Section 13, Page 27, March 25, 1996.
- ⁴⁴ Business Wire Magazine Editorial, "Building Owners Rising Concern: Violence, Vandalism, and Terrorism," *Business Wire, Inc.*, June 7, 1995.
- ⁴⁵ Chicago Daily Law Bulletin, "Tort Law: Surveillance of Plaintiffs," *Law Bulletin Publishing Company*, April 19, 1995
- ⁴⁶ Bill Zalud, Editor, Security Magazine, "Building Security In A Threatening Age," Excerpts From a Seminar at Chicago's Merchandise Mart Expo Center, June 13, 1995.
- ⁴⁷ Lorraine La Femina, "For Electronic Security Firms, Crime Pays," *LI Commercial Review, Inc., LI Business News*, No. 13; Page 27, March 25, 1996.
- ⁴⁸ Rosemary J. Erickson, "Armed Robbers and their Crimes," Athena Research Corporation, Seattle, Washington, 1996.
- ⁴⁹ National Association of Convenience Stores, "Convenience Store Security: Report and Recommendations," National Association of Convenience Stores, November, 1991.
- ⁵⁰ Analysis of Crime in the Two County Area of Long Island, New York, Presentation by Dr. Harvey Kushner, Chairman of the Department of Criminal Justice, CW Post College, to the Board of Directors of the Long Island News, March, 1996.
- ⁵¹ Jennifer Mulhern Granholm, "Video Surveillance on Public Streets: The Constitutionality of Invisible Citizen Searches," *University of Detroit Law Review*, Vol. 64: 687, 1987.
- ⁵² Ibid.
- ⁵³ Bill McGarigle, *Government Technology News*, "Special Report: GIS Helps Reduce Youth Violence," 1996.
- ⁵⁴ National Institute of Justice, Jeremy Travis, Director, *Technology Beat*, "Hands-Off Frisking: High-Tech Concealed Weapons Detection," June 1996.

-
- ⁵⁵ Marcus Nieto, "The 1994 Violent Crime Control and Law Enforcement Act Today," California Research Bureau Report #95-001, April 10, 1995.
- ⁵⁶ Linda Schiffer, Maryland Governor's Office of Crime and Prevention, Press Release, "New Downtown Video Patrol Program Uses Technology To Reduce Crime," January 19, 1996.
- ⁵⁷ Carl Rochelle, CNN Correspondent, "Public Places Private Lives," *Cable News Network*, Transcript #294-6, Domestic News 7:33 am, March 29, 1996.
- ⁵⁸ Telephone Interview with McKinley Howell, Director of the Newark, New Jersey Division of Economic Development, on Newark's "Video Patrol" September 19, 1996.
- ⁵⁹ Telephone Interview with Detective David Collins, Video Patrol Information Officer, Newark Police Department, September, 19, 1996.
- ⁶⁰ Telephone Interview with John Brushele, Deputy Chief of Police, Tampa Bay, Florida, October 16, 1996.
- ⁶¹ Statement by Lt. Greg Mullins, Virginia Beach Police Department, September, 1996.
- ⁶² Telephone Interview with Sam Moses, Deputy Police Chief, Memphis Police Department, September 1996.
- ⁶³ Emelyn Cruz, "Video Cameras Shooting Down Some Crime Rates," *The Seattle Times*, Section B-1, July 28, 1996.
- ⁶⁴ Ibid.
- ⁶⁵ Telephone Interview with Merle Singer, President of the Yucca Corridor Coalition of Property Owners and Managers, October, 1996.
- ⁶⁶ Press statement regarding Spenard Initiative in Anchorage by Steven H. Warner, Sergeant, Anchorage Police Department, March, 1995.
- ⁶⁷ Penny Scott, Balboa Park District Manager, Regarding the successful park district CCTV surveillance system, "CCTV For Public Safety," 1996 Report, Security Industrial Association, Page 38, September, 1996.
- ⁶⁸ Telephone interview with Major John Gordon, Public Information Officer, Atlanta Police Department, November 13, 1996.
- ⁶⁹ Telephone interview with Officer Glen Weathersby, Public Information Officer, San Francisco Police Department, November 13, 1996.
- ⁷⁰ Security Industry Association, *CCTV For Public Safety*, "The Portland Story," Page 60, October, 1996.
- ⁷¹ Ibid. Page 21.
- ⁷² Joel Kugelmass and Greg McVicar, "State Computers Take A Byte Out of Privacy," *California Journal*, October 1, 1991.
- ⁷³ Mark Walbrun, Amtrak America, "Amtrak Tests Video Ticketing and Surveillance For Unmanned Stops," *High Speed Transport News*, Copyright 1995 Information Access Company (IAC), A Thomsom Corporation Company, No. 15, Vol. 3, May 15, 1995.
- ⁷⁴ U.S. Department of Education, National Center for Education Statistics, Fast Response Survey System, "Survey on Advanced Telecommunications in the U.S. Public Schools, K-12," Table 408-- Percent of Public Schools Having Access To Selected Telecommunication Capabilities, *1995 Digest of Education Statistics*.
- ⁷⁵ Interview with Kenneth S. Trump, National School Safety and Security Services, May 23, 1997.
- ⁷⁶ Marc Posner, Education Development Center, Children's Safety Network, September 25, 1996.
- ⁷⁷ PR Newswire Association, Inc., "Public Schools Security Enhanced By BellSouth," *Financial News*, Section, January, 18, 1994.
- ⁷⁸ Aaron Baca, "Teens Vandalize High Schools With Graffiti," *The Santa Fe New Mexican Newspaper*, Page B-1, May 25, 1996.
- ⁷⁹ Angela Simoneaux, "Discipline Problem Now is Out of Hand," *The Advocate Newspaper*, of Baton Rouge, Louisiana, Page B-9, January 17, 1995.
- ⁸⁰ Telephone interview with Dela Mae Moore, Spokesperson for the Austin Independent School District, November 12, 1996.
- ⁸¹ Michael Gips, "Securing the Schoolyard," American Society for Industrial Security, Vol. 40, No. 3, Page 46, March, 1996.
- ⁸² Security Industry Association, *CCTV for Public Safety*, Page 65, September, 1996.

⁸³ Marcus Nieto, *The 1994 Violent Crime Control and Law Enforcement Act Today*, California Research Bureau Report # 95-001, April 10, 1995.