

# Security for Los Angeles Metro Blue Line

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The Metro Blue Line is a 22-mi light rail system that operates through three cities and unincorporated areas of Los Angeles County. The line was designed and constructed by the Los Angeles County Transportation Commission (LACTC) and is operated by the Southern California Rapid Transit District (SCRTD). The Blue Line is in one of the highest crime areas of Los Angeles County. Early on, LACTC recognized the importance of providing for effective security in the design, construction, and operation of the system with features such as communications, fare collection, security hardware, closed circuit television, parking policies, open stations, lighting, fencing, and security studies to determine staffing levels. During construction, contractors were required to maintain secure work sites by using lights, fencing, locks, roving guards, and security patrols. The contractors were also required to keep the work site and property free of graffiti. As LACTC assumed responsibility for completed works, security levels were increased with the cooperation of the local police departments and by contracting with the Los Angeles County Sheriff's Department, Los Angeles County Safety Police, and private security guard services. When prerevenue testing began, security levels were increased again. The SCRTD board of directors elected to contract with the Los Angeles County Sheriff's Department to provide police services for the revenue operations. By using the sheriff's department, the board believed that perceived and actual security levels for the line would be maximized. To date few security-related problems have occurred. Sheriff's deputies are highly visible on station platforms and on trains, and the high level of security has served to discourage criminal activity on the line.

In late 1982 the Los Angeles County Transportation Commission (LACTC) began its planning process for the Long Beach-Los Angeles rail transit project, since named the Metro Blue Line, with detailed route evaluation and environmental studies. In early 1985 LACTC approved the start-up of the project, and detailed design work commenced. Property acquisition and preliminary construction activities were started later in 1985. The line was opened for revenue service in July 1990.

The total route, shown in Figure 1, is approximately 22 mi long; about 15 mi follows an existing Southern Pacific railroad right-of-way. Much of the line's route is the same as the last line operated by the Pacific Electric Railway Red Cars, which ceased operation in 1961. The Blue Line includes 22 stations and incorporates conventional light rail vehicles (LRVs) powered from overhead electrical catenary wires. After 1 year's operation, the line's average daily ridership is approximately 30,000 passengers.

Since the inception of the Blue Line project, LACTC has been aware of the potential for problems associated with the security. It was recognized that portions of the line would

operate through some of the historically highest crime areas in the Los Angeles region and that the security of the patrons, employees, equipment, and facilities must be a primary concern throughout the design, construction, and operation of the system.

Generally the Blue Line runs through areas with average to high crime rates. Nearly half of the Blue Line runs through areas with high crime rates, from the Artesia Freeway/S.R.-91 north roughly to Firestone Boulevard, then from Slauson Avenue north to the line's terminus in downtown Los Angeles. Eleven of the line's 22 stations are located in high crime areas, including the five stations in downtown Los Angeles. Certain sections of the corridor are characterized by high rates of crime that is violent, gang-related, and drug-related.

Furthermore, LACTC recognized that the Blue Line would be a pilot for the county's entire rail transit systems development program. The 30-year program for light rail, heavy rail, and commuter rail systems development was, to some extent, dependent on the success of the Blue Line and on how the line's success was perceived by the residents of Los Angeles County. Personal safety and security were identified as critical factors influencing how individuals perceived the line and its success as a mode of transportation.

## EXISTING BLUE LINE LAW ENFORCEMENT

Planning and providing security for the Blue Line's construction and operations required cooperation and coordination among LACTC, the Blue Line's police services provider, and the police departments with primary jurisdiction in the various communities traversed by the line from Los Angeles to Long Beach. Four police departments have primary jurisdiction along the Blue Line corridor:

- City of Los Angeles Police Department (LAPD),
- Los Angeles County Sheriff's Department,
- City of Compton Police Department, and
- City of Long Beach Police Department.

In addition law enforcement agencies with limited jurisdiction operate in the Blue Line corridor, including the Southern California Rapid Transit District (SCRTD) Transit Police Department and the California Highway Patrol (CHP). The SCRTD Transit Police Department functions as a specialized law enforcement agency with concurrent jurisdiction for routine criminal matters affecting SCRTD passengers, employees, equipment, and facilities. CHP has primary responsibility for traffic and related matters on state highways and freeways.

In the Blue Line corridor, the LAPD has primary responsibility for police services for approximately 6.9 mi of the

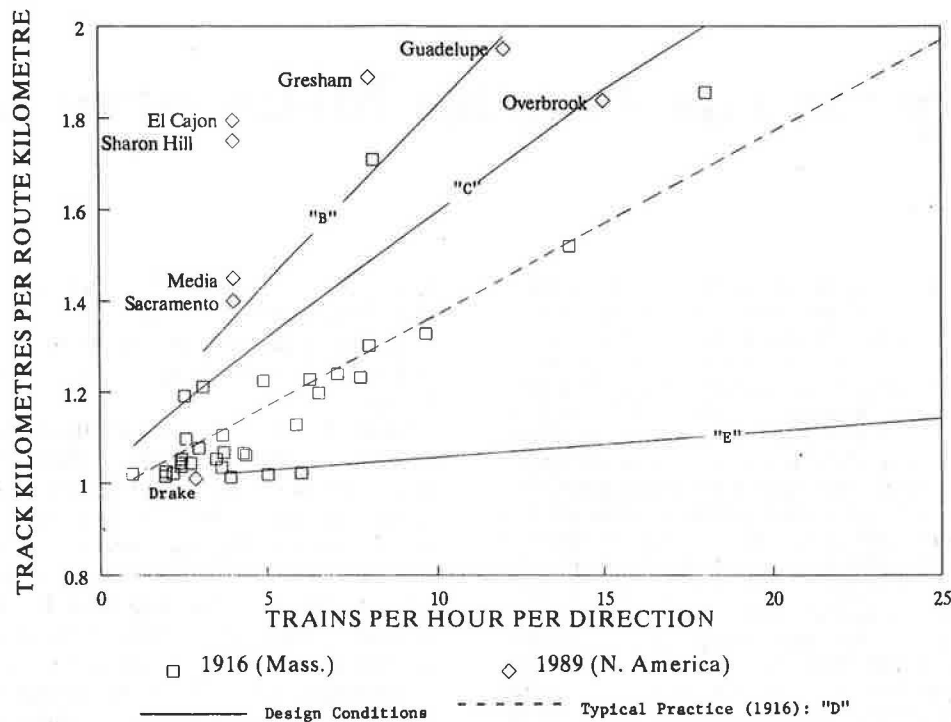


FIGURE 4 Track ratio versus frequency (1916 values estimated).

### PRACTICAL PLANNING AND DESIGN CONSIDERATIONS

Adjustments may be required before using  $T_1$  as a basis for determining the actual lengths of single-track sections. Ideally a route should require running trackage determined as follows:

$$TK = 2.0 * RK * (1.0 - T_1/H) \quad (16)$$

where  $TK$  and  $RK$  are track kilometres and route kilometres, respectively. In planning or designing a particular route, however, a number of other considerations may emerge to constrain single-track solutions. These constraints and some of the techniques applicable to them, are outlined below:

1. Specific locations may not be able to accommodate double track because of topography, cost, environmental impact, or other factors. These locations must be taken out of consideration as possible passing track locations. Where necessary, a lower design condition (i.e., larger  $T_1$  value) may have to be accepted at specific locations.

2. It may be necessary to accommodate more than one headway or service type (e.g., local and express). This may require a solution valid for several different values of  $H$  and  $T_{crit}$ , and even for different time-space trajectories. In this case, design values of  $T_1$  and  $H$  should be established for each service required, and passing tracks should be located to meet all the requirements. Maximum sharing of common passing tracks can be identified by testing different relative departure times from terminals.

3. Very short single-track sections cannot be justified economically; costs for trackwork and signals can exceed the cost of extending two tracks through the section. Current main-

tenance costs for rail systems suggest that single-track sections shorter than 500 m should be carefully examined to see whether they will offer a true saving in total annualized costs.

4. The location of passing tracks should include a consideration of the time-space trajectory of a typical vehicle trip, as shown in Figure 1. If single-track sections are located to avoid as many station stops as possible, they can be physically longer than sections that include many stops.

5. For some types of service, particularly commuter rail, the assumption of equal service priority in each direction may not be applicable. The values of  $T_1$  between Conditions C and E, for example, can usually provide a very satisfactory level of service for heavily loaded peak direction vehicles, provided that fairly long scheduled "meet" delays can be accepted by lightly loaded off-peak direction vehicles.

In actual application, several iterations or adjustments may be required to reach a satisfactory solution. It is also important to remember that once constructed, the guideway layout will govern the kinds of services that can be operated.

### REFERENCES

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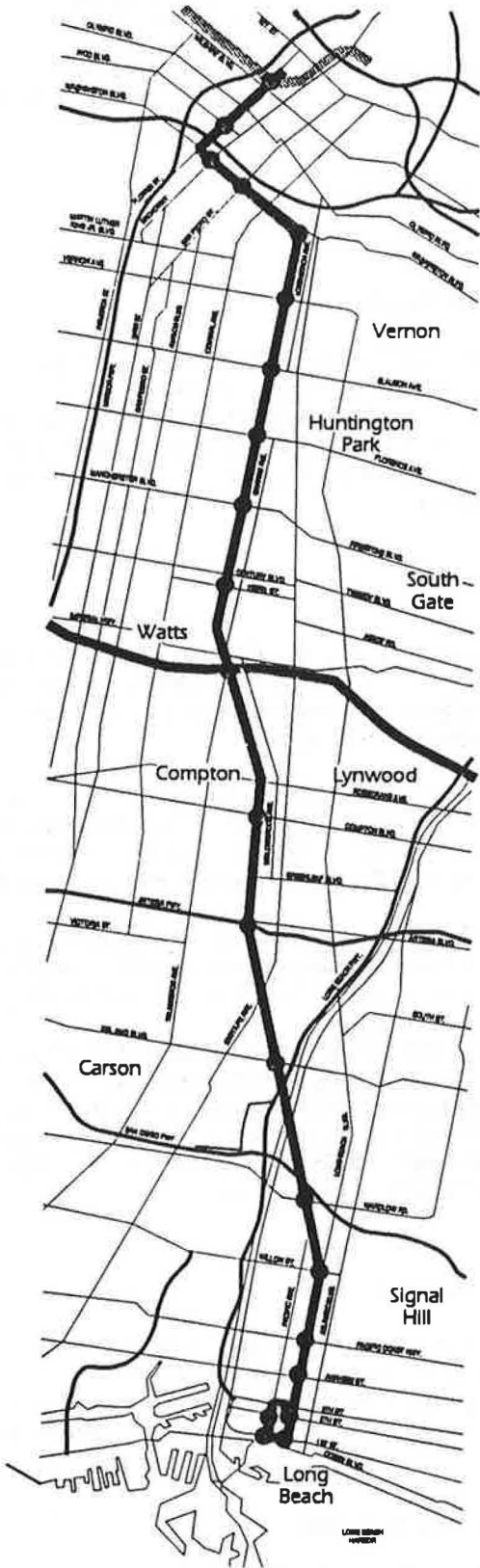


FIGURE 1 Blue Line system map.

route, including the line's subway section in downtown Los Angeles and seven station areas. The stations in the LAPD's jurisdiction are located in the department's Central, Newton, and Southeast service areas.

The Los Angeles County Sheriff's Department has primary law enforcement jurisdiction for approximately 5.5 mi of the route including five of the line's 22 passenger stations. The stations in the sheriff's department jurisdiction are located in the areas served by the department's Firestone, Lynwood, and Carson stations. The system's central control facility (CCF), located next to the Imperial Highway Station, is also in the jurisdiction of the sheriff's department Lynwood Station.

The Blue Line's Slauson Avenue and Imperial Highway stations are located at police service area boundaries. The area on the north side of Slauson Avenue is served by the LAPD's Newton Station, whereas the area on the south side is served by the sheriff's department Firestone Station. The Blue Line station is located on an elevated structure just on the south side of Slauson Avenue. The Imperial Highway Station is located where Imperial Highway forms the boundary between the LAPD's Southeast service area and the sheriff's department Lynwood Station service area.

The city of Compton Police Department has primary jurisdiction along approximately 3.1 route-mi, including two stations located in Compton.

The city of Long Beach Police Department has primary jurisdiction for eight of the line's 22 stations and approximately 6.5 mi of the route. The system's main yard and shop facilities are located next to the line about 4 mi from the line's downtown Long Beach terminal. These facilities are in the jurisdiction of the Long Beach police.

**SECURITY PLANNING APPROACH**

LACTC's approach for planning and providing security for the Blue Line involved the following elements:

- Establishment of goals for system security,
- Establishment of a security subcommittee of LACTC's safety and security committee made up of representatives from the sheriff's department, LAPD, Long Beach police, Compton police, and SCRTD transit police,
- Conduct of an analysis of system security risks,
- Implementation of system design features to mitigate security risks and areas of concern where possible,
- Development of a plan and program for implementing police and security services during construction, prerevenue service testing, and revenue operations, and
- Implementation of the recommended plan and program for police and security services.

Each of these security planning elements is discussed in detail in the following sections.

**SYSTEM SECURITY GOALS**

LACTC recognized the need for effective security early on and developed three security program goals:

1. Provision of a high level of security and well being for patrons, employees, and the general public;
2. Protection of facilities and equipment; and
3. Incorporation of provisions for deterrence, detection, and response to criminal acts in the planning, design, and operation of the rail system.

## SECURITY SUBCOMMITTEE

As preliminary design work for the Blue Line commenced, LACTC established a security subcommittee of its safety and security committee to identify areas of concern and to evaluate and make recommendations about system design features. The subcommittee consisted of representatives from each of the four law enforcement agencies having primary jurisdiction along the Blue Line's route, a representative from SCRTD's transit police, and consultants familiar with rail transit-related security problems and solutions.

The subcommittee evaluated and made specific recommendations concerning the following system design elements:

- Vandal-resistant train window materials;
- Landscaping that would not serve as hiding places for persons illegally entering the right-of-way or station areas;
- Security fasteners requiring the use of a special tool to loosen for vehicles, ticket vending machines, and other accessible locations; and
- Location and type of fencing along the right-of-way.

The subcommittee compiled a photo catalog of all equipment and components made of materials with scrap value, such as copper or brass. Photos were taken from all sides of the equipment and components, taking care to record any manufacturer's markings. This catalog was distributed to LAPD, the sheriff's department, and Long Beach police, and the Scrap Dealers Association. The Scrap Dealers Association cooperated in advising all its members that the catalog was available and requesting that dealers not buy any of the cataloged items. When any thefts did occur, flyers were prepared and distributed through the Scrap Dealers Association, requesting that information on anyone attempting to sell the stolen items be reported to the appropriate law enforcement agency.

## SECURITY RISK ANALYSIS

LACTC developed a security risk analysis methodology for the Blue Line's security planning. It has since been applied to the Green and Red lines currently under development. The methodology presents a structured approach to the identification of potential risks and to the specification of potential solutions and mitigations that might be invoked for each of the identified risks.

### System Elements and Subsystems

The security risk analysis addressed risks related to the following system elements and subsystems:

<i>System Element</i>	<i>Subsystems</i>
Stations	Platform/passenger waiting areas Fare vending equipment Equipment rooms Parking areas Elevators
Yards, shops, and facilities	Main yard and shops Satellite vehicle storage yard Central control facility Parking areas
Vehicles	
Trackways and structures	
Wayside equipment	

## Risks and Targets

For each system element and subsystem, risks likely to result in crimes or infractions were identified.

For each identified risk, the potential target of any resulting crime or infraction was specified as being one or more of the following: passengers, employees, revenue, and equipment and property.

## Severity of Crime

Security risks may be categorized according to the severity of the potential criminal activity resulting from the problem. Specifically the following categories were used for identified risks included in this analysis:

- Serious offenses including homicide or attempted homicide, forcible rape, burglary, robbery, aggravated assault, theft, auto theft, and arson—These offenses are referred to as Part I offenses, according to the Uniform Crime Reporting (UCR) system;
- Less serious offenses such as drug violations, simple assault, vandalism, drunkenness, and disorderly conduct—These offenses are referred to as Part II offenses, according to the UCR methodology;
- Local ordinance violations, including traffic and parking infractions and "quality of riding" violations related to smoking, eating, and playing radios aboard transit vehicles; and
- Incidents such as harassment and abuse, lost children, and stalled automobiles blocking traffic lanes, which do not necessarily involve criminal acts.

## Causes and Effects

Events or conditions contributing to the existence of the identified security risk were listed for each risk.

The potential effects of the criminal acts on rail transit system operations also were listed for each identified risk.

## Solutions and Mitigations

Potential solutions and mitigations for the security risks were organized in the following four areas:

- System design features and criteria,
- Equipment and products designed both to deter and detect criminal activity,
- System operations and scheduling, and
- Police service activities by fully sworn peace officers, uniformed security guards, or fare inspectors not having full police powers, and undercover spotters.

## SYSTEM DESIGN FEATURES

The Blue Line was designed with security systems and elements to enhance security. Design criteria and standards relating to system security were developed and applied. Key security systems and system design elements implemented for the Blue Line were as follows.

### Station Areas

#### *Materials*

Materials used for finishing the stations are graffiti- and vandal-resistant, and designed to be easily cleaned or maintained.

#### *Lighting*

Station platforms and waiting areas are illuminated adequately during hours of darkness and reduced visibility.

#### *Facility Intrusion Detection System*

Sensors have been installed for train control communications and other equipment rooms located in each station, for the end of platform gates at each station, and for doors at train control communications buildings. The sensors are monitored at the CCF by train operations control personnel.

#### *Public Address System*

The public address system provides the capability to give routine announcements and emergency warning information from the CCF to one or more passenger stations.

#### *Closed Circuit Television System*

The closed circuit television (CCTV) system provides visual surveillance of each station's platform, fare vending equipment, and other designated areas. The CCTV system provides for passenger assistance and for enhanced safety and security under certain circumstances. The system permits the images from any one CCTV camera to be viewed at a police dispatching call-up monitor.

#### *Passenger Assistance and Emergency Telephones*

Telephones in the platform and fare vending equipment areas permit passengers to talk directly with operations personnel at the CCF to obtain assistance or report emergencies.

#### *Fencing*

Steel picket fencing has been installed along the line's at-grade sections and at other selected locations.

### Vehicles

#### *Materials*

The materials used for vehicle seating, interior finishes, and exterior finishes are resistant to graffiti and vandalism, and easily cleaned or maintained.

#### *Windows*

Vehicle windows are sized as large as possible and located so that passengers can easily see outside the cars, and persons outside are able to see inside the cars. The windows are made of an impact-resistant, hard-surfaced material.

#### *Radio System*

The radio system provides frequencies for both data and voice transmissions between the CCF and all vehicles. Supervisory and selected control data for train control functions are provided by radio data transmissions. Voice transmission capabilities provide for communications between the CCF and operations and maintenance personnel on trains, at stations, and along the trackway.

#### *Silent Alarm*

A train operator may activate a silent alarm to alert CCF personnel to a problem on the train.

#### *On-Train Passenger Intercom System*

The intercom system permits passengers on a train to have two-way communications with the train operator.

#### *On-Train Public Address System*

The on-train public address system permits the train operator to make routine announcements and provide emergency warning information to passengers.

## CORRIDOR SECURITY EVALUATION

Figure 2 illustrates the crime rates in the cities and unincorporated areas along the Blue Line's route. For security planning, annual crime rates were calculated for each of these cities and unincorporated areas, which were then ranked as low, average, or high crime areas. An "average" crime area has crime rates that are roughly the same as those for Los Angeles County as a whole. A similar analysis of crime rates was done for individual station areas.

The statistical data summarized in Figure 2 illustrate why LACTC became concerned about taking the necessary steps to ensure personal and property security on the Blue Line trains and at its station areas. Without adequate attention to security, projected ridership levels could not be attained. For many of the station areas on the line, the rate of violent

crimes, including homicides, rapes, aggravated assaults, and robberies, was found to be at least three times and as much as five times greater than for comparable areas in other parts of the metropolitan area. In portions of the midcorridor, the high rates of crime were found to be generally gang- and drug-related.

The findings derived from statistical data were confirmed by interviews with law enforcement personnel responsible for police services in the corridor as well as by observations made of security measures implemented by other organizations in the corridor. For example, a recently constructed neighborhood shopping center adjacent to the line's 103rd Street Station has been protected by CCTV cameras, some mounted on high poles to prevent vandalism of the cameras; 8-ft steel picket fencing with electrically controlled gates; an observation "tower" to provide security guards with an unobstructed view of the center and its parking areas; and four uniformed, armed security guards on duty for each shift, 24 hr per day, 7 days per week. In midcorridor areas, numerous buildings, walls, and street curbs were found heavily marked with graffiti. It was anticipated that station facilities in these same areas would also be defaced unless appropriate security measures were implemented.

A representative of one of the law enforcement agencies serving the corridor suggested that the "transit police ride shotgun" on trains operating on the line. Although this response may be viewed as "colorful" or perhaps even "overzealous," it was consistent with LACTC's conclusions from statistical data and other investigations concerning security requirements for portions of the corridor.

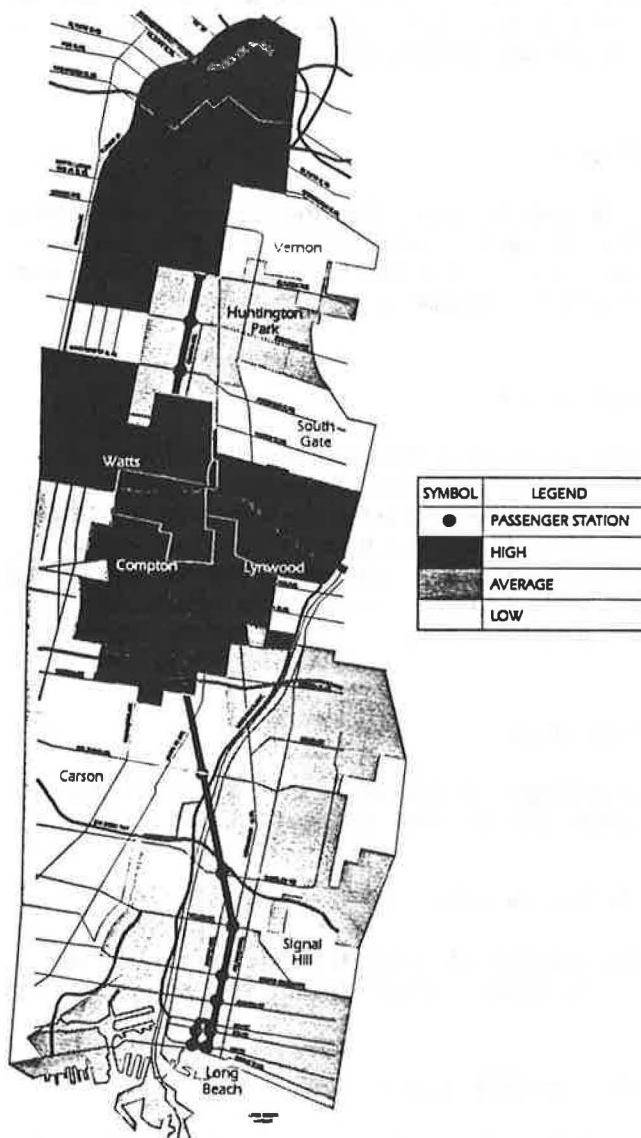


FIGURE 2 Crime rates for cities and unincorporated areas along the Blue Line corridor.

## CONSTRUCTION SITE SECURITY

When the design and construction phase of the Blue Line began, LACTC made a commitment to the residents of Los Angeles that the construction and operation of the system would not unnecessarily cause a safety hazard to the neighborhoods traversed by the system nor would the system cause an increase in crime in the areas. To uphold this commitment, security was as vital a part of the construction phase as it is now in the line's operations phase.

LACTC's construction and systems installation contractors were responsible for providing adequate security for all improvements as they were being constructed. Most major construction contracts mandated that contractors be responsible for the security of their personnel, tools, equipment, and the site in general. Depending on specific site security requirements, contractors were required to provide the following elements to ensure construction site security: fencing, lighting, signs, security personnel, police patrols, and intrusion alarms.

When a contractor was relieved of responsibility for completed or partly completed improvements, LACTC, as the owner, assumed responsibility for protecting and maintaining the improvements. Security was provided by contract security guards at the stations and at the yard and shops area. In addition, the Los Angeles County Safety Police provided patrols for the station areas, the yard and shops area, and the right-of-way as well as police support to the contract security guards.

**IMPLEMENTATION OF POLICE SERVICES**

The Blue Line's operator, SCRTO, has contracted with the sheriff's department for police services. The first year's cost for security services was approximately \$12 million. The sheriff's department has established a transit services bureau for the contract, headquartered at the Blue Line's CCF adjacent to the Imperial Avenue Station in central Los Angeles.

To date, there have been few security-related problems. Sheriff's deputies are highly visible on station platforms and on trains, and the high level of security being maintained has served to discourage criminal activity on the line.

**Blue Line Police Services Staffing**

The sheriff's department transit services bureau has 136 positions, including 123 sworn deputy positions, authorized for Blue Line police services. The authorized positions are as follows.

Position	No.
Sworn deputies	
Captain	1
Lieutenants	3
Patrol sergeants	11
Support unit sergeants	3
Supervising line deputies	5
Watch (dispatch) deputies	6
Detective deputies	5
Foot and car patrol deputies	89
Civilian	
Supervising secretary	1
Clerks	4
Captain's secretary	1
Crime analyst	1
Dispatch room assistants	4
Service assistants	2
<b>Total</b>	<b>136</b>

Contract security guards have also been employed for certain security work assignments. The security guards work under the "on the street" supervision of the sheriff's department. Sheriff's deputies and contract security guards have been deployed generally as follows for Blue Line security functions.

*Sheriff's Department Deputies*

Car patrols are scheduled for the day and p.m. watches. Each patrol operates in one of four predefined patrol zones along the line. One- or two-car patrols may be assigned to each zone.

Deputies are assigned to random foot patrols in each of the patrol zones along the line for the day and p.m. watches. Generally one of the deputies in each zone is responsible for fare inspections.

Deputies are assigned to station area foot patrols at selected stations only on the day and p.m. watches.

*Contract Security Guards*

Security guards are posted at four park-and-ride lots for the day and p.m. watches.

A security guard is posted at the CCF building's main entrance to monitor persons entering and leaving the building's second floor areas. The transit services bureau occupies the building's first floor.

Two security guards are posted at the main yard and shops facility in Long Beach. The guards are on duty for three shifts per day, 7 days per week.

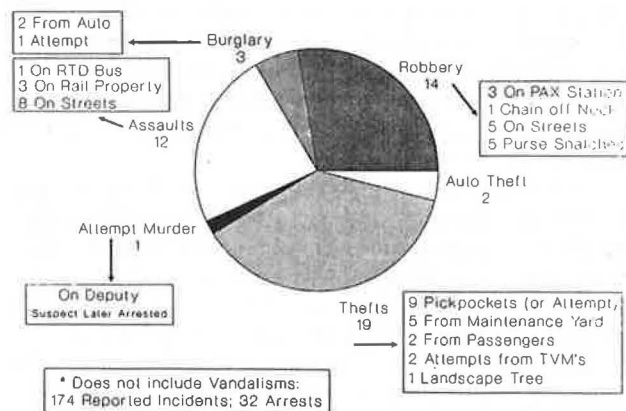
**Blue Line Crime Experience**

As already noted, little transit-related crime has occurred during the line's initial 12 months of operations. A total of 1,351 arrests were made for felony and misdemeanor offenses on the Blue Line during its first year of operation. The number of arrests made by month has varied from 59 in February 1991 to a high of 164 in May 1991.

Few violent crimes, including homicides, rapes, aggravated assaults, and robberies have occurred. Most of the violent crimes reported for the line's initial 12 months have been for aggravated assaults, primarily in connection with fights on trains and at stations, and assaults on deputies during arrests for other crimes. A total of 3 burglaries, 19 thefts, and 2 automobile thefts have been reported on the Blue Line during the line's first year of operations (see Figure 3).

In the first 12 months 19,106 citations were issued for infractions such as fare payment violations, quality of riding violations, and traffic-related violations. Figure 4 provides a breakdown. The fare evasion rate has averaged 0.39 percent. Deputies have been checking between 30 and 40 percent of the passengers on trains. In June 1991, deputies identified 1,702 passengers not paying fares on the line. Of this total, 785 passengers were cited for fare evasion or misuse of fare media, and the remainder were warned and advised about the line's fare payment requirements. The fare evasion rate increased to a high of 0.66 percent in May 1991 and was estimated to be 0.64 percent for June 1991. The fare evasion rate has increased as ridership has increased following the opening of the line's subway segment into downtown Los Angeles.

Gang-related problems have not occurred on the line, although the line runs through areas where there are numerous gangs and frequent gang-related criminal activities.



**FIGURE 3 Summary of Blue Line crimes, 1990-1991.**

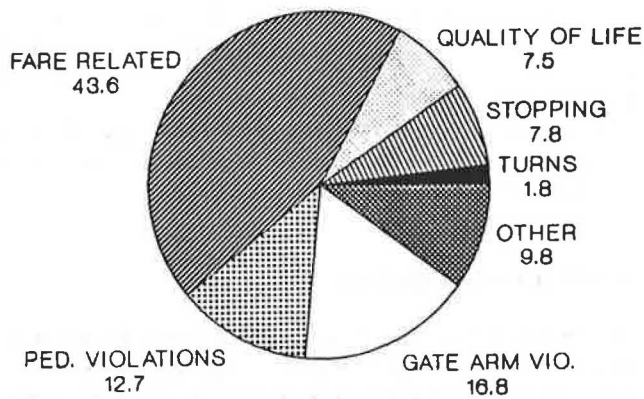


FIGURE 4 Blue Line citations percent by type, 1990-1991.

No particular problems have arisen with graffiti on the trains or the stations, but the sheriff's department is making arrests for vandalism and related property damage offenses when it has been possible to identify the persons responsible for the damage. In June 1991, 23 incidents of vandalism were reported by the sheriff's department, 19 for marking vehicle windows.

To enhance perceived security, LACTC has established an aggressive antigraffiti policy. Maintenance crews have been contracted to inspect for graffiti along the line and to remove it.

LACTC recognized that the perception of adequate security on the Blue Line would have a significant impact on the line's ridership. The perceptions of residents in the Blue Line corridor concerning "fear of crime" decreased from 16 percent in 1989 before the Blue Line's opening to 4 percent in 1991 after the line had been in operation for several months. Clearly the security program has changed the attitudes of the general public markedly concerning the possibility of risks to personal safety.

#### Coordination with Local Police Departments

Providing police services for the Blue Line has required cooperation and coordination among the sheriff's department transit services bureau and the local police departments with primary jurisdiction in the communities traversed by the line. The sheriff's department has executed a memorandum of understanding (MOU) with each of the three city police departments working in the corridor. The MOUs call for general and traffic law enforcement responsibilities to be separated generally as follows.

The sheriff's department is responsible for handling crimes or incidents occurring on the trains or in station areas; thefts of rail system property and any vandalism to rail system property; accidents involving trains and pedestrians not at controlled crossings or intersections and only at locations where the right-of-way is fenced to restrict access to the tracks.

The city police departments are responsible for handling crimes or incidents not originating on trains or rail system property, but that continue onto trains or rail property; crimes occurring on the right-of-way that do not involve train pas-

sengers; accidents at grade crossings involving trains and vehicles; and accidents involving trains and pedestrians at controlled crossings, intersections, or at other locations where the trains are running in a roadway.

#### FUTURE RAIL SYSTEMS DEVELOPMENT

LACTC has embarked on the development of a countywide rail transit system consisting of more than 300 mi of light rail, heavy rail, and commuter rail services to be completed by the year 2020.

Security will be needed for each of the transit lines as they are constructed and then during revenue operations. Planning is underway that takes into account the fact that each line has certain unique operating and design characteristics that result in varied security risks. For example, one of the lines will provide parking spaces for nearly 7,700 automobiles in 25 parking lots at 13 of the line's 17 stations. Providing security for parked cars will be a major concern for this line's security services provider.

In addressing the security requirements of the transit lines under development, LACTC has identified several key areas of concern and issues to which special attention is being directed.

#### Level of Security

How much security is necessary for the Blue Line? And for the rail transit and commuter rail lines under development? The first year's cost for police services on the Blue Line was approximately \$12 million or nearly \$1.50 per passenger transported. LACTC Executive Director Neil Peterson has summarized LACTC's view of the need for adequate security:

We have to have the respect of the public. Polls say people want [security] regardless of age, ethnic group or income . . . we hope to overinvest in security (1).

#### Police Services Provider

As already noted, SCRTD has contracted with the sheriff's department for Blue Line police services. It is likely that other law enforcement agencies, perhaps including the SCRTD transit police and LAPD, will become the primary police services providers for other transit lines.

#### Fare Inspections

The Blue Line system is barrier free, and uses a self-service approach for collecting fares. Fare inspections are done by sheriff's deputies. Both the Red and Green lines will use the same approach. For all three lines fare inspection duties may be carried out by deputies or other sworn police officers, as is currently done for the Blue Line, or alternatively by uniformed fare inspectors who are responsible only for checking fares.

Each approach has advantages and disadvantages. The use of fully sworn and trained deputies for fare inspections may



be an inappropriate use of their time. Fare inspections are most effectively done as a separate function because of the need to maintain controls on the number of fare inspections being done in a random manner, and because fare inspections cannot be done in an effective manner at the same time as other police duties. In addition the cost of using fully sworn police officers for making fare inspections is significantly higher than the cost of using inspectors.

The use of nonsworn inspectors provides greater flexibility for scheduling split and short work shifts, so that the desired inspection rates can be obtained for all hours of operation. A force of inspectors could be effectively assigned to any of the transit lines as necessary without the need to consider which law enforcement agency was providing primary police services for the line.

However, passengers will probably be more inclined to refuse cooperation to fare inspectors than to deputies, which could result in higher fare evasion rates and an increased number of disputes on trains and station platforms. In addition, the presence of additional deputies on the trains for fare inspections increases both the actual and perceived level of security for the system.

Furthermore police officers inspecting fares may observe more serious offenses and infractions and be able to immediately take appropriate actions.

And finally certain supervisory and clerical functions may need to be duplicated if fare inspections are done by a separate force of inspectors.

#### **Coordination with Police Departments**

With the continuing growth of public transit services in the county, the need to ensure that all public transit services are safe for passengers and as crime-free as possible is increasing. Furthermore sales tax revenues from the recently passed Proposition C will provide \$20 million a year specifically for improved and expanded rail and bus security in the county. Currently more than 80 operators provide public transit and paratransit services in Los Angeles County. They operate through areas policed by nearly 50 different law enforcement agencies. Only the SCRTD, the county's largest transit pro-

vider, maintains its own security force, which consists of approximately 160 officers.

LACTC is exploring approaches to coordinate transit-related police services throughout the county, possibly through the establishment of a metro police management group. Special attention will be directed to requirements for transit-related crime reporting.

#### **Construction Security**

In early 1991 LACTC elected to make its Red and Green line's construction management contractors directly responsible for construction security at locations and for time periods when finish construction and systems installation contract work is under way. This approach was implemented to eliminate confusion over security responsibilities for completed work, for areas where several contractors are working at the same time, for periods of time when no contractors are working in an area, for systems being installed by one or more contractors, and for other circumstances in which security provided by construction and systems installation contractors might not be adequate, resulting in additional costs and possible delays.

#### **CONCLUSION**

LACTC is proud of its success with the Metro Blue Line, which is being operated with an extra emphasis on security. The emphasis on security has been significantly greater than for typical transportation projects.

The Blue Line is an example of how security can be provided and maintained despite negative public perceptions, crime statistics, and press reports. The Blue Line is a nearly crime-free ribbon of transportation, carrying more than 30,000 passengers per day through some of the most notorious crime areas of Los Angeles County.

#### **REFERENCE**

1. N. Peterson. Building a Rail Line Means Making Passengers Happy. *Metro Magazine*, May/June 1990.