

**STATEMENT OF DOROTHY W. DUGGER  
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SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT**

**UNITED STATES SENATE  
COMMITTEE ON GOVERNMENTAL AFFAIRS  
HEARING ON “RIDING THE RAILS: HOW SECURE IS OUR PASSENGER  
AND TRANSIT INFRASTRUCTURE?”**

DECEMBER 13, 2001

Good morning Mr. Chairman and members of the Committee. My name is Dorothy Dugger and I am Deputy General Manager of the San Francisco Bay Area Rapid Transit District, also known as “BART.” I appreciate the opportunity to discuss our efforts to provide safe and secure public transportation for residents of and visitors to the San Francisco Bay Area in this dramatically altered environment and the federal role in helping safeguard fixed guideway public transit systems.

Mr. Chairman, your letter of invitation requests information on BART’s efforts to ensure the security and protection of both passengers and rail infrastructure, and asks for input on what the federal government’s role should be in these efforts. To begin with, it may be helpful to understand the physical geography of the BART system and some of the inherent difficulties we see associated with tightening security for rapid rail systems. By definition, rail rapid transit systems are characterized by high and concentrated levels of service and use supported, in part, by easy, convenient and open access to multiple facilities throughout a region. In other words, many of the security measures that may be available to other modes of transportation are impractical in the high volume, multi-access point environment of a rapid transit system.

This puts our industry in somewhat of a unique position and reinforces the need to continue to work in partnership with federal agencies to identify and share best practices, share intelligence information, expedite the development of state-of-the-art equipment and technologies, especially with regard to detection of both physical intrusions and nuclear, biological and chemical material releases and, of course, to secure the funds to implement security enhancements.

BART is a four-county, rapid rail transit system with 39 stations located on both sides of San Francisco Bay. We carry approximately 320,000 weekday passengers to work, school, medical appointments and cultural and sporting events. We employ roughly 3,500 people, including a fully staffed police department of 185 sworn officers and 75 civilian employees. Our system includes 95 miles of double track, nearly equally divided

between aerial, subway and at-grade level trackways. Next year, thanks in part to federal New Starts funding support, construction of our San Francisco International Airport Extension Project will be complete, which will add another 8.7 miles and four stations to the core system.

One of the most critical assets of the BART system and visible icons of the Bay Area is the Transbay Tube, a four-mile, underwater tunnel that connects the East Bay's major residential and urban communities with San Francisco's primary financial and commercial centers. Following the 1989 Loma Prieta Earthquake, when the damaged Bay Bridge was closed for nearly a month, BART service via the Transbay Tube provided the only practical link between the East Bay and San Francisco. Today, during the peak commute hour, BART carries more Transbay riders than the Bay Bridge carries vehicles. In other words, without BART and its Transbay Tube, another entirely new deck of the Bay Bridge would be needed to handle today's commute traffic. To deliver this level of service, BART operates trains from four different East Bay lines every 2.5 minutes through the Transbay Tube. Each of these trains carries between 700 and 1,000 riders.

Two other critical areas of the BART system worth noting are the three-mile long Berkeley Hills Tunnel and the Oakland Wye, which is an underground area where all train lines intersect. The Wye is accessed by three different portals and is crucial to the operation of all trains in the system.

Emergency planning, training and drills are all crucial components of BART's efforts to ensure the safety and security of our passengers, employees, infrastructure and system operations. Protocols for effective communication and crisis management among BART personnel and other first responders from surrounding jurisdictions are fundamental to our safety efforts. An immediate, coordinated response among first responders will save lives and protect property. BART has worked to make certain that this would occur, recognizing that a highly pressurized, volatile situation requires quick thinking, sound decision-making and immediate action to notify appropriate authorities, contain the scene, protect people and equipment and activate a unified command and communications system among first responders.

BART has been involved in emergency planning since revenue service began in 1971. As times have changed and new potential threats have emerged, our planning and response protocols have evolved accordingly. To begin with, we have a detailed Emergency Plan in place, which addresses responses to a variety of potential natural disasters (earthquakes, fires, floods, high winds) and criminal activities (e.g., explosions, bomb threats, hostage taking). The Plan is updated regularly and emphasizes coordination among District employees and other first responders, using the Incident Command

System (ICS) protocol.

Emergency training of Plan procedures ranges from in-depth multi-casualty drills with multiple first response agencies to resource training and frequent system “orientation” tours for fire department personnel. Drills are often practiced at tunnels or other system locations vulnerable to more serious consequences in the event of a fire or explosion.

BART holds bi-annual multi-casualty drills involving BART Police, station agents, train operators and operations central control personnel to hone first response capabilities in the event of a bomb threat, nuclear incident, deployment of a biological agent or other terrorist activity. Depending on the nature of the simulated event, these elaborate drills require BART and local law enforcement, fire department and emergency medical and public health personnel to coordinate evacuations, treat injuries, fight fires, set up emergency command and communications posts, mitigate damage to infrastructure and restore order. The most recent multi-casualty drill tested emergency response capabilities to a simulated bomb detonation in the Transbay Tube.

This year, we held three fire drills in the Berkeley Hills Tunnel. And, we have on the order of 60 – 80 orientation tours annually to familiarize fire fighters with third rail safety and emergency shut-off procedures along with the layout and safety features of various stations, trackway areas and train cars. Finally, BART periodically holds impromptu, in-house drills on each rail line to test transportation field and operations central control personnel on a variety of scenarios.

Following the Tokyo subway sarin attack in 1995, the District updated the Emergency Plan to address the potential use of nuclear, biological and chemical (NBC) weapons. An NBC Response Plan was developed, which, like the Emergency Plan, follows the same format of training and drilling employees with response protocols and coordination with other first responders.

Along with these emergency preparedness plans and drills, BART personnel have been trained at the U.S. Army’s chemical school, through the Department of Defense Domestic Preparedness Program and the Federal Transit Administration First Responder Training Center, among other courses.

We routinely hold or participate in “table top” exercises with other first responders from surrounding jurisdictions to share information, raise awareness of emergency response protocols, improve coordination and identify areas that need improvement. Some of these exercises have been sponsored by the federal government; others by the State Office of Emergency Services or by local agencies.

With regard to preparing for potential terrorist activity, BART has focused on prevention of terrorist acts on our system and mitigation of the consequences in the event that an act does occur. Preventative measures include “target hardening” to make key rail infrastructure facilities and stations less attractive potential targets and intelligence-related information sharing with other organizations.

Among the “target hardening” strategies that BART had already identified prior to the September terrorist attacks is the installation of closed-circuit television (CCTV) systems at every underground station platform. These live video feeds come directly back to the BART Police Command Center and Operations Control Center and serve as an important tool for detection and diagnosis of an incident in progress. Cameras have been installed on trains as a deterrent to crime and a follow-up investigative tool. The presence of the surveillance equipment may also help to diminish the potential for acts of terrorism.

Another “target hardening” strategy is improved use of “crime prevention through environmental design” whereby all of the physical traits of an area from landscaping to lighting to building materials are oriented toward crime prevention. BART has also been involved in several regional groups, which share intelligence information that may be helpful in anticipating terrorist attacks.

In terms of mitigation measures if an incident does occur, as discussed, BART has put substantial effort into planning, training and simulating first response actions in close cooperation and coordination with other local jurisdictions’ emergency response teams. We also actively participate in a working group known as the Bay Area Anti-Terrorism Task Force.

Despite all of these prevention and mitigation efforts being in place, the terrorist attacks of September 11 revealed a new dimension to the potential for criminal acts of terror. As a result, BART has taken a number of steps to further enhance the safety and security of our system. Additional security needs have been identified and BART has retained a consultant with nationally recognized expertise in transportation and anti-terrorism to assist us with a comprehensive update of our system threat and vulnerability analysis. This analysis is designed to make sure that no area is overlooked and that limited resources are productively maximized.

Immediately following the September attacks, BART instigated a two-pronged approach to enhance security system wide using stepped-up policing strategies and increased “target hardening” at the most critical points on the system. We stationed BART personnel at key system access points, increased employee visibility system wide, especially uniformed BART Police presence; conducted “sweeps” of trains at selected

locations to check for suspicious packages or suspicious activities, removed trash receptacles at underground platforms, closed restrooms and manually controlled selected elevators. We disseminated information to employees and customers and encouraged people to remain alert to unusual or suspicious circumstances and to report such activities to BART Police. BART Police officers worked 12-hour days, 6-day shifts to keep up with these increased staffing needs.

With respect to additional “target hardening,” we have installed intrusion alarms at ventilation buildings and are evaluating tunnel intrusion detection technology. We are approximately four months away from testing two different technologies for tunnel intrusion detection using motion detectors and alarm systems. Efforts to protect train control and communication systems are focused on hardening the BART Operations Control Center located in our main administrative building. Protecting wayside signaling and communication equipment is more challenging given the amount and nature of the territory involved. Our strategy here is focusing on better securing of critical field equipment and developing rapid recovery strategies in the event that this equipment is disabled.

*We are also focusing on improving awareness among our employees and customers. Counter terrorism is not just the responsibility of our police officers. Borrowing some ideas from our colleagues in London and New York we are engaged in a comprehensive effort to educate/remind front-line employees of the critical role they can play in identifying and reporting unusual or suspicious activity or events. Given the pattern of terrorist reconnaissance, research and rehearsal of attacks in advance, our focus is on interrupting or detecting a planned action and making our system as unattractive a target as possible.*

As you may know, the Federal Transit Administration is undertaking an immediate assessment of individual transit properties’ security needs. In response to the FTA, BART has developed a list of equipment needs and physical improvements to existing facilities that are designed to ensure the continued safe operation of the system.

We have identified approximately \$68 million in security-related needs, which are itemized and attached to this testimony. Most of these investments are one-time only capital expenditures designed to improve monitoring and detection capabilities and upgrade other physical security features using state-of-the-art technologies and material resources. Thus far, in the absence of such resources and equipment, BART personnel have been relied upon to perform extra security functions. This becomes problematic because over-reliance on human resources is not physically or financially sustainable over the long haul.

The first priority is protection of the underwater Transbay Tube and other critical BART corridors such as the Berkeley Hills Tunnel and the Oakland Wye. For these most vulnerable segments of the BART system, the installation of CCTV and intrusion alarms have been identified as a priority need. In addition, physical security improvements are necessary at BART's main administrative headquarters building, where the Operations Control Center and the police dispatch center are housed.

The security of the BART Operations Control Center is paramount to all of our operations and development of redundant capabilities for these vital control and communication systems would provide essential backup capability in the event that this facility is incapacitated. Physical barricades placed at strategic locations around our headquarters are another security measure that would protect against an attack using vehicle born explosives. In other areas, we need to install updated security "keyless" entry devices at BART administrative offices, stations and maintenance facilities.

To summarize, BART security efforts have focused on three main areas: continued emphasis on emergency preparedness, training and drills in close coordination with other first responders; "target hardening" at pivotal locations on the system, and improved vigilance among our 3,500-strong workforce.

With regard to the federal government's role in safeguarding rail transit systems, BART shares WMATA's position that public, fixed guideway rapid rail transit systems need to be recognized as an important resource in our domestic national security efforts. Rail transit systems carry vast numbers of people, provide mobility throughout large metropolitan areas and provide lifeline transportation service in times of crisis, as was recently demonstrated in New York and Washington, D.C. and following the 1989 earthquake in San Francisco. Rail transit systems are highly valuable public infrastructure assets that would be extraordinarily expensive to replace. These are easily accessible, public facilities that in some areas serve as highly visible, recognizable icons that could be viewed as potential targets.

Given the heightened security we now face, BART recommends federal support for three critical areas of need for fixed guideway rail transit systems. First, we urge Congress to provide funding support for counter-terrorism measures such as new technologies and equipment. The costs of these new unforeseen needs are simply beyond the capabilities of the limited resources available to us. We also encourage continued federal funding for security-related training programs such as the DOD first responder training program offered under the Nunn, Lugar, Domenici legislation. BART personnel have benefited directly from this outstanding program and we thank you very much for having enacted

it. Finally, we strongly encourage Congress to continue Department of Energy funding through the national laboratories for new technologies that can detect chemical and biological agents on fixed guideway transit systems. There are detection systems already under development and, the sooner these are tested and implemented nationwide, the better.

Again, Mr. Chairman and members of the Committee, thank you very much for the opportunity to testify today. I would be happy to respond to any questions you may have.

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Attachment 1

**SAN FRANCISCO BAY AREA RAPID TRANSIT DISTRICT**  
Proposals to Increase Security

**DETECTION AND PROTECTION**

**COST**  
**(Millions)**

Installation of Closed Circuit Television (CCTV) and intrusion alarms at entrances to the District's most vulnerable tunnels and underground areas.

\$1.4

Enhance physical security of offices, stations, and maintenance facilities by upgrading all locks to electronic lock technology.

\$5

Improve physical security at Districts main administrative office building which houses the operations control center and police dispatch center.

\$.2

Install CCTV at all station entry points.

\$3

Install intrusion alarms at all personnel access points to underground portions of the system.

\$ .5

Install CCTV, hardened perimeters, and improved entry controls at all maintenance/storage yards.

\$2

Improve intrusion protection system on all above ground right-of-ways, including an enhanced barrier system and/or electronic alarms.

\$12

**TOTAL:**

**\$24.1**

Attachment 2

## SECURITY ENHANCEMENTS

### **COST (Millions)**

Purchase mobile command post vehicle.

\$ .5

Develop redundancy capability for BART's communication and train control system.

\$5

Purchase personal protective equipment, i.e., escape masks suitable to use in chemical vapor environments.

\$ .4



Establish an alternative Emergency Operations Center (EOC) with the capability to also function as a fully operational operations control center.

\$30

**TOTAL**

**\$35.9**

Attachment 3

### OPERATIONAL AND STAFFING STRATEGIES

#### **COST/per year (Millions)**

Additional police officer staffing to allow sweeps of all trains entering the Transbay Tube.

\$3.6

In the absence of alarms and physical protection at vulnerable portals and other access points, additional personnel to staff these locations.

\$2.8

Additional personnel for full-time monitoring of CCTV cameras.

\$1.7

**TOTAL:**

**\$8.1**

DOROTHY W. DUGGER  
Deputy General Manager  
**San Francisco Bay Area Rapid Transit District**

**Dorothy W. Dugger has served as Deputy General Manager of BART since 1994. She joined BART as Executive Director of External Affairs in 1992. During her**

**tenure, BART has received a full funding grant agreement and is well into construction of a \$1.4 billion, 8-mile extension of the BART system to serve San Francisco International Airport – an effort in which Ms. Dugger has been intensively engaged.**

Ms. Dugger's career spans almost thirty (30) years of public policy and public service experience, including ten (10) years with the Port Authority of New York and New Jersey, where she served variously as the Authority's Director, Deputy Director and Government Affairs Representative in the agency's Government, Community and Public Affairs Department.

Ms. Dugger also worked in state government as Assistant to the Governor, State of New Jersey, in the Governor's Washington, D.C. office, where she represented the Governor before Congress and Federal agencies. She also served as Assistant to the Deputy Commissioner, New Jersey Department of Environmental Protection; Legislative Director of the American Civil Liberties Union of New Jersey, and in staff positions in campaigns for Federal, State and local elective offices.