

28265463

Final Report  
81152-201

STUDY OF PUBLIC FIRE FIGHTING  
CAPABILITIES AND REQUIREMENTS

FOR

THE METRO RAIL PROJECT

PREPARED IN COOPERATION WITH

THE SCRTD FIRE/LIFE SAFETY COMMITTEE

by

Kaiser Engineers California (California) Corporation and  
Gage-Babcock & Associates, Inc.

August 1983

The preparation of this document has been financed in part through a grant from the U.S. Department of Transportation, Urban Mass Transportation Administration, under the Urban Mass Transportation Act of 1964, as amended, the State of California, and the Los Angeles County Transportation Commission.

## CONTENTS

	<u>Page</u>
1. INTRODUCTION	1
1.1 Foreword	1
1.2 Purpose of this Study	1
1.3 Scope of Study	1
2. SUMMARY OF SURVEY	3
2.1 General	
2.2 Fire Supression/Medical Aid Equipment	3
2.3 Training	3
2.4 Communications	4
2.5 Inspection Program	4
2.6 Assumptions of Transit System Configuration	4
3. CONCLUSIONS	6
4. RECOMMENDATIONS	7
4.1 General	7
4.2 Transit Facility Recommendations	7
4.3 Fire Service Recommendations	10
4.4 Joint Transit System and Fire Services Recommendations	11
5. FIRE SERVICE SURVEY DETAILS	14
5.1 General	14

APPENDIX A City of Los Angeles Fire Department Service Survey

APPENDIX B County of Los Angeles Fire Department Fire Service Survey

## Chapter 1

### INTRODUCTION

#### 1.1 FOREWORD

This report contains the Fire Service Survey and conclusions and recommendations relative to the fire-fighting capabilities of the Los Angeles City Fire Department and the Los Angeles County Fire Department in relation to the Metro Rail System (hereafter referred to as "the System").

#### 1.2 PURPOSE OF THE FIRE SERVICE SURVEY

The purpose of the Fire Service Survey was to conduct an objective study and report on the ability of the Los Angeles City and County Fire Departments to provide the fire protection, rescue, and medical services for potential emergencies that may occur on the System. The need for providing additional personnel and/or equipment is also included.

#### 1.3 SCOPE OF STUDY

The scope of this study was to determine the fire response capabilities of the Los Angeles City and County Fire Departments. The need for SCRTD to provide additional personnel or equipment, or both, has been determined and quantitative recommendations are included in this report.

The evaluations were based on the standards of nationally recognized organizations and the subjective judgment of the persons preparing this study. In all instances, the anticipated needs and configuration of the System were the determining factors in the conclusions and recommendations contained in this report. Consideration was given to currently planned conditions as well as to foreseeable future service levels.

To accomplish the objectives of the study, a survey questionnaire was developed to secure data on operations and resources. This questionnaire was presented to the fire service jurisdictions for completion. The survey covered alarm receipt and dispatch facilities and operations, fire fighting apparatus, equipment and staffing, emergency medical services, resource equipment and activity, normal alarm response assignments, special equipment anticipated as necessary for transit system emergencies, communications, and fire prevention programs (see Chapter 5 of this report).

The study was confined to the jurisdictions within the planned 18.6-mile System boundaries. Emergency situations involving at-grade, below-grade, and aerial facilities as well as yard and shop facilities were anticipated. Consideration was given to emergency medical aid services as well as to fire control and suppression (fire-fighting) capabilities.

## Chapter 2

### SUMMARY OF SURVEY

#### 2.1 GENERAL

The survey questionnaires are included at the end of this report (see Chapter 5). This chapter is a brief narrative summary of the information gathered from the completed questionnaires.

Fire suppression and emergency medical services for areas through which the System will pass are provided by the full-time, paid personnel of the Los Angeles City and County Fire Departments. These fire agencies are among the largest in the United States and have extensive personnel, engines, ladder trucks, and rescue vehicle resources upon which to draw.

#### 2.2 FIRE SUPPRESSION/MEDICAL AID EQUIPMENT

The typical fire apparatus that respond to reported fires in commercial structures are three engines and two ladder trucks in the City and four engines and one ladder truck in the County. The typical response to any reported structural fire is at least two engines and one ladder truck. Engine company and ladder company staffing varies from four to five people.

The Los Angeles City and County Fire Departments provide emergency medical services with paramedics that respond in rescue vehicles. Transportation of patients to medical facilities is either through fire department vehicles or private ambulance services. The type of medical emergency call determines the equipment and manpower levels required for response.

In general, responses provided should be adequate for anticipated emergencies. Based on the study of Los Angeles' City and County Fire Departments, the fire apparatus now being used are equipped to handle common fire emergencies. Special pieces of equipment may be required to respond to major problems or those unique to the SCRTD Metro Rail System. This is addressed in Chapter 4, Recommendations, Section 4.3, Fire Services Recommendations.

#### 2.3 TRAINING

Although a detailed analysis was not made, based on the responses to the questionnaires and general discussions with fire department personnel, there are indications that the

City and County Fire Departments have developed and are carrying out good training programs. They have well-equipped training centers and are conducting regularly scheduled drills. The fire service personnel are well trained, but will need special training to handle Metro Rail emergencies.

#### 2.4 COMMUNICATIONS

Both the City and County Fire Departments have emergency communications facilities with personnel on duty at all times. These facilities are designed to receive emergency fire and resource telephone calls and provide radio communications with fire-service apparatus. The communications offices do not monitor public fire alarm systems (street fire alarm boxes) or private fire alarm systems. The communications centers are interconnected by private-line telephones and cross-monitor radio communications.

The fire services are equipped with handi-talkie units for communication in the fire locale, which is essential for supporting and coordinating any sizeable emergency operation. The departments also have access to a common radio frequency to use in the event of a multiagency operation. This reliance on radio communication will dictate transit facility requirements as discussed in Chapter 4, Section 4.4.

#### 2.5 INSPECTION PROGRAM

Both fire agencies have ongoing fire prevention inspection programs. The inspection programs require a yearly inspection of all commercial and commercial/residential properties. Occupancies determined as high fire and/or life hazard are inspected several times each year. Technical assistance for inspections is provided through the fire prevention bureaus. Since the bulk of Metro Rail facility inspections will be the responsibility of Metro Rail personnel, any additional inspection work load placed on the fire services will be commensurate with Metro Rail and jurisdictional fire service's policy and procedures.

#### 2.6 ASSUMPTIONS OF TRANSIT SYSTEM CONFIGURATION

The recommendations in this report are based on fire-related criteria that are still being developed; e.g., fixed fire detection, alarm, and control systems in selected areas; emergency access; emergency trip stations; and emergency lighting. The need for supplemental equipment and personnel may change as a function of any changes in the assumed features discussed above.

For the purposes of this study, the Fire/Life Safety implications are treated as an integrated system. Changes in one component could change other components and a re-evaluation may be required. Significant Fire/Life Safety components are:

- o Fuel loads
- o Fuel arrays
- o Area and height
- o Separations
- o Fire resistivity
- o Fixed protection systems
- o Ventilation
- o Exit facilities
- o Exit configuration
- o Patron loads
- o Operations
- o Vehicles
- o Communications
- o Emergency access
- o Facility monitoring.

## Chapter 3

### CONCLUSIONS

It is concluded that the Los Angeles City and County Fire Departments appear to have the capabilities for providing adequate fire and emergency medical services for the System. However, due to certain unique characteristics of a transit system, additional supplemental equipment and personnel training will be necessary.

The Fire Departments have established training programs that can be expanded to provide for anticipated emergencies peculiar to the SCRTD Metro Rail System. It is clear that the specific requirements for additional equipment, training, and response agreements need to be developed through a program of joint participation of fire, security, and transit personnel. Recommendations for special equipment and special training of personnel are discussed in the following sections of this report.

Due to the unique fire suppression tactics, which may be required in a possible underground trainway fire whereby entrance to the trainway will of necessity be from two opposite entry points, close tactical coordination between jurisdictions is needed. Currently, Los Angeles' City and County Fire Departments have a viable mutual aid plan wherein each department may request and receive additional resources to meet emergency demands. These plans will require evaluation and possible additional levels of understanding to cope with the probability of two fire jurisdictions responding to the same emergency.

## Chapter 4

### RECOMMENDATIONS

#### 4.1 GENERAL

As a first step toward determining the need for additional equipment and/or personnel to supplement the fire service or life safety efforts of the various jurisdictions, it was necessary to evaluate and ascertain the availability of those public fire services to meet the anticipated needs of the System to provide a level of response commensurate with contemporary services of other metropolitan transit systems. Staffing, apparatus, equipment training, communications, and other salient features of the fire services were determined and evaluated. The fire and rescue experiences of other transit systems were reviewed to determine needs, to anticipate emergency problems, and to develop the following recommendations.

Effective fire fighting is the result of careful coordination between Fire Department fire-fighting apparatus, procedures, and personnel and, most importantly, the facility where the fire occurs. Therefore, reasonable provisions in the System facilities for fight-fighting conditions must be addressed before specific fire service recommendations can be made. Therefore, the responsibilities and needs of both the fire services and the transit property are discussed and include, respectively, recommendations for the transit facility, the fire services, and the joint responsibilities.

#### 4.2 TRANSIT FACILITY RECOMMENDATIONS

##### 4.2.1 Intermediate Emergency Access

Fire Departments serving the Los Angeles area generally have typical self-contained breathing apparatus, sufficient in quantity and duration for the types of fires commonly encountered in the community. These units are rated at 30 minutes, giving an effective operating period of about 17 minutes. The breathing apparatus are essential for fire fighting in areas with heavy smoke or toxic gas atmospheres. Circumstances such as these have been experienced in underground sections of other transit systems, and can be expected to occur in underground portions of the Metro Rail System. The fire services and the District will have to agree on which breathing apparatus will best meet the needs of emergency personnel during fire situations and how to utilize most effectively the existing state-of-the art equipment.

#### 4.2.2 Fire Hose Connections

Previous experience at other transit systems indicates that standpipe systems with fire service hose connections are very desirable. It is recommended that fire hose connections be provided in each station and at regular intervals in the tunnels to facilitate emergency response capability by fire service personnel. Hand-stretching hose against the flow of exiting patrons and impeding their movement during an emergency situation can be avoided with the use of standpipes.

#### 4.2.3 Fire Vehicle for Transit Yards

The monetary value of the transit vehicles and their operational importance emphasizes the need to quickly confine incipient fires. Manual hose laying will probably be necessary. To speed up the response to incipient fires, a small fire vehicle, manned by trained District personnel from yard and shop crews, may be necessary. This vehicle will be for in-yard use with limited, but adequate, quick-attack capability and maneuverability. Generally, an extra-small, narrow-bodied, pickup-style, gasoline engine driven truck with the following equipment mounted on the vehicle would suffice:

- o 200 feet of 2-1/2-in. double Dacron jacket hose with Pyrolite couplings
- o 100 feet of 1-1/2-in. double Dacron jacket hose with Pyrolite couplings
- o One gated wye, 2-1/2 in. x 1-1/2"
- o One 2-1/2-in. combination fog-stream-off nozzle
- o Two 1-1/2-in. combination fog-stream-off nozzle
- o Two hydrant wrenches
- o Two universal hose spanners
- o One pickhead axe
- o One pry bar
- o Two 2-1/2-gallon pressurized water extinguishers
- o Two battery-powered hand lights
- o One 20-lb dry chemical extinguisher

- o One CO<sub>2</sub> unit with two 50-lb manifold units, 50 feet of hose, and nozzle on reel
- o One deck gun, mounted and demountable, "Ozzie" Akron Brass type, with a 2-1/2-in. inlet and a 1-1/2-in. outlet
- o Two spotlights mounted on the truck and powered by truck system
- o One emergency light and siren
- o One rope, 50-foot manila, 1/2-in. diameter

#### 4.2.4 Hand Cars or Folding Carts

Fire Department operations on any serious fire or rescue operation could require movement of equipment and tools down the trackway to the scene. If the firemen had to carry this equipment, their effectiveness and efficiency at the scene would be reduced. It is recommended that either a rescue train or District-provided hand cars or folding carts be used in the operational scenarios for emergency response.

#### 4.2.5 Emergency Transport Vehicle

Fire vehicle access to the trackway is not feasible. However, consideration should be given to providing a means of transporting seriously ill or injured people from underground to the surface for transfer to an ambulance. This may be either a rescue train or a manually powered vehicle.

#### 4.2.6 Develop Standard Operating Procedures for Emergencies

The development of standard operating procedures (SOP) for postulated emergencies ties in directly with recommendations 4.3.3 and 4.3.4 for the elderly and handicapped. These procedures should begin with a statement of policy as to which public emergency services are to be called for each type of emergency that is reported; e.g., fire, accident, smoke, heart attack, power outage. The SOP should then set forth procedures and actions for each step necessary to handle the emergency, such as assignment of transit personnel to meet and direct the responding fire service, knowing the location of entry, and by whom and where power is to be shut off.

#### 4.2.7 Fire Brigades for Yard and Shops

It is recommended that the District organize and train volunteer fire brigades from its own personnel to provide rapid first-line fire attack service in the yard and shops. These brigades are common in large industrial plants and are used only as a supplement to the public fire service.

One of the most valuable training attributes of using in-house fire brigades is that District personnel will have intimate knowledge of the facility, its utilities, any fixed automatic fire systems, and the transit vehicles. With this knowledge (that the public fire service usually does not have) fires are more quickly and knowledgeably attacked, so that damage is minimized and salvage operations promptly initiated.

Fire brigades are commonly composed of mechanics and utility persons, with an appointed lead person on each shift. Assignments should be made so that there will be a minimum of five people available at all times. If these people are not equipped with pagers, then coded audible signaling systems, actuated by the manual and automatic fire alarm devices in the yard and shops, should be installed. An acceptable alternative is to provide noncoded audible signaling with a slave annunciator at the fire brigade's vehicle station.

#### 4.3 FIRE SERVICES RECOMMENDATIONS

##### 4.3.1 Self-Contained Breathing Apparatus

Fire Departments serving the Los Angeles area generally have typical self-contained breathing apparatus, sufficient in quantity and duration for the types of fires commonly encountered in the community. These units are rated at 30 minutes, giving an effective operating period of about 17 minutes. These masks are essential for firemen who work in areas with heavy smoke or toxic gas atmospheres. Circumstances such as these have been experienced in underground sections of other transit systems, and can be expected to occur in underground portions of the Metro Rail System.

The fire services and the District will have to agree on which breathing apparatus will best suit the needs of emergency personnel during fire situations and how to utilize most effectively the existing state-of-the-art equipment.

##### 4.3.2 Rescue Equipment

The results of the survey and observation indicate that local fire services appear to be well equipped, or can secure the use of most essential equipment through aid agreements. However, special blocking and special jacks will be necessary. The location and extent of such equipment should be worked out with the local fire services who will be using it. Secured storage at strategic locations should suffice.

#### 4.4 JOINT TRANSIT SYSTEM AND FIRE SERVICES RECOMMENDATIONS

##### 4.4.1 Formation of a Fire/Life Safety Committee

It is our recommendation that a permanent Fire/Life Safety Committee be established to consider all of the fire protection and life safety circumstances of a rail rapid transit system. This recommendation has been detailed in a separate memorandum.

##### 4.4.2 Communications (Emergency)

Communication between emergency crews on the surface and in the tunnels is essential for effective emergency operations. It is recognized that typical fire department handi-talkies cannot operate properly underground. Several other transit systems solved this problem by using a hard-wire communications system with either instrument plug-in jacks or permanently mounted instruments. Such systems are effective only if a single, reserved channel is used, with provisions for tunnel-to-surface, surface-to-surface, and tunnel-to-tunnel station capability. This type of system is recommended for the Metro Rail System.

Communications are to be located at street, at concourse, and at platform levels in stations; at track and street levels in emergency accesses; and at intermediate "blue light" trip stations within tunnels. Spacing of the trip stations should be determined in concert with the local fire services, as they will be one of the prime users.

Radio systems have been used by some transit properties, but they are a less desirable and more costly alternative. However, in light of the small number of jurisdictions involved, this alternative should also be considered.

##### 4.4.3 Joint Training

Effective and efficient operations at fires and emergencies, as well as effective fire prevention, will result only from effective joint operations, cooperation, and mutual trust between the fire services and the District operating staff and personnel. To this end, a comprehensive joint training program is recommended. The benefits of this program should include a reduction in fire losses and minimization of System down-time. Other transit system experience indicates the importance of such training.

The District indoctrination and training offered to the fire services should include:

- o Ventilation system functions and controls
- o Emergency access facilities
- o Communications procedures and facilities
- o District authority and responsibility
- o Central Control functions
- o Facilities indoctrination
- o Transit vehicle indoctrination
- o Power-off switches, control and verification
- o System fire control and alarm systems
- o Yard and shop indoctrination
- o Arrangements for fire equipment tests
- o Identification of District transit personnel authorized to make decisions in emergencies.

#### 4.4.4 Pre-emergency Planning

If response to emergencies and fires is anticipated beforehand and emergency operations are planned in advance, then losses and down-times can be minimized. Fire departments routinely preplan emergency operations for the significant fire risks in their communities. In the case of the System, however, with its unique facilities and operations, a joint preplanning effort needs to be developed by both sides.

#### 4.4.5 Fire Systems and Equipment Maintenance

Fire systems and equipment are unique in that they may stand idle for years and then suddenly be called on to operate at full capacity for an extended period. For this reason, a comprehensive program of regular inspection, maintenance, and testing of systems and equipment is most essential. It is recommended that the District institute a program based on proven methods and standards. The local fire services, through the Fire/Life Safety Committee, may wish to participate in a program to inspect and test fire hoses and associated equipment.

#### 4.4.6 Fire Service Operations During Construction

Continual liaison between the District and the individual Fire Departments will result in the fire services being able to provide better service to the System and its patrons. This will be important during construction so that the Fire Departments may have access to streets, fire hydrants, the System facilities, and other parts of the community.

Alternate response routes to other parts of the community can usually be developed by the emergency services if obstructions to normal routes are known in advance. After the System becomes operational, such liaison should be continued so that the emergency services are apprised of changes in facilities, access, operations, fire systems, and other aspects that offset the efficiency and effectiveness of fire protection and emergency services.

## Chapter 5

### FIRE SERVICE SURVEY DETAILS

#### 5.1 GENERAL

As previously indicated in this report, fire service survey questionnaires were prepared and disseminated to the Los Angeles City and County Fire Departments. The completed questionnaires for the City of Los Angeles Fire Department are provided in Appendix A. The County questionnaires are provided in Appendix B.

APPENDIX A

CITY OF LOS ANGELES FIRE DEPARTMENT

FIRE SERVICE SURVEY

SCRTD  
Fire Service Survey

Name of Jurisdiction: Los Angeles City Fire Department

Mailing Address: 200 N. Main Street

Los Angeles, CA 90012 Tel. (213) 485-6003

Fire Chief: John C. Gerard

Contact for This Study: James W. Young

- Mailing Address: 200 N. Main Street

Los Angeles, CA 90012 Tel. (213) 485-5980

Information provided in this survey should be that which is pertinent to the SCRTD Metro Rail Project.

Does the fire department have the training and equipment to conduct hydrant water flow test: \_\_\_\_\_

Where can hydrant water flow test information be obtained: \_\_\_\_\_

Do you have mutual aid agreements? Yes With whom? Calif. Master Mutual Aid

Do you have outside aid agreements? Yes With whom? Mutual Fire Proct. Long Beach N.A.S.  
(formal written agreements with designated equipment)

Do you have automatic aid agreements? Yes With whom? L.A. County Santa Monica  
(automatic response on alarms) Yes Beverly Hills

Do you provide ambulance service (yes or no)? Yes If no, who provides ambulance service? \_\_\_\_\_

Do you provide paramedic service (yes or no)? Yes If yes, can you transport? Yes

Do you provide other emergency services, scuba rescue, or other services? (explain): Service Harbor, LAX, and Van Nuys Airports

Do you have any contracts for response outside your primary City/County boundaries? Yes with whom? Mutual & Automatic Aid

Manpower (general):

Single Triple Co. = 4

Task Force Eng. Co = 5

Average manning per engine company: \_\_\_\_\_; per ladder company: 5 ;

Average manning per special company: Sq = 5 Per Paramedic Unit: 2

APPARATUS ASSIGNMENT

Please indicate the normal apparatus response to initial alarms (type of alarm as indicated), including any special vehicles and ambulances (if not fire service vehicles, please indicate under "Remarks").

	Engines	Ladder	Other
Structure Fire - Residential	2	1	B/C
Structure Fire - Commercial	3	2	B/C
Street Box Alarm (if any)	N/A	N/A	
Sprinkler Flow Alarm	3	2	B/C
Investigation			Required full alarm assignment
Auto Accident	1	-	-
Auto, Grass, etc. Fire	1	-	-
Medical Aid Calls			Ambulance
Rescue	2	1	B/C
Underground Structures	3	2	
Fire & Smoke Detector Alarms	3	2	
Multiple Alarms - 2nd 3rd etc.			2 Eng, 1 Truck, 1B
			1st Alarm = 3 Eng, 2 Truck, 1B
	N/A		Not less 3eng, 1TK1 Greater = More than 1st Alarm
Automatic Aid (if any)	See below		Major Emer=15+companies

- REMARKS: Up to maximum 30 triples Mutual Aid:
- a. Calif. Disaster & Civil Defense Master Mutual Aid
  - b. Los Angeles County Mutual Aid and Mutual Assistance Agreements
  - c. Memorandum of Understanding United States Forest Service Zone
  - d. Mutual Fire Protection Agreement - Long Beach Naval Station

**(FIRST ALARM RESPONSE)  
FIRE STATION SUMMARY**

**For Stations Along Rapid Transit System**

Station #	Address	No. of Paid On Duty	No. of Engine Co's.	No. of Ladder Co's. <sup>1</sup>	No. and Type of Other <sup>2</sup>	Reserve Apparatus <sup>3</sup>
Example	12 Main Street	10	2	1 (EP)	2T	1E
	800 N. Alameda St.	33	3	2 (L)	1 Sq, 1A 1 B/C	
	1st & Broadway	33	3	2 (L)	1 Sq, 1A 1 B/C	
	5th & Broadway	33	3	2 (L)	1 Sq, 2A 1 B/C	
	7th & Flower	33	3	2 (L)	1 Sq, 3A 1 B/C	
	Alvarado & 7th St.	33	3	2 (L)	1 Sq, 3A 1 B/C	
	Vermont & Wilshire	33	3	2 (L)	1 Sq, 2A 1 B/C	
	Wilshire & Normandie	33	3	2 (L)	1 Sq, 2A 1 B/C	
	Wilshire & Western	33	3	2 (L)	1 Sq, 1A 1 B/C	
	Wilshire & La Brea	33	3	2 (L)	1 Sq, 2A 1 B/C	
	Wilshire & Fairfax	33	3	2 (L)	1 sq, 2A 1 B/C	

<sup>1</sup> Indicate Aerial Ladder (L) or Elevating Platform (EP).

<sup>2</sup> Indicate Tanker (T), Equipment Van (EV), Ambulance (A), Brush Truck (BT), Mini-Pumper (MP), or Rescue Van (RV).

<sup>3</sup> Indicate Ladder (L), Engine (E), Tanker (T), or Ambulance (A), and number.

Fairfax/Beverly Bl - Ventura Bl/Vineland  
Fairfax/Santa Monica - Tujunga Av/Chandler

\*Please attach additional pages if necessary\*

(FIRST ALARM RESPONSE)

Address	No. of Paid On Duty	No. of Engine Co's.	No. of Ladder Co's. <sup>1</sup>	No. and Type of Other <sup>2</sup>	Reserve Apparatus <sup>3</sup>
Fairfax & Beverly Blvd.	33	3	2 (L)	1 Sq, 1A 1 B/C	
Fairfax & Santa Monica	4	1	(L.A. County Area		Auto Aid)
Hollywood & Cahuenga	33	3	2 (L)	1 Sq, 2A 1 B/C	
Hollywood Bowl	33	3	2 (L)	1 Sq, 2A 1 B/C	
Ventura & Vineland	27	3	1 (L)	1 Sq, 2A 1 B/C	
Tujunga & Chandler	33	3	2 (L)	1 Sq, 1A 1 B/C	

## APPARATUS SUMMARY

The following section is provided to obtain a general overview of your department's apparatus, its capacity and the equipment it carries, and to indicate what is typically found on a piece of apparatus in the general proximity of the Rapid Transit System. Please provide as much information as possible without covering each different piece of apparatus.

### ENGINES:

- Booster Tank Size(s) Triple combinations 400-500 gal. tanks  
1000, 1250, 1500, 2000 gpm @ 150 psi
- Pumping Capacity(ies) \_\_\_\_\_
- Masks: Number & Type (hr. rating, etc.) 30 min. (1) per/member
- Hose: Type of hose threads National Standard
- Supply Lines: Amount 1500' (2½) Size(s) or (750' 2½) (600' 3½)
- Attack Lines: Amount 1"=500' 1½"=600' Size(s) 2½"=1500' or 750'
- Ladders (indicate number & length):
  - Extension 20'
  - Straight 12' roof
- Extinguishers (indicate no. & type) 2' gal air pressure, dry chem. 20 lb
- Medical Equipment (brief description):
  - Resuscitators or inhalators? Resuscitators
  - Other First Aid Kit
- Rescue Equipment (brief description, include power tools): \_\_\_\_\_
  - Hydrant jack, breathing apparatus
  - Radological kit, life line, smoke ejector

### LADDER TRUCKS (including Elevating Platforms):

- Reach (indicate average reach of the Aerial Ladders (L) and Elevating Platforms (EP) in your Dept.) \_\_\_\_\_  
(42) L=100', 85'                      (2) EP=50',                      (2) Squirt = 50'
- Ground Ladders (indicate no. & length):
  - Extension 12', 14', (2) 35', 50'
  - Straight (2) 20', (2) 24', Roof 12', 14', 16'
- Extinguishers (indicate no. & type) 2½ gal. air press., dry chem. 20 lb.  
CO<sub>2</sub> 20 lb.

LADDER TRUCKS (cont'd):

- Medical Equipment (brief description): First Aid Kit  
Resuscitators or Inhalators? Resuscitator  
Other Liter Basket
- Rescue Equipment (brief description):  
Electrical Power Tools Drills, lights  
Air Tools Chisels  
Other Chain saw, rotary saw, cutting torch, life lines, smoke ejector
- Masks: Number & Type (hr rating etc) 30 min. (1) per assigned member

RESCUE VEHICLE:

- General (brief description of type of vehicle(s)): (2) HU (wrecker)
- Equipment Carried (brief description): Jaws/life, ropes, chains etc.

SPECIALIZED EQUIPMENT (Provide brief description and on what vehicle):

- Lifting equipment (capacity?): --
- Railroad related: --
- Electrical Emergencies: Hot sticks? --  
Insulated wire cutters? yes  
Gloves Yes 10,000 volts Rubber Blankets No  
Other
- Underground Structure Emergencies --

REMARKS, ADDITIONAL INFORMATION & COMMENTS:

Emer. air (fills air bottles on scene)  
Emer. Lighting (provide lights)  
Light water (3) apparatus  
Helicopters (6)  
Mobile Hazardous Chemical Laboratory

TRAINING

Officer in Charge \_\_\_\_\_

Assistants (number) \_\_\_\_\_

Training Manual Used? Vol. 1-6, Basic II

Training Facilities: Location D.T. 89, D.T. 59, D.T. 21, D.T. 40, D.T. 1

Classroom Capacity? 20-45 Grounds (size) \_\_\_\_\_

Subgrade Structures? Describe Basements in all 5 Drill Towers

Training Tower? Describe 5-6 story drill towers.

Smoke Building? Describe same

Fire Building? Describe same

Any Props? Aircraft Fusilage at ~~Other?~~ Van Nuys A/P

Do you participate in training at or by other(s) than departmental facilities (non-fire service facilities) Yes. Hazardous materials companies, Highway Patrol and various other agencies and companies.

Do you provide training for non-fire service personnel (industrial fire brigades, institutional). If so explain & give location Yes. A number of private institutions request and receive varying levels of firefighting training and medical training.

DRILLS

	Frequency* (inc. hrs.)	Subject
Example: At Training Grounds	6-8 times/yr. 3 hrs/drill	Ladder & hose evolutions, masks
Example: At Station	2 times/week 2 hrs/drill	Regular training program
At Training Grounds by Instructor	min. 4 x / yr 3 hrs.	Ladder/hose/apparatus evolutions
At Training Grounds by Co. Officer	50 x per yr 1-2 hrs.	Company evolutions varied
Classroom	8-10 x per yr 4-8 hrs.	Varied special trng, ie EMT, Post etc.
At Station	110-120 x per yr 1 hr.	Each shift. Drills on equip., policy
Multi-Company Drills	30-40 x per yr 1-2 hrs.	Mult: Co. oper.
Inter-City Drills	2-3 x per yr depending on	Interagency oper.
Preplanning	station loc. 20-30 x per yr 1-2 hrs.	Station Fire Prev. preplanning

\*Indicate on a per shift basis, the number of times per week, month, or year and the number of hours per drill.

Training (con't.)

Training Program

Provide a brief description of the type and extent of training relating to the following: (indicate training props used if appropriate)

Electrical Equipment/Facilities (other than transformers) Review of Departmental training bulletin. Occasional special training on a battalion basis by representative of Department of Water & Power.

Transformers same

Underground Structures same

Underground Utilities same

Railroad Incidents (other than Hazardous Materials) Only covered during a special drill or demonstration. A drill confined to stations near R/R facilities.

Other Areas that may be "Subway" related Training bulletin on confined space rescues. No "subway" material.

COMMUNICATIONS HEADQUARTERS

Location where Alarms Received/Dispatched OCD, P-5 Level, City Hall East

Construction concrete/steel No. of F.A. Operators 63/ 21 per shift

Emergency Power (yes or no) Yes

Dispatching: Briefly describe method of dispatching fire companies, (e.g., radio, telegraph system, telephone, etc.) and location of dispatchers (if different from Headquarters): ..

Alarms are received by telephone and given to specific stations via telephone cable and/or microwave system.

Public Fire Alarm Installed:(telegraph, radio, etc.) 0

No. of Boxes 0 If radio, what frequency N/A

Telephone:

Number of Business Trunks 6

Number of Emergency Trunks (emergency only) 5 plus 1 Deaf & 1 TTY blind

Recording Facilities (yes or no) Yes

Do you have direct lines to other Agencies Yes

Do you have direct lines from other Agencies Yes

Average No. of Fire Calls Handled Per Year 774,165 32,108 fires

Average No. of EMS Calls Handled Per Year calls 161,550 EMS

Average No. of Other Calls Handled Per Year 496,364

Private Alarm System: Are any private alarm systems monitored at Fire Alarm Headquarters (yes or no, and give general description of method, company, capacity of system, and space, if any available for additional alarms). No

Auxiliarized Box Connections Permitted? No

Remote Stations (NFPA 72C) Permitted? No

Automatic Tel. Dialer Permitted No Special Tel. #? No

RADIO COMMUNICATIONS

1) 506.5125 (TR) / 509.5125 (T) 2) 506.5375 (TR) / 509.5375 (T)

3) 506.9125 (TR) / 509.9125 (T) 4) 506.1375 (TR) / 506.1375 (T)

5) 506.6375 (TR) / 509.6375 (T) 6) 507.0125 (TR) / 510.0125 (T)

7) 33.70, 8) 33.82, 9) 33.94, 11) 33.60, 12) 33.56  
EMS: 13) 33.52

EMS: HEAR 155.28 & 155.34

"White" Channel Capability? Yes In how many mobiles? 18 Portables? 45

Frequencies Shared: Biocom 468.000, 468.025, 468.050, 468.075, 468.100 & 468.125

With whom? Los Angeles County Paramedic Units and Hospitals

Base Station(s): (List Both Fire and EMS)

City Hall Tower, Mt. Lee, Elysian Pk, Verdugo, Baldwin Hill

Location(s) San Pedro Hill, Briarcrest, E-63, Oat Mt., San Pedro Sig. Ofc.

Westlake Sig. Ofc. and Coldwater Sig. Ofc.

Frequencies\*: Same as above - Note: UHF Channels 1-6

have duplex transmitting capability and require a repeater.

Recording Facilities? (yes or no) Yes

Are all Fire Apparatus Equipped with Radios? Yes

Transmit? Yes Receive? Yes

For which channels? From above 7, 8, 9, 11, 12, 13, in VHF and 1, 2, 3, 4, 5, & 6 in UHF  
~~Explain:~~

List other vehicles equipped with radios (i.e., Chief's Car, Assistant Chief's Car, etc.): All emergency sedans, nonemergency sedans and all front-line firefighting apparatus.

Handy-Talkies: Number assigned to engines? 250 Ladders 150  
(Portables) Chiefs 45 Others? 40

Frequencies\*: All have 2 or more of the above channels.

\*Please indicate Transmitting (T) and Receiving (R) frequencies if they are different.

FIRE PREVENTION

Officer in Charge (name) \_\_\_\_\_ Rank \_\_\_\_\_

Address \_\_\_\_\_

Telephone \_\_\_\_\_

Number of Inspectors: 85

Average Number of Inspections per Year: FPB = 13,000 + 2,000 oil wells  
CO = 400,000 Brush = 140,000

High Hazard Min. 1 P/Yr Commercial 1 P/Yr

High Life Hazard Min. 1 P/Yr Residential Multi Apt/Hotel 4 P/Yr

Public Property 1 P/Yr Other S/F Dwelling 1 P/3 Yr  
(schools, etc.)

Who is performing the inspections (inspectors, fire companies, etc.):

High Hazard Both Commercial Both

High Life Hazard Both Residential Fire Stations

Public Property Both Other Both  
(schools, etc.)

Do you conduct sprinkler system tests (if yes, to what extent) No,  
witness test made by private company.

Do you conduct fire detection system tests (if yes, to what extent) No,  
witness test on installation.

Do you conduct standpipe system tests (if yes, to what extent) No,  
witness test made by private company.

Plan Review: By Whom? Inspector II's Other Bldg. Dept.

APPENDIX B

COUNTY OF LOS ANGELES FIRE DEPARTMENT

FIRE SERVICE SURVEY

SCRTD  
Fire Service Survey

Name of Jurisdiction: Consolidated Fire Protection District

Mailing Address: PO Box 3009 - Terminal Annex

Los Angeles, CA 90051 Tel. 267-2426

Fire Chief: Clyde A. Bragdon, Jr.

Contact for This Study: \_\_\_\_\_

- Mailing Address: \_\_\_\_\_  
Tel. \_\_\_\_\_

Information provided in this survey should be that which is pertinent to the SCRTD Metro Rail Project.

Does the fire department have the training and equipment to conduct hydrant water flow test: Yes

Where can hydrant water flow test information be obtained: \_\_\_\_\_

Prevention and Conservation Bureau - Water Section

Do you have mutual aid agreements? Yes With whom? Beverly Hills and L.A. City in sub-Same as AUTOMATIC ject area.

Do you have outside aid agreements? Aid With whom? \_\_\_\_\_  
(formal written agreements with designated equipment)

Do you have automatic aid agreements? yes With whom? L.A. City  
(automatic response on alarms) Yes

Do you provide ambulance service (yes or no)? No If no, who provides ambulance service? Private Ambulance

Do you provide paramedic service (yes or no)? Yes If yes, can you transport? No

Do you provide other smergency services, scuba rescue, or other services? (explain): In the West Hollywood area, no.

Do you have any contracts for response outside your primary City/County boundaries? No-with with whom? \_\_\_\_\_  
respect to W. Hollywood

Manpower (general):

Average manning per engine company: 4 ; per ladder company: 4 ;

Average manning per special company: 2 Per Paramedic Unit: 2

APPARATUS ASSIGNMENT

Please indicate the normal apparatus response to initial alarms (type of alarm as indicated), including any special vehicles and ambulances (if not fire service vehicles, please indicate under "Remarks").

	Engines	Ladder	Other
Structure Fire - Residential	4	1	1-Rescue Squad 1-Battalion Chief
Structure Fire - Commercial	4	1	1-Rescue Squad 1-Battalion Chief
Street Box Alarm (if any)			
Sprinkler Flow Alarm	4	1	1-Rescue Squad 1-Battalion Chief
Investigation	1		
Auto Accident	1		1-Rescue Squad
Auto, Grass, etc. Fire	1		
Medical Aid Calls	1		1-Rescue Squad
Rescue	1		1-Rescue Squad
Underground Structures	4	1	1-Rescue Squad 1-Battalion Chief
Fire & Smoke Detector Alarms	4	1	1-Rescue Squad 1-Battalion Chief
Multiple Alarms - 2nd	(INC'L 1st ALARM) 8	3	1-Rescue Squad, 1-LightUn 2-BC, 1-AC, 1-Air Utility
3rd	3	1	1-Air Cache 1-Lighting Unit, 1-DC
etc.			
Automatic Aid (if any)	(Los Angeles City units upon request)		

REMARKS:

**FIRE STATION SUMMARY**

For Stations Along Rapid Transit System

Station #	Address	No. of Paid On Duty	No. of Engine Co's.	No. of Ladder Co's. <sup>1</sup>	No. and Type of Other <sup>2</sup>	Reserve <sup>3</sup> Apparatus
Example	12 Main Street	10	2	1 (EP)	2T	1E
8	7643 Santa Monica Blvd.	12	2 (E)	1 (L)	1 Res. Squad	
7	958 N. Hancock	5	1 (E)			

-29-

<sup>1</sup> Indicate Aerial Ladder (L) or Elevating Platform (EP).  
<sup>2</sup> Indicate Tanker (T), Equipment Van (EV), Ambulance (A), Brush Truck (BT), Mini-Pumper (MP), or Rescue Van (RV).  
<sup>3</sup> Indicate Ladder (L), Engine (E), Tanker (T); or Ambulance (A), and number.

\*Please attach additional pages if necessary\*

## APPARATUS SUMMARY

The following section is provided to obtain a general overview of your department's apparatus, its capacity and the equipment it carries, and is to indicate what is typically found on a piece of apparatus in the general proximity of the Rapid Transit System. Please provide as much information as possible without covering each different piece of apparatus.

### ENGINES:

- Booster Tank Size(s) 2-500 gal, 1-400 gal.
- Pumping Capacity(ies) 2-1250 gpm, 1-1500 gpm
- Masks: Number & Type (hr. rating, etc.) 20 SCBA positive pressure, 30 min.
- Hose: Type of hose threads National Standard
- Supply Lines: Amount 1000' - 3½", 1600' - 2½"
- Attack Lines: Amount 900' - 1½", 600' - 1" (reels)
- Ladders (indicate number & length):  
Extension 1-16', 2-24'  
Straight 2-16', 3-14',
- Extinguishers (indicate no. & type) 1-10# Dry Chem. 4-20#CO2, 4-2½Gal H2O, 4-20#Dry Chem.
- Medical Equipment (brief description):  
5-E&J Resuscitators, Basic 1st Aid kits, Resuscitators or inhalators? Trauma Box, Drug Box, Cardiac care equipment  
Other incl-EKG monitor, defibrillator, radio, MAST suit, Burn pacs.
- Rescue Equipment (brief description, include power tools):  
2-12ton jacks, 1-10ton porto power, K-12 Rescue Saw, Cutting torch  
(Note: This equipment carried on Truck company.)

### LADDER TRUCKS (including Elevating Platforms):

- Reach (indicate average reach of the Aerial Ladders (L) and Elevating Platforms (EP) in your Dept.)  
1-100' (L)
- Ground Ladders (indicate no. & length):  
Extension 1-28', 1-35', 1-40'  
Straight 1-10', 2-16', 1-14', 1-6' step ladder
- Extinguishers (indicate no. & type) 1-20# DC, 1-20# CO2, 1-2½gal H2O

LADDER TRUCKS (cont'd):

- Medical Equipment (brief description): Basis 1st Aid Kit  
Resuscitators or Inhalators? 1-E&J Resuscitator  
Other \_\_\_\_\_

- Rescue Equipment (brief description):  
Electrical Power Tools \_\_\_\_\_  
Air Tools \_\_\_\_\_  
Other 1-12ton jacks, 10 ton porto power, K-12 Rescue saw, Cutting Torch.

- Masks: Number & Type (hr rating etc) 6 SCBA positive pressure, 30 min.

RESCUE VEHICLE:

- General (brief description of type of vehicle(s)): \_\_\_\_\_

- Equipment Carried (brief description): Cardiac care and monitoring equipment, Radio, mast suit, burn pacs, Drugs, Trauma care and misc. other patient care equipment and supplies.

SPECIALIZED EQUIPMENT (Provide brief description and on what vehicle):

- Lifting equipment (capacity?): 2-12 jacks, 1-10 ton porto power jack

- Railroad related: \_\_\_\_\_

- Electrical Emergencies: Hot sticks? low voltage wire cutters  
Insulated wire cutters? \_\_\_\_\_

Gloves No Rubber Blankets No  
Other \_\_\_\_\_

- Underground Structure Emergencies \_\_\_\_\_  
equipment to provide lighting and ventilation

REMARKS, ADDITIONAL INFORMATION & COMMENTS:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

TRAINING

Officer in Charge \_\_\_\_\_  
 Director of Training \_\_\_\_\_

Assistants (number) Four  
 Training Manual Used? 3 Deptl. Drill Manuals, Multitude of Reference Books, Manuals  
 Training Facilities: Location 1320 N. Eastern Ave., L.A. 90063  
 Classroom Capacity? 200 Grounds (size) 4 1/2 Acres  
 Subgrade Structures? Describe Basement in Drill Tower  
 Training Tower? Yes Describe 5 story reinforced concrete w/basement  
 Smoke Building? --- Describe Training Tower used for Smoke Training  
 Fire Building? --- Describe Training Tower used for "Hot" Fires  
 Any PROPS? Sprinklers, Gas, Electrical Other? \_\_\_\_\_

Do you participate in training at or by other(s) than departmental facilities (non-fire service facilities) \_\_\_\_\_

Do you provide training for non-fire service personnel (industrial fire brigades, institutional). If so explain & give location Yes - "Hot" Fire Drills at Oil Firefighting School in the Castaic Area (Val Verde Park)

DRILLS

	Frequency* (inc. hrs.)	Subject
<i>Example: At Training Grounds</i>	6-8 times/yr. 3 hrs/drill	Ladder & hose evolutions, masks
<i>Example: At Station</i>	2 times/week 2 hrs/drill	Regular training program
At Training Grounds by Instructor	1 time/year 8 hours/drill	Juvenile Fire Setter Prog.; Ropes, Knots & Hitches; Driving Drill; Fire Simulator Trng.
At Decentralized Trng. Grnds. by Instructor <del>At Training Grounds by Co. Officer</del>	2 times/year 4 hours/drill	Hose evolutions, ladders, masks.
Classroom		
At Station	120 times/year 2 hours/drill	Hose lays, ladders, masks, first aid, salvage & overhaul, Ventila- tion, spec. trng. & safety
Multi-Company Drills	24 times/year 2 hours/drill	-Same as Above-
Inter-City Drills		
Preplanning	12 times/year 2 hours/drill	All specialized hazards and/ or occupancies.

Indicate on a per shift basis, the number of times per week, month, or year and the number of hours per drill.

Training (con't.)

Training Program

Provide a brief description of the type and extent of training relating to the following: (indicate training props used if appropriate)

Electrical Equipment/Facilities (other than transformers) Polychlorinated biphenyl training by videotape provided by Edison Co., & "Electricity, Facts to Live By". Presented to all personnel in 1981, approximately 3 hours.

Transformers \_\_\_\_\_

Underground Structures \_\_\_\_\_

Underground Utilities \_\_\_\_\_

Railroad Incidents (other than Hazardous Materials) \_\_\_\_\_

Other Areas that may be "Subway" related \_\_\_\_\_

COMMUNICATIONS HEADQUARTERS

LA County Fire Headquarters

Location where Alarms Received/Dispatched 1320 N. Eastern Ave., LA 90063

Construction Concrete No. of F.A. Operators 8

Emergency Power (yes or no) Yes

Dispatching: Briefly describe method of dispatching fire companies, (e.g., radio, telegraph system, telephone, etc.) and location of dispatchers (if different from Headquarters):

Radio dispatch - Dispatchers located at Headquarters.

Public Fire Alarm Installed: (telegraph, radio, etc.) no

No. of Boxes \_\_\_\_\_ If radio, what frequency \_\_\_\_\_

Telephone:

Number of Business Trunks 4

Number of Emergency Trunks (emergency only) 8

Recording Facilities (yes or no) Yes

Do you have direct lines to other Agencies Yes

Do you have direct lines from other Agencies Yes

Average No. of Fire Calls Handled Per Year 12,000

Average No. of EMS Calls Handled Per Year 48,000

Average No. of Other Calls Handled Per Year 14,000

Private Alarm System: Are any private alarm systems monitored at Fire Alarm Headquarters (yes or no, and give general description of method, company, capacity of system, and space, if any available for additional alarms). No

Auxiliarized Box Connections Permitted? No

Remote Stations (NFPA 72C) Permitted? No

Automatic Tel. Dialer Permitted Yes Special Tel.#? regular  
published emergency number

RADIO COMMUNICATIONS

Assigned Frequencies\*: FIRE: 2  
EMS: same as Fire

"White" Channel Capability? Yes In how many mobiles? all Portables?     

Frequencies Shared: none

With whom?     

Base Station(s): (List Both Fire and EMS)

Location(s) 1320 North Eastern Avenue, LA, CA 90063

Frequencies\* 154.43, 154.295

Recording Facilities? (yes or no) Yes

Are all Fire Apparatus Equipped with Radios? Yes

Transmit? Yes Receive? Yes

For which channels? all

If no, explain:     

List other vehicles equipped with radios (i.e., Chief's Car, Assistant Chief's Car, etc.): All staff, repair and utility vehicles

Handy-Talkies: Number assigned to engines? 177 (1 ea) Ladders 10 (1 ea)  
(Portables) Chiefs 6 (1 ea) Others? 20  
Frequencies\*: same as base station

\*Please indicate Transmitting (T) and Receiving (R) frequencies if they are different.

FIRE PREVENTION

Officer in Charge (name) George Demos Rank Deputy Fire Chief

Address 1320 North Eastern Avenue, Los Angeles, CA 90063

Telephone (213) 267-2461

Number of Inspectors: FPD-75 Eng.Co. - 1,500

Average Number of Inspections per Year:

High Hazard 5,500 (4) Commercial 61,000 (1)

High Life Hazard 6,500 (4) Residential 33,000 (4)

Public Property 5,000 (4) Other 2,000  
(schools, etc.)

Who is performing the inspections (inspectors, fire companies, etc.):

High Hazard F.P.D. Commercial FPD, large - Fire Co., smaller

High Life Hazard F.P.D. & Fire Co. Residential FPD, hi-rise - Fire Co., others.

Public Property F.P.D. & Fire Co. Other F.P.D. & Fire Co.  
(schools, etc.)

Do you conduct sprinkler system tests (if yes, to what extent) We require  
annual flow tests which we observe. Complete tests are required each 5 years.

Do you conduct fire detection system tests (if yes, to what extent) Yes  
Annual test of smoke and H.A.D. units

Do you conduct standpipe system tests (if yes, to what extent) Yes  
Visual test annually- flow test each 5 years.

Plan Review: By Whom? F.P.D. Other \_\_\_\_\_

FUTURE

Please provide information on future plans of your department in the following general areas. Only provide information on those items that are fairly certain to occur and would be pertinent to the Rapid Transit System:

---

ire Stations

no immediate plans

---

re Apparatus

no additional

---

npower

no additional

---

mmunications

no

---

her