FIRE MANAGEMENT 2D
Master Planning
Instructor Guide

accredited by

for the

CALIFORNIA FIRE SERVICE
TRAINING AND EDUCATION SYSTEM

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INSTRUCTOR GUIDE

COMMUNITY FIRE PROTECTION:

MASTER PLANNING

FEDERAL EMERGENCY MANAGEMENT AGENCY

NATIONAL EMERGENCY TRAINING CENTER

NATIONAL FIRE ACADEMY

FOREWORD

The Federal Emergency Management Agency (FEMA) was established in 1979. FEMA's mission is to focus federal effort on preparedness for, mitigation of, response to, and recovery from emergencies encompassing the full range of natural and unnatural disasters.

FEMA's National Emergency Training Center in Emmitsburg, Maryland includes the National Fire Academy, the United States Fire Administration, and the Emergency Management Institute.

The National Fire Academy's legislated mandate (under Public Law 93-498, October 29, 1974) is "to advance the professional development of fire service personnel and of other persons engaged in fire prevention and control activities." To achieve this purpose, the National Fire Academy has developed an effective program linkage with established fire training systems which exist at the state and local level, and has established a comprehensive residential fire service program.

The staff of the National Fire Academy is proud to join with state and local fire agencies in providing educational opportunities to the members of the nation's fire services.

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ACKNOWLEDGMENTS

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COURSE SCHEDULE

UNIT		LENGTH
Unit 1:	Introduction	1 hr., 50 min.
Unit 2:	Master Planning Overview	8 hr., 45 min. (Includes 2 hr. reading assignment and 2 hr. evening video session)
Unit 3:	Sunville Overview	6 hr., 50 min.
Unit 4:	Organizing for Planning	4 hr.
Unit 5:	Data Gathering	1 hr., 20 min.
Unit 6:	Goals and Objectives	4 hr., 5 min.
Unit 7:	Requirements and Alternatives	2 hr., 35 min.
Unit 8:	Preparing Presentations	1 hr.
Unit 9:	Presentations to Council	10 hr., 40 min.
Unit 10:	Implementation Techniques	20 min.

Total Time: 41 hr., 25 min.

*Includes 30 minutes of breaks in morning and 30 minutes of breaks in afternoon.

SCHEDULE

Monday Tues Wed Thurs Fri

~~Sunday~~	~~Monday~~	~~Tuesday~~	~~Wednesday~~	~~Thursday~~	Friday
Morning	**Morning**	**Morning**	**Morning**	**Morning**	**Morning**
RB Unit 1: Introduction RB Unit 2: Master Planning Overview RB - Fire Protection Planning Slide Series	Unit 3: Sunville Overview - Sunville Slidetape - Sunville Data Analysis - Part 1	Unit 4: Organizing For Planning - Exercise in Decisionmaking - Problem Statements - Sunville Data Analysis - Part 3 - Organizing	Unit 7: Requirements and Alternatives - Requirements Activity - Alternatives Activity - Fight it with Foresight Video Unit 8: Preparing Presentations - Master Planning Approval Video	Unit 9: Presentations to Council (Cont'd.)	Unit 10: Implementation Techniques
Afternoon	**Afternoon**	**Afternoon**	**Afternoon**	**Afternoon**	**Afternoon**
KM - Problems Facing the Fire Service KM -Strategic Planning Slide Series (The Business of Management Video) - Introduction to the Planning Process Slide Series RB KM Reading Assignment Sunville: Read pp. 5-33 Review pp. 35-end	- Sunville Data Analysis Part 1 (Cont'd.) - Fire Demand Zones - Station Location - Risk -Sunville Data Analysis - Part 2	- Recommendations to City Manager Activity - Unit 5: Data Gathering - Historic, Present, and Future Unit 6: Goals and Objectives Sunville Goals Activity Sunville Objectives Activity	- Graphics Selection Unit 9: Presentations to Council	Unit 9: Presentations to Council (Cont'd.)	
Evening	**Evening**	**Evening**	**Evening**	**Evening**	**Evening**
~~Videos~~ ~~Citizens on the Street~~ ~~On the Street with Fire Safety~~ ~~Fire Safe California~~	SB1830 Citizens on the Street	Videos: Interstate Bank Corporation High-rise Fire Fire in the Interface			

INSTRUCTIONAL AIDS

Equipment Needed

~~Plan scale wheels (6)~~
Video playback equipment (1/2" VHS, 2 monitors)
Carousel slide projector with extension for remote control unit
Flipcharts and easels (6)
Multiple-color marker pens (including red and black)
36-inch rulers (6)
~~Apple Mac II computer (1) and~~ IBM Compatible computer (1 in classroom)
Name cards to identify activity groups
Name cards for students
Acetate for reproducing overhead transparencies
~~Tubes for transporting~~ maps and overlays ~~to breakout rooms~~
Erasable markers to write on overlays or transparencies
Chart on Page xii transferred to flipchart paper
3-hole punch
Stapler
Scissors

Support Requirements

Six breakout areas with work space for Days ~~4~~ and ~~5~~
Class roster (to establish groups before start of class)
Support for graphics development and reproducing overhead transparencies--Day ~~4~~ morning
~~Support for word processing Day 5 morning, 7:30 -~~ 11:00
~~News release for use by participants to publicize their training and obtain local recognition when they return home~~
Name tags for council members

~~Instructor Preparation~~

~~Read material in appendix~~
~~Review The Planning Process~~ Chart

Please note: The course units follow the Planning Process Chart. Participants are asked to become familiar with Sunville and the Sunville data before the units on Organizing for Planning or Data Gathering in order to become involved early in the training process.

Standard Course Media

Unit 1:	Introduction	OHTs 1.1 to 1.9
Unit 2:	Master Planning Overview	OHTs 2.1 to 2.5
Unit 3:	Sunville Overview	OHTs 3.1 to 3.72
Unit 4:	Organizing for Planning	OHTs 4.1 to 4.16
Unit 5:	Data Gathering	OHTs 5.1 to 5.12
Unit 6:	Goals and Objectives	OHTs 6.1 to 6.12
Unit 7:	Requirements and Alternatives	OHTs 7.1 to 7.10
Unit 8:	Preparing Presentations	OHTs 8.1 to 8.8
Unit 9:	Presentations to Council	OHT 9.1
Unit 10:	Implementation Techniques	OHT 10.1
	Total OHTs	**146**

Handouts and Teaching Aids

Precourse:
- ~~Hazardous Materials Emergency Planning Guide, NRT-1~~
- ~~Criteria for Review of Hazardous Materials Emergency Plans, NRT-1A~~
- International Concepts in Fire Protection: Ideas from Europe That Could Improve United States Fire Safety
- International Concepts in Fire Protection: Practices from Japan, Hong Kong, Australia, and New Zealand
- Overcoming Barriers to Public Fire Education in the United States
- Fire in the United States ~~1985~~

Unit 1:
- Reprint of ICMA *Managing Fire Services*, Chapter 4. (HO if students did not receive)
- Sunville Book
- Ten-Step Planning Process Chart (Introduction), SM p. 1-4
- Sunville Map 24 x 36
- Sunville Community Seal
- Name Cards for Activity Groups
- Name Cards for Participants

Unit 2:
- Slides: Fire Protection Planning: Master Planning - Part A
- Video: The Business of Management
- Slides: Introduction to the Planning Process

~~Evening Videos:~~
- On the Street with Fire Safety (15 min.)
- Citizen on the Street (15 min.)
- Fire Safe California, CDF (8 min.)

Unit 3:
- Sunville Slide-Tape Presentation
- Maps and Overlays (HO) listed on SM p. 3-10

Unit 4:
- Sunville Letterhead paper (HO)

Unit 6: Evening Videos:
Interstate Bank Corporation High-Rise Fire (2hr.)
Fire in the Interface, CDF

Unit 7: ~~Sample Privatization Package (Proposal for City of Sunville by Melbourne Fire Protection Company)~~
ISO Ratings
~~Santa Cruz Master Planning (HO)~~
Video: Fight it With Foresight

Unit 8: Video: Master Planning Approval Process: Presentation Techniques (12 min.)
Sample Student Presentations to Council (3) CNFCO THFE)

Unit 9: Alternative Assignments (HO)
Council Bios, Evaluation Form, Worksheet, Council Agenda

Activities for Saturday Evening:

A buffet will be prepared for the arriving V.I.P. students in the dining hall. Students arriving on buses will be directed to the dining hall. An instructor should check with the dining hall manager in the early afternoon to assure that the buffet is ready.

Instructors should be at the dining hall at 7:00 p.m. (Check with Student Services for bus arrival time.)

A sign will be set up in the dining hall to welcome the students.

As students complete their dinner the Lead instructor should give a brief welcoming statement, and introduce the instructors and National Academy Staff who are present.

The students should be advised that the dining hall opens at 6:45 a.m. and the classes must assemble in the Auditorium of Building J at 8:00 a.m. In order to have breakfast without rushing the students should be in the dining hall by 7:00 a.m.

The students should be directed to the Registration area in Building E.

UNIT 1: INTRODUCTION

OBJECTIVE

The participants will initiate communication with other class members which will facilitate workshop interaction.

ATTITUDES TO FOSTER

Interaction among participants will increase the effectiveness of the activities used in this course. Take time to allow participants to get to know one another.

POINTS FOR THE INSTRUCTOR

Use the class roster (provided to instructors before class starts) to group participants by table. Assign five participants for each table. Distribute the departments and states.

Complete name tags for participants and arrange these at assigned seats.

Display the ten-step planning process chart where it will be visible to the class throughout the week.

Use the participant introductions to identify specific needs of participants which should be considered in the delivery of the course.

METHODOLOGY

This unit consists of a brief lecture and introductions.

ESTIMATED TIME
(Total Time: 1 hr., 50 min.)

5 min.	Lecture Objective and Overview	IG 1-3
15 min.	Lecture Welcome and Announcements	IG 1-3
60 min.	Individual Activity 1.1 Participant and Instructor Introductions	IG 1-7
30 min.	Lecture Course Overview	IG 1-9

AUDIOVISUAL

OHTs 1.1 to 1.9
Name cards to identify activity groups (tables)
Name cards for participants
Reprint of ICMA *Managing Fire Services*, Chapter 4
Ten-step planning process chart
Sunville Book
Sunville Map 24 x 36 dry mounted
Sunville Community Seal

5 min.
Lecture
OHT 1.1

I. OBJECTIVE

The participants will initiate communication with other class members which will facilitate workshop interaction.

II. OVERVIEW

A. Welcome and Announcements

B. Participant and Instructor Introductions

C. Course Overview

15 min.
Lecture

III. WELCOME AND ANNOUNCEMENTS

A representative of the Academy staff will welcome the students and describe the VIP program.

The Academy staff representative will introduce the instructors.

A. Logistics.

1. Class starts at 8 a.m. sharp each day and ends at 5 p.m.

2. There will be one coffee break in the morning and one in the afternoon, each 15 minutes.

3. Lunch will be from noon to 1 p.m. – MENU IS

4. No smoking is allowed in the classroom.

5. Evening meetings.

   a. ~~Sunday~~.

      ~~2-hour reading assignment.~~
      ~~(4:00 - 6:00 p.m.).~~

Administrivia

8:00 to 5:00 (sharp) – Take Roll.

12:00 to 1:00 lunch – menu posted.

Coffee 10:00 / 2:30

No smoking in class

40hr. Class – Friday – noon

Evening meeting – Tues.
Wed.

Evening Gathering:
- Wine Stewart

Course Pass/Fail
50 ? Multiple Choice → Participation

→ Introductions

Course Overview:

- Lecture/workshop. Student manual
  - Note taking
  - Survill e Exercise
  - Info. manuals
- Course materials
- Present planning/management Techniques
  - Different from other planning techniques
    - Not on shelf.
- Why should Community develop M.P.
  - I.D. Service, Risk + Cost.
- Methods of promoting M.P.
- Individuals which should be involved – Citizens Comm
- Planning Team
- Data needs – Simulated City
- Prepare & present M.P.
- Use @ Capt. / B/C Level

Change → 2nd pg.

b. Monday: Volunteers--
"Issues and Innovations"
i.e. - man on the street
(students to bring).

c. Tuesday--National Volunteer
Fire Council (7:00 p.m., 2 hr.).

- Volunteer recruitment.

- N. V. F. C.

d. Wednesday--prepare
presentations.

e. Thursday--Barbecue (optional).

6. An orientation to the Learning Resource
Center has been scheduled for your
class.
Time: Sunday afternoon 3:30 p.m.

7. A class photograph is scheduled.
Time: Tuesday lunch break: _____

B. Describe fire safety features of meeting room:

1. Exit locations.

2. Sprinkler system.

Flow alarm to security.

3. Extinguisher location.

4. Procedure for calling fire department
(911).

a. Pull stations go to security.

b. Dial "0"--Student Services will
call 911.

5. Procedure for calling EMS assistance.
Dial "0" on NFA house phones.

6. Routine medical assistance.

   a. 8 a.m. to 5 p.m.--Instructors and staff.

   b. 5 p.m. to 8 a.m.--Security (EMT).

C. Locations for:

   1. Telephones.

   2. Restrooms.

   3. Coffee room.

   4. Water fountain.

D. Correct names and fire department address list (complete information as necessary).

E. BBQ (Fire Command Operations is here).

F. Resources:

   1. Emmitsburg Area.

   2. O'Leary's.

   3. Student center.

60 min.
Individual
Activity 1.1
OHT 1.2

IV. PARTICIPANT AND INSTRUCTOR INTRODUCTIONS

Participants will be asked to introduce themselves to the group. Show the OHT and ask each participant to answer the following:

- Name.

- Fire department.

- Position.

- *Fire department special assignments/responsibilities.*

- *Planning experience.*

- *Primary occupation.*

- *Hobbies/interests.*

- *Reason for attending.*

Instructors should introduce themselves using the same format as the students. However, they also should stress experience they have had with volunteer fire departments and master planning.

30 min.
Lecture

V. COURSE OVERVIEW

Handouts

~~If there are~~ participants ~~who did not receive~~ the ICMA reprint "Managing Fire Services", ~~or the Sunville Book,~~ distribute ~~copies to these participants.~~

OHT 1.3

A. Course purpose.

To provide ~~volunteer chief~~ officers with the capability to:

1. Plan and manage the local fire protection system.

2. Organize and coordinate the development and implementation of a community fire protection master plan.

B. Instructional process.

1. Minimize lectures and maximize activities.

2. Emphasis is on application of master planning concepts to a sample community.

   a. Demonstrate.

   b. Practice.

C. Content.

OHT 1.4

1. Units.

a. Introduction.

b. Master Planning Overview.

c. Sunville Overview.

d. Organizing for Planning.

e. Data Gathering.

OHT 1.5

f. Goals and Objectives.

g. Requirements and Alternatives.

h. Preparing Presentations.

i. Presentations to Council.

j. Implementation Techniques.

2. The political aspects of planning and management are considered the most critical aspects of the planning process.

3. Planning and analysis techniques related to the ten-step planning process.

Planning Process Chart
SM p. 1-4

Point out the steps of the process on the Planning Process Chart. Point out that a copy of the chart is in the Student Manual.

OHT 1.6

OHT 1.7

D. Student Manual contents.

1. Unit objectives.

2. Note-taking guide.

3. Activity support material.

4. Background text.

E. Sunville Manual contents.

1. Description of community.

2. Data compilation report.

OHT 1.8

F. Handouts provide an overview of the following precourse handout materials.

Refer participants to each item as it is described.

1. International Concepts in Fire Protection--Asia.

2. International Concepts in Fire Protection--Europe.

3. ~~Hazardous Materials Emergency Planning Guide.~~

4. ~~Criteria for Review of Haz Mat Emergency Plans.~~

5. ~~Fire in the United States.~~

3. ~~6.~~ Overcoming Barriers to Public Fire Education.

OHT 1.9

G. Participant evaluation.

1. Evaluation will be based on individual participation and group activities.

2. Master Plan Post-Course Project.

SM p. 1-5

Refer students to material in Student Manual. Their projects are to be completed at home. Introduce the project here so that students will have the remainder of the week to ask questions. Pass out envelopes.

UNIT 2: MASTER PLANNING OVERVIEW

OBJECTIVES

The participants will:

1. *Identify the benefits of master planning.*
2. *Gain a general knowledge of the purpose and methodology of the ten-step planning process.*
3. *Define the concept of a "fire protection system" which consists of public and private agencies in which the fire dc, rtment is one of the agencies.*

ATTITUDES TO FOSTER

1. Throughout this course, encourage participants to perceive master planning as a process which can meet the needs of volunteer fire departments.

2. Participants should accept the need to control the fire problem rather than merely react to incidents/losses.

POINTS FOR THE INSTRUCTOR

Stress the need to deal with the political aspects of planning.

Stress the need for participation by all members of the fire protection system in order to obtain commitment.

Emphasize that this process is applicable to small volunteer as well as large ~~volunteer or~~ paid departments.

METHODOLOGY

This unit is designed to provide an overview of planning through brief lectures and videotapes which describe fire protection planning needs.

ESTIMATED TIME
(Total Time: 8 hr., 45 min.)

5 min.	Lecture Objectives and Overview	IG 2-3
90 min.	Interactive Lecture and Slide Series Fire Protection Planning	IG 2-3
40 min.	Small Group Activity 2.1 Problems Facing the Fire Service	IG 2-23
90 min.	~~Slide~~ Tape and Discussion Strategic Planning in the Private Sector	IG 2-25
60 min.	Interactive Lecture and Slide Series Introduction to the Planning Process	IG 2-31
120 min.	Reading Assignment	IG 2-43
~~120 min.~~	~~Evening Session~~ Videos and Discussion Citizen on the Street On the Street with Fire Safety Fire Safe California	IG 2-43

AUDIOVISUAL

OHTs 2.1 to 2.5
Ten-step planning process chart

Videos: The Business of Management (~~30~~ 45 min.)
~~Citizen on the Street (15 min.)~~
On the Street with Fire Safety ~~(15 min.)~~
Fire Safe California (8 min.)

Slide Series: Fire Protection Planning (A# 1-80) (1 hr., 20 min.)
Introduction to the Planning Process (B# 1-71) (1 hr.)

5 min.
Lecture
OHT 2.1

I. OBJECTIVES

The participants will:

A. Identify the benefits of master planning.

B. Gain a general knowledge of the purpose and methodology of the ten-step planning process.

C. Define the concept of a "fire protection system" which consists of public and private agencies in which the fire department is one of the agencies.

II. OVERVIEW

A. Fire Protection Planning

B. Problems Facing the Fire Service

C. Strategic Planning in the Private Sector

D. Introduction to the Planning Process

E. Reading Assignment

F. Sunville Workshop Data

G. Evening Session

90 min.
Interactive Lecture
and Slide Series
OHT 2.2

III. FIRE PROTECTION PLANNING

A. There is a need for each ~~volunteer~~ fire department to develop a master plan.

B. The process is 60% political and 40% technical.

As an introduction to the slide series, discuss the three levels of planning.

OHT 2.3

C. Three levels of planning:

1. Strategic (master planning).

   a. Concerned with evaluating and changing the fire protection system to meet the needs of a changing environment.

   b. Policy-oriented (not detailed steps).

   c. Long-range in time frame (5 + years).

   d. Broad in scope.

   e. This level of planning is the focus of this course.

OHT 2.4

2. Operational.

   a. Performed to implement a strategic plan on a day-to-day basis.

   b. Primarily administrative in nature.

   c. Exemplified by:

      - Budget preparations.

      - Response planning.

      - Regional incident command.

      - Mutual-aid program development.

      - Etc.

OHT 2.5

3. Tactical.

   a. Detailed planning performed at the field or working level.

b. Examples are:

- Prefire planning.

- Designing incident command system network.

- Tactical training.

Ask if participants have questions regarding these definitions.

Slide Series

Show the "Fire Protection Planning" slide series which takes approximately 1 and 1/2 hours.

Fire Protection Planning
Master Planning Part A
Slide Series Narrative

SLIDE	VISUAL	DESCRIPTION
A-1	Title slide	This slide series has been prepared to present major concepts and issues which identify the need to develop a master plan.
A-2	Suppression crew	If you ask most citizens in a community what they receive as fire protection from the fire department, they will tell you that it has primarily to do with the response to fire incidents after they occur. If you ask most fire departments what their role is, most will talk to you in terms of fire suppression.
A-3	Hoseline over balcony	In fact, 80% to 90% of most fire department budgets go to fire suppression. It is viewed as a reactive response to an emergency incident.
A-4	4-way: trans., EMS, haz mat, and bldg. construction	However, the role of fire departments has been expanding over the last few years--transportation incidents, emergency medical, haz mat, and the involvement in land development and building construction. There have been improvements in building construction such as increased use of

		sprinklers. There are also increased problems such as the use of prefab trusses in residential occupancies. Fire department functions have broadened beyond the historical role of fire suppression.
A-5	"It's the fire department's job"	There is a misconception that the fire department can do it alone.
A-6	Community fire department system	There is a fire protection system that exists in every community. It may or may not function as positively as it should. In order to provide effective and efficient fire protection, all of the elements such as building department, law enforcement, and water department must perform their proper functions within the fire protection system. In fact, the fire department cannot provide fire protection without the full support of these agencies.
A-7	Fire protection system--"Elements of System"	A fire protection system has required characteristics. Those agencies that make up the fire protection system must understand their role. They must commit themselves to certain fire protection results. These must have general community support and the agencies within the fire protection system must be mutually supportive.
A-8	Grease fire	The residents can perform certain functions within the fire protection system if they are prepared and properly educated.
A-9	Lid on fire	They can learn to control a small kitchen fire by placing a lid on a pan on a kitchen stove.
A-10	Auto fire	They can control car fires and smaller fires if they are knowledgeable and trained in the use of a fire extinguisher.
A-11	Barn fire	However, fires can quickly exceed the capability of the homeowner and require the services of organized fire departments who are generally effective in controlling fires in small buildings.
A-12	Commercial building fire	Fires grow to the point quite rapidly where they exceed the capabilities of the first responding fire units and frequently it is necessary not only to use all the forces

		within the fire department, but also to utilize neighboring fire departments.
A-13	Basic principle	There is a basic principle here that all non-sprinklered buildings are at risk of total loss regardless of the amount of firefighting resources available.
A-14	San Paulo high-rise	There are some buildings that are clearly beyond the control capabilities of any fire department. The San Paulo, Brazil, high-rise fire is one example. The first-arriving officer, when he saw the conditions he was faced with as he approached from about 2 blocks away, stopped the engine, got off the engine, knelt down beside of the engine for a few minutes then got back on the engine and went on to the fire. This was probably the most effective thing he did all day because he and the San Paulo fire department waited for the building to burn down to their firefighting capability which was relatively limited.
A-15	Horse-drawn engine	In fact, if a city's fire protection system is based upon the after-the-fact response, a horse-drawn fire engine may characterize the fire protection capability of those cities when faced with major fires such as high-rise. The horse-drawn fire apparatus is just as effective on the San Paulo fire as modern firefighting resources.
A-16	Currier and Ives conflagration	Over the years, the results of the nation's reactive fire protection system is that we have had major losses in this country because of the unrealistic expectation of the effectiveness of fire suppression. Most major cities in this country have burned down at least once. San Francisco, for example, has burned down 5 times.
A-17	Unrealistic expectation of the effectiveness of suppression	In the late 1800's, the insurance industry became concerned about the conflagrations in our cities and started promoting built-in fire protection such as: fire-resistant construction building codes, more effective fire control by fire departments, and sprinkler systems. As a result, conflagrations have almost disappeared and the commercial and

		industrial losses have been greatly reduced. In fact, the records of the Factory Mutual Insurance Company show that in the 1860's, prior to the installation of the sprinkler systems, their losses averaged 30 dollars to every 100 dollars insured value. By the 1970's, as a result of the installation of sprinkler systems, their losses were 2 to 3 cents per 100 dollars of insured value. It should be noted that the residential losses have maintained a constant rate primarily because insurance industries have not shown an interest in residential losses nor have others in the fire protection system.
A-18	Bar chart fire incident	In fact, the United States has the worst fire record in the world when measured in terms of the number of building fires per thousand people,
A-19	Bar chart fire deaths	and also the number of fire deaths per million population. Why should the United States have such high fire losses when we invest so many resources in fire protection? There are three primary factors. The public attitude in other countries, the legal responsibility of those who start fires in other countries, and the general approach to code enforcement.
A-20	Tokyo/Los Angeles	The city of Tokyo, which is four times the size of Los Angeles, has one quarter the number of fires as the city of Los Angeles. Although they operate under the same building codes, there is a different cultural attitude in Japan. A fire has a social stigma attached to it that does not occur in this country. Under pressure from their neighbors, people who have frequent fires, are required to move out of their homes. This attitude has a long history in the Japanese culture. In this country if you have a fire, people commiserate with you and bring you pies and cakes and help you recover from the fire. You become a social outcast in Japan. Also, although Japan has volunteers in their rural areas to provide fire suppression, they also have a large number of volunteers both in metropolitan and rural areas to provide fire safety education. There are 8,000 fire

		safety groups in the city of Tokyo that are primarily operated by the housewives and children of Tokyo.
A-21	Summary	In summary, in foreign countries, there is a higher level of public fire safety education. There is greater cultural pressure regarding fires. There is a higher level of code enforcement, and people are held legally responsible for the fires they start.
A-22	Wyncoff Hotel	The history of hotel fires in this country paints a typical picture of our approach to fire protection which is primarily reactive. We have built our cities and other structures without a large degree of concern for fire protection. Then, after we have major incidents, we go back and try to fix the system. The Wyncoff Hotel fire, which occurred in Atlanta, is typical of the hotel fire experience. This structure had a high life loss of over 200 people. The structure had open stairways. High flame spread in hallways, transoms over doors had minimum fire resistance. There was no fire alarm system, no sprinkler system and fire suppression was essentially ineffective.
A-23	Las Vegas Hilton	In the 1980's, there was a series of high-rise fires such as the Las Vegas Hilton,
A-24	Stouffer's Inn	the Stouffer Inn fire, and
A-25	Westchase Hilton	the Westchase Hilton, all of which had high life loss.
A-26	MGM Grand	Also in this period, the MGM Grand Fire in Las Vegas occurred. Something happened as a result of this fire. Like the Vietnam war, we saw the dramatic occurrence on TV and public expectation changed as a result of viewing this disaster.
A-27	MGM sprinkler head	There was an increased public awareness that sprinklers were required in high-rise buildings.
A-28	MGM velour wall	The MGM building was partially sprinklered. The casino area suffered almost total loss. It should be noted that the velour wall covering

		in the hallway leading to the convention center is intact because there was a sprinkler system in that hallway.
A-29	MGM smoke-stained hallway. Unrealistic expectation: fire-resistive structure, prevents smoke spread	This fire also reinforced the concept that fire-resistant construction was unable to control the rapid spread of fire without the assistance of an automatic sprinkler system. The unrealistic expectation that fire-resistive construction prevents smoke spread was adequately demonstrated in this fire.
A-30	MGM fatalities	The fatalities from the toxic by-products of the fire were found on the upper floors of the structure. In some cases, there was heavy concentration of smoke, and in other areas there was light concentration of smoke, but fatal levels of CO_2.
A-31	Hotel smoke and people at windows	In years past, when the smoke rose in buildings, people had some opportunity of going to windows to obtain fresh air. Our modern building construction now encloses the building with windows that cannot be opened. Also, air-handling systems spread the smoke throughout the building. There is an unrealistic expectation that the smoke removal systems within high-rise buildings are effective. Fire incidents and fire tests have raised serious doubts about the effectiveness of smoke-removal systems. One series of tests was "Operation San Francisco," which tested these systems in high-rise hotel buildings and documented the serious concerns about their effectiveness.
A-32	Hotel retrofit	As a result of the MGM fire, major retrofits of high-rise hotels commenced in this country. The state of Nevada adopted a retrofit sprinkler ordinance. The city of Honolulu adopted retrofit sprinkler ordinances, and the Mariott Corporation retrofitted all of the hotels in their system. The reason was a public expectation that hotels should be sprinklered and the industry was responding to that expectation.
A-33	Completed hallway	The new technology in the sprinkler industry enabled sprinkler systems to be installed at

		a relatively low cost and without damaging the aesthetics of hotels. Insurance reductions were significant. In Honolulu it was commonly found that a 75% reduction in insurance costs for hotel structures was obtained, and up to a 35% reduction for contents. There was a business incentive as well as a popular demand to sprinkler these facilities. However, a large number of unsprinklered high-rise structures still remain. Fatal fires in high-rise occupancies continue to occur such as the high-rise hotel in Puerto Rico and the Cathedral Hill fire in San Francisco. Proposed ordinances have been unsuccessful. Although highly supported by the mayor of San Francisco, an ordinance failed to be adopted in that city after the Cathedral Hill fire. It is significant to note that the hotel was retrofitted when it was reconstructed.
A-34	Firefighter with 1 1/2"	The fire loss prevention capability of suppression forces is limited. At best, the firefighters can confine a fire to the building or area of involvement upon arrival. Life loss usually occurs prior to the arrival of the fire department. Effective life-saving rescues by fire departments are rare. Buildings, contents, and occupants of unsprinklered buildings are at risk of total loss to fire.
A-35	Currier and Ives firefighter	This has been true since the time of Currier and Ives. Unrealistic expectations of fire suppression has a demonstrated history of...
A-36	Fallen Firefighter Memorial	unacceptable losses to property, lives of occupants, and the lives of firefighters.
A-37	Reflex time chart	The typical reflex time chart is used to demonstrate the reactive capabilities of fire suppression in after-the-fact response to fires. If we take the typical reflex time and say that a fire will be detected within 1 minute after it starts, the detection process will be completed in 1 minute; it will take a minute and a half to complete the alarm--that is the receipt of the alarm by the dispatch center, notification of the fire stations; it takes 20 seconds for the fire apparatus to get out of the station; 2-minute response time; a

		minute and a half to set up; and a minute to get water on the fire. Most firefighters would say that that is optimistic, although here we call it typical. What that response is intended to do is control fires prior to flashover. That is the point at which the interior contents of the building reach self-ignition at about 800°F. In order to prevent flashover, the temperature must be controlled within a given period of time.
A-38	Church fire flashover	In this example, flashover occurs according to the standard time temperature curve as the fire department is going out the door which is approximately 4 minutes after ignition. This standard time temperature curve is, however, a theoretical curve utilized in building materials testing.
A-39		A more realistic curve was developed by the Los Angeles city fire department in their Operation School Burning tests after the Our Lady of the Angel school fire in Chicago. According to this curve, it indicates that flashover occurs in approximately 7 to 8 minutes.
A-40- A-45	Time/Reflex slides	This time temperature curve has been validated by numerous lab tests. It seems to be a good time average to use for this analysis.
A-46	Time/Temperature sprinkler curve	Other fires have such a rapid rate of development they are detected at flashover; flammable liquid fires, or fires in areas of highly combustible contents. One of the answers to this flashover control problem is the use of automatic sprinkler systems. In the case of a sprinklered building, when the temperature rises to approximately 200°F, the sprinkler head activates. Time then is no longer a factor as the temperature never reaches the flashover point. The generation of toxic gases is maintained at a safe level. It is a proven fact that sprinkler systems in the U.S. are 96% effective. The 4 % of failures are from: turned off systems, explosions, fast moving fires or frozen systems.

A-47	Sprinkler head	Some of the concerns about sprinklers in the past have been excessive water damage, expensive installation, damage to aesthetics, and "It can't happen to me." Other resistance comes from those who just don't want any more governmental regulation. This is why we say that 40% of fire protection planning is technical to prove the technical aspect of the performance of such systems. But 60% of the master planning process is educational and political in order to overcome myths about the capabilities of manual firefighting and myths that relate to the effectiveness and costs of built-in fire protection.
A-48	Aerial ladder--2 men	We have numerous other myths such as the myth that aerial ladders provide a capability for life safety. It turns out that aerial ladders are effective in fire control, assisting the fire department to limit the spread of fires and enable occupants to escape by the normal paths in the building. But there is a myth held by many that large numbers of people can be evacuated by aerial ladders. There is significant evidence that this is not possible.
A-49	Aerial ladder "ladder pipe"	There are other myths that aerial ladders are effective in high-rise firefighting. This is not always true. Buildings have outreached the aerial ladders.
A-50	Fire growth versus reflex time	The fire growth versus reflex time should be considered in the design of a fire protection system. There are manageable elements of the system which can be controlled. It is possible to control the time of detection of the fire. It is also possible to control the reporting of the alarm--either by education of the public or by installation of an automatic alarm system. It is also possible to directly control the fire service response time by controlling automated dispatch system. Response time can be reduced through the addition of fire stations. Setup time can be reduced by better training of the firefighting forces. The ability to control this time is limited, tends to be expensive, and you are still dealing with the 7- to 8-minute flashover

A-51 UBC

period. You may arrive at the base of a high-rise building within 4 minutes and you have a possibility of controlling flashover, it may take you 20 minutes to an hour to reach the fire floor. The results are obvious--you are going to have flashover.

Where is our firefighting problem generated? The building code establishes the fire control problem, it also provides unrealistic expectations. The features of standard building codes provide only a minimal level of fire protection. Building code provides allowable floor areas based upon the occupancy type and risk, fire-resistant construction of the building, and the height of the structure. These requirements establish fire areas, fire flow, and resource requirements which we can calculate. It also can be stated that the areas within these fire walls are acceptable risks. The problem is that those factors are not considered in the development of allowable fire areas. People who have written this code have never thought of these areas in terms of fire risk, allowable fire areas, or the fire flow and resource requirements of the fire department. The fallacy is that the structural requirements will provide adequate protection for large or small cities despite their level of firefighting resources.

A-52 UBC

In order to analyze these unrealistic expectations, we have calculated the personnel required to deliver the required fire flow to these areas. If you set a goal to control a fire within a building within 5 to 10 minutes after the arrival of the fire department, you need a certain fire flow capability which can be calculated using the ISO fire flow formula. In the case of single-family dwellings which require approximately 16 personnel, fire departments are typically effective in extinguishing fires within 5 to 10 minutes. However, in a fire-resistive public assembly building of 22,500 sq. ft. the fire department would have to arrive with 90 people in order to accomplish the same results accomplished in single-family dwellings. Obviously, this is unrealistic. No

		departments that we know of are capable of providing 90 personnel on the scene within 5 to 10 minutes. Therefore, the result is that the fire either spreads to other areas or the fire department waits for the fire to burn down to their firefighting capabilities. Many features within the fire code provide unrealistic expectations. High-rise building construction allows smoke to spread, fire walls and fire doors fail because of improper installation or maintenance.
A-53	Wood roof	The efforts of the insurance industry have eliminated the use of combustible roofs in industrial and commercial occupancies. The results of combustible roofs on single-family dwellings are dramatic.
A-54	4-way/roof fires	They have allowed the multiple destruction of single-family dwellings, and this is increasingly evident in the wildland/urban interface fire problems that we are experiencing in all states in this nation.
A-55	There are alternatives	There are alternatives to combustible roofing just as there are alternatives in other construction features. In the case of roofing,
A-56	Perlite	a fire-retardant roofing material provides aesthetic, economic, and firesafe benefits.
A-57	Life safety effectiveness of smoke detectors	We know that smoke detectors provide effective life safety service. Residential fire safety has been improved through the use of smoke detectors. Many building codes in this country now require smoke detectors in all structures. The nationwide emphasis in *America Burning* was the force behind this movement. The smoke detector industry initiated public education regarding the installation of smoke detectors. The fire departments supported that. However, now that the market has been saturated, the smoke detector industry has discontinued its public education programs and we now have major concerns regarding the effectiveness and maintenance of these smoke

		detectors, many of which are 8 to 10 years old. We are beginning to see failures. It is time for the fire service to conduct a major public education program about maintenance and testing of sprinkler systems.
A-58	Units going out of doors	One of the things that we should consider in a fire protection master plan is the realistic capabilities of firefighting forces. It is very possible that by the time the apparatus is responding out the door, the fires have exceeded their capabilities and the fatalities they had hoped to prevent have already occurred.
A-59	Hand-drawn apparatus at high-rise fire	If the fire department responded with a hand-drawn fire apparatus to a fire in a high-rise building, it would probably be criticized by the citizens of the community.
A-60		However, the expectations of a modern fire department should not be higher than those of hand-drawn fire apparatus in relation to high-rise buildings and many other structures.
A-61	Sprinkler head	Unless adequate levels of building protection are provided, unrealistic expectations of the effectiveness of these firefighting capabilities will continue to produce unacceptable fire losses. We must remember that the fire service is faced with more than firefighting activities. Emergency medical, hazardous materials, building construction, and code enforcement are growing functions in the fire service.
A-62	4-way slide	The fire departments started providing emergency medical services to care for their own personnel who were injured and to provide services at accidents, particularly transportation accidents. The level of expectation regarding emergency medical services has increased with the television series *Emergency* and the installation of 911 systems serving as catalysts.

A-63	Injury/Stretcher	Some fire departments have assumed a larger and larger role in the EMS system. Some become involved in Advanced Life Safety systems (paramedic systems). In most fire departments today, 60% to 80% of the fire department's activities relate to emergency medical. It is significant that the fire department did not plan this; they merely reacted to demands for service. It is having a major impact on volunteer fire departments. The increased activities have resulted in employer resistance to the frequency of employees leaving work to provide emergency medical services. There are increased training requirements that make major demands on the time of volunteers. Exposure to contagious diseases is also increasing. There are major family impacts when people are required to spend more and more of their time in training and in response to emergency medical incidents. In today's world, when both spouses tend to be employed, the time spent at home is becoming more and more precious. The ability to provide a 24-hour EMS service with volunteers is becoming more difficult. The key factors here are that we did not anticipate the requirements of this service and we did not control the level of service that we are now providing. Many fire chiefs would prefer not to be as deeply involved in EMS as they now find themselves.
A-64	CPR reflex chart	We also find that there is an EMS system within which the fire service participates. And, if we look again at the reflex time, we find that the departments by themselves may have a difficult time being effective in worst case conditions such as cardiac arrest. It is necessary to involve others in this system for support. A trained citizenry can improve the effectiveness of fire departments in response to cardiac arrest by 20% as has been proven in the city of Seattle. There are also restrictions placed upon the fire departments as part of the system by the medical profession both in terms of legal constraints and operational constraints.

A-65	Crescent City, Ill.	The other major program that the fire service is becoming involved in is hazardous materials control. Incidents such as this Crescent City, Illinois, explosion demonstrates that firefighters are being drawn into the hazardous materials program in a manner similar to that of EMS. The fire service is being exposed as the first responder to spills and to new hazards. Increased training requirements are being legislated such as Title III SARA requirements and certain state requirements.
A-66	Tank truck	There is an increased possibility of exposure to all communities. No one today is immune to exposure to hazardous materials.
A-67	BLEVE	Most communities have railroad systems which carry large volumes of hazardous materials and which present significant risk.
A-68	Capitol	Legislation is being adopted which places more and more responsibility and training requirements upon the fire department to protect its citizens and its firefighters. The manager must evaluate the extent of involvement in hazardous materials. It is possible that others should perform the task that the fire service is assuming.
A-69	Firefighter in corner	The fire service is being backed into a corner. More services are being demanded without the corresponding increase in resources.
A-70	$	Funding for the increased demands of services have not kept pace. There is a voter resistance to increased expenditures at local government levels as demonstrated by
A-71	Proposition 13	Proposition 13 and other expenditure controls.
A-72	FLSA	
A-73	NFPA 1500, SARA Title III	Other regulations are placing requirements on fire departments without consideration for funding.

A-74	Vise	Local governments in general are being asked to increase services and cut costs. It is called *local government squeeze.*
A-75	Competing priorities	Even when funds are available there are competing priorities. The local governing bodies perceive many problems that must be solved with the public safety dollar--crime, drugs, the AIDS epidemic--all of these are issues that demand funding out of the public safety dollar. The fire problem may not be perceived in as high a priority as these other issues since local government tends to respond to complaints. The fire department may receive a low priority because few complaints are received. The fire service may see the need for a fire station.
A-76	EMS complaints and service demands	The medical profession may see the need for a hospital or clinic, and from what we hear about the impending costs of the AIDS epidemic, a higher and higher priority is going to be allocated to medical services. It should be remembered that the fire service receives few complaints about their service. In general, most politicians will consider the fire protection services to be adequate for that reason.
A-77	Purposes and benefits	It is necessary that in the process of planning the fire administrator demonstrate the benefits of control versus reaction, that there is a need for a fire protection system, and that a cost/risk management system can be effective for a community.
A-78	Cost/Risk management	In order to do this it is necessary to define the acceptable cost. What is the community willing to pay for fire protection? What risk is the community willing to accept? The community will probably accept more risks than the fire chief is willing to accept. What is that proper balance? That must be determined through the process of negotiations and evaluations. The acceptable levels of cost and risk will

establish the levels of service that the community and the fire service jointly accept as reasonable for that community. We believe the process to accomplish this is contained in the master planning process.

40 min.
Small Group
Activity 2.1

SM p. 2-9

IV. PROBLEMS FACING THE FIRE SERVICE

A. Purpose.

Each participant will develop a list of problems that they think will face the ~~volunteer~~ fire service over the next 10 years.

~~Divide~~ the class ~~into~~ groups of five participants.

B. Directions.

1. As a group, discuss the individual problem lists and develop a list of 5 problems that represent a group consensus.
2. Prioritize the five problems.
3. List the problems on flipchart paper.
4. Appoint a spokesperson to present the group's findings to the class.

Flipchart

Give the groups 15 minutes to work on the activity.

After the presentations are completed, within 15 minutes:

- Hold a brief discussion to identify reasons for areas of disagreement among groups.

- Discuss those problems which have a high potential for solution as a result of master planning.

Save the flipcharts covering participants' identified problems to be reviewed at the end of the course to validate this planning process for participants.

90 min.
Video and
Discussion

V. STRATEGIC PLANNING IN THE PRIVATE SECTOR

Introduce the video with the following points:

A. Purpose.

1. To provide the students with the private business sector perspective of strategic planning.

   a. The private sector has planning needs similar to, and sometimes more complex than, the public sector.

   b. It presents the views of corporate industry regarding the need for planning.

   c. It demonstrates the effectiveness of good planning in the private sector.

2. To obtain a clearer understanding of how corporate industry views planning and the role it plays in business.

B. This video identifies the importance planning plays in business and how it is used by some of the largest corporations in the world.

SM p. 2-5

Refer participants to "The Business of Management Worksheet." Explain that this sheet highlights a few of the key points in the video and may be used for taking notes.

Show "The Business of Management--Planning and The Management Process" #105. The video is 30 minutes long.

For 15 minutes discuss with the class the questions and comments from the worksheet. In general, take each point and ask what it means to them or how it applies.

A. How does this video apply to the fire service?

B. How is the fire service different?

C. Planning is: "Preparing for tomorrow, today."

D. Steps of the planning process are basically similar.

Methods and strategies can vary; there is no single method for every situation.

E. Strategic planning.

Tactical planning.

Operational planning.

F. No budgeting process makes sense without a road map of where you are going.

G. Strategic planning.

Considers a number of key parameters.

What are the needs criteria of the public?

H. AT&T.

A monopolist which was required to change. How is the fire service like AT&T (past, present, and future)?

I. "All organizations share a common need, the need to plan."

J. Who are the stockholders?

K. Who are the stakeholders?

L. "Managers who rely on policies that have evolved as guidelines over the years based on past historic approaches can no longer cope or deal with future uncertainties."

M. Uncertainty is one of the greatest reasons to plan.

N. The need for flexibility is a reason to plan.

O. Organizations function best where there is a sense of direction that is well understood all the way through the organization.

P. "Where there is no sense of long-term direction, I find that good people leave."

Key points that should be brought out by participants include:

1. *The concepts in this video apply closely to the fire service.*

2. *The fire service is usually one of the larger businesses in town and therefore should be run in a businesslike manner.*

3. *The fire service has a product--service. We provide a given number of personnel who are trained to use apparatus and equipment within a certain time period.*

4. *The fire service is one of the last monopolies in town.*

5. *There is no single best method of planning. It varies with the political climate and decisionmaking structure within the community.*

The terms tactical and operational planning are sometimes interchanged (precourse reading definitions and this video do not match).

ASK: *If this is such a good concept, then why are we not seeing everyone planning?*

What are the barriers to planning?

Problems Facing the Fire Service
(from pg 2-23)

60 min.
Slide Series

VI. INTRODUCTION TO THE PLANNING PROCESS

Planning Process Chart
SM p. 1-4

This slide presentation provides an overview of the ten-step planning process. It is intended to give a general understanding of the methods used in fire protection planning. Each step in the process will be discussed in detail in later sections.

SM p. 2-7

Refer participants to the outline of what is in a master plan in their Student Manual. Review the outline briefly with the class.

Introduction to the Planning Process
Master Planning Part B
Slide Series Narrative

SLIDE	VISUAL	DESCRIPTION
B-1	Hot Foot Master Planning	Master Planning Part B. This set of slides describes the master planning process which can be used to cope with those issues identified previously.
B-2	America Burning	The fire protection master planning process was identified and recommended in *America Burning* with the report from the National Fire Prevention and Control Administration.
B-3	Urban Guide	One of the first primary programs initiated by the National Fire Prevention and Control Administration, now the USFA, was the Master Planning Urban Guide for Fire Prevention Control: Master Planning. This was followed by a rural guide and a multijurisdictional guide.
B-4	Purposes and Benefits	This master planning process was designed to accomplish three general tasks:

		1) To confront the issues of control versus reaction, 2) To develop and maximize the use of a fire protection system, and 3) To establish the cost/risk management system that identified service levels, acceptance costs, and acceptable risks.
B-5	Disney World	We have evidence that this process works. One of the best examples is the Disney World Epcot Center, Florida, project in which these concepts were fully implemented. In this development, all buildings had been installed with smoke detectors and all buildings over 1,000 square feet had been sprinklered, including 7,000 dwellings. There have been no sprinkler failures. The maximum of two sprinkler heads have activated in any one fire, no loss of life or injury has been reported, and with the $3 billion assessed valuation over the past 15 years, the average annual fire loss has been less than $5,000 per year.
B-6	Fresno, CA	Fresno, California. Sprinkler Retrofit - Buildings in principle business districts. Sprinkler - All new construction over 5,000 sq. ft. Fire loss decreased 93.8%. Three fire stations in PBD reduced to one $1.9 million/year fire station operation savings. City insurance class rating from three to two.
B-7	Flow chart	The master planning process is broken into three phases: Preparation, Planning, and Implementation. The first phase of preparation includes the organization for a planning project and a decision to allocate the resources to this program. This is a time-consuming and expensive process which can produce great results but should not be taken lightly. There should be a formal analysis of the need for the program and a formal plan organization. Once that is completed and the decision and the commitment are made, then the process proceeds to the five major steps within the planning section of the program. First, there is the collection and analysis of data, then the definition of goals and objectives, the definition of the cost or requirements of the programs and the systems to accomplish those goals and objectives, a

		procedure to evaluate alternatives, and, finally, the analysis and adoption of the best programs and systems and the preparation of the master plan. Once a plan has been approved and those appropriate elements adopted by the governing body, the implementation process begins. This includes assigning responsibilities, establishing operating programs, and periodically updating and modifying the plan. If the process works properly, the updating and modifying of the plan are integrated into the routine operations of the organization and tend to function during the normal budget and program development each year.
B-8	Preparation	The preparation stage includes determining the need for the plan, the organization and obtaining commitment to conduct the plan.
B-9	Initial Decision	The decision to plan or not to plan should be based upon the identification of specific needs and desired results.
B-10	Decision to Plan	• Specific needs • Desired results
B-11	Organization	The organization for planning should include the formation of the management team; starting of data gathering; selection of the planning team leader, the planning team, and the advisory committee; the definition of the approval process; that is, who must review the results of this program and who must provide their approval; a need to provide the necessary funding, and establishment of a planning schedule.
B-12	Organizational Components	The organizational components of a plan are the **management group**, consisting normally of the chief executive officer of the community, the fire chief, and one or two other key individuals; the **planning team** consisting of members of the community who will actually perform the tasks of planning, the **planning team leader** who serves as the coordinator for the project; and the **advisory committee**.

B-13	Planning Team	Picture slide only.
B-14	Typical Planning Team	A typical planning team would consist of the assistant fire chief as chairman, assistant city manager, planner analyst, water division engineer, and assistant director of finance, all of whom would have a direct fire protection responsibility.
B-15	Planning Team Leader	The planning team leader should be someone with planning experience, organizational ability, and knowledge of the community government.
B-16	Advisory Committee	The advisory committee consists of significant individuals from the community who represent constituencies who will be affected by the issues raised in the master plan.
B-17	Word Organizer	This group should be identified by the management team and should be appointed by the governing body. They should not include fire department personnel, local government staff, or politicians. All of these personnel will have sufficient opportunity to input to the process. The purpose of an advisory committee is to resolve conflicts before presentation is made to the governing body. If you do not resolve these conflicts and your proposal is presented to the governing body unresolved, it is unlikely that the plan will be adopted. The advisory committee provides one additional key role, it provides the political support to adopt and implement the program once it is approved. It is essential that the role of this committee be clearly understood. It should be developed in writing in which the role of the committee is defined as advisory. It should be an *ad hoc* committee which is formed for the sole purpose of this process and is disbanded at the end of this project. You can anticipate a proposal from the members to become a permanent committee, because they will become interested in the process. But fire commissions have been found to be a detriment rather than an asset to the implementation to fire protection plans.

B-18	Keys to Success	The keys to success for a fire protection master plan are a commitment from local government, involvement of multiple agencies, the consideration of all potential strategies, and the community involvement (consequently their commitment).
B-19	Planning Process	The planning process consists of the activation of the planning project once it has been approved, identification of the community, the definition of the fire situation, establishment of goals and objectives, the development of resource requirements, and the consideration of alternatives.
B-20	Define the Situation	The first milestone is the definition of the situation. This process involves a major data-gathering effort which is probably the most difficult part of the planning process because most fire departments do not normally maintain data sufficient to conduct the long-range planning.
B-21	Why Collect Data?	The data that should be collected is to identify the fire situation, what risks exist, and what losses have occurred in the past. There is a need for data to define goals and objectives. Particular objectives must be measurable which requires specific data or criteria can be used for measurable objectives. If we are going to formulate and compare alternatives, there must be data to provide for these comparisons. When you justify decisions that come from this process, it is expected that those decisions can be quantified. Each year as you prepare and update the master plan, you will need to evaluate progress and document the need for modifications, because all of these efforts require data.
B-22	Data	The kinds of data needed in the historical, present, and future incident data are population development, land use, occupancy, financial, and fire incident data. There is also a need for other data such as pending legislation, water system performance, and planning data.

B-23	Cause of Residential Fires	Fire in the United States. There is a need for data to document the incidents that have occurred in terms of fires, deaths, injuries, and dollar loss.
B-24	Aerial of Town	There is a need to define the community: how many occupancies are there by type; what fire prevention work loads do they produce; what is the fire department's capacity to deal with these risks?
B-25	Sunville Zoning Map	In terms of future data, you will find that the planning department can provide most of the information you need to project the future of the community. It is important that fire department requirements be tied to planning requirements and planning data, especially zoning requirements. One of the goals of the master plan should be to integrate the fire protection requirements into the general plan requirements. When new developments occur and environmental impacts are developed, the requirements of fire protection should be included in those environmental impacts.
B-26	4-Way	There is a need to identify in significant detail the many programs and functions in which the fire department participates. That includes the activities, the direct costs, and the fire protection requirements.
B-27	Inspector	What will the requirements of new construction be? How many personnel hours will be required to enforce and maintain the fire code?
B-28	Riser	There is considerable evidence that although fire protection systems may be installed, there is a need to maintain that. How well are your fire protection systems being maintained? To what extent are the building code provisions maintained? There is unjustified expectation that the building code provision, once installed in the building, will remain intact.
B-29	Wedge/Door	In fact, we find that over time the fire protection features within buildings will deteriorate due to a lack of maintenance or inspection.

B-30	Fusible Link/Tank	Fusible links on flammable liquid storage tanks must be checked. All special hazard controls built-in protection have the same potential for failure due to improper maintenance and testing.
B-31	Public Ed Engine	There is a need to identify the public education that is conducted for children,
B-32	Pub. Ed.	for adults, for industry,
B-33	Pub. Ed.	or fire brigades.
B-34	Apartment Fire	There is a need to identify your ability to cope with major fire incidents.
B-35	Incident Commander	Have you developed and maintained an incident command system that is capable of managing major incidents?
B-36	Engines	Can you provide sufficient firefighting resources?
B-37	Radio Console	Do you have a communication system that is capable of handling day-to-day incidents as
B-38	Dispatch Center	well as major incidents?
B-39	Training	Have you provided training programs for multiple agencies to make these mutual-aid incidents function well?
B-40	State/Federal/Local	Have you developed coordination between state, federal, and local agencies, particularly in relationship to the disasters that your community may experience,
B-41	Flood	whether they be floods
B-42	Earthquake	or earthquakes?
B-43	Apparatus	There is a need also to evaluate internal operations of the organization such as apparatus maintenance, standards for apparatus design,
B-44	Engine	a scheduled replacement program,

B-45	Fire Station	fire station design criteria, and policies regarding sharing the facilities with other fire emergency medical agencies.
B-46	Hydrant Flow	There is also a need to identify those miscellaneous functions provided by the fire service. The fire service provides services related to hydrant testing, lockouts, and water leaks. There is a need to identify the resource cause, political necessities, and the potential for performance by others. It may be that the demands upon the fire service for the major functional requirements no longer allow them to devote time to such tasks as hydrant maintenance which should be provided by the water department. There are also some questions about other functions such as fund-raising. With the time of the volunteers being so limited, maybe you no longer have time to devote to fundraising. There may be serious consideration needed to funding volunteer operations completely without fundraising by the volunteers.
B-47	Set Goals and Objectives	The next milestone is to set goals and objectives.
B-48	Define	Under this phase, the acceptable levels of fire protection and risk are developed.
B-49	Goals	Goals are the fundamental, inclusive, and qualitative future-oriented standards that are developed for the community.
B-50	Examples of Goals	These become the statements in public policy. Will we provide basic life support; will we provide advanced life support? The community may want to emphasize built-in protection, shifting the cost to the developer, or it may want to remain a strong suppression force with minimal costs carried by the private sector. The community may choose to have a redevelopment agency to encourage growth with no added funds for the fire department. These are all public policy issues. They may be stated in terms of: fires will not exceed design limits in buildings; ambulatory patients will self-exit; nonambulatory patients will be

		protected. Policy issues not set in time are long-range and not usually necessary.
B-51	Objectives	The objectives are derived from the goals. They are specific, quantitative, obtainable, measurable, set in time, independent of the system or method to accomplish.
B-52	Examples of Objectives	Life loss due to fire will be reduced by 10% per year over next 5 years. First unit will arrive within 5 minutes at 95% of incidents. Full alarm assignment will arrive within 10 minutes at 95% of incidents. All buildings will be reinspected annually, except high hazard occupancies will be semi-annual. A community-wide fire safety education program will be implemented within 12 months.
B-53	Apartment House	3,000 sq. ft. burned out of a wood-framed apartment house may be an acceptable risk. That is a risk developed in the building code because fire walls are established every 3,000 sq. ft. In this case this could be called a success because the fire remained within the limits of the building code. However, the occupants exiting at 3 a.m., with the ceilings falling behind them, did not consider this fire a success.
B-54	Total Loss	This fire was obviously not a success. Was it an acceptable risk? How do you define risk?
B-55	Justice Scales	It is the measurable objectives that provide the definition of acceptable risks and acceptable costs.
B-56	Types of Fire Risks	There are many types and definitions of risk. **Fire flow** is typically used to define risk because it contains the major elements through which fire risk can be controlled. The ISO fire flow formula factors in construction fire resistance, occupancy risk, height, built-in protection, exposure protection, and combustible roof construction. These are all valid issues in the assessment of risk. **Life loss potential** can be evaluated, particularly in residential health care or school occupancies. **Economic significance** can be related to a major employer in the

		community. The **historical significance** of key buildings is obvious.
B-57	Select Programs and Policies	The next milestone is the selection of programs and policies. In order to implement the goals and objectives, various programs will be required.
B-58	Levels of Service Versus Risk	These programs can maintain or reduce fire risk by applying public or private resources. An existing high rate of risk may exist with low public and private resources. Those risks may be modified by immediate input of public and private funds. Or the risk may be further reduced by applying a high level of public costs and a medium level of private costs, or a medium public and a high private cost.
B-59	Alternative Systems Examples	Alternative systems to meet goals and objectives can be typified by increased codes and enforcement, functional consolidation, political consolidation, contractual protection, volunteer and career forces, or even a combination of police and fire.
B-60	Alternative Systems Must	A key factor is that all alternative systems must meet all objectives in order to be considered. The alternatives must be described in detail, and documented. This is essential to the proper evaluation of alternatives. In too many cases, an alternative is put forth for political reasons without being called to meet the requirements of all the objectives.
B-61	Results of Analysis	The results of analysis that are required to compare the alternatives should include an addition to the attainment of all objectives, the cost requirements, the political implications, the legal implications, and the alternatives.
B-62	Milestones	Approval and Implementation.
B-63	Council Action	The governing body will probably adopt a master planning concept; the entire master plan will not be codified. The actions taken by a typical city council to implement a plan will include specific actions such as general plan

		revision, building code revision, fire code revision, revised capital improvement programs, and a current budget.
B-64	Advisory Committee	At this point the advisory committee will play its major role. It will provide political support to obtain the approval of these proposals before the governing body. It is recommended that the most influential members of the advisory committee make the presentation to the city council.
B-65	Our Master Plan	Once the master plan is approved, it will become our master plan because we will have had input from all segments of the community, it will have been fully reviewed by all those affected by the plan, and it will have the political support for implementation.
B-66	General Plan	One of the first steps after approval of the plan is to modify the community general plan so that all future developments will proceed in compliance with the provisions of the fire protection master plan.
B-67	Westville Map	
B-68	Implementation Management	The implementation management includes the assignment of responsibilities to individuals, monitoring progress, measuring results on a frequent basis, correcting deviations, and modifying the plan--preferably annually at the development of next year's budget program.
B-69	Scales with photos	It is essential that the elements of the plan be consistently measured throughout the year. Which programs are working; which programs are not working? This will require an improved data system, and continual analysis and tracking by management. If these functions are performed, they will define the acceptable cost/risk and establish the level of service.
	Flow Chart	End with the flowchart.
B-70	Process	Define acceptable costs. Define acceptable risks. Establish level of service.

MANAGING DISASTER IMPACTS

DAMAGE CONTROL AFTER A MAJOR INCIDENTS.

WHAT POLITICAL RISKS EXIST FOR A F.D. AFTER A DISASTER:

B-71 | Hot Foot
Master Planning

120 min.
Reading
Assignment

VII. READING ASSIGNMENT

Sunville Book

Participants are assigned to read the Sunville Exercise Community Description, Facts, Fire Department Data, and review Data Compilation Report. Participants may be requested to read in the classroom or leave. Emphasize that they are responsible for spending 2 hours studying the material.

Sunville Manual-
Read pp. 5-33, 34
Review pp. 35-end

120 min.
3 Videos: Citizen on the Street; On The Street With Fire Safety; Fire Safe California

IX. EVENING SESSION

The evening session (7:00 to 9:00 p.m.) consists of showing three videotapes.

The first videotape is citizen interviews regarding the public's knowledge of fire department programs, the activities of firefighters, and general fire safety. The second tape was produced four years after the first and reflects the changes in public knowledge as a result of fire safety education programs. It also should encourage those communities that are anticipating master planning to identify community attitudes.

A. Purpose:

1. To provide and understanding of the methods of obtaining citizen input using one informal process.

UNIT 3: SUNVILLE OVERVIEW

OBJECTIVES

The participants will:

1. *Identify data elements relevant to fire and EMS planning.*
2. *Use historical incident information to ascertain present concerns and project future fire service needs.*
3. *Identify reliable sources of relevant data.*
4. *Organize data so it can be analyzed to forecast future fire service needs.*
5. *Define fire demand zones.*
6. *Establish baseline data for future evaluation.*
7. *Identify the two evaluation methods of assessing fire station locations.*
8. *Identify the spheres of influence and the methods of their determination.*
9. *Identify a manner in which this information can be conveyed to a council or other decisionmaking group.*
10. *Define the purpose and process of determining the relative level of risk in the community based upon what there is to burn.*
11. *Identify a method of determining the level of service provided with the present service model.*

ATTITUDES TO FOSTER

1. Historical information (fire and EMS incident and experience) is a valuable tool for projecting future needs.

2. Data must be accurate, well organized, and objectively interpreted to be useful.

3. The honest and ethical use of data is essential for good fire protection management.

4. Data retrieval and analysis is hard work but the results can be rewarding.

5. The development of fire station location contour maps that reflect service levels is an important part of the master planning process.

6. This process does not require any "special" knowledge and can be performed by most fire agencies in-house.

7. Conveying service levels allows the decisionmaker to make better decisions concerning fire station location.

POINTS FOR THE INSTRUCTOR

What has happened in the past, with respect to services required, can help to identify, reinforce, or refute theoretical projections of what might happen in the future. It should be emphasized that clear and accurate base information is essential for measuring effectiveness of programs in the future. Planning starts with who you are today.

From a theoretical standpoint, it is more appropriate to identify system goals and performance objectives before historical information is considered. However, in practical use it helps to identify the present situation in terms of life, property, and community impact before goals and objectives are formulated. It helps to identify practical expectations or problems that need to be resolved and potential improvements to be made.

As the first step in problem identification, emphasis should be placed upon the relationships among all pieces of the available information.

Occasionally, it may be advantageous to reinforce the need to fluctuate back and forth between steps during the planning process to be sure the final plan is objective and realistic.

This unit also aims to give the participants a chance to view and analyze a prepared set of data elements by describing an actual community situation. From this, participants will identify a list of observations that may need further analysis in a later step--problem identification.

It is important that the students read the material and understand the community of Sunville fully.

METHODOLOGY

This unit uses lecture and small group activities to present background information on a community and ways that data can be displayed.

The major portion is organized so students can participate through group activity in the analysis of a typical community's historical and projected fire, EMS, and life safety situation.

Short lecture sessions are followed by hands-on applications to the community of Sunville.

ESTIMATED TIME
(Total Time: 6 hr., 50 min.)

5 min.	Lecture	
	Objectives and Overview	IG 3-7
15 min.	Sunville Slide Tape Presentation	IG 3-7
180 min.	Small Group Activity 3.1	IG 3-17
	Sunville Data Analysis--Part 1	
105 min.	Lecture	
	Development and Use of Fire Demand Zones (30 min.)	IG 3-21
	Fire Station Location Analysis (30 min.)	IG 3-27
	Analyzing the Present Situation--Risk Analysis (45 min.)	IG 3-41
105 min.	Small Group Activity 3.2	IG 3-63
	Sunville Data Analysis--Part 2	

AUDIOVISUAL

OHTs 3.1 to 3.72
Slide Tape--Sunville Slide Tape Presentation (1-61) (15 min.)
Maps and Overlays

Map 1	Land Use
Map 2	Historical Development
Map 3	Population
Map 4	Assessed Valuation
Map 5	Transportation
Map 6	Future Land Use
Map 7	Water Distribution System

OVL 1	Fire Demand Zones
OVL 2	Average Fire Flow Required and Available for the FDZ
OVL 3	Case Studies
OVL 4	Fire Incidents/Working Fires
OVL 5	EMS Incidents
OVL 6	Public Facilities
OVL 7	Five-Year Incident Forecase (Fire and EMS)
OVL 8	Target Hazards
OVL 9	Five-Minute Sphere of Influence

5 min.
Lecture

I. OBJECTIVES

OHT 3.1

The participants will:

A. Identify data elements relevant to fire and EMS planning.

B. Use historical incident information to ascertain present concerns and project future fire service needs.

C. Identify reliable sources of relevant data.

OHT 3.2

D. Organize data so it can be analyzed to forecast future fire service needs.

E. Define fire demand zones.

F. Establish baseline data for future evaluation.

G. Identify the two evaluation methods of assessing fire station locations.

H. Identify the spheres of influence and the methods of their determination.

OHT 3.3

I. Identify a manner in which this information can be conveyed to a council or other decision-making group.

J. Define the purpose and process of determining the relative level of risk in the community based upon what there is to burn.

K. Identify a method of determining the level of service provided with the present service model.

II. OVERVIEW

Explain that this unit will be divided into sections and delivered in the following order:

A. Sunville Workshop Data

B. Sunville Data Analysis--Part 1

C. Development and Use of Fire Demand Zones

D. Fire Station Location Analysis

E. Analyzing the Present Situation--Risk Analysis

F. Sunville Data Analysis--Part 2

15 min.
Slide Tape
Presentation

SUNVILLE SLIDE TAPE PRESENTATION

Present the Sunville slide tape program as an introduction to the Sunville exercise.

The slide tape presentation will restate a number of the ideas discussed before and provide an overview of the kinds of data that should be considered in data analysis.

It also will suggest methods of organizing data so it can be compared and contrasted more easily to uncover the not-so-obvious problems.

SUNVILLE SLIDE TAPE SCRIPT

Slide 1

Music

Slide 2

Music--Welcome to Sunville...
Sunville is a hypothetical city patterned in the ~~rural United~~ States.

Slide 3

The city of Sunville is a small community with an agricultural economic base, located in Lewis county, and

Slide 4

adjacent to Boehne National Forest.

Slide 5

The city covers an area of 9 square miles, at an elevation of 1100 feet above sea level. The average annual rainfall is 7.34 inches.

Slide 6

The terrain is relatively flat with a gentle rise to the east. Two small rivers run through the city into a large river that borders the city to the north and runs to the ocean.

Slide 7

Incorporated in 1820, this community has a population of ~~6,000~~ with a rich and proud history and a tradition of self-determination.

Slide 8

In recent years the community has experienced an annual increase in population of 4% to 5% per year and continues to grow at this steady rate.

Slide 9

Sunville public and private schools have a combined enrollment of 8,198 students with active sports and recreational programs.

Slide 10

Sunville has a central business district,

Slide 11

a decentralized modern shopping mall,

Slide 12

with small shopping areas dispersed throughout the community,

Slide 13

a private university,

Slide 14

a 70-bed hospital,

Slide 15

and new diversified industry.

Slide 16

Sunville is primarily composed of medium-income, single-family-dwelling units,

Slide 17

with scattered areas of low-income older housing, used by seasonal farm laborers,

Slide 18

an area of large, expensive upper-income homes on the north side of the city,

Slide 19

and areas composed of multi-family residential apartment complexes up to three stories in height that reflect medium to high income.

Slide 20

The central business district has narrow streets,

Slide 21

with older masonry buildings,

Slide 22

up to four stories in height, typical of turn-of-the-century construction,

Slide 23

and many of these buildings are listed on the National Register of Historic Places.

Slide 24

Sunville is a center of considerable importance to Lewis county and the surrounding area and serves as the county seat.

Slide 25

Two freeways, one intrastate and one interstate with a bypass for trucks and a business segment, serve the community.

Slide 26

The major railway thoroughfare serves most communities in the region with a wide variety of freight, including chemicals and explosives for industry in the neighboring communities.

Slide 27

Sunville has several railroad spurs which serve local business and industry,

Slide 28

a community airport that can accommodate aircraft up to the size of small business jets, and

Slide 29

a base for the local ag-chem company's crop dusting aircraft operation.

Slide 30

Sunville's history and economic base has been primarily devoted to agricultural activities over the years,

Slide 31

however, times are changing in Sunville...
with an increase in ~~industrial, and~~

Slide 32

commercial activity, and tourism associated with the Boehne National Forest.

Slide 33

Sunville is becoming a community of diverse industry, with ~~its first privately owned~~ light industrial complex consisting of four buildings at present,

Slide 34

as well as a large hardwood floor manufacturing plant and lumber storage yard,

Slide 35

an auto parts manufacturer,

Slide 36

an electronics plant,

Slide 37

a major agricultural chemical distribution plant,

Slide 38

bulk propane storage,

Slide 39

bulk gasoline storage,

Slide 40

and various chemical tank cars on railroad spurs.

Slide 41

The Sunville Fire Department has experienced an increase in demand for services due to the growth and changes in the community.

Slide 42

The Sunville Fire Department was organized in the late 1800's and

Slide 43

served as ~~an all~~ volunteer force until recent years.

Slide 44

The department is presently staffed by ~~4~~ paid personnel and 29 volunteers, with approval for 35 volunteers.

Slide 45

Because of the difficulties of recruiting and retaining volunteers, the department has not been able to maintain the maximum number allotted.

Slide 46

The department has ~~one station that was built by volunteers in 1923 and remodeled several times over the years. It is crowded and in need of major repairs.~~

Slide 47

Due to the age and condition of apparatus, the department has experienced excessive downtime for repairs, resulting in inadequate number of apparatus for emergency response.

Slide 48

The department provides emergency medical services to the city and surrounding area with a rescue/ambulance and ~~10~~ trained EMTs.

Slide 49

EMS staffing is difficult due to an increase in emergency medical incidents.

Slide 50

Overall, the community of Sunville anticipates a 20% growth in all areas over the next 5 years.

Slide 51

It has became obvious that some action is needed to improve fire protection in Sunville, and to prepare for the future.

Slide 52

The fire department received approval from the city administration to study the fire problems and make recommendations to develop a master plan for fire protection services.

Slide 53

With funding from "20th Century Sunville," a development activity of the business community,

Slide 54

the fire department contracted with a consultant to develop and prepare the data needed to assist the planning team in its study.

Slide 55

Working with the Sunville city planner, the planning team developed a series of maps to illustrate the nature of the community.

Slide 56

A city base map was developed showing direction of future growth.

Slide 57

The team developed a base land use map with various colors showing such types of zoning use as residential, commercial, industrial, and agricultural.

Slide 58

A fire demand zone map was prepared that identifies the data-gathering areas. Numerous overlays are then developed to help identify various problems and areas of potential change.

Slide 59

The planners also gathered historical data and in several categories developed future projections.

Slide 60

For all areas studied, the Sunville planning team members developed maps and overlays that depict their findings and organized the data to facilitate aggressive analysis.

Slide 61

You will now become the planning team for Sunville with these tools provided, and with direction from your instructors, you will be developing the Sunville fire protection master plan.

180 min.
Small Group
Activity 3.1

IV. SUNVILLE DATA ANALYSIS--PART 1

In the classroom, divide the class into small groups of approximately five persons for a workshop data analysis exercise. Do not create more than 6 groups; no two people from any given agency in the same group. The participants will have a typical data situation for review based on the mythical city of Sunville. From this data, the groups will be led through the data analysis by a sequence of questions and comparisons.

~~*Hand out Data Analysis Worksheets.*~~

A. Purpose of activity.

1. Individuals who can understand and execute the principles presented in this section should be qualified to conduct a similar planning process in their own political jurisdiction.

2. This exercise not only provides a basis for comprehending the process of master planning but, more importantly, provides an experience that should improve one's ability to transfer the process to a real-world situation.

3. The ability to carry out master planning at the local level is the primary objective of this class.

B. Introduction.

1. The data for the city of Sunville is all taken from actual communities.

2. Every attempt has been made to duplicate an actual city and provide as realistic an experience as possible.

C. Objective.

The objective of this activity is to define a community in detail--using historical, present, and future data, a method of data gathering, methods of formatting, and data relationships--to enable you to develop observations regarding these data relationships.

D. Directions for data analysis.

1. The key to this exercise is not whether you complete all of the questions, but, rather, that you experience this portion of the master planning process, i.e., collecting and analyzing data.

2. Your group will be a planning team, not unlike the planning team you will assemble to prepare a master plan.

3. Refer back to the Sunville Community Description.

Handouts
Maps and
Overlays

Distribute maps and overlays. Tell the class: ***Do not mark on maps or overlays.*** *Repeat this as many times as necessary to ensure that the visuals are not destroyed!*

SM p. 3-11

4. Use the data from these maps and overlays.

5. Then, starting with question set #1, develop the answers within your planning team. Work through until you get to question set #6. Stop at that point for a short discussion on establishing fire demand zones (FDZs).

6. You will notice that the data for Sunville has been organized by FDZs. FDZs generally are geographic areas used to collect and maintain data.

105 min.
Lecture

V. DEVELOPMENT AND USE OF FIRE DEMAND ZONES (30 min.)

OHT 3.4

A. Data requirements.

1. In some departments, resources may be available for sophisticated data analysis projects or they may exist in another department within the city.

2. In most smaller communities resources are limited. The key is to find the level that meets your analysis needs, yet is suitable for your department.

3. The data must be assembled in such a manner as to allow analysis in sufficient depth, yet simple enough not to overwhelm.

4. It needs to be well organized with enough utility to be applicable to future analysis.

5. Above all, it needs to portray a true picture of the fire service needs of the community.

6. When considering all of these data requirements, it also becomes apparent that analyzing data for an entire community at one time can be cumbersome at best.

OHT 3.5

B. Divide the data into smaller geographic areas.

1. Simplify the analysis.

2. The ideal situation is to take each occupancy within the city and assess its needs individually, developing a specific plan for each analysis. Obviously, that would be time-prohibitive.

3. The next best approach, and the one we recommend, is to divide the area into similar segments and identify the "average" occupancy and it's fire protection/EMS needs.

   The term most commonly used to identify these smaller geographic segments is fire demand zone (FDZ).

OHT 3.6

C. The factors for FDZ development are:

1. General nature of occupancies (land use).

2. Required fire flow.

3. History of service need.

4. Population density.

5. Age.

6. Distance from fire station(s) (barriers to response).

7. Other special considerations (airports, colleges, prisons, anything significant enough to merit individual attention).

OHT 3.7

D. A simple definition of an FDZ is a geographic area used to collect and maintain data for planning.

FDZs may be:

- Geographical areas.

- Homogeneous occupancy areas.

- Small enough to accommodate aggregation in order to compare with other agency data collection areas or to transfer areas among fire management areas.

OHT 3.8

E. Potential additional uses may be:

1. Incident analysis.

2. ~~Hazard inspection~~ Fire Code enforcement management.

3. Hydrant servicing schedule.

4. ~~Home inspection~~ Haz Mat Inventory.

5. ~~Other~~ public ~~information~~ Education activities.

OHT 3.9

F. Development of FDZs.

While several different approaches may be used (one is as good as another in most cases), the following steps are offered as a starting point for zone development.

Use OHT 3.9 to provide an overview of the steps. Then examine each step again.

OHT 3.10
OHT 3.11

1. **Step 1:** Divide the community into 1-mile-square segments (township/range/section format). Contact your local planner or city engineer for a similar starting point.

OHT 3.12

2. **Step 2:** Secure a land use map (planning dept.) and review the general land uses. Divide the segments further to reflect general land uses. There usually will be a mixture of occupancies, with some residential within commercial lines, schools within residential lines, etc. Keep in mind that this analysis is developing a general overview of risk and that we cannot evaluate each occupancy individually.

OHT 3.13

3. **Step 3:** Use overlays to identify barriers to response, freeways, rivers, etc., and divide segments further.

OHT 3.14

4. **Step 4:** Further divide out any special occupancies that you may wish to evaluate individually, or to keep records on for future use; e.g., colleges, prisons, large businesses, etc.

OHT 3.15
OHT 3.16

G. Fire management areas.

Fire management areas (FMAs) are clusters of FDZs for the purposes of implementing and managing the programs developed through this planning effort. First-in response areas for stations or fire prevention inspection districts are typical fire management areas.

They also may be identified as:

- Fire station response areas.
- Battalions.
- Inspection or public education districts.
- Wildland/urban interface or intermix areas.

VI. FIRE STATION LOCATION ANALYSIS (30 min.)

OHT 3.17

A. Fire station location is important in that it usually represents the point from which most emergency services are initiated.

B. Fire station location is one of the main elements in every fire master plan.

OHT 3.18

C. Analysis of the location(s) of fire stations, actual or planned:

1. Determines the extent to which they meet community response objectives.
2. Does not include determining personnel and apparatus needs.

OHT 3.19

3. Procedure.
   a. The procedure listed is only one means of assessing the adequacy of stations.

b. The procedure suggested is a rather basic procedure; however, it can become complex if your community has chosen a complicated set of response objectives.

- Different for different occupancies.

- Population densities.

- Etc.

c. The procedure described assumes that community-wide response time objectives have been established for first arrival and total resources required to provide maximum fire flow. (i.e., response time = 5 min. to 95% of the incidents.)

OHT 3.20

D. Two evaluations.

There are two principal areas of evaluation when considering an assessment of fire station locations:

1. Response Time:

The ability of the fire agency to attack the fire prior to "flashover," or before the building is involved heavily in fire. "Can we get there prior to flashover?"

2. Fire Flow:

a. The relationship between the hazard level of the community and the fire services provided; or, "once the fire has started, can we put it out?"

b. The Risk Analysis portion of the class addresses the relationship between the hazard level of the community and the fire forces available.

c. The I.S.O. Fire Flow Formula which this is based upon, contains the factors which can identity and establish the required fire flow, i.e.,

- Building construction type.
- Building area.
- Building height.
- Occupancy class.
- Exposures.
- Noncombustible roofs.
- Automatic fire sprinklers.

OHT 3.21

3. The first concern addresses the ability of the fire forces to attack the fire before the building becomes involved heavily in fire.

a. When fire forces are rapidly deployed, there are far fewer resources needed and, therefore, more can be accomplished with less.

b. Success in this area somewhat negates the impacts of limited resources.

OHT 3.22

4. Response time is measured from the time the fire apparatus leaves the fire station until it arrives at the scene.

a. The target response time should be developed by the planning team and approved by the citizens advisory board.

b. For purposes of this class, an acceptable response time of 5 minutes has been identified as the recommended time for the first unit (Fire and EMS).

c. 10 minutes has been established as the response time for the full alarm assignment.

OHT 3.23

Explain the Time/Temperature Curve using the overhead. Discuss time development.

OHT 3.24

E. Determine the area which should be served by each fire facility.

1. Service area is based on a response time from the station.

a. Established by the average response speed and the distance traveled.

b. Depends upon the physical characteristics of the area (road conditions, etc.).

c. Shape sometimes assumes an odd configuration due to access restrictions.

OHT 3.25

d. This approach is called the modified grid method.

OHT 3.26

2. There are other methods, such as drawing circles or diamonds, without regard for the physical nature of the community.

a. The inaccuracy of these methods precludes their use.

b. Neither of these methods takes into consideration the impact of:

- Freeways.

- Rivers.

- Canyons.

- Other barriers to response.

OHT 3.27

3. There are several procedures which may be used to develop service area perimeter.

   a. The most accurate and time-consuming is to actually drive the apparatus to several locations around the service area.

   b. An alternate method, acceptable for planning, is to determine an average response speed in mph and multiply that speed by the identified response time objective.

4. Example: A 5-minute response time objective and an average speed of 20 mph results in a 1.7-mile response distance. You then determine the 1.7-mile points in all directions and connect the dots to give a picture of the area area covered.

5. The use of an engineer's wheel can aid greatly in determining the response area served.

   a. With the wheel set to the effective response distance, several different runs can be made on the map and the service area easily defined.

   b. It is important to follow actual routes of travel as would be taken during an emergency response.

OHT 3.28

F. Average vehicle speed.

1. The average vehicle speed should be determined based on response records indicating response time and distance traveled from the fire department.

2. After careful review of incidents, an average response speed can be selected.

a. It is suggested that at least 50 incidents be selected.

b. Throw out the best 10 and worst 10 to assure that an average is attained.

OHT 3.29

G. Fire station service area maps.

1. A set of maps should be prepared that indicates the area served within 5 minutes from each of the station(s) for both the present system and at least two options.

2. The analysis of those maps can then be conducted in terms of:

a. Population served.

b. Assessed valuation.

c. Historic response needs (number of incidents).

OHT 3.30

H. Response map analysis.

1. Viewing the response maps will readily determine the areas in the community that are "covered" and those "uncovered."

a. Being covered means that, in general, a response to that location can be made within the time objective.

b. Being uncovered means that, in general, response to that area cannot be made within the desired time criteria.

2. Uncovered does not mean that there is no fire protection.

a. For each uncovered area, the community must decide whether to add or reposition resources to meet the criteria or accept the risk associated with lack of coverage within the time criteria.

b. In resolving the "uncovered" areas, remember the approximations made in developing the response maps and the uncertainties involved in actual response.

c. These approximations and uncertainties will generally be such that the response time objective should be used as a guide and not an absolute requirement.

OHT 3.31

l. Coloring of maps.

1. When the response maps are to be used for presentations, it becomes important to indicate the uncovered area instead of the covered area.

2. One technique is to color the areas not covered within the response time frame in a red color using felt tip markers.

a. This color can be readily seen from a distance.

b. Clearly indicates the areas in question.

OHT 3.32

VII. ANALYZING THE PRESENT SITUATION--RISK ANALYSIS (45 min.)

In the process of master planning it is advantageous to identify and quantify the present level of hazard within the community in order to allow for the assessment of any modifications or changes. Performing an unemotional, non-threatening, risk assessment that is based on quantifiable data can be of immeasurable value to the study and the decisionmakers.

A. Introduction.

1. Presenting potential of large-life-loss fire to city officials is often dismissed as something that "can't happen here."

2. Share problems with officials prior to sharing solutions, in term they can understand.

3. Stress the problems with a greater potential to happen.

4. Stress that the public expects government to anticipate and mitigate fire risks.

5. The performance of a risk analysis can be highly beneficial in the development of an understanding of the fire needs of the community.

OHT 3.33

B. Benefits of risk analysis.

1. Understanding of fire problem in community by:

   a. Department members.

   b. Council members.

   c. Other city management.

   d. The community.

2. Quantifying fire problem for all to criticize or accept.

OHT 3.34

C. Fire risks defined.

The potential vulnerability to fire with the possibility of loss, injury, disadvantage, or destruction.

OHT 3.35

D. Categories of risk.

1. Life.
2. Property.
3. Essential services risk.
4. Community impact.
5. Environmental damage.

OHT 3.36

E. Factors to consider when determining risk (the five questions to ask).

1. Who is endangered?
2. What is endangered?
3. Where will the incident occur?
4. Why will the incident occur?
5. When will the incident occur?

OHT 3.37

F. The kinds of risk may be defined as:

Potential vulnerability for the community that may result from:

1. Fire.
2. Explosion.
3. Hazardous materials incident.
4. Accident.
5. Natural disaster.
6. Sudden illness.

OHT 3.38

G. Risks may cause loss of:

1. Life and property.
2. Jobs and tax base.
3. Essential community services.
4. Environmental resources.
5. Historic value.
6. Community reputation.

OHT 3.39

H. Risk modifiers.

1. We will be dealing with the modifiers related to fire in structures however, these same concepts can be applied to any analysis.
2. Structure or building.
   a. Type of construction.
   b. Size (length, width, and height).
   c. Code compliance.
   d. Built-in protection.
      - Active (sprinklers and other suppression systems).
      - Passive (detection systems, standpipes).
   e. Any other influence that might impact the severity of an incident.
      - Occupant training, education, etc.
3. When determining the type(s) of risk analysis you wish to undertake, review each of these items and ascertain their degree of relativity to your community's planning needs.

For instance:

a. If your community happens to be atop a fault line you certainly would want to consider impacts of earthquakes.

b. If your community receives 70% of its tax revenues from one business who also happens to employ 30% of the town's work force, then you would definitely want to perform a specific risk analysis on that occupancy.

c. If your community receives a substantial portion of its revenue from tourism based upon the large, well-kept, Victorian mansions of historic significance located in the town, then you would want to pay specific attention to these structures.

I. Risk analysis application.

1. Formula for developing a risk analysis:

OHT 3.40

REQUIRED - AVAILABLE = RISK

a. Any given structure has a resource requirement for extinguishment should a fire occur.

b. The fire department also has a given response capacity.

c. The difference between these two factors yields the quantification of the degree of risk for that structure.

This may be a good time to reaffirm that present risk and historical loss may be defined as acceptable risk and acceptable loss. Even though it may not be a conscious decision, by allowing it to continue over a period of time, it is an acceptable community loss.

OHT 3.41

2. Make the acceptance of the level of risk a conscious decision in the community that is understood by the decisionmakers.

   a. The development of the understanding of that risk is your job.

   b. The establishment of the level of risk is their job.

   c. One is technical, the other is political.

3. It is important to establish the issues of evaluation in performing any risk analysis. These are the criteria that will be used to measure the level of need as well as the level of services provided.

OHT 3.42

4. Identifying criteria for assessment of fire risk.

   a. Personnel.

   b. Time.

   c. Water.

   d. Equipment and apparatus could be included along with training, etc. but the three noted above appear to be the main elements to consider.

OHT 3.43

5. Common thread.

   GPM is related to each of the criteria for assessment in the following manner:

SM p. 3-43

   a. To personnel through several staffing studies but most logically applied in table. How many firefighters are necessary to apply this required fire flow?

b. To the amount of water necessary to extinguish a fire in the largest single undivided area. (Accepted standard: Guide for the determination of required fire flow developed by ISO.)

c. To time. How soon will the personnel need to arrive in order to be effective?

Take time to explain Table 3-1 taken from USFA Urban Guide for Fire Prevention Control. Refer participants to their Student Manual.

SM p.3-43

TABLE 3-1

PERSONNEL REQUIRED TO RESPOND WITHIN A TIME

Fire Flow Required	Total Suppression Personnel Required	Personnel Required to Respond Within a Time (min.)					
		5.0			10		
250	3		3		3		
500	6		3		6		
750	9		6		9		
1,000	12		6		12		
1,500	15		6		15		
2,000	18		12		18		
2,500	21		12		21		
3,000	24		12		24		
3,500	27		12		27		
4,000	30		12		30		
4,500	33		12		33		
5,000	36		18		36		
5,500	42		18		42		
6,000	48		18		48		
6,500	54		18		54		
7,000	60		18		60		
7,500	66		18		66		
8,000	72		18		72		

OHT 3.45

d. Summary.

The premise is that to effectively fight a fire in a structure you need sufficient personnel, sufficient water, and the ability to get each one there in time with the necessary number of firefighters.

6. Establishing Standards/Services Levels.

OHT 3.46

a. Definition: "A point of reference from which measurements can be made."

b. In dealing with the time frames given in the fire service, there appear to be two points of time assessment or benchmarks.

These are:

OHT 3.47

- Five minutes, the point prior to flashover, initial response.

- Ten minutes, the point of substantial involvement, full response.

SM p. 3-47

Table 3-1, with slight modification, again lends itself nicely to this process.

7. The risk analysis considerations:

a. Plan for one fire at a time.

b. Plan for the average flow.

OHT 3.48

8. Determine resources required.

Refer back to Table 3-1.

a. Quantify required fire flow.

- The best approach appears to be to gather two or three persons of expertise in the department and identify representative flows for each FDZ. This is the procedure for the Sunville exercise.

SM p. 3-51

The approach developed and fostered by NFA is the Quick Calculation Fire Flow Formula for structure fires. Explain to students that information on this method is available in their Student Manual. Consider this method if no hydrants or weak hydrants are all that's available.

- The flows can then be open to comment from the rest of the department and the community.

b. Identify required personnel at 5 minutes and 10 minutes.

OHT 3.49

9. Determining resources available.

a. Determine average travel speed.

b. Identify distance from each station to each FDZ.

c. Identify average staffing.

d. Identify the average staffing time, time from dispatch until apparatus is staffed.

e. Calculate personnel available.

10. The results.

SM p. 3-45 to
SM p. 3-46

Have students refer to The Sunville Response Assessment. Discuss the features of the printout and the results noted. (Sunville Response Assessment Model--daytime and nighttime.) Use the overheads provided to explain each column.

OHT 50 to 60 Day
OHT 61 to 71 Night

a. Compare daytime response with night/weekend response.

b. What is the response capacity of Sunville (capable of handling residential, etc.)?

ASSESSMENT MODEL: DAYTIME

RESPONSE ASSESSMENT MODEL

Company	Avg # of Personnel	Location	Man Time (Minutes)
E1	4.0	123 SR101 FDZ SE6	0
E2	8.5	123 SR101 FDZ SE6	4

Avg. Vehicle Speed= 26 m.p.h.

Avg. Dispatch Time= 0 minutes

STATISTICS (Shortage/Surplus Column)

Response Evaluation		
# OF ZONES THAT ARE:	@5	@10
A. >3 persons deficient	19	19
B. 0 to 3 persons deficient	12	6
C. meeting suggested requirements	11	17

SHORTAGE/SURPLUS COLUMN RESULTS

Avg. Personnel over/short @ 5 min.	-4.1 persons
Avg. Personnel over/short @ 10 min.	-3.7 persons
Avg. Fire Flow Required	1464 Gallons
Avg. Fire Flow Available	1135 Gallons

ZONE INVENTORY

# OF ZONES:	
Rural/Residential	17
Residential	6
Light Commercial	8
Medium Commercial	7
Heavy Commercial	4
Total # of Zones	42

Sunville Fire Department

NO.	FIRE DEMAND ZONE	FIRE DEMAND ZONE DATA Est. Pop.	Fire Flow (GPM)	NEEDED RESOURCES Personnel @: (time in min) 5	10	Fire Flow (GPM)	SHORTAGE/SURPLUS Personnel @: (time in min) 5	10	AVAILABLE RESOURCES Fire Flow (GPM)	Personnel @ (time in min) 5	6.5	10	15	RESPONSE TIME FROM STATION Company # E1	E2	0	0	0	TRAVEL DISTANCE FROM STATION Company # E1	E2	0	0	0
1	SW1	42	2000	12	18	-1400	-8	-5.5	600	4	4	12.5	12.5	4.8	8.8	0.0	0.0	0.0	2.1	2.1			
2	SW2	22	3000	12	24	-2300	-8	-11	700	4	4	12.5	12.5	3.2	7.2	0.0	0.0	0.0	1.4	1.4			
3	SW3		3000	12	24	-1400	-8	-11	1600	4	12.5	12.5	12.5	1.8	5.8	0.0	0.0	0.0	0.8	0.8			
4	SW4	340	500	3	6	300	1	6.5	800	4	4	12.5	12.5	3.5	7.5	0.0	0.0	0.0	1.5	1.5			
5	SW5	16	2000	12	18	-800	-8	-5.5	1200	4	4	12.5	12.5	2.5	6.5	0.0	0.0	0.0	1.1	1.1			
6	SW6	820	1000	6	12	-350	-2	0.5	650	4	4	12.5	12.5	3.5	7.5	0.0	0.0	0.0	1.5	1.5			
7	SW7	804	1000	6	12	-600	-6	0.5	400	0	4	12.5	12.5	5.5	9.5	0.0	0.0	0.0	2.4	2.4			
8	SW8	204	500	3	6	300	-3	6.5	800	0	4	12.5	12.5	5.8	9.8	0.0	0.0	0.0	2.5	2.5			
9	SW9	21	2000	12	18	-1300	-8	-5.5	700	4	4	12.5	12.5	4.6	8.6	0.0	0.0	0.0	2.0	2.0			
10	SW10	16	500	3	6	100	-3	-2	600	0	0	4	12.5	7.4	11.4	0.0	0.0	0.0	3.2	3.2			
11	SW11	146	500	3	6	-300	-3	-2	200	0	0	4	12.5	9.2	13.2	0.0	0.0	0.0	4.0	4.0			
12	SE1	360	3000	12	24	-2550	-12	-20	450	0	0	4	12.5	7.4	11.4	0.0	0.0	0.0	3.2	3.2			
13	SE2	22	500	3	6	100	-3	-2	600	0	4	4	12.5	6.2	10.2	0.0	0.0	0.0	2.7	2.7			
14	SE3	14	500	3	6	-500	1	6.5	0	0	12.5	12.5	12.5	1	6.3	0.0	0.0	0.0	1.0	1.0			
15	SE4	63	3000	12	24	-1000	-8	-11	2000	4	12.5	12.5	12.5	1.2	5.2	0.0	0.0	0.0	0.5	0.5			
16	SE5	264	3000	12	24	-50	-8	-11	2950	4	4	12.5	12.5	3.5	7.5	0.0	0.0	0.0	1.5	1.5			
17	SE6		4000	12	30	-1400	0.5	-17	2600	12.5	12.5	12.5	12.5	0.5	4.5	0.0	0.0	0.0	0.2	0.2			
18	SE7	308	500	3	6	300	1	6.5	800	4	12.5	12.5	12.5	1.8	5.8	0.0	0.0	0.0	0.8	0.8			
19	SE8	196	1000	6	12	1100	6.5	0.5	2100	12.5	12.5	12.5	12.5	0.7	4.7	0.0	0.0	0.0	0.3	0.3			
20	SE9	8	2000	12	18	400	-8	-5.5	2400	4	12.5	12.5	12.5	1.8	5.8	0.0	0.0	0.0	0.8	0.8			
21	SE10	14	500	3	6	-500	1	6.5	0	4	4	12.5	12.5	3.2	7.2	0.0	0.0	0.0	1.4	1.4			
22	SE11		4000	12	30	-1200	-8	-17	2800	4	4	12.5	12.5	3.7	7.7	0.0	0.0	0.0	1.6	1.6			
23	SE12		1000	6	12	400	-2	0.5	1400	4	4	12.5	12.5	4.4	8.4	0.0	0.0	0.0	1.9	1.9			
24	SE13	464	1000	6	12	700	-2	0.5	1700	4	4	12.5	12.5	4.8	8.8	0.0	0.0	0.0	2.1	2.1			
25	NE1	94	1000	6	12	1100	-6	0.5	2100	4	4	12.5	12.5	5.3	9.3	0.0	0.0	0.0	2.3	2.3			
26	NE2	11	500	3	6	-500	-3	-2	0	0	4	4	12.5	6.2	10.2	0.0	0.0	0.0	2.7	2.7			
27	NE3	72	500	3	6	0	-3	-2	500	0	0	4	12.5	6.9	10.9	0.0	0.0	0.0	3.0	3.0			
28	NE4	21	2000	12	18	-50	-8	-5.5	1950	4	4	12.5	12.5	2.5	6.5	0.0	0.0	0.0	1.1	1.1			
29	NE5	17	500	3	6	-500	1	6.5	0	4	12.5	12.5	12.5	1.2	5.2	0.0	0.0	0.0	0.5	0.5			
30	NE6	264	500	3	6	1500	1	6.5	2000	4	12.5	12.5	12.5	2.3	6.3	0.0	0.0	0.0	1.0	1.0			
31	NE7	4	500	3	6	3100	1	6.5	3600	4	4	12.5	12.5	3.7	7.7	0.0	0.0	0.0	1.6	1.6			
32	NE8	12	500	3	6	-500	-3	-2	0	0	0	4	12.5	6.9	10.9	0.0	0.0	0.0	3.0	3.0			
33	NE9	760	1000	6	12	200	-6	-12	1200	0	0	0	0	15.7	19.7	0.0	0.0	0.0	6.8	6.8			
34	NE10	8	2000	12	18	900	-12	-18	2900	0	0	0	4	12.0	16.0	0.0	0.0	0.0	5.2	5.2			
35	NW1	6	3000	12	24	-600	-12	-24	2400	0	0	0	4	12.0	16.0	0.0	0.0	0.0	5.2	5.2			
36	NW2	10	500	3	6	-500	-3	-6	0	0	0	0	4	14.3	18.3	0.0	0.0	0.0	6.2	6.2			
37	NW3	11	500	3	6	-500	1	6.5	0	4	4	12.5	12.5	4.2	8.2	0.0	0.0	0.0	1.8	1.8			
38	NW4	206	500	3	6	250	1	6.5	750	4	4	12.5	12.5	4.2	8.2	0.0	0.0	0.0	1.8	1.8			
39	NW5		2000	12	18	-1400	-8	-5.5	600	4	12.5	12.5	12.5	2.1	6.1	0.0	0.0	0.0	0.9	0.9			
40	NW6	31	2000	12	18	-1300	-8	-5.5	700	4	4	12.5	12.5	3.5	7.5	0.0	0.0	0.0	1.5	1.5			
41	NW7	380	1000	6	12	600	-2	0.5	400	4	4	12.5	12.5	4.4	8.4	0.0	0.0	0.0	1.9	1.9			
42	NW8		3000	12	18	-2500	-8	-11	500	4	4	12.5	12.5	4.8	8.8	0.0	0.0	0.0	2.1	2.1			

ASSESSMENT MODEL: NIGHTTIME/WEEKENDS

RESPONSE ASSESSMENT MODEL

Company	Avg # of Personnel	Location	Run Time (Minutes)
E1	3.0	123 SR101 FDZ SE6	3.5
E2	9.4	123 SR101 FDZ SE6	3.5

Avg. Vehicle Speed= 26 m.p.h.

Avg. Dispatch Time= 0 minutes

STATISTICS (Shortage/Surplus Column)

Response Evaluation

# OF ZONES THAT ARE:	@5	@10
A. >3 persons deficient	22	23
B. 0 to 3 persons deficient	16	0
C. meeting suggested requirements	4	19

SHORTAGE/SURPLUS COLUMN RESULTS

Avg. Personnel over/short @5 min	-6 persons
Avg. Personnel over/short @10 min	-3.8 persons
Avg. Fire Flow Required	1464 Gallons
Avg. Fire Flow Available	1135 Gallons

ZONE INVENTORY

	# OF ZONES
Rural/Residential	17
Residential	8
Light Commercial	8
Medium Commercial	7
Heavy Commercial	2
Total # of Zones	42

Sunville Fire Department

NO.	FIRE DEMAND ZONE	FIRE DEMAND ZONE DATA Est. Pop.	Fire Flow (GPM)	NEEDED RESOURCES Personnel @: (time in min) 5	10	Fire Flow (GPM)	SHORTAGE/SURPLUS Personnel @: (time in min) 5	10	Fire Flow (GPM)	AVAILABLE RESOURCES Personnel @ (time in minutes) S	6.5	10	15	RESPONSE TIME FROM STATION Company # E1	E2	0	0	0	TRAVEL DISTANCE FROM STATION Company # E1	E2	0	0	0
1	SW1	42	2000	12	18	-1400	-12	-5.6	600	0	0	12.4	12.4	8.3	8.3	0.0	0.0	0.0	2.1	2.1				
2	SW2	22	3000	12	24	-2300	-12	-11	700	0	0	12.4	12.4	6.7	6.7	0.0	0.0	0.0	1.4	1.4				
3	SW3		3000	12	24	-1400	-12	-11	1600	0	12.4	12.4	12.4	5.3	5.3	0.0	0.0	0.0	0.8	0.8				
4	SW4	340	500	3	6	300	-3	6.4	800	0	0	12.4	12.4	7.0	7.0	0.0	0.0	0.0	1.5	1.5				
5	SW5	16	2000	12	18	-800	-12	-5.6	1200	0	12.4	12.4	12.4	6.0	6.0	0.0	0.0	0.0	1.1	1.1				
6	SW6	820	1000	6	12	-350	-6	0.4	650	0	0	12.4	12.4	7.0	7.0	0.0	0.0	0.0	1.5	1.5				
7	SW7	804	1000	6	12	-600	-6	0.4	400	0	0	12.4	12.4	9.0	9.0	0.0	0.0	0.0	2.4	2.4				
8	SW8	204	500	3	6	300	-3	6.4	800	0	0	12.4	12.4	9.3	9.3	0.0	0.0	0.0	2.5	2.5				
9	SW9	21	2000	12	18	-1300	-12	-5.6	700	0	0	12.4	12.4	8.1	8.1	0.0	0.0	0.0	2.0	2.0				
10	SW10	16	500	3	6	100	-3	-6	600	0	0	0	12.4	10.9	10.9	0.0	0.0	0.0	3.2	3.2				
11	SW11	146	500	3	6	-300	-3	-6	200	0	0	0	12.4	12.7	12.7	0.0	0.0	0.0	4.0	4.0				
12	SE1	360	3000	12	24	-2550	-12	-24	150	0	0	0	12.4	10.9	10.9	0.0	0.0	0.0	3.2	3.2				
13	SE2	22	500	3	6	100	-3	6.4	600	0	0	12.4	12.4	9.7	9.7	0.0	0.0	0.0	2.7	2.7				
14	SE3	14	500	3	6	-500	-3	6.4	0	0	12.4	12.4	12.4	5.8	5.8	0.0	0.0	0.0	1.0	1.0				
15	SE4	63	3000	12	24	-1000	0.4	-11	2000	12.4	12.4	12.4	12.4	4.7	4.7	0.0	0.0	0.0	0.5	0.5				
16	SE5	264	3000	12	24	50	-12	-11	2950	0	0	12.4	12.4	7.0	7.0	0.0	0.0	0.0	1.5	1.5				
17	SE6		4000	12	30	-1400	0.4	-17	2600	12.4	12.4	12.4	12.4	4.0	4.0	0.0	0.0	0.0	0.2	0.2				
18	SE7	308	500	3	6	300	-3	6.4	800	0	12.4	12.4	12.4	5.3	5.3	0.0	0.0	0.0	0.8	0.8				
19	SE8	196	1000	6	12	1100	6.4	0.4	2100	12.4	12.4	12.4	12.4	4.2	4.2	0.0	0.0	0.0	0.3	0.3				
20	SE9	8	2000	12	18	400	-12	-5.6	2400	0	12.4	12.4	12.4	5.3	5.3	0.0	0.0	0.0	0.8	0.8				
21	SE10	14	500	3	6	-500	-3	6.4	0	0	0	12.4	12.4	6.7	6.7	0.0	0.0	0.0	1.4	1.4				
22	SE11		4000	12	30	-1200	-12	-17	2800	0	0	12.4	12.4	7.2	7.2	0.0	0.0	0.0	1.6	1.6				
23	SE12		1000	6	12	400	-6	0.4	1400	0	0	12.4	12.4	7.9	7.9	0.0	0.0	0.0	1.9	1.9				
24	SE13	464	1000	6	12	700	-6	0.4	1700	0	0	12.4	12.4	8.3	8.3	0.0	0.0	0.0	2.1	2.1				
25	NE1	94	1000	6	12	1100	-6	0.4	2100	0	0	12.4	12.4	8.8	8.8	0.0	0.0	0.0	2.3	2.3				
26	NE2	11	500	3	6	-500	-3	6.4	0	0	0	12.4	12.4	9.7	9.7	0.0	0.0	0.0	2.7	2.7				
27	NE3	72	500	3	6	0	-3	-6	500	0	0	0	12.4	10.4	10.4	0.0	0.0	0.0	3.0	3.0				
28	NE4	21	2000	12	18	-50	-12	-5.6	1950	0	12.4	12.4	12.4	6.0	6.0	0.0	0.0	0.0	1.1	1.1				
29	NE5	17	500	3	6	-500	9.4	6.4	0	12.4	12.4	12.4	12.4	4.7	4.7	0.0	0.0	0.0	0.5	0.5				
30	NE6	264	500	3	6	1500	-3	6.4	2000	0	12.4	12.4	12.4	5.8	5.8	0.0	0.0	0.0	1.0	1.0				
31	NE7	4	500	3	6	3100	-3	6.4	3600	0	0	12.4	12.4	7.2	7.2	0.0	0.0	0.0	1.6	1.6				
32	NE8	12	500	3	6	-500	-3	-6	0	0	0	0	12.4	10.4	10.4	0.0	0.0	0.0	3.0	3.0				
33	NE9	760	1000	6	12	200	-6	-12	1200	0	0	0	0	19.2	19.2	0.0	0.0	0.0	6.8	6.8				
34	NE10	8	2000	12	18	900	-12	-18	2900	0	0	0	0	15.5	15.5	0.0	0.0	0.0	5.2	5.2				
35	NW1	6	3000	12	24	-600	-12	-24	2400	0	0	0	0	15.5	15.5	0.0	0.0	0.0	5.2	5.2				
36	NW2	10	500	3	6	-500	-3	-6	0	0	0	0	0	17.8	17.8	0.0	0.0	0.0	6.2	6.2				
37	NW3	11	500	3	6	-500	-3	6.4	0	0	0	12.4	12.4	7.7	7.7	0.0	0.0	0.0	1.8	1.8				
38	NW4	206	500	3	6	250	-3	6.4	750	0	0	12.4	12.4	7.7	7.7	0.0	0.0	0.0	1.8	1.8				
39	NW5		2000	12	18	-1400	-12	-5.6	600	0	12.4	12.4	12.4	5.6	5.6	0.0	0.0	0.0	0.9	0.9				
40	NW6	31	2000	12	18	-1300	-12	-5.6	700	0	0	12.4	12.4	7.0	7.0	0.0	0.0	0.0	1.5	1.5				
41	NW7	380	1000	6	12	-600	-6	0.4	400	0	0	12.4	12.4	7.9	7.9	0.0	0.0	0.0	1.9	1.9				
42	NW8		3000	12	18	-2500	-12	-11	500	0	0	12.4	12.4	8.3	8.3	0.0	0.0	0.0	2.1	2.1				

OHT 3.72

11. Risk analysis graph.

    a. This graph is an example of one way to display this information to a city council. The computer printout is very "busy" and may cause more questions than answers.

    b. The graph on the left shows the performance of the present system in the daytime (0800-1600 Monday through Friday). Paid personnel on duty. Note at both 5- and 10-minute time periods:

    - Greater than 3 deficient is the highest category.

    - The 10-minute time period is better than the 5-minute (meets requirements category).

    c. The graph on the right depicts the performance of the present system at night and on the weekends (all volunteer).

    - The greater than 3 deficient is still the highest.

    - In this time period, more zones meet requirements at 10 minutes than at 5 minutes.

12. General comments.

    a. The service level is better, overall, on weekdays.

    b. Nights/Weekends--very few zones meet the response requirements within the 5-minute time frame. This will normally mean a higher potential for fires escalating to "working" fires.

c. There are a large number of zones that are very deficient (greater than 3 persons) in both time frames or all the time.

d. The resources are not available in this community for fires in structures other than single-family residential.

105 min.
Small Group
Activity 3.2

VIII. SUNVILLE DATA ANALYSIS--PART 2

Have students return to Sunville Workshop Assignment.

Directions

For the purposes of this class we will assume that Sunville is a community that has no special requirements for other than a "basic" risk analysis assessment.

Complete Question Sets #7 through #12.

Flipchart

Prepare a report for question set #2 to the class. Place answer on flipchart.

Allow 60 minutes for group work

Allow 45 minutes for each group to report on question set #12.

UNIT 4: ORGANIZING FOR PLANNING

OBJECTIVES

The participants will:

1. *Identify the group dynamics associated with decisions and the impact of hidden agendas and prejudice.*
2. *Identify the key factors of a problem statement.*
3. *Prepare well-defined problem statements that reflect the real problems rather than symptoms.*
4. *Provide a recommended organizational structure for master planning.*
5. *Identify the roles of the management team, planning team, planning team leader, and citizens' advisory board.*
6. *Define in writing the need to develop a plan.*

ATTITUDES TO FOSTER

1. Key members of community government should participate in the decision to conduct the planning project. Their commitment is needed in addition to the fire department's.

2. The reasons for developing a plan should be defined clearly.

3. A significant commitment of resources will be required to develop and maintain a master plan. Additional resources should be provided or work loads should be reduced and resources transferred to this project.

4. A management team should be appointed to review and approve all phases of the planning effort. The management team typically consists of three or four persons who are the top management personnel for the fire department and the community government. Their tasks include:

   a. Approving the proposal to develop a plan.

   b. Selecting the planning team members.

   c. Deciding whether or not to use a citizens' advisory committee.

   d. Selecting the members of the citizens' advisory committee and recommending their appointment to the governing body responsible for fire protection.

5. A planning team is appointed by the management team. The planning team performs or coordinates the tasks needed to complete the master plan. Primarily, these are fire department personnel supplemented by other community members with specific skills (city planner or water department supervisor).

6. A citizens' advisory committee of influential representatives of the community may be formed to provide input to the plan. This group presents the views of the segments of the community they represent to assure that concerns are considered and that a compromise plan which can be supported by the majority of the community is produced.

   A citizens' advisory committee provides important political support for the adoption and implementation of the plan, especially through:

   a. Review and approval of the results of each phase of the planning project, and

   b. Support for the plan when the final recommendations are submitted to the governing body.

POINTS FOR THE INSTRUCTOR

Continue to stress that this process involves the entire community, not just the fire department.

The need for a plan and the resources required to develop it must be defined clearly. Showing benefits for all involved is important. Long-term savings in the delivery of fire protection are a strong argument.

Controlling the fire problem and the costs of fire protection are very important to the continuance of the volunteer fire service.

The citizens' advisory committee should be identified by the management team and recommended to the governing body for appointment. Committees appointed by governing bodies without full input from management usually are not effective.

It is important to stress that the role of a citizens' advisory committee should be specified clearly in writing at the time it is formed. Normally, it is best to give advisory powers only and not a good practice to give the committee approval powers.

METHODOLOGY

This unit describes the tasks required to gain the necessary approvals to prepare a plan and to develop an organization to conduct the planning effort. This process includes documenting the need for a master plan and preparing a letter to the chief administrative officer requesting approval to develop the master plan.

ESTIMATED TIME
(Total Time: 4 hr.)

5 min.	Lecture Objectives and Overview	IG 4-5
85 min.	Small Group Activity 4.1 An Exercise in Decisionmaking	IG 4-5
15 min.	Discussion Decisionmaking	IG 4-11
15 min.	Lecture Problem Statements	IG 4-13
30 min.	Small Group Activity 4.2 Sunville Data Analysis--Part 3	IG 4-19
60 min.	Lecture Organizing for Planning	IG 4-21
30 min.	Small Group Activity 4.3 Recommendation to Sunville City Manager	IG 4-27

AUDIOVISUAL

OHTs 4.1 to 4.16
Sunville Letterhead

5 min.
Lecture
OHT 4.1

I. OBJECTIVES

The participants will:

A. Identify the group dynamics associated with decisions and the impact of hidden agendas and prejudice.

B. Identify the key factors of a problem statement.

C. Prepare well-defined problem statements that reflect the real problems rather than symptoms.

D. Provide a recommended organizational structure for master planning.

E. Identify the roles of the management team, planning team, planning team leader, and citizens' advisory board.

F. Define in writing the need to develop a plan.

II. OVERVIEW

A. An Exercise in Decisionmaking

B. Decisionmaking

C. Problem Statements

D. Sunville Data Analysis--Part 3

E. Organizing for Planning

F. Recommendation to Sunville City Manager

85 min.
Small Group
Activity 4.1

III. AN EXERCISE IN DECISIONMAKING

SM p. 4-5

The "shelter exercise" is a decisionmaking exercise that allows the learning process to take advantage of actual hands-on experience developed in the classroom. It is important to give only the necessary instructions prior to the exercise.

This participant activity, which demonstrates group decisionmaking methods, uses a fictitious disaster situation. Participants will develop a solution individually without input from other participants. Next each group will develop a group consensus which all can support. The instructor will analyze the methods used and relate them to the processes used in master planning to reach a group consensus or compromise decision which all can support.

During the exercise, walk around the room recording any comments that will assist in making the educational point during the postexercise session. Comments such as "If you agree to keep _____, I will agree to keep _____," usually are heard. Or "O.K., let's take a vote."

After approximately 10 minutes start to push the groups to reach consensus. This causes them to work under a little time pressure much like what will occur when they return home.

Allow 45 minutes for group work.

1. This activity identifies some of the ways in which decisions are reached and potential problems encountered in achieving consensus or agreement.

2. The exercise is purely hypothetical and there is no correct answer.

3. The narrative contains many of the prejudices inherent in daily life and, therefore, is an excellent reference tool for pointing out the pitfalls associated with decisionmaking.

4. Participants individually complete a worksheet in which several decisions will have to be made concerning a given set of data.

5. Once everyone has made an independent decision, the groups will attempt to reach consensus.

6. Each group posts its decision on the wall for reporting to the class.

7. The instructor conducts a critique and post-exercise discussion of decisionmaking.

Ask the groups to report their decisions and rationales.

Introduction

Introduce the activity with the following points:

1. To varying degrees, everyone feels prejudice or has preconceived notions about every facet of life. The key to planning is recognizing this and acting accordingly (in a positive manner).

2. Setting objectives for meetings that are understood by all participants will facilitate better meetings.

3. By understanding the theories of group dynamics and the group decision process, you will assist in accomplishing the goals of the planning process.

4. Acknowledging others' perspectives and, possibly, their hidden agendas will relieve personal anxieties and assist you in preparing and presenting materials.

5. By focusing on service-related objectives you are better able to cope with the issues and proceed with minimal interruption.

Occasionally, someone will refuse to participate in this exercise because they perceive that they are "killing" people by removing them from the shelter. The best reaction appears to be to reinforce the objective, an exercise in decisionmaking, and not pursue it any further.

Once all of the groups have completed their lists and have them posted:

Allow 15 minutes for reports.

15 min.
Discussion

IV. DECISIONMAKING

A. While this class does not allow time to pursue the decisionmaking process in depth, the student manual contains information on the following subjects.

1. Some common decisionmaking methods.

2. Characteristics of positive work teams.

3. The decisionmaking process.

4. Concerns/effectiveness matrix.

B. Reviewing these materials prior to commencing a planning project will assist you in your planning efforts.

Discuss with the class the following points using the comments you picked up during the exercise to emphasize and clarify points.

C. Discussion questions.

1. How did you arrive at your decisions?

You usually will hear such things as: we voted, we exchanged or traded, we could agree to some but not all, etc.

2. What were the barriers to effective decisionmaking?

Directions

From the laundry list of problems facing Sunville, select two problems and write complete problem statements. Place the statements on a flipchart and post for reporting.

Reporting

Have each of the groups give its report. Ask the class, "Is this a complete problem statement? If not, how could it be improved?"

Remember to avoid problem statements that deal with resources only; i.e., we need more money or we need more apparatus.

Ask the question "So what?" for each statement.

60 min.
Lecture

OHT 4.9

SM. 4-1

VII. ORGANIZING FOR PLANNING

A. Methods of documenting need for master plan.

1. Identify deficiencies in the current system.

2. Develop a projection of increasing or changing service demands, i.e.; EMS, hazardous materials, etc.

3. Define the benefits anticipated from an effective master plan.

4. Prepare a letter to the chief administrative officer which documents the issues defined in 1, 2, and 3 above.

B. Membership and purpose of the management team.

OHT 4.10

1. Membership:

   Three or four persons, including key members of community government and the fire department.

OHT 4.11

2. Purpose:

   a. Decide to develop a master plan.

b. Appoint a planning team leader.

c. Determine the need to use a citizens' advisory committee.

d. Approve a program budget.

OHT 4.12

e. Establish program and operational policies.

f. Establish the process through which the interim products of the planning effort will be reviewed and approved; i.e., who will review, who will approve, and when will reviews be performed.

g. Review and approve interim products of the planning effort.

h. Present final document to the governing body.

OHT 4.13

C. The role of the planning team leader.

1. A senior management person, preferably from the fire department.

2. Will require 50% to 100% of available time to manage the project.

3. Coordinates the activities of those preparing and reviewing the planning process.

OHT 4.14

D. Methods of identifying and appointing a planning team.

1. Temporarily assigned fire department personnel, with relief personnel available as needed.

2. Include non-fire-department personnel; i.e., building official, planner, law enforcement, etc.

3. The team will have the responsibility of performing the tasks needed to develop an effective plan.

OHT 4.15

E. Purpose and organization of a citizens' advisory committee.

Purpose:

a. Provide a broad spectrum of support needed to implement the plan when it is completed.

b. Obtain input from the major organizations or individuals within the community in order to obtain support, reduce conflicts, and dilute the impact of special interests.

c. To negotiate those compromises needed to obtain support of special interests, approval by the governing body, and effective implementation of the plan.

OHT 4.16

2. Organization of the citizens' advisory committee:

a. Members should be identified by the management team.

b. Members should be appointed by governing body (city council).

c. The citizens' advisory committee should consist of influential members of the community who represent the major private sector interests which will be impacted by a master plan. These should include strong supporters and opponents of progressive fire protection and emergency services. Elected or career governmental officials should act as advisers to the committee but should not be members.

Too little time, not enough information, others have different values or qualities needed, etc. The key here is that each of the characters represents any number of traditional prejudices and values.

3. What effect did prejudice have on your decision?

Its effects usually are profound. Keep referring to the fact that many prejudices will surface during the planning process and that most prejudice results from a lack of education. In the planning process, prejudice most often is called a hidden agenda.

4. What role does having a relatively clear set of goals and objectives play in this exercise?

It is very important. That is why you must look toward establishing clear goals and objectives for the master plan.

15 min.
Lecture

OHT 4.2

V. PROBLEM STATEMENTS

A. Problem areas.

1. Once accurate information is organized in such a way that it can be studied and compared, problem areas will emerge.

   a. Many of the findings will have been known before, but possibly never quantified in this manner.

   b. Others will be entirely new and come as a surprise to all concerned.

   c. The key is that possibly for the first time, everyone is sharing the same set of problems, quantified in the same manner.

2. As an example:

   a. Reflex times may be much longer than predicted, perhaps because of delayed alarms, perhaps because of slow staffing times of the apparatus.

   b. Or it may emerge that the town's only industrial complex may be at a high level of risk even though there has never been a fire there. However, if it should burn, the impact on the town's work force could be devastating.

3. The fact that the issue is identified and quantified unemotionally allows everyone to be operating from the same decision foundation and, therefore, better able to agree if it is something we can live with or something we have to do something about.

4. Once this system is in place, different kinds of information can be reviewed logically and accurately and decisions obtained more readily.

OHT 4.3

B. Writing problem statements.

1. Once a problem has been brought to light, it is essential that the problem be defined clearly so everyone has a good understanding of what needs to be resolved.

   a. The easier it is to solve,

   b. The faster the selected solution can be implemented.

2. The problem statement should state what the concern is in terms relating directly to the fire/EMS problem but never contain the solution.

For example, "We don't have enough money" is not a good problem statement. "We don't have enough firefighters" is not acceptable either.

A clearer statement would be:

OHT 4.4

"There is an insufficient personnel response necessary to provide the required fire flow to 80% of the working fires."

a. It relates directly to the provision of service.

b. It is related to service needs and not just resource statements.

OHT 4.5

3. The problem statement should include answers to the following questions:

SM p. 4-15

Question Set 13

a. What is happening?

b. Where is it happening?

c. When is it happening?

d. Why is it happening?

e. Who is causing it to happen?

f. What is the impact?

g. Who is affected?

OHT 4.6

4. Example:

What:	A large number of wood stove fires.
Where:	Residential occupancies.
When:	January and February, early morning.
Why:	Creosote buildup, poor maintenance.
Who:	Building owners/occupants.
Impact:	Greater risk to life, higher property damage, extra burden on volunteers, higher service costs.

Who affected: Occupants/Volunteers

Problem Statement: The large number of wood stove fires (17%) in residential occupancies is placing owners and occupants at great risk and causing substantial property loss.

OHT 4.7

5. Once problems are stated clearly, solutions become more apparent and more minds can be focused on the issue(s).

   a. In the example given, several alternative solutions emerge. The department could work with the owners/occupants through educational programs.

   b. The community could adopt stricter codes and inspection procedures, or the community could accept the problem as an acceptable risk.

   c. The solution selected is up to each individual community.

OHT 4.8

6. Keep in mind that once the problem and its implications have been **thoroughly documented and communicated** and the community has accepted that level of risk, you must implement that political decision. It is not your responsibility to impose quality-of-life judgments on the community. That is a political decision and the role of elected officials in our society.

30 min.
Small Group
Activity 4.2

VI. SUNVILLE DATA ANALYSIS--PART 3

SM p. 4-15

Refer participants to the worksheets for Question Set #13.

d. Develop written guidelines for committee operations which clarify responsibilities, especially their "advisory role."

e. Activate citizens' committee after data gathering is complete. It is necessary to keep the process moving once the committee is activated. The time required to complete data gathering may result in "loss of interest" by committee members if program is delayed.

30 min.
Small Group
Activity 4.3

SM p. 4-~~17~~ 19

VIII. RECOMMENDATION TO SUNVILLE CITY MANAGER

This group exercise is the final step in Organizing for Planning. The students will prepare a letter to the city manager of Sunville recommending the development of a fire protection master plan.

A. Introduce the activity with the following review:

1. The planning process needs the approval and support of top management.

2. The need for a master plan must be documented in order to state clearly the purpose of the project and to obtain the approval of top management.

3. An organizational structure must be established with lines of authority and responsibility clarified.

4. The resources needed to develop and implement the plan must be quantified; these resources should be provided by top management.

B. Directions.

SM p. 4-19
Handout

Refer participants to sample memo in Student Manual. Hand out Sunville letterhead.

1. Each group will develop a one-page letter to the city manager.

Allow 20 minutes for group work.

2. Each group will appoint a person to report to the class.

Ten minutes is reserved for reports.

3. The letters should include the following:

   a. A definition of the need to develop a plan. Students should use problem statements developed from the list of "10 problems facing Sunville."

   b. Estimated costs, personnel hours, and timeline for the project.

   c. A recommended management team and planning team members.

   d. A recommendation regarding the formation of a citizens' advisory board and recommended members.

FORCED Field ANALYSIS p. 4-31

UNIT 5: DATA GATHERING

OBJECTIVES

The participants will:

1. *Identify the purposes of collecting data.*
2. *Review FDZ and FMA.*
3. *Identify data categories and how to use data from these categories.*

ATTITUDES TO FOSTER

1. Complete and accurate data is needed to identify needs and define desired results of proposed services or programs.

2. Data collection is an important and time-consuming part of master planning.

3. Current data and record systems probably will not be adequate to meet the needs of planning; therefore, new record systems probably will be required to implement the plan adequately.

4. Incomplete data can be used for planning with the knowledge and approval of decisionmakers.

5. Avoid the pitfall of collecting unnecessary data. A specific use should be identified for each piece of information before it is collected. Data which may be nice to have in the future should be collected in the future.

6. Data collected for the development of the plan should be maintained in order to evaluate changes in conditions and success in plan implementation over the life of the plan.

7. Computerized data systems should be an essential part of most volunteer fire departments' management programs.

POINTS FOR THE INSTRUCTOR

1. Data gathering has proven to be the most time-consuming and difficult part of developing a master plan.

2. Most fire departments do not have records and data that are needed for long-range planning and management. Examples of data needed for planning should be provided.

3. Many fire departments do not have computers available for storage and analysis. It should be demonstrated that computer systems are important and readily available to volunteer departments.

4. Most fire departments will often collect data which is not essential to the planning effort and which cannot be maintained readily. Stress the need to ask the question, "How will this data be used?" before it is collected. Also ask the question, "Can this data be maintained with minimal effort?"

5. Identify other agencies which can provide and maintain the data needed to plan and implement a master plan. Demonstrate the use of data available from planning departments, tax assessors, regional planning agencies, etc.

6. Use data developed by the local planning department to estimate future community changes and related fire protection, EMS, and hazardous materials needs. Establish a program whereby fire protection data is updated as the local planning agency updates its data. Encourage students to consider using professional planners (public and private) as part of the planning team.

7. The citizens' advisory committee can be an excellent source of information regarding current and future community conditions. An important role of this committee is to serve as a sounding board for the evaluation of the accuracy of the data collected.

METHODOLOGY

This unit includes an interactive lecture.

ESTIMATED TIME
(Total Time: 1 hr., 20 min.)

5 min.	Lecture Objectives and Overview	IG 5-5
75 min.	Lecture Data Gathering--Historical, Present, and Future	IG 5-5

AUDIOVISUAL

OHTs 5.1 to 5.12

5 min.
Lecture

OHT 5.1

I. OBJECTIVES

The participants will:

A. Identify the purposes of collecting data.

B. Review FDZ and FMA.

C. Identify data categories and how to use data from these categories.

II. OVERVIEW

Data Gathering--Historical, Present, and Future

75 min.
Lecture

III. DATA GATHERING--HISTORICAL, PRESENT, AND FUTURE

A. Introduction

1. The Sunville data which has just been reviewed represents a significant data gathering effort. We will analyze some of the methods which can be used in data gathering.

2. The necessary data frequently will not be readily available.

3. Top management expects the fire chief to document needs and the anticipated results of programs and resource expenditures.

4. Other agencies, such as the planning department and county assessor, possess data which can be used by the fire department for planning and management.

OHT 5.2

5. The purposes of collecting data:

   a. Define current and future problems, needs, service demands.

b. Prepare goals: specify what conditions should exist.

c. Define and evaluate results: provide measurable results which are needed for periodic reporting and program evaluations.

d. Develop alternative methods and programs: provide data needed to compare the cost and result differences of alternatives.

e. Identify program requirements: provide the information needed to establish resources needed to accomplish goals and objectives in the areas of personnel, equipment, legislation, costs, etc.

B. Data collection process:

OHT 5.3

1. Review each step of the plan to identify data needed for each step in the process.

2. Establish a list of data categories which define the issues you believe the plan must confront.

3. Assign one person to coordinate data collection.

   Necessary to maintain data consistency and accuracy within an established format.

4. Divide community into data collection areas:

OHT 5.4

   a. Fire demand zones (FDZs) are used to collect and maintain data for planning and management.

OHT 5.5

   b. Fire management areas (FMAs) contain a number of FDZs and are used to implement and evaluate the provisions of the master plan.

C. Data categories and usage.

SM p. 5-9

Refer participants to Figure 5.1 Data Categories in Student Manual. Point out several categories and ask participants to volunteer data usage. If you want to know what is on the right-hand side, collect data on the left-hand side.

FIGURE 5.1--DATA CATEGORIES

The information contained in this figure is most commonly used in fire protection for master planning. It should be emphasized that this data may not be applicable to all agencies. Other data may be needed to identify the unique character of each agency. If a specific use for the data cannot be identified, it should not be collected.

DATA CATEGORY AND DATA ELEMENTS	DATA USAGE
Population	
- Total population by year - Population by age/year - Population by FMA - Per capita service costs	- Per capita incident ratios - EMS service demands - Incendiary fire trends versus age
Land Use Data	
- Existing land area by zoning - Developed versus undeveloped land - Areas of potential annexation - Community future land use plan	- Potential development - Current and future work load estimates by type of land use - Potential changes in land use type
Physical Data	
- Topography - Freeways/Street patterns - Climatic and weather conditions - River, lakes - Relationship to other communities	- Access to incidents - Identification of growth areas - Disaster potential for tornadoes, earthquakes, floods, and other weather-related disasters - Response distance for mutual aid
Building/Occupancy Data	
- No. of occupancies by type - No. of occupancies with sprinklers - Occupancies by FMA - Fire flow requirements	- Fire prevention work load - Fire suppression resources - Water supply requirements
Safety Code Data	
- Current fire code - Current building code - Local amendments to codes - State codes - Hazardous materials regulations	- Built-in fire protection - Risk-reduction programs - Mandated enforcement and training
Apparatus and Equipment	
- Number by type - Age of apparatus - Maintenance costs - Downtime - Parts availability - Standards/Specifications	- Preventive maintenance programs - Scheduled replacement program - Operating cost control

Financial Data

- Previous budgets
- Capital improvement plans
- Revenues (taxes, fees, donations)
- Revenue and tax limitations
- Insurance rating of community
- Future budgets
- New program funding
- New revenue sources
- ISO rate reduction

Water System

- Available fire flow by FDZ
- Size, age, and condition of water mains
- Storage capacities and reliability
- Hydrant system maintenance/tests
- Fire protection system design standards.
- Alternative fire flow supplies
- Fire flow capabilities
- Sprinkler system water supply
- System reliability and testing
- Disaster/Major incident planning
- Insurance rate reductions
- Mobile water supply program

Fire Department Data

- Personnel by rank
- Training activities
- Certification standards
- Fire station descriptions
- Fire station maintenance/repair
- Minimum staffing standards
- Allocation of personnel hours by type of activity
- Safety data
- Safety standards
- Workmen's Compensation claims
- Insurance claims
- Sick leave
- Injuries
- Accidents
- Operating costs
- Staffing standards
- Fire station type and location
- Training requirements
- Personnel required/available for program accomplishment
- Recruitment/retention of volunteers
- NFPA 1500 compliance
- OSHA compliance
- Justifying physical fitness program
- Identifying needs for safety equipment

Fire Prevention

- New construction plans review
- New construction inspections
- Periodic code enforcement inspections
- Special hazard abatement program description
- Hazards found versus corrected
- Permits enforcement
- Citation program
- Training and certification
- Fire code enforcement
- Resources allocated to code enforcement
- Liability for uncorrected hazards

Fire Investigation

- Fire cause determination
- Arson investigation
- Arson prosecution
- Training and certification
- Directed fire prevention
- Resources allocated to investigations
- Arson task force organization
- Law enforcement role
- District attorney role
- Cooperation of courts

Communications and Dispatching

- Available radios and frequencies
- Dispatching services
- Dispatching standards
- Radios and frequencies of mutual aid and auto aid agencies
- Radio maintenance/repairs
- Scheduled replacement of communications equipment
- Emergency support resources
- Adequate emergency/routine communications system
- Adequate communications for mutual/auto aid operations
- Adequate disaster operations
- Communications system costs
- Support preplanning; e.g., run maps, street addresses, etc.

Emergency Medical Services

- Total incident rates
- Resource commitment to EMS
- Activity rates related to demographics of FDZs
- Advanced life support needs
- Basic life support needs
- Resource requirements of EMS
- Desired levels of service
- Training/Certification levels for personnel
- Future service demands

Hazardous Materials

- Types of material
- Quantity of types
- Fixed storage
- Mobile transportation routes
- Times for materials movement
- Method of movement--rail/water/air/highway/etc.
- Mitigation resources available
- Legal requirements
- Adopted plans in place
- History of incidents

The data required to develop and implement a master plan can be extensive and present the primary workload in the project. It is essential that the data collected is required for the planning effort. Data that would be nice to have in the future should not be collected. It is necessary, therefore, to determine which data is needed early in the process.

OHT 5.6

D. Data sources.

1. Fire department records.
2. State fire marshal or USFA.
3. Planning department.
4. County assessor.
5. Building department.
6. Regional planning agencies.
7. Private sector: banks, McDonalds, Burger King, etc.
8. Public utilities: transit, telephone, etc.

OHT 5.7

E. Data time frames:

1. Five years - reasonable accuracy.
2. Beyond 5 years.
   a. Accuracy reduced.
   b. Provide for updating data as the plan is implemented.
3. Link planning department with time frames.

OHT 5.8

F. Historical data.

This data is used to identify:

1. Past fire protection, emergency medical, and hazardous materials incident activity and trends.

2. Community changes which have affected fire department operations such as:

   a. Land development.

   b. Population changes.

   c. Water system.

   d. Building code inspection and enforcement.

   e. Legislation.

   f. Community policies, ordinances, etc.

3. Fire department history, including:

   a. Staffing.

   b. Facilities.

   c. Equipment.

   d. Programs.

4. Historical data which relate to occupancies or risks in the community also should be collected from regional, state, and national fire protection agencies.

   Low activity rates in most small communities will not present a true picture of the potential risks of many occupancies or processes.

OHT 5.9

G. Current data.

1. The current data should:

   a. Describe the conditions which exist within the community.

   b. Provide a thorough description of the fire protection system, including the fire department.

2. A detailed description of the structures and occupancies within the community is needed to define the fire protection, EMS, and hazardous materials service demands accurately.

   a. This data frequently is not contained in fire department records.

   b. The records of the county assessor frequently will contain this information.

SM p. 3-40

The methods discussed previously during Risk Analysis in Unit 3 should be referenced here.

OHT 5.10

H. Future data.

1. The community and the fire protection system are changing constantly. The community fire protection plan must be updated to cope with changes.

2. Fire protection system planning should be based upon projections developed by local planning agencies.

OHT 5.11

3. Future changes which can affect fire protection include:

   a. Land development.

   b. Redevelopment projects.

   c. Population changes.

   d. New commercial/industrial structures and occupancies.

   e. Legal constraints.

   f. Financial changes.

   g. New service demands such as EMS and hazardous materials.

OHT 5.12

h. New water or sewer system improvements.

4. Sources of data to project future conditions are:

a. Local planning department.

- Annexations.

- New development.

- Proposed redevelopment.

- Land use and density changes.

- Population changes.

- Sphere of influence boundary changes.

- Prezoning of land to be annexed.

b. Local building department.

- Proposed changes to building codes.

c. Public works department.

- Proposed changes to water system.

- Projected water system deficiencies.

- Projected transportation needs and improvements.

d. City/County legal office.

- Proposed legislation.

- Tax and expenditure limits.

- Liability audit.

e. Finance department.

- Revenue projections.

- Expenditure projections.

f. State fire marshal.

- Proposed state legislation.

- Future state fire protection programs.

g. Local school boards.

- Student population projections.

h. Private institutions' (banks, fast food chains, local industries) business projections.

- Business and industrial developments.

- Residential development.

- Population age changes.

i. Public utilities.

If a single message underlies this section, it is that data does not speak for itself. Planning information is produced through a process that includes a clear statement of the problem, careful efforts to uncover existing data from a variety of sources, systematic collection of original data, and careful translation of data into easily understood written and graphic displays. Not only must the planning team understand the data they produce, they must also be able to communicate the information precisely and concisely to policymakers and the public.

UNIT 6: GOALS AND OBJECTIVES

OBJECTIVES

The participants will:

1. *Define goals, objectives, system objectives, and operational objectives.*

2. *Prepare appropriate goal statements, objectives, system objectives, and operational objectives.*

ATTITUDES TO FOSTER

1. Goals are long-term statements of purpose which are best expressed in terms of anticipated conditions.

2. Goals are unique to each community in order to meet the specific physical, geographical, economic, cultural, and political needs of each community.

3. Goals form the basis of the measurable results or standards which are established through objectives.

4. Recommended goals should be developed by the fire department and approved by the community through the master planning process.

5. The fire protection goals should be incorporated into the management process of the community by integrating them into the general plan of the community and into the operating goals and objectives of the public and private agencies which make up the fire protection system.

POINTS FOR THE INSTRUCTOR

1. Goals are general concepts. They are not measurable, nor do they have a completion date; in general, they are timeless.

2. Goals are broad statements of the level of service desired by the community. How these goals will be met, who will accomplish them, and how much they will cost should not be specified.

3. Goals, when adopted by the governing body, also establish public policy to provide certain services, resolve existing problems, or mitigate anticipated problems.

METHODOLOGY

This unit uses brief lectures followed by small group activities.

ESTIMATED TIME
(Total Time: 4 hr., 5 min.)

5 min.	Lecture Objectives and Overview	IG 6-5
15 min.	Lecture Fire Protection System Goals	IG 6-5
30 min.	Small Group Activity 6.1 Sunville Goals	IG 6-9
15 min.	Lecture Fire Protection System Objectives	IG 6-9
60 min.	Small Group Activity 6.2 Sunville Objectives	IG 6-15
120 min.	Video and Discussion New Concepts	IG 6-15

AUDIOVISUAL

OHTs 6.1 to 6.12
Videos: Interstate Bank Corporation High-Rise Fire (2 hrs.)
Fire in the Interface

5 min.
Lecture
OHT 6.1

I. OBJECTIVES

The participants will:

A. Define goals, objectives, system objectives, and operational objectives.

B. Prepare appropriate goal statements, objectives, system objectives, and operational objectives.

II. OVERVIEW

A. Fire Protection System Goals

B. Sunville Goals

C. Fire Protection System Objectives

D. Sunville Objectives

E. New Concepts

15 min.
Lecture

III. FIRE PROTECTION SYSTEM GOALS

OHT 6.2

A. Definition of goals:

1. Fire protection system goals are the desired results which the community expects the fire protection system to produce.

2. These goals establish public policy that meet the unique needs of a community.

3. They form the basis for fire protection standards which are established as objectives and which define levels of service and acceptable risks.

4. They are not measurable or set in a time frame.

OHT 6.3

B. Purpose of goals:

1. General statement of purpose.
2. Establish policy regarding service areas.
3. Define direction of fire protection system.
4. Provide policy to resolve present or anticipated problems.
5. Goals are not measurable standards.

Present some examples of goals:

OHT 6.4

"To provide adequate protection at acceptable cost."

"To provide emergency medical service."

"To control community risks related to hazardous materials."

OHT 6.5

"To limit fire losses and fire protection costs through a high level of built-in fire protection."

"To develop a general awareness of fire safety and a commitment to fire prevention throughout the community."

C. These examples, if adopted by the governing body of a community, would establish public policy and set the direction of the fire protection system.

30 min.
Small Group
Activity 6.1

IV. SUNVILLE GOALS

SM p. 6-5

Refer participants to the Goals Worksheet in the Student Manual.

Directions

1. Using the two previously developed problem statements, develop one goal for each of the problem statements if time allows (2nd goal is optional).

Flipchart

2. Record goals on flipchart paper.

3. Each group spokesperson will present the results to the class.

Critique the goals as they are presented to assure that the criteria for goals are met.

15 min.
Lecture

OHT 6.6

V. FIRE PROTECTION SYSTEM OBJECTIVES

A. Purpose of objectives.

1. Objectives are used to measure the results of implementing the master plan programs.

2. Objectives are the fire protection standards for the community.

   a. There are no general fire protection standards available for use by communities except those which each community develops.

   b. When adopted by the community governing body, objectives are the community standards for fire protection and other services for which goals and objectives are established.

c. The Insurance Services Office (ISO) grading schedule is designed to meet the needs of the insurance industry and does not meet the overall needs of the community. This is especially apparent with residential occupancies.

3. Objectives provide measurable levels of service and acceptable risk.

B. Characteristics of objectives.

OHT 6.7

1. At least one objective is established to attain each goal.

2. Objectives must be measurable.

3. Objectives must be accomplished within a specific period of time.

4. One guideline in planning is that **all** objectives must be met.

a. Objectives must be met by the programs established as a result of the master plan.

b. If it is apparent that the objectives will not be met, then the program must be upgraded or the objective must be changed.

*This will be discussed in detail as part of "Alternatives." At this point it is sufficient to state that all objectives **must** be accomplished.*

C. Operational and system objectives.

OHT 6.8

1. System objectives are developed to meet the overall goals of the fire protection system.

OHT 6.9

a. Example: **Fire protection system objective:**

- All occupancies will be reinspected at least annually.

b. System objectives should be approved and funded by the community governing body as part of an annual program budget.

OHT 6.10

2. Operational objectives are developed to accomplish the system objectives. Operational objectives are assigned to ndividuals or divisions.

a. **Operational objectives:**

OHT 6.11

- Engine company personnel will inspect all commercial occupancies annually.

- The fire inspector will inspect all high fire risk occupancies semi-annually.

- The fire inspector will inspect all hospitals and rest homes quarterly.

OHT 6.12

- All sprinkler systems will be inspected and tested annually by a certified private agency.

- A home inspection program will be conducted annually by the public education division of volunteers.

b. Operational objectives will be developed to define the responsibilities of individuals or divisions in order to attain system objectives.

c. More than one operational objective may be required to attain one system objective.

d. Measurable operational objectives are essential to evaluate the results of programs implemented to accomplish system objectives.

60 min.
Small Group
Activity 6.2

SM p. 6-7

VI. SUNVILLE OBJECTIVES

Refer participants to the Activity Worksheet in the Student Manual.

Directions

1. Develop two objectives for each goal prepared previously.

2. Develop at least two operational objectives for each system objective.

Flipchart

3. Appoint a spokesperson who will report group results to the class after placing results on flipchart paper.

Critique each group's work to assure that objectives meet criteria:

1. *Meet the requirements of an established goal;*

2. *Are measurable; and*

3. *Have an established time frame.*

120 min.
Video & Discussion
(Evening session)

VII. NEW CONCEPTS

This evening session is intended to expose the students to new and innovative concepts in volunteer fire department operations and fire protection/EMS/hazardous materials operations. The topics discussed should provide innovative concepts which will help them in the development of their plans, starting the next morning.

The method proposed is to present a video or slide presentation describing the topic to be discussed, followed by an open, unstructured discussion period.

Sample topics:

1. Fire and disaster planning by the private sector.

   - Video: Open postfire critique of the Interstate Bank Corporation High-Rise Fire. (approximately 2 hr.)

Some fire departments have stopped the critique - reason is the Sunshine Law! Fire department critiques have been used against departments.

-This is a video of an open-fire critique conducted by the Los Angeles City Fire Department for neighboring fire service agencies.

- In addition to dramatic fire scenes and a clear demonstration of the extensive resources and fire management skills required for high-rise fires, the successful preplan developed by the Interstate Bank Corporation provides a model for large and small businesses.

2. Publicizing the master plan.

   - Video: Fire In The Interface.

   - A description of structures and conditions which constitute defendable risks in the wildland/urban interface. Conditions which make structures undefendable are identified.

3. An inventory of innovative programs which are applicable to volunteers or which have been developed by volunteers, such as recruitment methods, benefit packages for volunteers, operating procedures, fund raising programs, etc., should be developed for this course.

UNIT 7
HANDOUTS

Flipchart

C. Each group will appoint a spokesperson who will record the results on flipchart paper and provide a report to the class.

The instructor will critique the results with the students and will emphasize:

1. Is there a valid reason for developing an alternative?
2. Is the alternative clearly defined?
3. Will the alternative meet the goal and objective?
4. Can the alternative be compared with the original program?

Handout

Review the Santa Cruz Master Plan. Go over each element of the plan.

VII. IMPLEMENTATION

Video

VIDEO: FIGHT IT WITH FORESIGHT

This video was prepared by the students at a local community college to help the fire department inform citizens about the master plan which had just been developed for the city of Santa Barbara, California. This quality video was prepared at no direct cost to the fire department.

3. When original objectives are not politically or legally feasible.

OHT 7.10

D. Alternatives are identified as a result of:

1. New or improved methods discovered as a result of data gathering and analysis of existing programs.

2. The need to reduce resource requirements of programs which meet goals and objectives.

3. The recommendations of the citizens' advisory committee

4. City managers, city councilpersons, residents, or other administrative personnel who request that such alternatives as the consolidation of departments, contractual fire protection, providing additional stations, etc., be investigated.

5. Programs which may need to be modified to meet political or legal requirements.

40 min.
Small Group
Activity 7.2

SM p. 7-11

VI. SUNVILLE ALTERNATIVES

A. Each group will develop one alternative for one of the programs identified under resource requirements. (Use worksheet 7-2.)

B. Each alternative should include:

1. A brief description of the alternative program.

2. A description of how the goal and objective(s) will be met, within the specified time frame.

3. The resources required to implement an alternative program.

c. Equipment or materials costs.

d. Training (hours, tuition, travel costs).

e. Approvals/support of nonfire department personnel or agencies.

SM p. 7-15 & 7-16

Review Sample Requirement of Fire Protection Master Plan Sheet and Summary of Requirements for the Fire Protection and Emergency Medical Master Plan.

20 min. Lecture

V. ALTERNATIVES

OHT 7.7

A. Purpose of alternatives.

1. Identify programs which have higher efficiency and effectiveness.

2. Evaluate options to assure that they meet goals and objectives.

OHT 7.8

B. When an alternative does not meet the related objective:

1. The alternative must be changed.

2. Cycle back in the process and change the objective.

OHT 7.9

C. Why develop alternatives?

1. To respond to specific questions, issues, or opportunities.

a. It is not necessary to develop an alternative for each program.

b. Alternatives for each program provide objectivity.

c. Such a process would prevent the successful completion of a fire protection master plan.

2. When original objectives are too expensive.

1. Frequently, the programs proposed will require levels of resources which exceed the available resources. It is important that the programs which result from this process are realistic.

2. It may be necessary to cycle back into the planning process and modify the goals and objectives to establish realistic objectives which are within the resource constraints of the organization.

Planning Process Chart, SM p. 1-4

Refer to the planning process chart and point out the circular process.

60 min.
Small Group
Activity 7.1

IV. SUNVILLE REQUIREMENTS

Directions

SM p. 7-7

1. Develop the requirements for one system objective previously identified, including the resource requirements of the operational objectives for that system objective. (Use worksheet 7-1.)

Flipchart

2. Have one spokesperson assigned to record the results on flipchart paper and report to the class.

3. The instructor will critique the results as they are presented. Each statement of requirements should answer the questions:

   a. How will it be done?

   b. Who will do it?

   c. How much will it cost?

   d. How will it be financed?

4. Be sure the following are identified if applicable:

   a. Personnel hours required, by position (rank).

   b. New policies, regulations, or legislation.

3. Apparatus and facility purchase and maintenance.

4. Public fire safety education.

OHT 7.4

G. New program development will include certain operational requirements which will be identified.

1. Prepare a detailed description and analysis of new programs. (p/hrs.)

2. Identify funding sources. (p/hrs.)

3. Obtain input from department membership. (p/hrs.)

4. Obtain approval of top management. (p/hrs.)

5. Develop new ordinances, regulations, or procedures. (p/hrs.)

OHT 7.5

H. Requirements answer the questions:

1. What must be done?

2. How will it be done?

3. Who will do it?

4. What resources are required (personnel hours, costs of equipment/ materials and legislation, codes, policies, etc.)?

OHT 7.6

I. Develop a consensus among key personnel when using estimates.

This is one of the purposes of the review/ approval procedure at the end of each step in the planning process.

J. Compare the total costs of all programs with resources (personnel hours, equipment budget, etc.) which are available.

I. OBJECTIVES

The participants will:

A. Identify the programs and resource requirements needed to accomplish objectives.

B. Identify the cost of attaining goals and objectives.

C. Identify and evaluate alternatives.

II. OVERVIEW

A. Requirements to be Identified

B. Sunville Requirements

C. Alternatives

D. Sunville Alternatives

E. Implementation

III. REQUIREMENTS TO BE IDENTIFIED

A. Personnel hours needed to accomplish tasks.

B. Personnel costs: salaries and fringe benefits.

C. Facility costs: stations, training centers, maintenance facilities, etc.

D. Apparatus, vehicles, and support equipment periodic replacement programs.

E. Training equipment, instructors, and information.

F. Program costs related to:

1. Training.

2. Fire prevention.

POINTS FOR THE INSTRUCTOR

It is essential that the total resource requirements for department operations be identified to assure that sufficient resources will be available to accomplish the proposed goals and objectives.

Existing program requirements must be combined with those proposed in order to present an accurate and complete definition of requirements.

Most departments will not have records which identify all resource requirements. This will be true especially of personnel hours related to programs or tasks. It will be necessary to develop a method of estimating resource allocations. This can be done best by involving those persons who perform the tasks in question.

When complete information is not available it is important to establish a consensus among key personnel where estimates are used in lieu of complete data.

The students should concentrate on answering these questions:

- What must be done to attain the objectives?

- How will it be done?

- Who will do it?

- What resources (personnel, apparatus, materials, legislation, codes, etc.) are needed?

Alternative programs to accomplish goals and objectives may be evaluated. These alternatives may be developed:

- When proposed programs are too expensive.

- When proposed programs are not feasible.

- When alternative analysis is recommended by city council, city manager, or citizens' advisory committee.

Alternative programs should not be developed for all objectives.

Alternatives should be defined clearly so that a complete picture of service levels provided and resource requirements is presented.

Challenge students to provide reasons for developing alternatives. Encourage the development of new concepts and methods.

METHODOLOGY

This unit uses small group activities and short lectures.

ESTIMATED TIME
(Total Time: 2 hr., 35 min.)

5 min.	Lecture Objectives and Overview	IG 7-5
30 min.	Lecture Requirements to be Identified	IG 7-5
60 min.	Small Group Activity 7.1 Sunville Requirements	IG 7-9
20 min.	Lecture Alternatives	IG 7-11
40 min.	Small Group Activity 7.2 Sunville Alternatives	IG 7-13

AUDIOVISUAL AND HANDOUTS

OHT 7.1 to 7.10
Video: Fight It With Foresight
Sample Privatization Package
(Proposal City of Sunville by Melbourne Fire Protection Company)
ISO Ratings
Santa Cruz Master Planning

UNIT 7: REQUIREMENTS AND ALTERNATIVES

OBJECTIVES

The participants will:

1. *Identify the programs and resource requirements needed to accomplish objectives.*
2. *Identify the cost of attaining goals and objectives.*
3. *Identify and evaluate alternatives.*

ATTITUDES TO FOSTER

1. The costs of conducting each new program must be documented. These costs include personnel hours, materials, and equipment.

2. The costs of new programs must be combined with the costs of existing programs to develop a total cost.

3. Other requirements may include:

   a. Legislation.

   b. Regulations and policies.

   c. Training.

   d. Support or endorsement of other public or private agencies.

4. The initial calculations probably will show costs which exceed available resources. Program modifications will be needed to establish an acceptable cost for programs.

5. Programs will be prioritized; lower priority programs may be eliminated, reduced, or postponed.

6. "Alternatives" will also be used to resolve the problems of insufficient resources.

7. The fire service must be receptive to new ideas and new methods.

8. An alternative may be a compromise between opposing philosophies and levels of service or expenditures and may be necessary in order to gain approval of the plan.

9. Acceptable risk is the alternative to complete protection or service. The ability to clearly define risks will be important in evaluating alternatives.

10. To qualify as valid, a proposed alternative must attain at least one goal and related objectives. This emphasizes the need for well-defined goals and objectives. This also assures that the plan is protected from alternatives which are not worthy of consideration, such as poorly designed police-fire consolidation, contractual fire protection which provides a low level of service, and other schemes to reduce costs without considering the resultant levels of service.

UNIT 8: PREPARING PRESENTATIONS

OBJECTIVES

The participants will:

1. *Identify the role of the presentation to council or other decision-making body.*
2. *Identify the manner of preparation for a presentation.*
3. *Identify techniques to avoid and techniques to include in effective presentations.*
4. *Understand the importance of using graphics for displaying, analyzing, and communicating data.*
5. *Identify the methods for selecting and developing appropriate graphics to display data for planning team analysis, citizens' advisory committee review, and communicating to city council.*
6. *Learn how to use visual perception to think, review, and communicate effectively.*

ATTITUDES TO FOSTER

1. A single presentation can mean the difference between adoption or rejection of a planning effort that has taken months to develop. Therefore, it is prudent to pay particular attention to the presentation of the material to the council.

2. The presentation must be geared to the members of the audience (the decisionmakers) and meet their needs, not your personal needs.

3. Rehearsing presentations will improve their quality and allow for self-critique. This may avert disaster.

4. Effective use of audiovisual aids can enhance a presentation considerably and assist in securing acceptance.

5. The physical appearance of the presenter is an important factor to consider in making a presentation.

6. Little things that can assist include position on the agenda, telling council members what action you will expect from them following the presentation, making pencil notes to yourself on the flipcharts, etc.

7. Know when to shut up. If you see the council ready to make the decision, do not continue simply because you have more information.

8. It is important to realize the value of the citizens' advisory committee in the planning process and particularly at these meetings with council. Use the committee as much as is reasonable to secure a decision.

9. The value of securing approvals in incremental steps.

10. Graphic techniques are a basic part of the analysis and communication of data; visual displays are often clearer and more accessible than tabular summaries of data.

11. Graphic media selection is based solely on the audience and the message to be conveyed.

12. Developing graphics is an iterative process which typically involves trial and error, but graphic techniques are extremely valuable in capturing the attention of the audience to stimulate analytical thinking or to communicate key information through visual perception.

POINTS FOR THE INSTRUCTOR

1. Stress the important role of the presentation in achieving adoption of the plan.

2. Rehearsing the presentation in the actual council chambers will greatly enhance the presentation.

3. After the video, discuss the following key points:

   a. Appearance.

   b. What turned you off?

   c. What turned you on?

   d. Whether students have ever seen presentations like the first and second made to a council?

   e. Preparation--what role does it play?

   f. Visuals--what role do they play?

4. Objectives need to be set for the presentation; what are we trying to accomplish? Who makes up our audience? What is their level of comprehension? What do they need to know to make a decision?, etc.

5. Stress that the purpose of the presentation is to secure a positive decision from the council. **Do not expect miracles.** If you do not convey the necessary information, they will not receive it.

6. Visual communication continues to be an essential part of the way we think. Although research opinion varies, it seems generally accepted that 70% to 80% of what we learn is through sight.

7. Graphic thinking takes advantage of the power of visual perception by making visual images external and explicit.

8. Graphics allow us to see large amounts of information at one time, exposing spatial relationships and other complex information.

9. Using graphics in the planning process is really about finding things, seeing new ideas, and sharing ideas and discovery.

10. Planning relies heavily on graphics to explain and persuade.

11. Current and emerging technology for displaying data graphically holds exciting promise. The full use of this technology is directly related to the development of our own visual thinking.

METHODOLOGY

This unit uses a combination of video presentation, controlled notes, and postvideo discussion to describe the features of better presentations.

ESTIMATED TIME
(Total Time: 1 hr.)

5 min.	Lecture	
	Objectives and Overview	IG 8-5
15 min.	Video: Master Planning Approval Process: Presentation Techniques	IG 8-7
20 min.	Discussion	
	Postvideo Discussion	IG 8-7
20 min.	Lecture	
	Graphics Selection	IG 8-11
	Graphics Development	IG 8-13

AUDIOVISUAL

OHTs 8.1 to 8.8
Video: Master Planning Approval Process: Presentation Techniques (12 min.)
Sample Student Presentation Package

5 min.
Lecture

I. OBJECTIVES

OHT 8.1

The participants will:

A. Identify the role of the presentation to council or other decisionmaking body.

B. Identify the manner of preparation for a presentation.

C. Identify techniques to avoid and techniques to include in effective presentations.

OHT 8.2

D. Understand the importance of using graphics for displaying, analyzing, and communicating data.

E. Identify the methods for selecting and developing appropriate graphics to display data for planning team analysis, citizens' advisory committee review, and communicating to city council.

F. Learn how to use visual perception to think, review, and communicate effectively.

II. OVERVIEW

A. Video: Master Planning Approval Process: Presentation Techniques

B. Postvideo Discussion

C. Graphics Selection

D. Graphics Development

SM p. 8-3

Have students refer to controlled notes, "Master Planning Presentations." This sheet is provided to aid in notetaking during the video.

15 min.
Video

III. VIDEO: MASTER PLANNING APPROVAL PROCESS: PRESENTATION TECHNIQUES

The video contains viewing guidance for the student.

If possible, two monitors are preferred if the class size exceeds 20 persons.

20 min.
Discussion

IV. POSTVIDEO DISCUSSION

SM p. 8-5

After the video, use the controlled notes sheet to discuss the role of:

A. Knowing the audience.

1. Objectives.
2. Background.
3. Knowledge.
4. Composition.
5. Attitude.

Knowing the audience will help you target your presentation and avoid pitfalls (pet irritations or projects of each of the politicians). Attend council sessions prior to your presentation to gain insight or view videos if previous sessions were broadcast over cable TV to the community.

B. Targeting the presentation.

1. Setting objectives.
2. Outlining the presentation.
3. Giving the audience the data.

Do not get too technical.

4. Show and tell.

C. Other points to consider.

Discuss with the class.

1. Did you notice their placement on the agenda?

2. How did their appearance affect the presentations?

3. In the third presentation, how effective was the chairman of the citizens' advisory committee. Why?

4. Degree of preparation for each of the three performances.

5. Rehearsals (at the place of presentation if possible).

6. At the start of your presentation, tell council members what you expect from them following the presentation.

7. What turned you on?

8. What turned you off?

D. Summary.

OHT 8.3

1. Presentation importance.

2. Be prepared.

3. Use the citizens' advisory committee appropriately.

4. Do not get too technical.

5. Show and tell.

20 min.
Lecture

V. GRAPHICS SELECTION

OHT 8.4

A. Graphics selection criteria for planning team use should stimulate analytical thinking.

1. Place emphasis on spatial relationships, trends, patterns, and cycles.

2. Use geographic units shown on maps representing data groupings.

3. Using transparent overlays showing conditions or impact by area with a base map is an excellent aid to analytical thinking by steering a thought-provoking discussion in a specific direction.

OHT 8.5

B. Graphics selection criteria for citizens' advisory committee review should:

1. Focus on the need to communicate the findings of the data collection.

2. Generate input from the community as an aid to putting theory into practice.

a. The planning team maps and overlays are helpful in accomplishing this objective.

b. They should be supplemented with flipcharts that summarize the findings and recommendations of the planning team.

- The flipchart should be structured in outline form with space to write in citizens' advisory committee comments.

OHT 8.6

C. Graphics selection criteria for city council presentation.

1. Is not designed to encourage input, but rather present the final fixed product and gain approval.

2. Should be used with caution, and then only to display data that communciates information key to the approval process; e.g., maps.

3. Flipcharts are also useful, but, unlike the citizens' advisory committee flipcharts, they should be structured to draw attention only to the "bottom line" of the findings and recommendations.

4. A more effective approach is the use of a 10- to 15-minute slide tape presentation giving a brief historical account of how the proposed plan was developed.

5. Then, supplement this presentation with graphs, charts, or overhead transparencies which illustrate the elements of the plan.

VI. GRAPHICS DEVELOPMENT

A. Most graphics require advance preparation, and some are time-consuming and costly to produce. However, failure to invest the necessary time and money to produce effective graphics can have more costly effects on the success or failure of the plan.

OHT 8.7

B. Rules of thumb for preparing graphic displays.

1. All graphics should be properly documented, self-contained, and self-explanatory.

2. Titles should provide a clear and complete statement of what the graphic shows. The title should be kept short to catch attention, with a subtitle to complete the thought.

3. Labels, sources, explanatory notes, keys, and the date of preparation should be documented on the graphic display to help users answer questions for themselves.

4. Colors are useful in drawing attention to key information, but the number of colors should not exceed the quantity necessary to convey the message. Using too many colors often draws attention to the graphics, rather than the message or data being displayed.

5. Be sure lines, letters, numbers, rows, and columns are straight, properly spaced, and large enough to read.

OHT 8.8

6. Do not clutter graphics with extraneous information that is hard to understand. It is better to use two uncluttered graphic pieces than one that is overloaded.

7. Reproduce all graphics in an 8 1/2" x 11" format to encourage participants to take copies for further study.

8. Do not use humorous graphics unless they are likely to have universal appeal; stale humor detracts from the presentation.

9. Slides that are on hand should not govern the content of the message. First, write the script and then assemble the slides. Show each slide at least 5 and no more than 15 seconds. The total program should not exceed 15 minutes.

   (Rules that govern the development of maps are comparable to those that apply to slides.)

Pass out Sample Presentation Packages.

UNIT 8

HANDOUTS

SAMPLE PRESENTATION PACKAGE

ACTIVITY 9.1

DEVELOPING A PLAN

DIRECTIONS

Your planning team has been asked to develop a plan that addresses the adopted goals and objectives using the assigned approach in a 20-minute presentation to the council. The occupational/social makeup of your presentation team will be determined by you. Groups are free to use as many members as desired in making the presentation (two or more is suggested).

The master plan advisory committee has met with the council in the past and has secured approval for the following goals and objectives for the Sunville fire master plan. When these goals and objectives were approved, the city council requested the three alternative fire protection plans be submitted to meet these goals and objectives. They are:

- Financial status quo (pg. (9-7).
- Adaptive response (pg. 9-8).
- Public/Private (pg. 9-9).

The council will select one of the alternative fire protection plans using these as guidelines for its selection.

Goals

1. To provide adequate fire protection at a reasonable cost.
2. To reduce the risk of injury and death from fire.
3. To improve fire protection through code enforcement.
4. To provide adequate emergency medical care.

Objectives

1. To provide the required fire attack capacity to 80% of the commercial occupancies within the next 3 years.
2. To provide the required fire attack capacity to 80% of the residential occupancies within the next 3 years.
3. To adopt a new fire code within 1 year.
4. To implement a code enforcement program within 18 months.
5. To provide BLS coverage to 90% of the community within 1 year.

The city administrator and city attorney will be provided. Complete the assignment worksheet and give it to the city administrator prior to the council meeting to assure that your group will be introduced properly and that you will receive participation credit toward your certificate/graduation.

Time Schedule

11:00 a.m.	Wed.	Receive assignment
1:00 p.m.	Wed.	Elect council members (one per group, elected by group)
9:00 a.m.	Thurs.	Council study session (for council members only)
11:00 a.m.	Thurs.	Council meeting

Points to Consider

Consider the following points for the fire protection alternative you are preparing.

1. Approximate cost of implementing your alternative.
2. The percentage or degree to which your proposal meets the objective(s).
3. List the legislation required to implement your alternative; e.g., a sprinkler ordinance or smoke detector requirements would require legislation.
4. What political ramifications does your alternative hold?
5. Have you considered all of the positives and negatives of your alternative?
6. Do your analysis and presentation assess and present the alternative's ability to meet the fire protection needs of Sunville?
7. Does your presentation answer the obvious questions?
8. Assure that your presentation meets the information needs of the council and remains close to the allotted time.
9. Prepare an outline of your presentation prior to making assignments to individual members.

ALTERNATIVE FIRE PROTECTION PLANS

ALTERNATIVE #1: FINANCIAL STATUS QUO

One approach to fire protection in the City of Sunville is to continue operations along the current framework of operations with no significant changes in financial implications. The general concept is to maintain a financial status quo position. This posture assumes that the current fire protection delivery system generally meets the needs of Sunville and that only changes within that scope will be accepted.

The intent of this option is to retain, at a minimum, the current level of risk with possible improvements coming from a more efficient use of present resources.

Your assignment is to review the problems of Sunville developed to date and prepare an action plan based upon the planning objectives approved by council. Those objectives will be the ones the planning team/advisory committee (you) submitted to the council earlier in the planning process.

Development of Alternative #1

Consider how a continuation of the current fire department structure and operating policy will affect fire protection in Sunville over the next 10 years. Assess the degree to which the present programs respond to the stated planning objectives and for fire and life safety in Sunville. Evaluate the potential economic impact of implementing and maintaining the fire department program as outlined.

Develop a legislative program as needed to accomplish the adopted goals and objectives within the context of the assigned objective.

Develop and describe a plan of action which will be used to implement the plan. Identify the authority and responsibility required to implement the plan, along with an estimated time line.

Identify the process which will be used to evaluate results and make the required plan modifications.

You may reallocate any fire department resources, but you cannot increase the cost of fire protection to the public or private sectors: no larger budget, retrofit sprinkler ordinances, or user fees, etc. You can adopt and enforce the new building and fire codes but nothing can be made retroactive. On the basis of these findings and analysis, prepare a presentation to the council which develops this alternative as though you are a planning team readying a presentation to the city council.

ALTERNATIVE #2: ADAPTIVE RESPONSE MODEL

A management approach to fire protection services in Sunville might include an organization model that meets all of the identified problems. In other words, the fire service resource requirements and the allocation of these resources would be matched to the specific problem conditions. Apparatus types and designs would be changed to provide increased tactical capability with the option of increased staff, apparatus, stations, etc.

The intent of this option is to reduce the risk level in Sunville through the intelligent application of public resources.

In Sunville, the primary responsibility for fire protection with this model would rest with the public sector. Emphasis would be placed on improving fire services in order to address the problems. Little effort would be placed on improving the fire protection capability in the private sector. The fire problem of Sunville still would be addressed as a publicly financed responsibility.

Development of Alternative #2

This model recommends changes in fire station location, equipment, apparatus, and staffing levels. It should be noted that fire and EMS services will each be considered in developing this option.

With this alternative you are able to increase the fire department budget to the extent necessary to meet community fire service needs. You cannot increase private sector costs, adopt retrofit ordinances, or implement any user fees.

Consider how a continuation of the current fire department structure and operating policy will affect fire protection in Sunville over the next 10 years. Assess the degree to which the present programs respond to the stated planning objectives for fire and life safety in Sunville.

Develop a legislative program as needed to accomplish the adopted goals and objectives within the context of the assigned option.

Develop and describe a plan of action which will be used to implement the plan. Identify the authority and responsibility required to implement the plan along with an estimated time line.

Identify the process which will be used to evaluate results and make the required plan modifications.

On the basis of these findings and analyses, prepare a presentation to the council which develops this alternative as though you are a planning team readying a presentation to the city council.

ALTERNATIVE #3: PUBLIC/PRIVATE DELIVERY MODEL

A third alternative for providing fire protection services to the city of Sunville is the transfer of a greater portion of the responsibility to the private sector. In other words, this model is based on the premise that the community will provide a level of basic service with the private sector bringing the hazard level of its structures/requirements down to meet a reasonable degree of risk.

A portion of the responsibility for adequate fire services must be borne by the private sector; it does that now through the fire and building codes. This option takes that premise a step further and says that built-in protection and user fees will reduce the need for service or pay for its maintenance. "If you create the problem, you create the solution."

The intent of this option is to manage the level of risk in the community, requiring that those who create a demand satisfy that need. Built-in fire protection and user fees are two of the ways in which hazard levels are controlled and risk managed.

Development of Alternative #3

Consider how a continuation of the current fire department structure and operating policy will affect fire protection in Sunville over the next 10 years. Assess the degree to which the present programs respond to the stated planning objectives for fire and life safety in Sunville. Evaluate the potential economic impact of implementing and maintaining the fire department as outlined.

Develop a legislative program as needed to accomplish the adopted goals and objectives within the context of the assigned option.

Develop and describe a plan of action which will be used to implement the plan. Identify the authority and responsibility required to implement the plan along with an estimated time line.

Identify the process which will be used to evaluate results and make the required plan modifications.

You may adopt retrofit legislation and user fees for any or all services, but you cannot increase the fire department budget significantly over a 5-year period.

Consider carefully the future costs of operating the Sunville Fire Department if the objectives are met through automatic sprinklers, detection, and user fees. Determine the impact on the level of required services through the use of built-in protection. Estimate the impact of this option on fire insurance premiums for the community.

On the basis of these findings and analyses, prepare a presentation to the council which develops this alternative as though you are a planning team readying a presentation to the city council.

Cost Analysis - Retrofit Installation of Sprinklers in Target Hazards

#	FDZ	Structure	Installation Cost	Annual Cost*	Annual Saving**
1	NE4	University Motel	$136,000	$ 8,160	$ 27,640
3	SE6	Lumber Mill	312,000	18,720	29,400
5	SE9	Hospital	92,000	5,520	46,200
6	NE4	Ag-Chem Corp.***	146,000	8,760	4,600
7	SW5	Warehouse	68,000	4,080	4,100
9	NW6	Business Complex	78,000	4,680	8,000
10	SE9	University	110,000	6,600	19,000
11	SE1	Apartment Complex	92,000	5,520	11,200
12	SE5	Convalescent Center	106,000	6,360	14,700
				$68,400	$164,840

Note: Installation costs will vary according to local, size, and design of structure, labor and material costs, etc. These examles are applicable to Sunville only.

*Amortized over 20 years.
**Includes insurance savings, increased rental fees, and other financial credits.
***Nonwater system.

APPROACHES/STRATEGIES

There is no single best way of providing fire protection in any community. Identifying the types and levels of fire protection programs that will meet the expectations of the community is a matter of meeting both the technical and emotional needs of the community. Implementing those programs is a matter of meeting both the professional and political expectations of those involved in the decisionmaking process. Ensuring adequate fire protection services for any given jurisdiction is a matter of balancing the level of public and privately supported services against the factors of cost.

At this point in the Sunville exercise, each planning team has reviewed the data prepared, identified the problems/concerns and desired improvements, developed goals and objectives, reviewed alternative programs to meet the objectives, and identified the requirements of the alternative programs. Now it is appropriate to write and present a viable fire protection services master plan that is in concert with the needs of the community.

The community has a wide set of policy positions around which the fire protection system can be developed. The first, and generally most accepted, is the assumption of fire service responsibility by the community. Here the community as a whole is responsible for fire protection and usually deals with it through a publicly funded fire department. At the opposite end of the spectrum is the position that each individual will provide his or her own fire protection. Somewhere in between represents the point at which community (risk aversion through sharing of cost) and individual (risk seeking through acceptance of risk as an individual) desires are satisfied.

The development of alternative fire protection approaches provides both planners and decisionmakers with a choice of delivery systems that can be matched to community objectives and ability/desire to pay. The applicability and feasibility of each plan have to be measured in the context of political reality. In other words, a key question to ask is, "Which plan has the best chance of being implemented?" Implementation feasibility has to be considered by each planning team in the preparation of the plan as well as the presentation(s) for adoption.

Three primary approaches (strategies) have been structured for the city of Sunville for use in this exercise. It is hoped that each community would have reviewed and developed a position on these approaches prior to reaching this point in the planning process. However, the Sunville planners failed to clear this hurdle and so it too must be cleared at this meeting.

The planning teams should consider each alternative plan in relation to the current and projected problems of Sunville, and, most important, the objective performance for fire protection service over the next 5 to 10 years. Planning teams can make adjustments in a given plan to accommodate specific requirements.

SERVICE DELIVERY STRATEGIES

There are basically three or four general service delivery positions that can be assumed by a community in adopting a plan. While an actual plan probably would feature a mix of these philosophies, this exercise will assume that the city council of Sunville has opted to select just one.

The council has requested that presentations be made in each of the three more obvious public policies or strategies. They are:

1. *Status Quo*
2. Adaptive Response Model
3. Public/Private Model

#1 - Status Quo

Represents a response to the fire service problem which requires no additional public or private resources. It assumes that problems or concerns can be managed by reallocating the current resources through a planned approach and efficient management.

#2 - Adaptive Response Model

Represents the point of view that community fire service problems are handled best by local government. Fire-related issues within the community are the community's responsibility and, therefore, should be dealt with at that level. Business/commerce generates additional jobs, pays additional taxes, and should be encouraged by the community.

#3 - Public/Private Model

Represents the point of view that "he who creates the problem should create the solution." It postulates that the community will provide a basic level of service, usually at the residential level, requiring those who create additional levels of need to address the problem through built-in protection.

POLITICAL IMPACT

The political impact of each of the three policy positions generally is consistent and predictable from community to community.

Status Quo - Represents the least opportunity for community concern because present funding levels are continued. This option usually creates concern when there is strong dissatisfaction with the present level of service, possibly triggered by some significantly emotional event in the community.

Adaptive Response Model - This policy normally represents an increase in cost to the community budget, and, therefore, incurs the opposition of the budget watchers. It often raises the question of the residential sector paying to support the profits of business. There also may be issues raised by businessmen concerning additional taxation, but these usually can be deferred by the potential savings in insurance premiums.

Public/Private Model - Generally, this policy represents increased building and development costs through a greater degree of built-in protection, and, therefore, usually creates the greatest amount of political opposition. Retrofitting is often a part of this approach and is often seen by the business community as excessive, unjust, and a handicap to development.

While these perceptions are usually found, they are by no means absolute. A lack of understanding is often at the heart of the issue and may be corrected or averted with adequate information and open communications. Keep in mind that you have developed your attitudes and opinions based on a given data base. If you can convey that same information, the opportunity for a favorable decision will increase.

Recognizing biases of decisionmakers

When developing and presenting a master plan to a governing body, the biases of the decisionmakers must be identified and considered. The approval of the plan can be jeopardized if those developing or presenting the plan are unaware or insensitive to these biases.

Typical biases which may be encountered are:

Progrowth: A progrowth attitude may be manifested by opposition to governmental activities which restrict or increase the cost of development.

Antigrowth: An antigrowth attitude may be manifested by seeking to use governmental activities or regulations to restrict development.

Government cost reduction: Although this is a desirable trait for governmental managers and politicians, there are instances where all costs related to existing or proposed expenditures are opposed regardless of their relative value.

Opposition to fire department operations: Biases may also relate to certain fire department operations or programs due to a lack of understanding or due to previous negative experiences or constituent complaints. These may include such issues as:

The productivity of career and part-paid personnel; especially the belief that large blocks of unused time are available.

A belief that the operation of a volunteer fire department means the local government is relieved of financial responsibility for fire protection.

Concerns that the fire department responds with too much apparatus and excessive personnel to incidents, or that they operate the vehicles at excessive speeds.

A belief that fire departments are a threat to private business by operating ambulances and other services.

The plan should contain data and programs which confront each of the misconceptions or biases identified. Complete and accurate data should be provided to modify these attitudes where possible. If the causes of biases cannot be removed, then the planner should be sensitive to these issues and not precipitate confrontations if they can be avoided.

PRESENTATION OBJECTIVES WORKSHEET

	GROUPS					
	1	2	3	4	5	6
1. To provide the required fire attack capacity to 80% of the commercial occupancies.						
2. To provide the required fire attack capacity to 80% of the residential occupancies.						
3. To adopt a new fire code within 1 year.						
4. To implement a code enforcement program within 18 months.						
5. To provide BLS coverage to 90% of the community.						
Public Cost						
Private Cost						
Time of Presentation						

PLANNING FOR PROGRESS

To: Mr. Mayor and City Council
From: Master Planning Committee
Re: Proposal

Dear Mr. Mayor and City Council:

We, the master planning committee, would like to present to you for your approval the following master plan for fire protection for the city of Sunville.

You will find the following information enclosed.

A plan to:

1. Provide adequate fire protection at a reasonable cost.
2. Reduce the risk of injury and death from fire.
3. Improve fire protection through code enforcement .
4. Provide adequate emergency medical care.

These plans will give our city the maximum fire protection available without increased cost to the public or private sector.

City of Sunville
Fire Protection Master Plan

Management Team

Charlie Zook	Mayor
Pete Lamon	City Administrator
Duey Doolittle	Fire Chief
Ken McCallister	City Planner

Planning Team

Chuck Friday	Project Director/ Assistant Fire Chief

Members

Penny Pincher	Assistant Director of Finance
Jim Green	Director of Parks
Tom Sawyer	Assistant Water Superintendent
Tom Edison	Superintendent of Utilities

City of Sunville
Fire Protection Master Plan
Citizens' Advisory Committee

Chairman

K. J. Powell	President , 20 Centry Club
Lamon McAllister III	Sunville Lions Club
Doug Dogood	Sunville Red Cross
Father A. Spencer	St. Mary's Catholic Church
Henery Lovesmucker	Sunville School District
Fawn Hall	Sentry 22 Reality
Rev. Charles Condon	1st Baptist Church
Frank Framer	Sunville Builders Association
O. T. Hill	President, Aging Citizens of Sunville
Jim Ziphal	Well Digger's Local 503
Spike	Sunville Biker's Recreation Club

MASTER PLAN OUTLINE

GOAL I To provide adequate fire protection at a reasonable cost.

1. To provide the required fire attack capacity to 80% of the commercial occupancies.
2. To provide the required fire attack capacity to 80% of the residental occupancies.

GOAL II To reduce the risk of injury and death from fire.

To adopt a new system code within one (1) year.

GOAL III To imporive fire protection through code enforcement.

To implement a code enforcement program within 18 months.

GOAL IV To provide adequate emergency medical care.

To provide Basic Life Support (BLS) coverage to 90% of the community.

GOAL I

To provide adequate Fire Protection
at a reasonable cost.

OBJECTIVES

To provide the required fire attack capacity
to 80% of the commercial and residential occupancy.

A) Built two new stations at no additional cost to the city to reduce travel time.

B) Launch a Recruitment campaign to increase volunteer staffing.

C) Establish well defined Mutual Aid contracts with RIDGEVIEW and Northview Fire Department.

GOAL II

To reduce the risk of injury and death from fire.

OBJECTIVES

To adopt a new fire code within one year.

A) Adopt uniform building code.

B) Adopt live safety code.

C) Adopt sprinkler code for all new buildings.

GOAL III

To improve fire protection through code enforcement.

OBJECTIVES

To implement a code enforcement program within 18 months.

A) Fire Company inspections.

B) Assistant Chief to reinspect.

Sentry 22 Reality
341 Bruce Street
Sunville, TN 00000

Sunville City Hall
Finance Department
P.O. Box 225
Sunville, TN 00000

Dear Ms. Pincher,

After assessing the Sunville Fire Station and its location, I have appraised its value at $275,000.

Sincerely,

Chuck Smith

GOAL IV

To provide adequate emergency medical care.

OBJECTIVES

To provide BLS coverage to 90% of the community.

A) Two station concept.

B) 5 minute sphere of influence

1) Decreased response time.

Sunville Builders Association
Sunville, TN 00000

Sunville City Hall
Finance Department
P.O. Box 225
Sunville, TN 00000

Dear Penny Pincher,

After reviewing your building proposals I have projected the cost of your two stations at $250,000.

Station 1 at McAllerster Blvd. at a cost of $150,000.

Station 2 at Northview Drive at a cost of $100,000.

If I can be of assistant please feel free to contact me at any time.

Sincerely,

Frank Framer

Northview Fire Department

Subject: Mutual Aid

To: Sunville Fire Department

Dear Chief Duey,

In reference to the mutual aid contract between our departments, you have my full support. And can count on our response in the event of an emergency beyond your resources.

Sincerely,

Jimmy Joe Johnson
Fire Chief

Ridgeview Volunteer Fire Department

Subject: Mutual Aid

To: Fire Chief

This is to confirm your request for Automatic Alarm response to the extreme eastern edge of Sunville, and a general mutual aid contract between our two fine cities. I have sent the contracts for approval.

Sincerely,

I. B. Handy

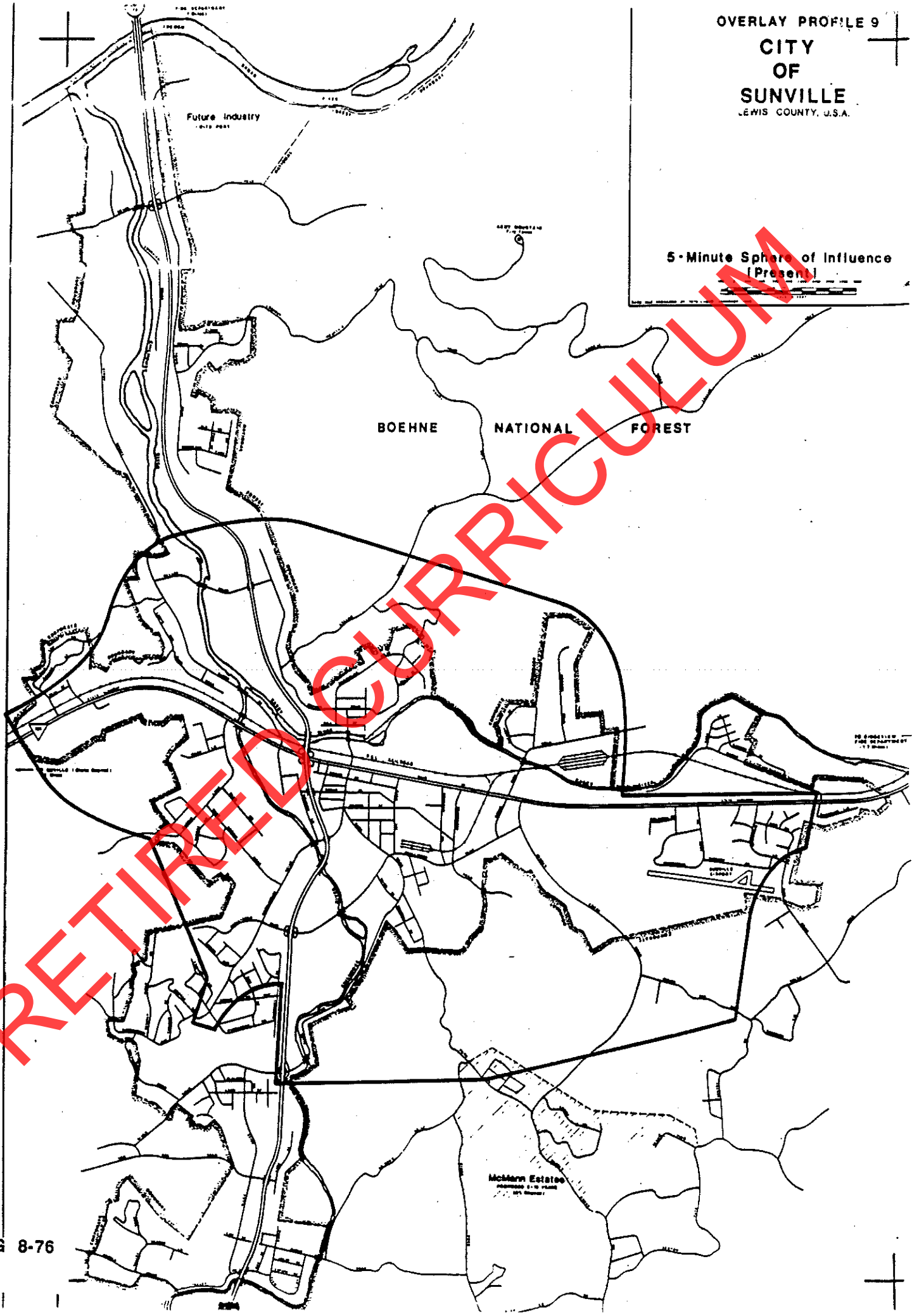
Table 2: Fire Department Budget Overview

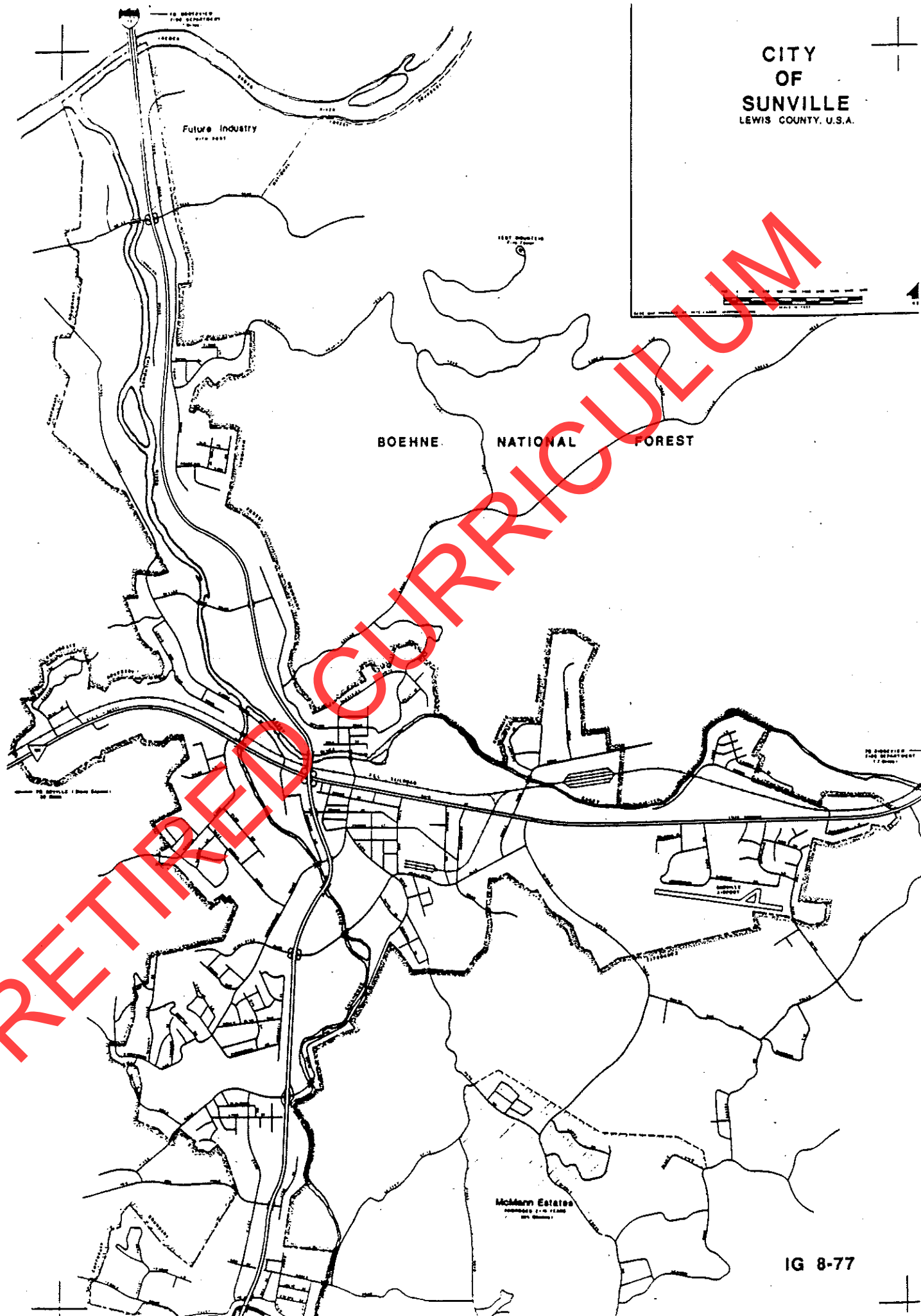
Item	Amount Budgeted
Legislative	$6,500
Legal	10,000
Fire Payroll	94,826
Fire Benefits	37,250
Administrative Costs	32,911
Suppression Costs	67,900
Public Education	5,250
Station Maintenance/Supplies	43,120
EMS Payroll	15,424
EMS Benefits	1,806
EMS Maintenance/Supplies	60,100*
EMS Training	5,245
Communications	38,500
Hydrant Rental	10,000
Total	**$428,832**

* Includes $50,000 for ambulance purchase.

Note: There is now a reserve fund for apparatus of facility/improvement as a result of:

Trade-in value of 84 Meditrans Ambulance	$12,500
Net Profit from sale of Existing Station	25,000
Total	**$37,500**



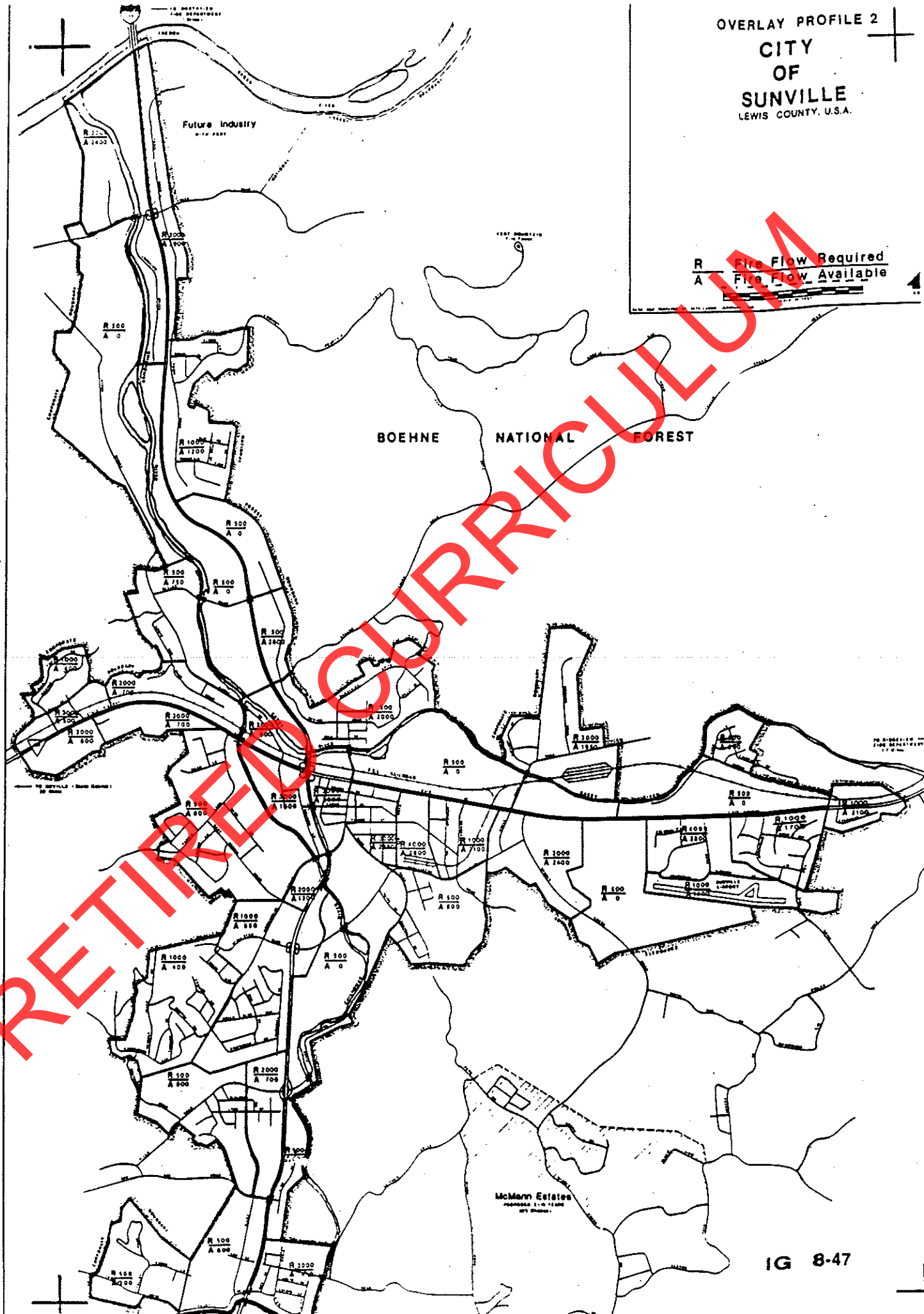


COMMUNITY FIRE PROTECTION

MASTER PLAN

Inadequate required water flow for 59% of the city during emergency situations.

Recommend implementation of the water company/department upgrade. Ordinance or zoning requirement for land developers to ensure future developments meet the required water flow for a projected area in accordance with Amercian Water Association recommendations to be initiated within 30 days.



ASSESSMENT MODEL: DAYTIME

RESPONSE ASSESSMENT MODEL

Company	Avg # of Personnel	Location	Man Time (Minutes)
E1	4.0	123 SR101 FDZ SE6	0
E2	8.5	123 SR101 FDZ SE6	4

Avg. Vehicle Speed= 26 m.p.h.

Avg. Dispatch Time= 0 minutes

STATISTICS (Shortage/Surplus Column)

Response Evaluation

# OF ZONES THAT ARE:	@5	@10
A. >3 persons deficient	19	19
B. 0 to 3 persons deficient	12	6
C. meeting suggested requirements	11	17

SHORTAGE/SURPLUS COLUMN RESULTS

Avg. Personnel over/short @ 5 min. -4.1 persons

Avg. Personnel over/short @10 min. -3.7 persons

Avg. Fire Flow Required 1464 Gallons

Avg. Fire Flow Available 1135 Gallons

ZONE INVENTORY

# OF ZONES:	
Rural/Residential	17
Residential	8
Light Commercial	8
Medium Commercial	7
Heavy Commercial	2
Total # of Zones	42

Sunville Fire Department

NO.	FIRE DEMAND ZONE	FIRE DEMAND ZONE DATA Est. Pop.	Fire Flow (GPM)	NEEDED RESOURCES Personnel @: (time in min) 5	10	Fire Flow (GPM)	SHORTAGE/SURPLUS Personnel @: (time in min) 5	10	Fire Flow (GPM)	AVAILABLE RESOURCES Personnel @ (time in Min) 5	6.5	10	15	RESPONSE TIME FROM STATION Company # E1	E2	0	0	0	TRAVEL DISTANCE FROM STATION Company # E1	E2	0	0	0
1	SW1	42	2000	12	18	-1400	-8	-5.5	600	4	4	12.5	12.5	4.8	8.8	0.0	0.0	0.0	2.1	2.1				
2	SW2	22	3000	12	24	-2300	-8	-11	700	4	4	12.5	12.5	3.2	7.2	0.0	0.0	0.0	1.4	1.4				
3	SW3		3000	12	24	-1400	-8	-11	1600	4	12.5	12.5	12.5	1.8	5.8	0.0	0.0	0.0	0.8	0.8				
4	SW4	340	500	3	6	300	1	6.5	800	4	4	12.5	12.5	3.5	7.5	0.0	0.0	0.0	1.5	1.5				
5	SW5	16	2000	12	18	-800	-8	-5.5	1200	4	4	12.5	12.5	2.5	6.5	0.0	0.0	0.0	1.1	1.1				
6	SW6	820	1000	6	12	-350	-2	0.5	650	4	4	12.5	12.5	3.5	7.5	0.0	0.0	0.0	1.5	1.5				
7	SW7	804	1000	6	12	-600	-6	0.5	400	0	4	12.5	12.5	5.5	9.5	0.0	0.0	0.0	2.4	2.4				
8	SW8	204	500	3	6	300	-3	6.5	800	0	4	12.5	12.5	5.8	9.8	0.0	0.0	0.0	2.5	2.5				
9	SW9	21	2000	12	18	-1300	-8	-5.5	700	4	4	12.5	12.5	4.6	8.6	0.0	0.0	0.0	2.0	2.0				
10	SW10	16	500	3	6	100	-3	-2	600	0	0	4	12.5	7.4	11.4	0.0	0.0	0.0	3.2	3.2				
11	SW11	146	500	3	6	-300	-3	-2	200	0	0	4	12.5	9.2	13.2	0.0	0.0	0.0	4.0	4.0				
12	SE1	360	3000	12	24	-2550	-12	-20	450	0	0	4	12.5	7.4	11.4	0.0	0.0	0.0	3.2	3.2				
13	SE2	22	500	3	6	100	-3	-2	600	0	4	4	12.5	6.2	10.2	0.0	0.0	0.0	2.7	2.7				
14	SE3	14	500	3	6	-500	1	6.5	0	0	12.5	12.5	12.5	2.3	6.3	0.0	0.0	0.0	1.0	1.0				
15	SE4	63	3000	12	24	-1000	-8	-11	2000	4	12.5	12.5	12.5	1.2	5.2	0.0	0.0	0.0	0.5	0.5				
16	SE5	264	3000	12	24	-50	-8	-11	2950	4	4	12.5	12.5	3.5	7.5	0.0	0.0	0.0	1.5	1.5				
17	SE6		4000	12	30	-1400	0.5	-17	2600	12.5	12.5	12.5	12.5	0.5	4.5	0.0	0.0	0.0	0.2	0.2				
18	SE7	308	500	3	6	300	1	6.5	800	4	12.5	12.5	12.5	1.8	5.8	0.0	0.0	0.0	0.8	0.8				
19	SE8	196	1000	6	12	1100	6.5	0.5	2100	12.5	12.5	12.5	12.5	0.7	4.7	0.0	0.0	0.0	0.3	0.3				
20	SE9	8	2000	12	18	400	-8	-5.5	2400	4	12.5	12.5	12.5	1.8	5.8	0.0	0.0	0.0	0.8	0.8				
21	SE10	14	500	3	6	-500	1	6.5	0	4	4	12.5	12.5	3.2	7.2	0.0	0.0	0.0	1.4	1.4				
22	SE11		4000	12	30	-1200	-8	-17	2800	4	4	12.5	12.5	3.7	7.7	0.0	0.0	0.0	1.6	1.6				
23	SE12		1000	6	12	400	-2	0.5	1400	4	4	12.5	12.5	4.4	8.4	0.0	0.0	0.0	1.9	1.9				
24	SE13	464	1000	6	12	700	-2	0.5	1700	4	4	12.5	12.5	4.8	8.8	0.0	0.0	0.0	2.1	2.1				
25	NE1	94	1000	6	12	1100	-6	0.5	2100	4	4	12.5	12.5	5.3	9.3	0.0	0.0	0.0	2.3	2.3				
26	NE2	11	500	3	6	-500	-3	-2	0	0	4	4	12.5	6.2	10.2	0.0	0.0	0.0	2.7	2.7				
27	NE3	72	500	3	6	0	-3	-2	500	0	0	4	12.5	6.9	10.9	0.0	0.0	0.0	3.0	3.0				
28	NE4	21	2000	12	18	-50	-8	-5.5	1950	4	4	12.5	12.5	2.5	6.5	0.0	0.0	0.0	1.1	1.1				
29	NE5	17	500	3	6	-500	1	6.5	0	4	12.5	12.5	12.5	1.2	5.2	0.0	0.0	0.0	0.5	0.5				
30	NE6	264	500	3	6	1500	1	6.5	2000	4	12.5	12.5	12.5	2.3	6.3	0.0	0.0	0.0	1.0	1.0				
31	NE7	4	500	3	6	3100	1	6.5	3600	4	4	12.5	12.5	3.7	7.7	0.0	0.0	0.0	1.6	1.6				
32	NE8	12	500	3	6	-500	-3	-2	0	0	0	4	12.5	6.9	10.9	0.0	0.0	0.0	3.0	3.0				
33	NE9	760	1000	6	12	200	-6	-12	1200	0	0	0	0	15.7	19.7	0.0	0.0	0.0	6.8	6.8				
34	NE10	8	2000	12	18	900	-12	-18	2900	0	0	0	4	12.0	16.0	0.0	0.0	0.0	5.2	5.2				
35	NW1	6	3000	12	24	-600	-12	-24	2400	0	0	0	4	12.0	16.0	0.0	0.0	0.0	5.2	5.2				
36	NW2	10	500	3	6	-500	-3	-6	0	0	0	0	4	14.3	18.3	0.0	0.0	0.0	6.2	6.2				
37	NW3	11	500	3	6	-500	1	6.5	0	4	4	12.5	12.5	4.2	8.2	0.0	0.0	0.0	1.8	1.8				
38	NW4	206	500	3	6	250	1	6.5	750	4	4	12.5	12.5	4.2	8.2	0.0	0.0	0.0	1.8	1.8				
39	NW5		2000	12	18	-1400	-8	-5.5	600	4	12.5	12.5	12.5	2.1	6.1	0.0	0.0	0.0	0.9	0.9				
40	NW6	31	2000	12	18	-1300	-8	-5.5	700	4	4	12.5	12.5	3.5	7.5	0.0	0.0	0.0	1.5	1.5				
41	NW7	380	1000	6	12	600	-2	0.5	400	4	4	12.5	12.5	4.4	8.4	0.0	0.0	0.0	1.9	1.9				
42	NW8		3000	12	18	-2500	-8	-11	500	4	4	12.5	12.5	4.8	8.8	0.0	0.0	0.0	2.1	2.1				

Program for systematic apparatus and equipment replacement and acquisition is currently not in place.

Purchase of 1 Engine Tanker for main fire station to replace 1957 LaFrance and 1972 Ford.

Purchase of 1 new Ambulance which had previously been budgeted. This vehicle to be placed in the main fire station.

Purchase of 15 new SCBA units. To include: spare bottles, personal alerting safety systems, compressor/cascade filling system, and MSA explosive meter for possible Haz Mat incidents.

Establish a written procedure that defines an acceptable replacement time frame for all equipment which will keep all equipment up to NFPA and safe standards. This procedure should be in effect within 180 days.

Current training does not meet NFPA standards.

Establish a resolution/ordinance to appoint the training officer position to a volunteer officer.

Provide training up to the appropriate firefighter level(s) and First Responder course within the first 12 months.

Establish a progressive training program which is within NFPA Standards and EMS criteria to be written within the first 12 months and implemented within the following 6 months.

Currently used fire codes are in need of updating with enforcement provisions to be strengthened.

Purchase a current copy and adopt the appropriate National Fire Codes.

Hire an administrative assistant to support the officer(s) in charge of fire inspeciton and fire prevention.

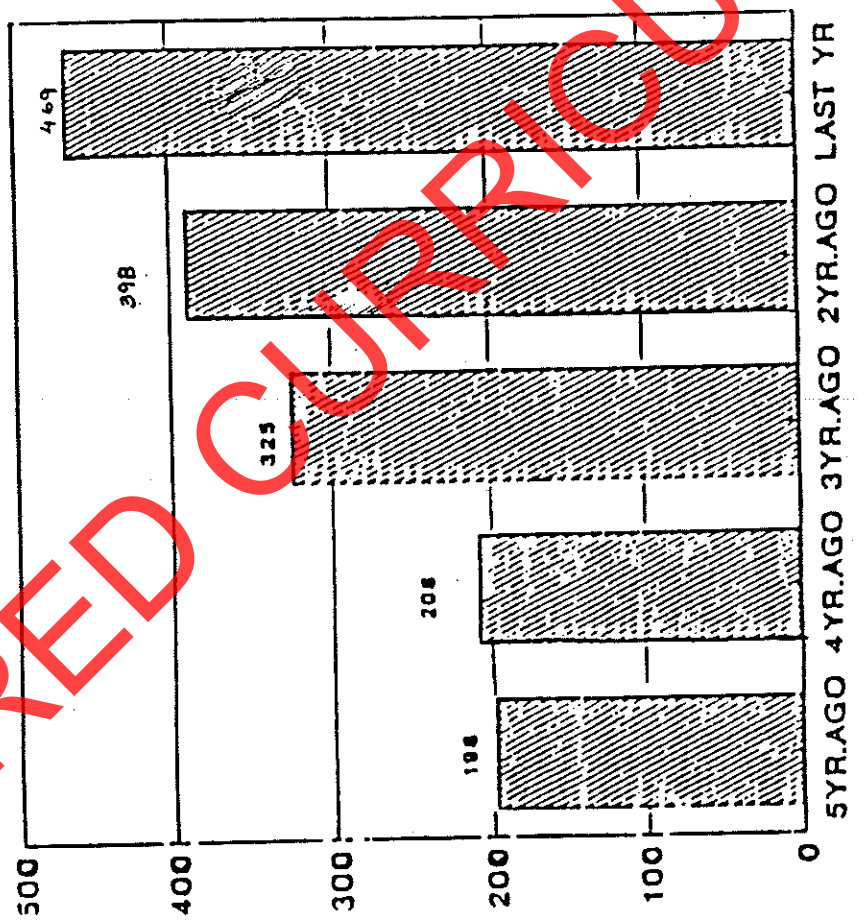
Initiating an in-service inspection program with regularly scheduled inspection of all public access buildings, commercial establishments, and multi-family buildings. Also provide private homeowners an opportunity to request home fire inspections.

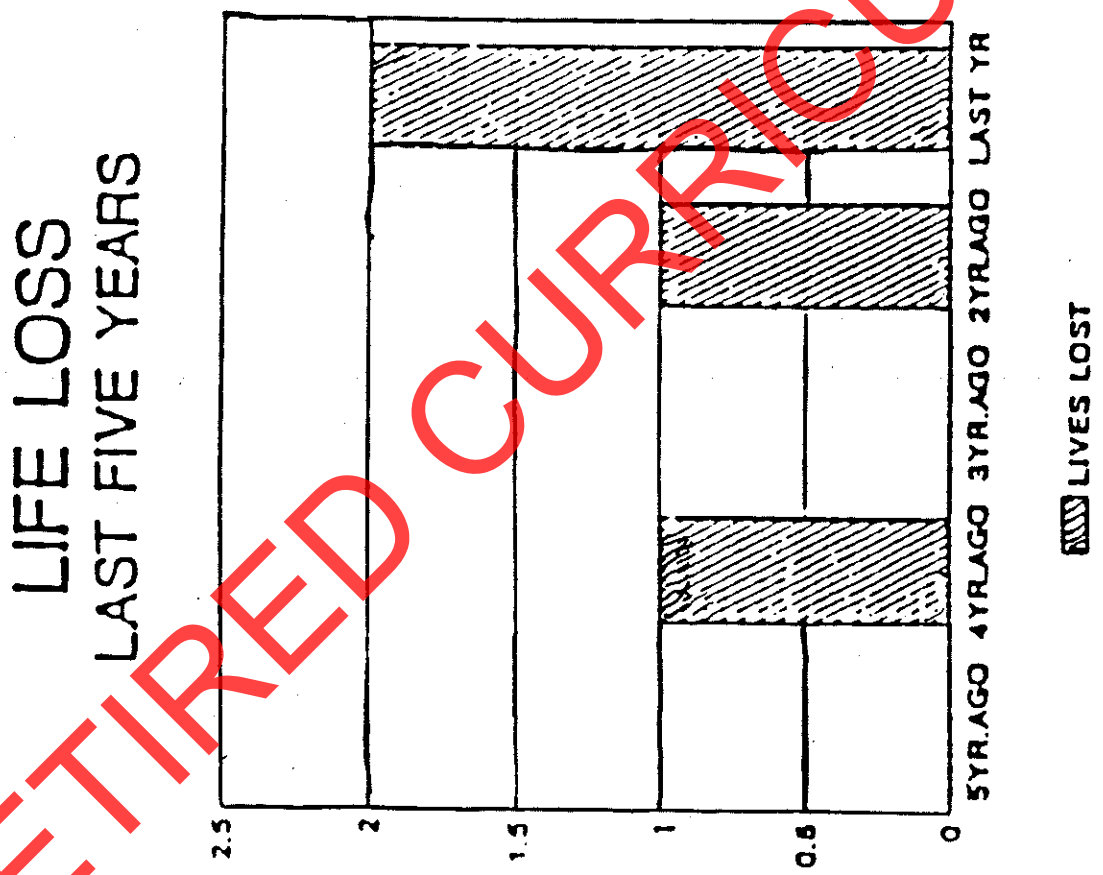
Adoption of the appropriate codes should be within 90 days, with the inspection program written within the following 90 days, and the first round of inspections completed within the following 6 months.

Less than adequate personnel to meet suggested required manning levels.

Hire 2 additional full-time firefighters. Have 6 firefighters on a standby mode for 4-hours blocks in the fire station.

The hiring of full-time personnel should be completed wthin 60 days. The program for volunteers should be funded and initiated within 30 days. These quick decisions are required to ensure that an adequate number of personnel are available for any emergency within the city of Sunville.





31% of fire and 25% of EMS response times are exceeding 5 minutes.

Approximately 2-1/2 miles of additional connecting roads would assist in increasing response times. To include Sevier to Town Road 3/4 mile, Marshal St. to River Road 1/4 mile, River Road (east side of Chilhowee River) to connect with Rainbow Drive 1 mile, Burns Ave. dead end to connect with Highway 101 1 /16 mile. Access of Prince to back of fire staiton 1/10 mile. Connect Riverview with Line St. 1/3 mile. Construction should be completed within 1 year.

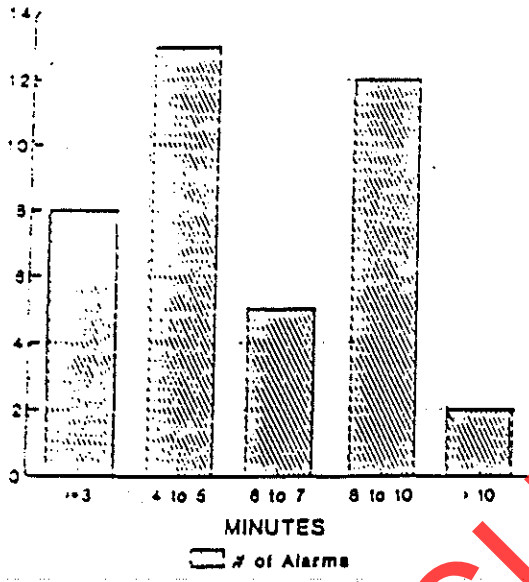
Construct 1 (one) fire/EMS station at junction of River Road and I-77. Construction should be completed within 6 months.

Within 5 years, locate 1 satellite fire station at the junction of I-77 and Boyds Creek Road.

SUNVILLE FIRE DEPT.

RESPONSE TIMES

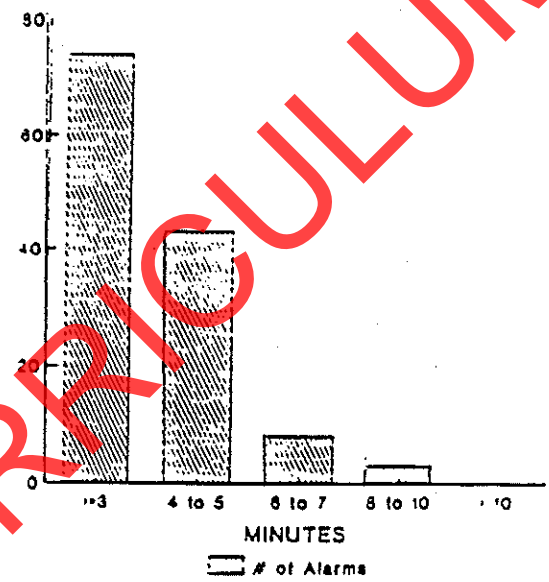
Response times
Responses 0001-0600



Jan/Dec.

BASED ON 40 RESPONSES

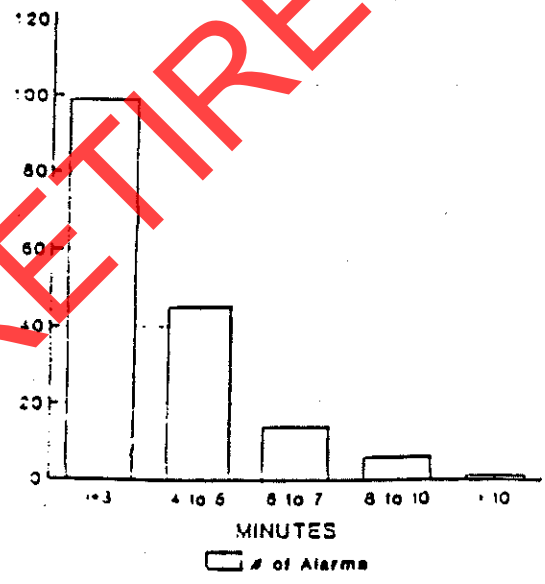
Response times
Responses 0601-1200



Jan/Dec.

BASED ON 128 RESPONSES

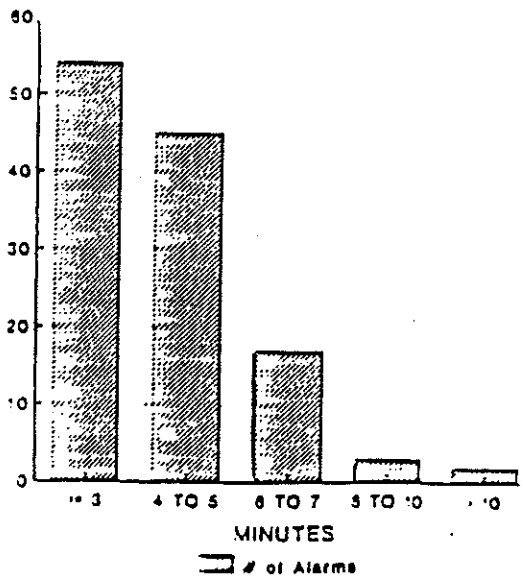
RESPONSE TIMES
RESPONSES 1201-1800



Jan/Dec.

BASED ON 166 RESPONSES

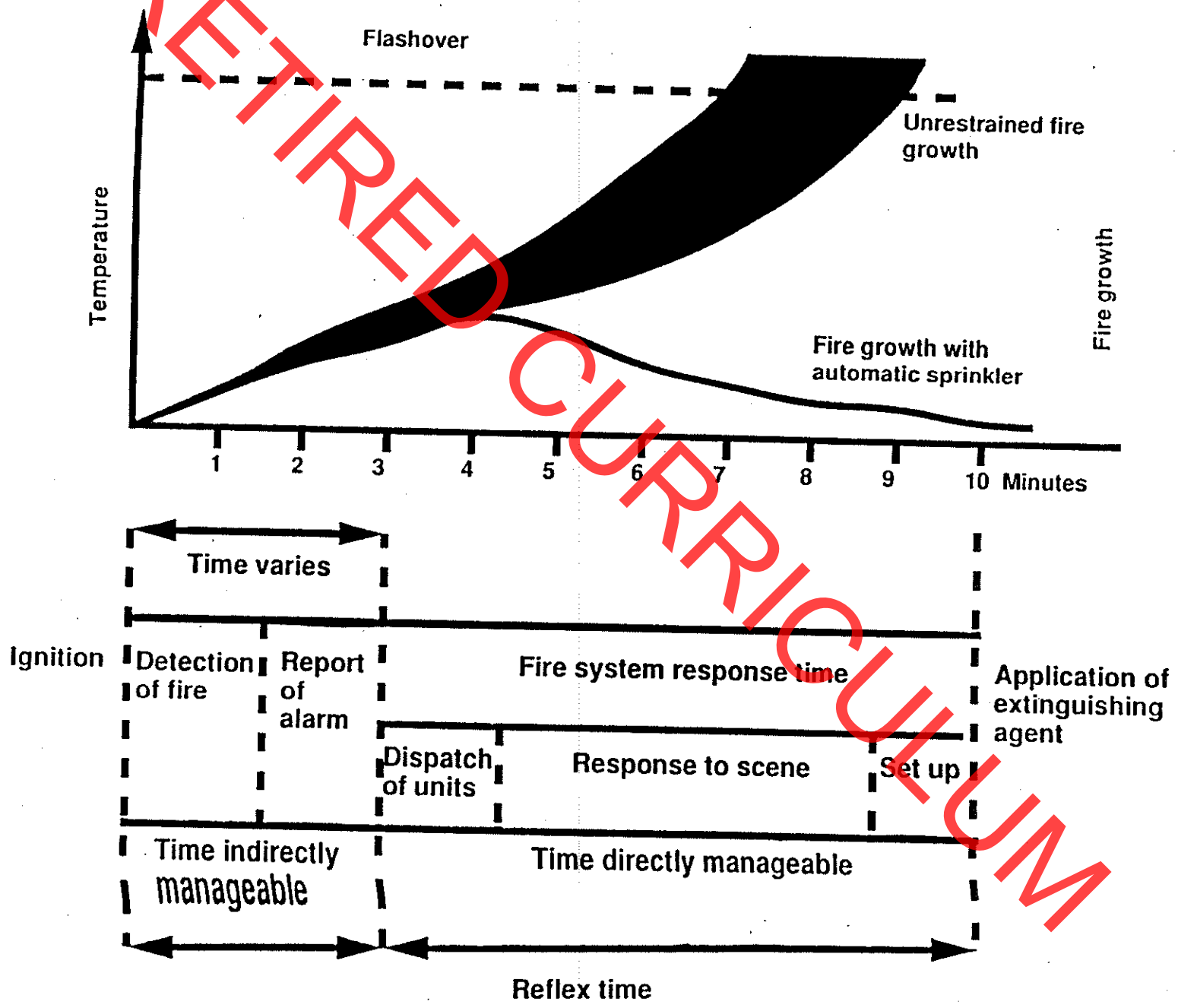
RESPONSE TIMES
RESPONSES 1801-2400

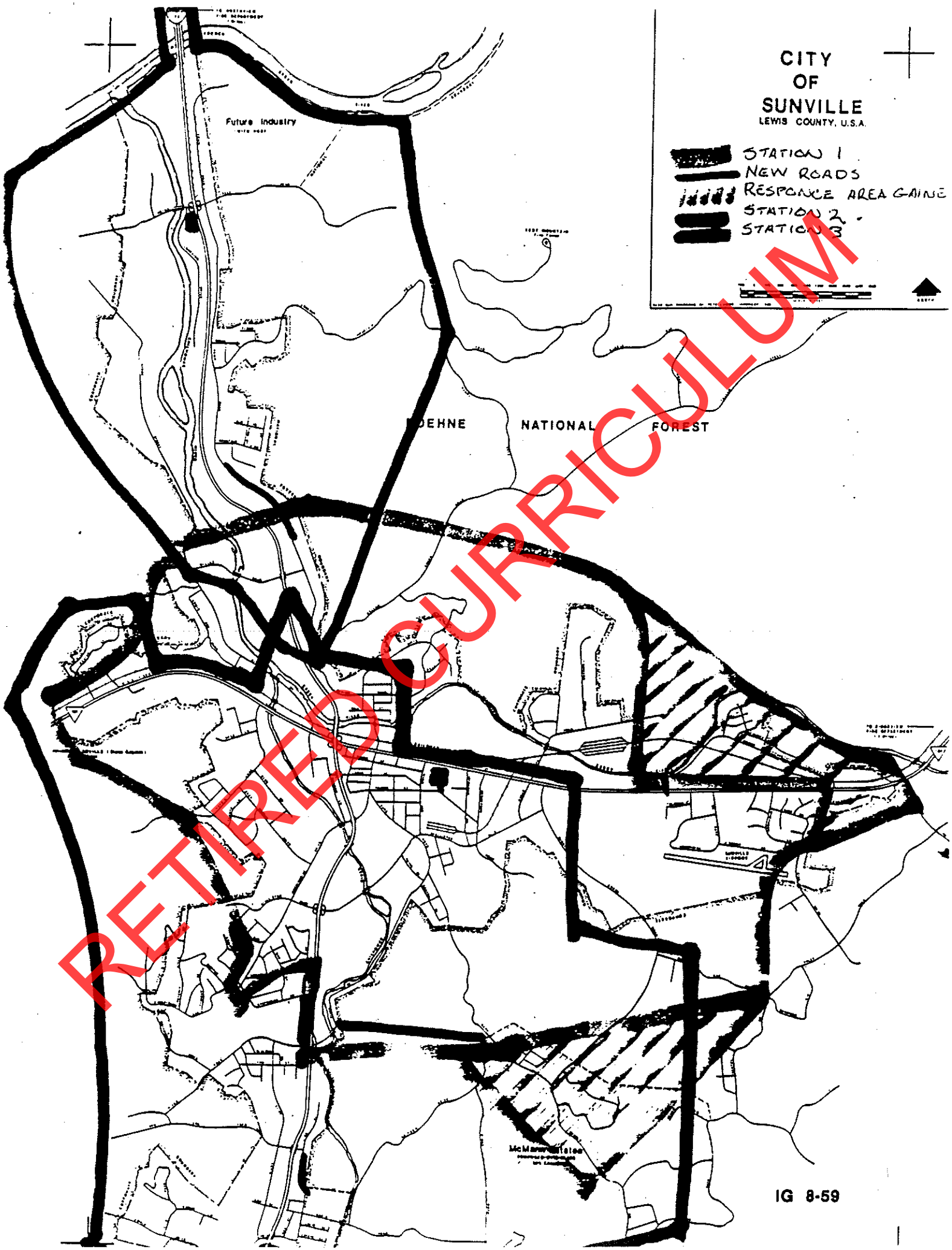


JAN/DEC.

BASED ON 121 RESPONSES

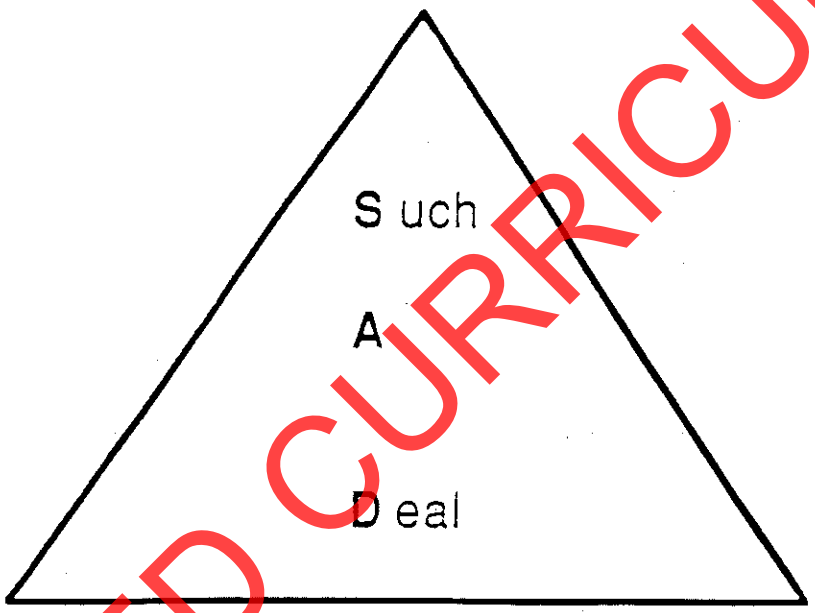
Graphic scenario: fire growth versus reflex time





Upgrade water system	$9,000,000
Existing Station:	
Purchase engine tanker	225,000
15 SCBA units	24,000
High pressure compressor/cascade	25,000
MSA explosimeter	1,800
6 beds	1,200
Upgrade plumbing	5,000
Repair roof	5,000
Two additional firefighters	42,000
Protective clothing for new firefighters	2,000
Incentive for volunteers (standby)	49,920
Subtotal	$380,920
Training:	
3 firefighter classes for 1989	3,600
3 firefighter classes for 1990	3,600
3 firefighter classes for 1991	3,600
EMS class for 1989 First Responder	1,200
EMS class for 1990 EMT	1,200
EMS class for 1991 EMT	1,200
Subtotal	14,400
Codes:	
New set of fire codes	500
Administrative Assistant	15,000
Subtotal	15,500
Roads:	
Joining dead end streets	500,000
Southside Station:	
New three-bay station	250,000
Engine	250,000
Ambulance	75,000
Subtotal	575,000
Northside Station:	
New two-bay station (in 1994)	250,000
Engine	310,000
Ambulance	90,000
Subtotal	650,000

ANNUAL REPORT



CARTEL, INC.

Corporate Headquarters
100 - 500 Overthrow Alley
Promiseland, U.S.A.
1-800-GET-HELP

OFFICERS OF THE CARTEL

Founder: U.R. Stuck, Sr.

SENIOR OFFICERS

(Buddy) U.R. Struck, II	Chairman of the Board Chief Executive Officer
S.S. Gustapo	Sr. Vice President, Operations European Continent
A.S. Sanchezovitz	Sr. Vice President, Operations Latin America
I.M. Slick, B.S., A.S., Ph.D., M.D.	Sr. Vice President, Operations North America, Eastern Region
and state volleyball champ	
L.A. Tofu, A.C. D.C.	Sr. Vice President, Operations North America, Western Region
U.S. Aid	Sr. Vice President, Operations Depressed areas worldwide
Sir Guiseppe Von Herskowitz, Esq. A.A.R.P.	Legal Counsel, Recognized Expert Licensed to practice everywhere.

ABOUT THE CARTEL

The S.A.D. Cartel was founded in 1968 in a small pub in Panama. Our original members included business and government leaders from many of the drug producing countries of South America and Southeast Asia. Today we are an international, multi-billion dollar corporation. We are proud of our past products and provide employment for many of this world's less fortunate. Our world wide fleet of transportation assets allows quick, efficient delivery of our finished products. We deal almost exclusively in cash and easily negotiated securities. Our distribution network is equipped with the latest computer technology and our administration is flawless and ruthless. We anticipate payment for services in advance and our loan applications are brief, simple, and straight forward. Please call us toll-free worldwide:

Fire Protection and Emergency Medical Services

1-800-GET-HELP

All other products and services

1-800-GET-COKE

PROPOSAL

CITY OF SUNVILLE

FIRE PROTECTION MASTER PLAN

BY:
S.A.D. CARTEL PROTECTION COMPANY

August 31, 1989

Mayor and Council
City of Sunville
City Hall
Sunville, Lewis County, U.S.A.

Dear Mayor and Council:

We are pleased to submit our proposal to provide complete fire protection and emergency medical services to Advanced Life Support (ALS) levels. As well as dispatching and code enforcement services for the City of Sunville.

Our bid is 0.2% of the annual total assessed valuation determined by the chief assessor while the ISO rating is at the present level 7 and shall increase to 0.3% of the annual total assessed valuation when the ISO rating reaches level 4. Further, we request an exclusive Emergency Medical Service (EMS) contract for the area which will allow us to charge for any transport services for the duration of the contract period. The term of the contract shall be for 5 years with a option to renew for an additional 5 years. We shall provide a performance bond for $10,000,000.00. This contract cannot be terminated by either party without a 2 year notice of said intent.

Respectfully yours

I. AM Slick
S.A.D. Protection Company

6 STEPS TO QUALITY FIRE PROTECTION

1. Adopt 1988 Uniform Fire Code and Sprinkler Ordinance.
2. Inspection and Code Enforcement will be implemented within 60 days of contract date.
3. Close current Sunville Fire Station by January 1991 and build 2 new stations by that date.
4. Ambulance service will be run out of McAllister Blvd. Central Station.
5. Advanced life support will be provided to 90% of population within 5 min.
6. A 24 hour dispatching system will be manned with trained Fire/EMS Dispatchers.

OBJECTIVE # 1

TO PROVIDE THE REQUIRED FIRE ATTACK CAPACITY TO 80% OF THE COMMERCIAL STRUCTURES

OBJECTIVE #2

TO PROVIDE THE REQUIRED FIRE ATTACK CAPACITY TO 80% OF THE RESIDENTIAL OCCUPANCIES

WE PROPOSE
TO EXCEED THE REQUIRED FIRE ATTACK CAPACITY

- PROVIDE 95% FIRE ATTACK CAPABILITY TO ALL COMMERCIAL AND RESIDENTIAL OCCUPANCIES
- BUILD TWO NEW FIRE STATIONS
- INCREASE STAFFING TO EXCEED 6 MAN MINIMUM
- PROVIDE TWO NEW ALS ENGINES
- PROVIDE ONE NEW LADDER TOWER QUINT
- PROVIDE ONE NEW ALS TRANSPORT AMBULANCE
- IMPROVE BENEFIT PROGRAMS FOR VOLUNTEERS
- UPGRADE TRAINING THROUGH UNIVERSITY PROGRAMS
- ESTABLISH A LIAISON WITH COMMUNITY AND GOVERNMENT LEADERS TO ADDRESS FUTURE GROWTH AND DEVELOP A FEASIBLE PLAN TO UPGRADE SERVICES

CHART 1

STAFFING LEVELS

	DAYTIME	NIGHTTIME	WEEKENDS
Admin/Opr.	1	On call	On call
Insp./Fire Prev.	1	On call	On call
PM/FF	2	2	2
EMT/FF	2	2	2
Vol. FF/Insp.	2	-	-
Vol. FF	2	2	2
Vol. Amb. Att.	2	2	2
	12	8	8

- Volunteers would provide services for hourly rates dependent on training and seniority.
- Volunteers would be utilized to fill vacancies of full-time personnel to cover illnesses or vacations.
- Volunteers would receive credit for on-duty time entitling them to retirement benefits and/or insurance.
- Volunteers would receive free training through our career incentive program with Sunville University.
- Volunteers would be paid a standard rate for ambulance calls.
- Volunteers would be given first consideration for career positions as available.

CURRENT APPARATUS

DATE, MFR.	TYPE	CAPACITY (GPM)	TANK SIZE IN GALLONS	CONDITION
'76 LaFrance	Pumper	1,500	750	Good
'76 Pierce	Mini-pumper	350	150	Good
'57 LaFrance	Pumper	750	750	Poor
'78 Chevrolet	Sedan			Good
'84 Meditrans	Ambulance			Fair

Propose to sell: Ambulance to ABC Ambulance for $12,500

'57 LaFrance to collector for $7,500

'72 Ford Tender to LaPoorista Mex FD for $7,500

PROPOSED APPARATUS

DATE, MFR.	TYPE	CAPACITY (GPM)	TANK SIZE IN GALLONS	CONDITION
(2) 1988 Pierce	Pumper	1500	750	Excellent
(1) 1989 Pierce	100' Ladder Tower	1500	250	Excellent
(1) 1985 4 Guys	Tanker	500	3000	Good
(1) 1990 Grumman	Ambulance			Excellent
(2) 1990 Chev.	Suburban Command			Excellent
(1) 1976 LaFrance	Pumper	1500	750	Good
(1) 1976 Pierce	Mini-Pumper	350	150	Good

OBJECTIVE #3

TO ADOPT A NEW FIRE CODE WITHIN (1) YEAR

WE PROPOSE

- TO ASSIST THE CITY ADMINISTRATION IN AMENDING EXISTING CODES OR DRAFTING NEW CODES AS NECESSARY.
- TO UTILIZE EXISTING STAFF, RESOURCES, AND DATA BASE SYSTEMS TO MEET THE OBJECTIVE.
- TO MAKE AVAILABLE, MODEL CODES CURRENTLY IN PLACE FROM OTHER CONTRACT JURISDICTIONS AS APPLICABLE TO SUNVILLE'S NEEDS.
- ONCE ADOPTED BY ORDINANCE TO ASSIST IN ENFORCING THE FIRE CODE, TO ENSURE COMPLIANCE.
- TO MAINTAIN RECORDS AND MAKE RECOMMENDATIONS TO MODIFY AND UPGRADE THE CODES ANNUALLY.

OBJECTIVE #4

TO IMPLEMENT A CODE ENFORCEMENT PROGRAM WITHIN 18 MONTHS

WE PROPOSE

- TO UTILIZE THE FULL-TIME FIRE INSPECTOR WITH THE AUTHORITY GRANTED BY THE FIRE CODE TO CERTIFY COMPLIANCE.
- TO UTILIZE 1 TRAINED VOLUNTEER INSPECTOR TO ASSIST IN INSPECTIONS AND PROVIDE SUPPORT.
- TO UTILIZE THE ON-DUTY FF PERSONNEL TO CONDUCT LIFE SAFETY SURVEYS.
- TO MAINTAIN RECORDS AND REPORT MONTHLY TO THE CITY ADMINISTRATION ANY VIOLATIONS AND/OR FINES ISSUED.
- TO ASSIST THE CITY IN ESTABLISHING A CODE ENFORCEMENT BOARD TO ENSURE UNBIASED IMPLEMENTATION OF THE FIRE CODE.

OBJECTIVE #5

TO PROVIDE BLS COVERAGE TO 90% OF THE COMMUNITY

WE PROPOSE

TO PROVIDE ADVANCED LIFE SUPPORT COVERAGE TO 100% OF THE COMMUNITY

- OPERATION OF 2 ALS ENGINES
- OPERATION OF 1 ALS TRANSPORT AMBULANCE
- UPGRADING TRAINING OF ALL PERSONNEL, INCLUDING VOLUNTEERS TO EMT LEVEL
- DEVELOPING TRAINING PROGRAMS FOR HOSPITAL PERSONNEL TO ENHANCE THE TRAUMA CARD DELIVERY CAPABILITY
- UTILIZING THE HOSPITAL STAFF TO TRAIN PARAMEDICS AND EMTs IN CARDIAC AND RESPIRATORY CARD LIFE SUPPORT FUNCTIONS
- TO OFFER THE OPPORTUNITY TO THE HOSPITAL E/R STAFF DOCTORS, AND NURSES TO RESPOND WITH THE UNITS WHEN AVAILABLE
- TO COORDINATE WITH HOSPITAL AND UNIVERSITY STAFF MEMBERS TO ENSURE A PROGRESSIVE AND ACTIVE HEALTH CARE EDUCATION SYSTEM.

The City of Sunville has recently completed a Fire Protection Master Plan. As part of this plan you have defined six performance objectives. The Such A Deal Cartel has developed the enclosed proposal and contract for consideration by the Sunville City Council. We are confident that this contract will provide a cost effective alternative to fire protection and emergency medical services for all the residents and structures in Sunville.

The first two master plan objectives relate to the application of fire suppression forces. These objectives specify that 80% of both commercial and residential occupancies in Sunville shall be reached by at least one engine and six personnel within 5 minutes after the processing of alarm information. Through the application of innovative management and capital designs, the cartel shall contract to reach this objective for 95% of both commercial and residential properties.

Our proposal includes a new set of engines and an Advanced Life Support Ambulance. Under a lease-purchase plan we shall place in service two class A pumpers which meet NFPA 1901 specifications and are less than 2 years old. A new ALS capable ambulance will be added to the vehicle roster. Our engines and ambulance will be equipped with ALS equipment to provide state-of-the-art fire and EMS protection.

A major part of our capital proposal is the closing of the present fire station and the construction of two new facilities to more equitably provide protection services. The closing of the outdated cramped station and the erection of 2 new and larger area facilities will provide service to the present areas of demand as well as future growth sites along the Marine Industrial Park and McCann Estates areas. We have concluded an agreement with the Ridgeview Fire Department to allow for first alarm response to the East section

of the city. The 2 new stations shall be located off interstate Route 77, both to the North and South of state Route 101.

The dispatching function shall be revamped to provide centralized fire and EMS dispatch in consent with an alarm monitoring function. This will remove this vital link in the communications chain from the present contract service provided by the Sunville Police Department. Our experience indicates that this arrangement will be superior to the present situation.

In addition to these hard changes in fire and EMS activities, we will be recommending carefully engineered modifications to the city's water supply system. As will be discussed in detail later, retrofitting and requirements for future sprinkler system protection will be highly recommended. If these and other actions are initiated, the city can expect to drop its ISO fire rating from 7 to 4 for anticipated fire insurance premiums. Reductions will save Sunville's occupants about $85,000 per year based on projections from the ISO office.

As briefly outlined above, the cartel can exceed the objective levels of protection required under the master plan. Following is a brief description addressing the 3 remaining objectives.

The third objective in the Sunville Master Plan addresses the lack of a comprehensive fire code within the city. The cartel does not and cannot become involved in the legislative process of amending or adding to the city code. However, our proposal includes the following provisions:

1. That the city adopt the most current edition of the uniform building code within 1 year of the commencement of the proposed contract for services.
2. By code or appropriate legal action, require the installation of sprinkler systems in all new single-family residences (in excess of 2500 sq. ft.) regardless of occupancy classification.

3. Encourage through appropriate means (i.e., tax incentives) the retroactive installation of sprinkler systems in all nonresidential structures. This shall be a legal and binding requirement so that all nonresidential structures shall be sprinkler equipped at the end of the contract option period (10 years from date of initiation).
4. Provide for residential home smoke detectors in all Sunville residential occupancies. Require by code or statute the installation of smoke detectors in all new residences sold after the first year of the services contract.
5. Provide for an aggressive, comprehensive fire safety and public education program for all ages and socio-economic groups. The cartel will actively work with the city government and community organizations to provide superior public education.

The Sunville Master Plan considers the implementation of a code enforcement program as its fourth objective. This is a vital component of any plan which requires the close interaction of the fire protection and building departments. The enforcement of building codes and fire investigation activities must be accomplished in an aggressive, in-depth fashion.

The cartel stands ready to provide experienced and certified personnel to furnish services in the code enforcement division. We anticipate close purposeful work with the city manager, the planning department, and the water department.

A system of annual inspections in all commercial and industrial occupancies shall be operational within 6 months. Qualified administrative personnel shall conduct inspections and ensure enforcement of all life safety provisions. Supplemental inspections can be performed by engine company members.

Our firefighters will also be involved in a hydrant and static water source inspection and maintenance program. This vital water supply system must be maintained in top operational condition. Additionally, engine personnel can become involved with a home inspection program. We are all aware of our poor national level of fire death. This program will help to ensure a comprehensive, responsible attack on the fire fatality program.

Target hazards are high life hazard areas within communities. Sunville includes a nursing home, university, hospital, and other occupancies in this target hazard category. These occupancies require special attention and a three month inspection schedule is planned.

In summary, the cartel is ready to assist Sunville with a dynamic, up-to-date fire prevention program.

Objective five of the Sunville Fire Protection Master Plan addresses the activities of the Emergency Medical Services (EMS) Division of the Public Safety Services. The master plan objective indicates a service level capable of providing Basic Life Support (BLS) to 90% of the community.

Our proposal is to provide Advanced Life Support (ALS) to 95% of the Sunville community area. This system will place firefighter/paramedic personnel on the two Sunville engine companyies and continue the ambulance service with two Emergency Medical Technicians (EMT).

Our cartel shall provide a fully trained and certified firefighter/paramedic who will respond on an engine, immediately, to a request for medical assistance. This firefighter/paramedic shall initiate medical treatment with a suite of specialized equipment which is carried on the engine company apparatus. The ambulance, which will be a new advanced life support system equipped apparatus, shall respond with 2 EMTs in conjunction with an engine company. This combination of trained personnel utilizing state-of-the-art

medical equipment will provide the professional care to which the residents of Sunville are entitled.

Under this proposal, any individual requiring medical attention shall not be denied access to the best of care. However, routine and other nonemergency medical to a hospital or other medical treatment facility should not be the function of a Public Safety Organization. In areas where it is warranted, private transportation and/or ambulance service would have to be arranged with a private provider.

The problem of burn out will be greatly reduced as personnel will work on a specific shift and will not operate in an environment where they are potentially always "on call". The full-time crew proposal means that the present response time of up to 8 minutes for volunteers shall be reduced to less than 1 minute as a crew is available at the fire station.

Under certain conditions, insurance companies will pay for the cost of certain specific EMS functions. It is our intent to assess reasonable cost of services, not to exceed $100 per incident, per person plus a mileage fee, for advanced life support activities and transportation.

As can be easily seen we can provide a superior level of service, indeed, well in excess of the Master Plan Objectives, by using an advanced life support system. We look forward to being able to work with the political, economic, and social leaders within Sunville as our cartel and your community set the standard for public safety services into the 1990's.

MUTUAL AID AGREEMENTS

S.A.D. CARTEL PROTECTION COMPANY

A new ultra-modern communications facility despatching fire and ambulance service.

This facility will also include complete monitoring of both intrusion and fire sprinkler alarms.

We are pleased to announce that the following organizations have signed a letter of intent for communications services:

City of:
- Northview
- Ridgeview Volunteer Fire
- Sunville General Hospital
- U.S. Forest Service
- McAllister Lumber
- Burns Electronic Manufacturing

SUNVILLE INSURANCE COUNCIL

To: Such A Deal Cartel Protection Company

From: I.M. Fullofit

Subject: ISO Rating Information

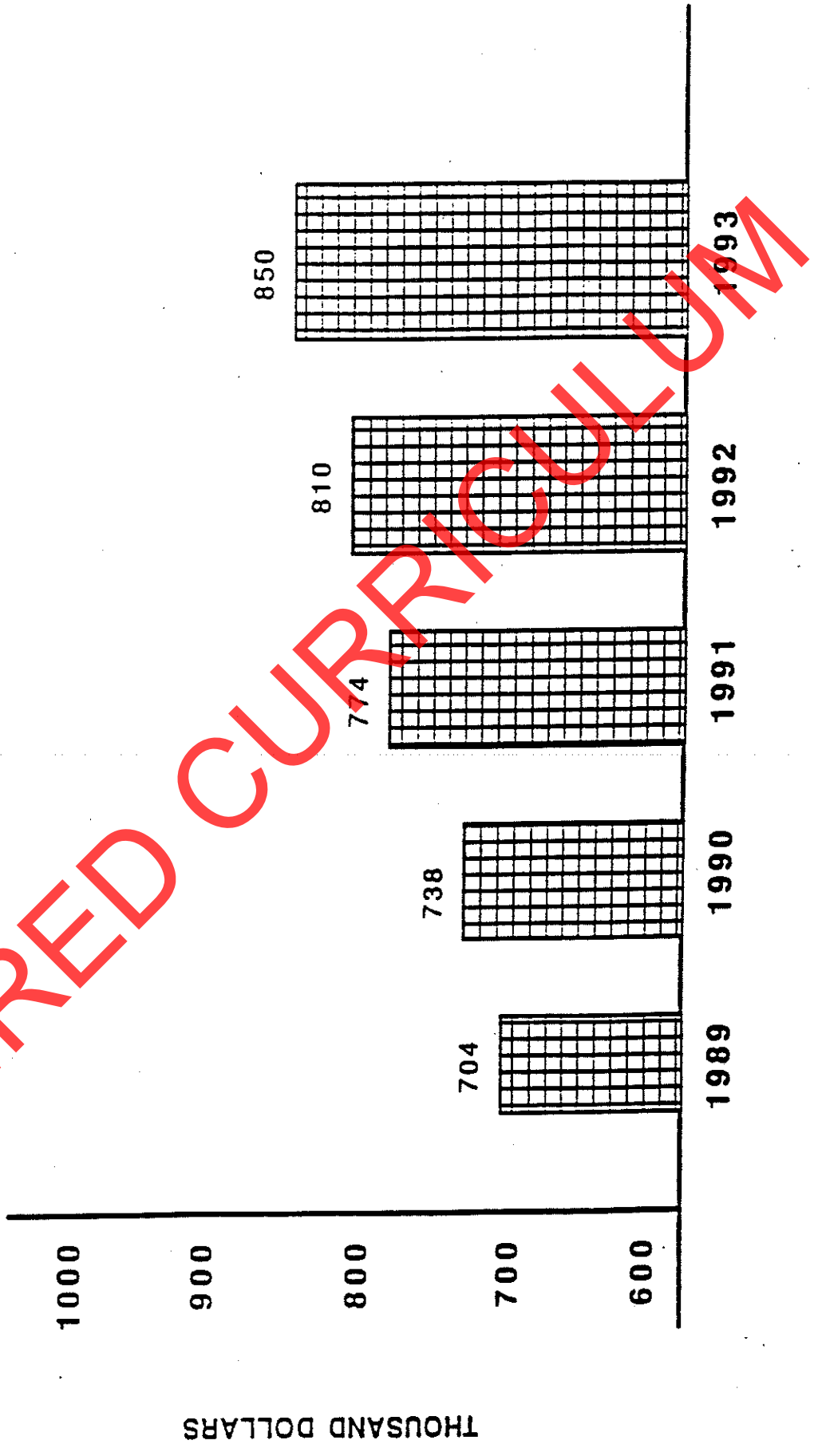
I'm pleased to respond to your request for rating data on Sunville. The current rate for Sunville is Class 7. Assuming that your company were to make the changes to the response, communications, personnel and apparatus, we could project a reduction for residential structures to Class 6 and Class 4 for the commercial/industrial occupancies. We are not at liberty to authorize these ratings until a full classification inspection has been conducted.

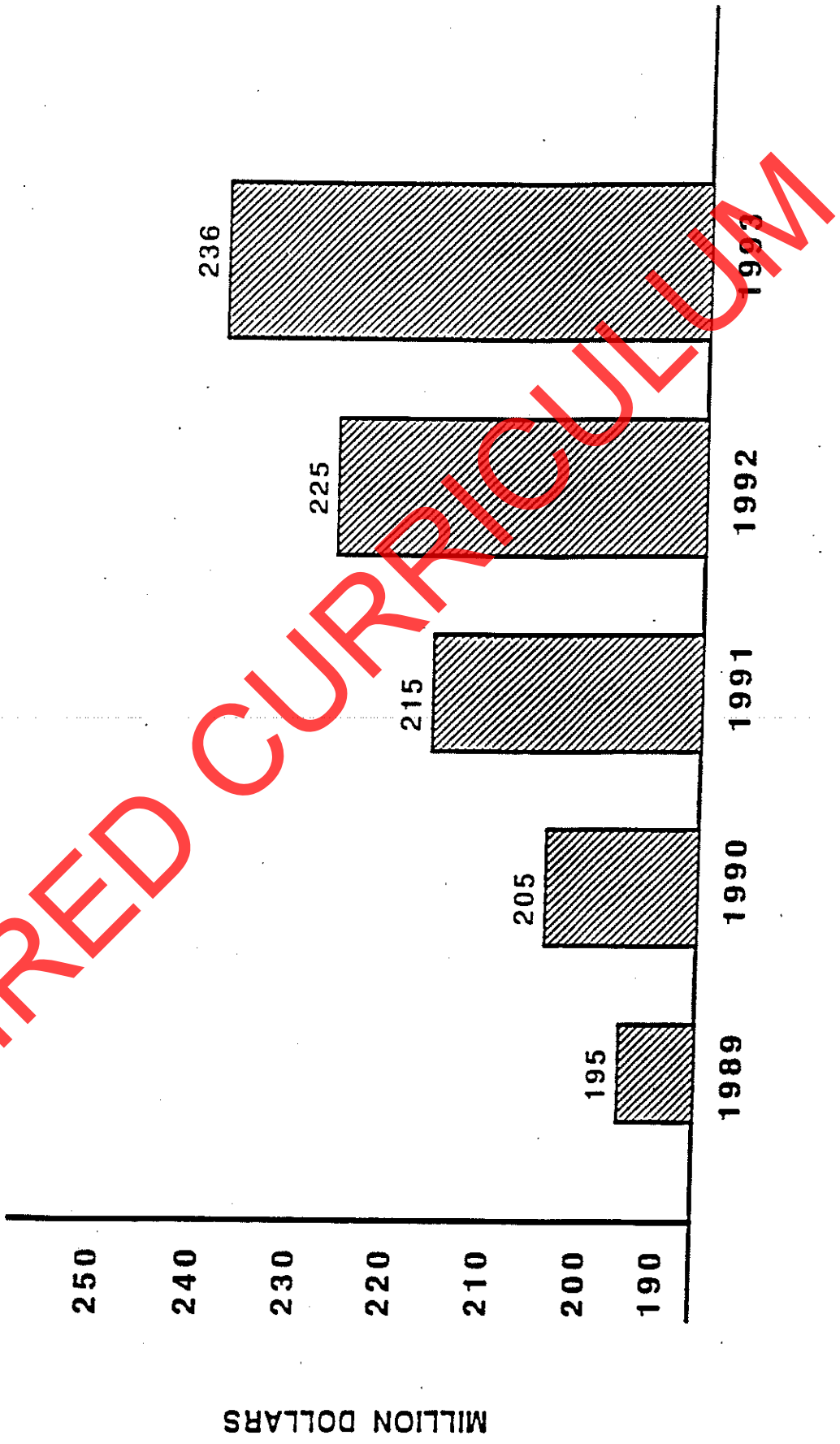
Please feel free to contact our office if we can be of further assistance.

The approximate savings for Sunville based on these improved ratings according to current statistics are as follows:

CLASSIFICATION	CURRENT NUMBER OF BUILDINGS	SAVINGS
Residential	2500	200,000
Commercial	950	475,000
Industrial	18	180,000

Could be further reduced if sprinklers are installed as proposed.





Cost Analysis - Retrofit Installation of Sprinklers

Installation #	FDZ	Structure	Cost	Annual Cost*	Annual Saving**
1	NE4	University Motel	$136,000	$ 8,160	$27,640
3	SE6	Lumber Mill	312,000	18,720	29,400
5	SE9	Hospital	92,000	5,520	46,200
6	NE4	Ag-Chem Corp.***	146,000	8,760	4,600
7	SW5	Warehouse	68,000	4,080	4,100
9	NW6	Business Complex	78,000	4,680	8,000
10	SE9	University	110,000	6,600	19,000
11	SE1	Apartment Complex	92,000	5,520	11,200
12	SE5	Convalescent Center	106,000	6,360	14,700
			$164,840		

Note: Installation costs will vary according to local, size, and design of structure, labor and material costs, etc.

*Amortized over 20 years.

**Includes insurance savings, increased rental fees, and other financial credits.

***Nonwater system.

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Fire Services Division
American Big Business Corporation
1105 Fifth Avenue
New York, NY 10013

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Fire Services Division
American Big Business Corporation
1105 Fifth Avenue
New York, NY 10013

August 24, 1989

Mayor and Council
City of Sunville
City Hall
Sunville, Lewis County, USA

Dear Mayor and Council:

We hereby submit our proposal to provide complete fire protection, emergency medical services to the BLS level, dispatching and code enforcement services to your fine city.

Our bid is 0.2% of the annual total assessed valuation determined by the chief assessor while the ISO rating is at the present level 7, and shall increase to 0.3% of the annual total assessed valuation when the ISO rating reaches level 4. Further, we request an exclusive EMS contract for the area which will allow us to charge for any transport services (other than for the initial call to the scene) for the duration of the contract period. The terms of the contract shall be for five years with an option to renew for an additional five years. We shall provide a performance bond of ten times the first year cost. This contract cannot be terminated by either party without a two year notice of said intent.

Sincerely yours,

Archibald V. Dewey,
Executive Vice-President

dewey, cheatham, & howe

Fire Services Division
American Big Business Corporation
1105 Fifth Avenue
New York, NY 10013

BACKGROUND AND REFERENCES

Dewey, Cheatham, & Howe was formed in 1969 to provide professional, private contracted fire services to communities like yours. In 1983, Fortune 500 member American Big Business Corporation (ABBC) determined that a service like ours was a needed area for their corporate group of diversified companies, particularly in the fire protection equipment sales and service section (of which companies like custom fire apparatus manufacturers BRFT, breathing-air systems supplier Iron Lungs, communications/electronics giant Sparks Industries, and installed protection systems Deluge Corporation) were already key industry players. With the resources of business giant, ABBC, we will be able to provide your community with fire protection that is lower in cost and higher in service that you could provide locally.

At the beginning of 1989 we were serving 97 communities or rural areas with top-notch fire protection services, including one major metropolis in the Yukon Territory of Canada. The following is a list of areas not unlike Sunville that we would like to have you visit or call to confirm our commitment to service and economy in the local community.

Location	Mayor/Chairperson	Telephone
Corkscrew, FL	Helen Waite	(904) 555-3712
Braggadocio, MO	Knute Olsen	(417) 875-2439
Turtletown, TN	Oscar Pulley	(901) 987-1234
Ducktown, TN	Joe Barerock	(615) 234-3821
Wawa, Ontario, Canada	Saca Tommee	(705) 798-8366
Sadelite, NM	Slippin Foot	(505) 783-9812
Papa, HI	Aka Yougo	(808) 373-8231
Tin Cup County, Co	Pete Saucer	(303) 837-2927
Lost Hills, CA	Mary Slidden	(805) 543-8237
Suffern, NY	Sally Crying	(914) 872-8916
Sweet Grass, MT	Joe Pretty	(406) 283-9875

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Fire Services Division
American Big Business Corporation
1105 Fifth Avenue
New York, NY 10013

AMERICAN BIG BUSINESS CORPORATION - A COMPANY YOU CAN TRUST

American Big Business Corporation (ABBC) began as a small, local service corporation in the 1840's, whose primary business was cleaning horse stalls. Our ingenious leader, A. Lowe Blow, found that the object of our cleaning services was a product he could sell, and he did in quantity. He continued doing this same thing in each new endeavor he pursued. Our commitment to this goal has never been lost, which has allowed us to soar to the business leader we are today. Presently, we are a Fortune 500 company with annual sales in excess of $1.5 billion.

Our economic base has diversified in the nearly 150 years of our history, which has allowed us to survive and prosper during lean times. During the Great Depression in the 1930's, when business leaders where hurling themselves out of sky-scraper windows due to the failures of their businesses, we seized the opportunity to provide not only new windows but the installation where needed, so that more people than ever before had the opportunity to jump. We saw that it was necessary to provide not only manufacturing of a product, but also the sales, installation, service, and financing to ensure a satisfied customer.

Remember us for all of your needs - from our variety of quality manufactured products, building services and supplies, financial services, insurance services, professional engineering services, and our public safety and health services - our motto is "We are here to help you!"

Sincerely yours,

A. Lowe Blow, IV
Chairman/President
American Big Business Corporation

SUNVILLE INSURANCE COUNCIL

To: Dewey, Cheatham, & Howe
Sunville Project Team

From: I.M. Hotte, President

Subject: ISO Rating Adjustment

Per our discussion on your proposal for a reduction in Sunville Insurance Premiums, we are pleased to quote the following rate reductions.

ISO Rating 4 From Current 7

Building Class	#	Reduction
Residential	2500	$200,000
Commercial	950	$475,000
Industrial	18	$180,000
		$855,000

Further reductions will result from your proposed fire/sprinkler monitoring system.

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Fire Services Division
American Big Business Corporation
1105 Fifth Avenue
New York, NY 10013

Letter of Agreement

Dewey, Cheatham, & Howe

and

City of N orthview
Ridgeview Fire District
City of Burnstein
City of Neville

for

Mutual Aid as Requested

Upon receipt of an alarm at our dispatching center, the following automatic aid responses will be dispatched.

First Alarm	District of origin only, with advisory alert to neighboring district(s)
Second Alarm	One pumper from neighboring district(s)
Special call	Any district may special call any apparatus as needed.
Haz Mat call	City of Neville will dispatch their haz mat vehicle and team: requesting agency will be required to replace any expandable or damaged items used at the scene of the incident (e.g., foam concentrate, encapsulation suits, etc.)

Minimum staffing on any responding fire unit will be four (4) firefighters unless otherwise stated, or unless the ambulance is called.

PUBLIC **S**AFETY **A**NSWERING **C**ENTER

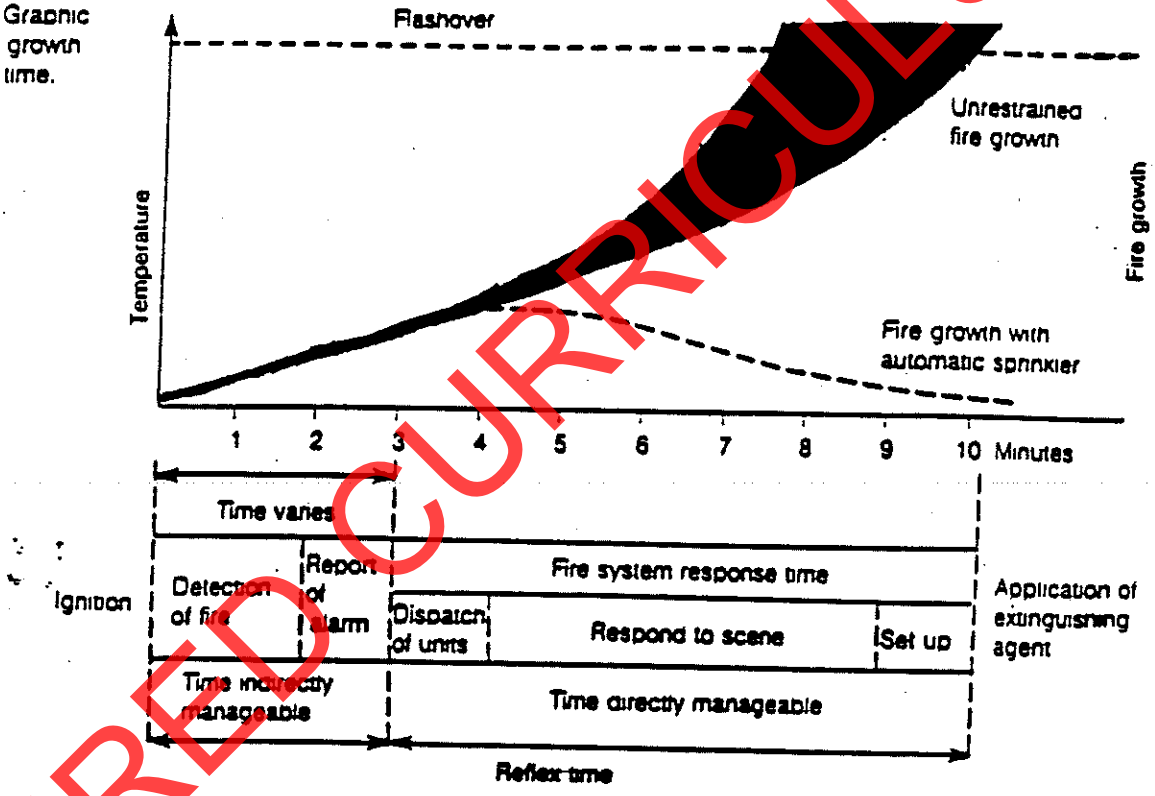
A new ultra-modern communications facility dispatching fire and ambulance service.

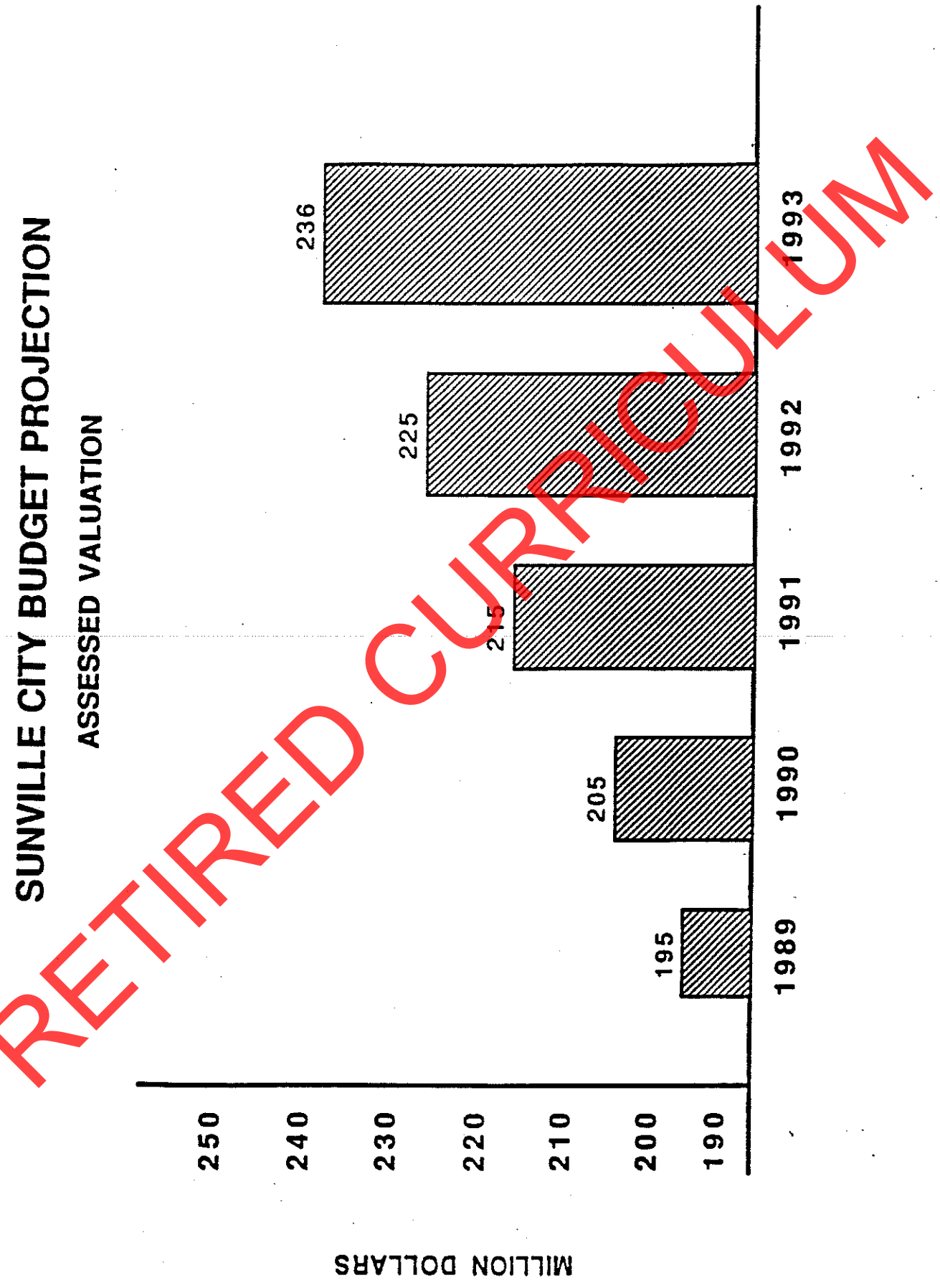
This facility will also include complete monitoring of both intrusion and fire sprinkler alarms.

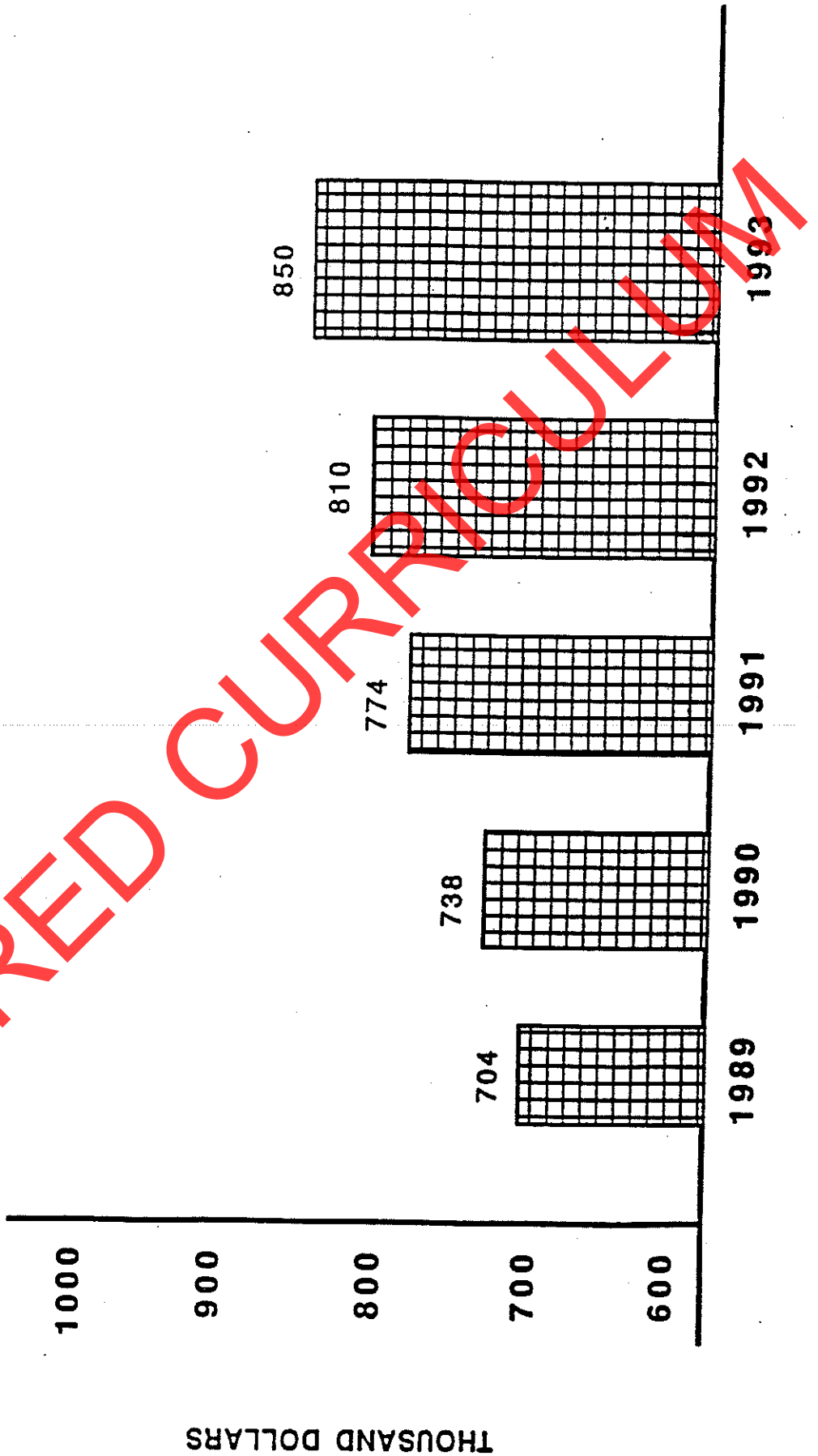
We are pleased to announce the following organizations have signed letters of intent for communications services:

City of:
- Northview
- Ridgeview Volunteer Fire
- Sunville General Hospital
- U.S. Forest Service
- McAllister Lumber
- Burns Electronic Manufacturing

Figure 4–6 Graphic scenario: fire growth versus reflex time.







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Fire Services Division
American Big Business Corporation
1105 Fifth Avenue
New York, NY 10013

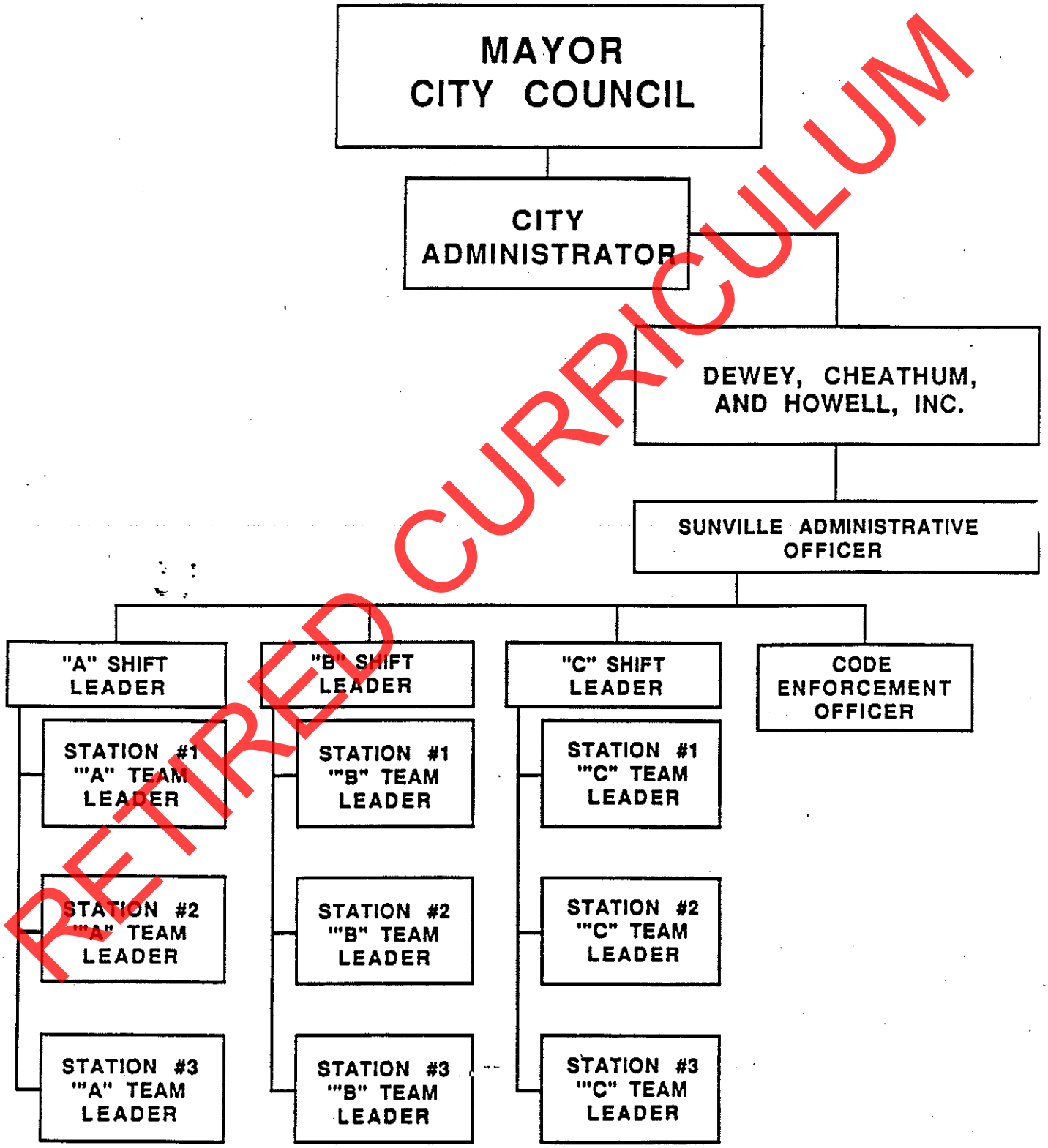
FIRE SCIENCE PROGRAM TO BEGIN AT SUNVILLE COLLEGE

As part of our commitment to community service, American Big Business Corporation, through our private fire service division of Dewey, Cheatham, & Howe, is pleased to announce, with the cooperation of Sunville College, a grant to start a Fire Science Program. Initially, this program will award degrees at the A.S. level, and within five years of inception will be awarding degrees at the B.S. level.

In cooperation with the Community College system in the state, Sunville College will be the focus of all fire service technical teaching statewide. This program is to be started with another grant from ABBC.

Both programs should be started in the fall quarter of 1990.

SUNVILLE FIRE PROTECTION ORGANIZATION CHART



NEW EQUIPMENT

A. 4 PUMPERS

1000 GAL. TANK CAPACITY
1500 GPM PUMP CAPACITY

B. 1 AERIAL QUINT (PUMPER/LADDER COMBINATION)

800 GAL. TANK CAPACITY
1500 GPM PUMP CAPACITY
75 FOOT AERIAL PLATFORM

C. 1 COMPLETE RESCUE UNIT

EMERGENCY MEDICAL SERVICE CAPABLE

MANPOWER

18 FULL-TIME FIREFIGHTERS

- EACH FULLY CERTIFIED
- ON-DUTY 24 HOURS, OFF-DUTY 48 HOURS
- THREE SHIFTS
- TWO AT EACH STATION AT ALL TIMES

3 SHIFT LEADERS

- EACH FULLY CERTIFIED
- SUPERVISES ALL INCIDENTS
- ONE ON-DUTY AT ALL TIMES

1 CODE ENFORCEMENT

1 ADMINISTRATIVE OFFICER

- WEEKDAY BUSINESS OPERATIONS
- LIAISON BETWEEN CITY AND FIRE SERVICES

30 ON-CALL PAID VOLUNTEERS

STATION LOCATIONS

1. INTERSECTION OF 1-77 & BOYDS CREEK ROAD

2. INTERSECTION OF RIVER ROAD AND RILEY DRIVE

3. EXISTING STATION SITE

UNIT 9: PRESENTATIONS TO COUNCIL

OBJECTIVES

The participants will:

1. *Assign program elements to specific objectives.*
2. *Prepare plan to accomplish the stated goals and objectives of Sunville using an assigned alternative.*
3. *Participate in the presentation of plan to council.*

ATTITUDES TO FOSTER

1. Long-range plans must be integrated into the routine management operations of the community.

2. Plans must be presented in an appropriate manner with due consideration given to preparation, rehearsal, and presentation technique.

3. Plan approval and implementation are highly dependent upon:

   a. Presenting a plan to the governing body which is not only complete and factual, but one which meets the needs and expectations of the governing body.

   b. Public support via citizens' advisory groups.

POINTS FOR THE INSTRUCTOR

The elements of the plan have been developed and the participants are confident in its ability to meet the needs of the community. This apparent end to the work effort and self-knowledge of the plan often lead to taking for granted the adoption of the plan by the governing body.

This is not the time to ease up or take anything for granted. The presentation to council must be well prepared and presented in a professional manner.

METHODOLOGY

Each group will be assigned an alternative system concept. On the basis of the goals and objectives presented, each group is asked to produce a "plan" for the City of Sunville that will meet the community's needs. The group then will be confronted with an actual council setting in which to make the presentation.

ESTIMATED TIME
(Total Time: 10 hr., 40 min.)

5 min.	Lecture Objectives	IG 9-3
5 min.	Small Group Assignment Developing Plan Elements	IG 9-3
420 min.	Small Group Activity 9.1 Develop A Plan	IG 9-5
180 min.	Group Presentations	IG 9-5
30 min.	Critiques and Summary	IG 9-7

AUDIOVISUAL

OHT 9.1
Unit 9 Handouts

5 min.
Lecture
OHT 9.1

I. OBJECTIVES

The participants will:

A. Assign program elements to specific objectives.

B. Prepare plan to accomplish the stated goals and objectives of Sunville using an assigned alternative.

C. Participate in the presentation of plan to council.

5 min.
Small Group
Assignments

WORK ASSIGNMENTS

DEVELOPING PLAN ELEMENTS

Instructor assigns workshop assignments.

A. Briefly review the workshop process.

B. Select the groups which will work on each of the four alternative systems and provide them with written materials for:

1. Status quo.

2. Improved fire service response model.

3. Private contract protection model.

C. Assign breakout rooms.

D. Review availability of audiovisual aids.

E. Instruct groups to elect a city council member.

F. Schedule a meeting of the city council members.

420 min.
Small Group
Activity 9.1

ACTIVITY 9.1

DEVELOPING A PLAN

Participants develop plan and presentation to city council.

The participants will use breakout rooms to prepare action plans and presentations.

SM p. 9-3

Ask participants to read "Developing a Plan," and "Alternative Fire Protection Plans" directions.

Handout

Hand out alternative assignments to each group.

Instructor should visit breakout rooms periodically to provide guidance (clarify directions if necessary) and assist participants in obtaining presentation materials. Assure that each group elects a city council member (at 1 p.m. on Wednesday).

Thursday morning instructor should conduct the meeting of those elected to the city council.

Hand out Bios, Evaluation Form, and Worksheet

A. Distribute and discuss the following handouts with council members:

1. *Council bios.*
2. *Sunville Presentation Evaluation Form (one to each group that will be making a presentation to the council).*
3. *Presentation Objectives worksheet.*

B. Select a mayor.

C. Assign one role to each council member. (You may wish to let each member select their role.)

D. Review the Council Agenda.

E. Describe the room setup.

F. Describe the review process that will take place after each presentation.

G. *Describe the review process that will take place after all the presentations have been completed.*

H. *Instructions to mayor:*

1. *Control the meeting, maintain decorum.*

2. *Allow challenges to unreasonable or unsupported presentations.*

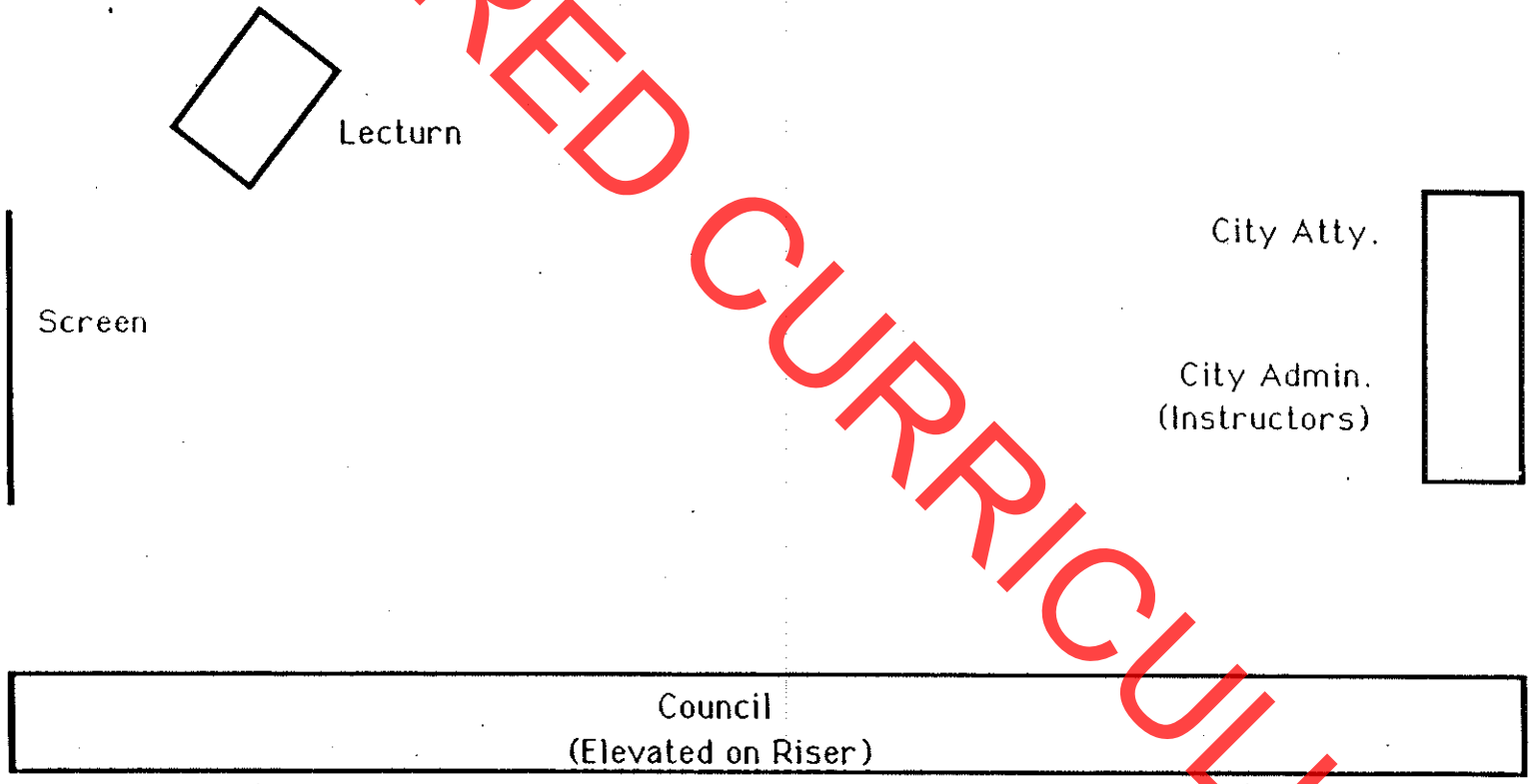
3. *Don't allow unnecessary interruptions.*

4. *Don't allow discussion from the audience until after all presentations.*

Classrooms should be set up as city council chamber prior to beginning next phase.

ROOM LAYOUT

PRESENTATION TO COUNCIL



Props (if available): Flag, Gavel, Nametags, Flipcharts, City Seal or Logo, Riser for council

180 min.
Group
Presentations

Each group will make presentations to the city council. During the presentations the instructors must complete the Sunville Presentation Evaluation Form for each group.

A. Twenty minutes should be allowed for each presentation.

B. Ten minutes should be provided for the city council to review its evaluations and reach a consensus.

C. The next group should be setting up its presentation while the council is reviewing the last presentation.

D. After the last presentation, the city council will vote on the alternative to be implemented.

Following all presentations, the instructor should ask each councilperson to comment on the strong and weak points of presentations.

30 min.
Critique and
Summary

Following the council session:

Before the council members have left their positions on the risers, ask for a comment from each of them:

1. Ask the class:

What turned you off about the presentations?

What turned you on about the presentations?

Allow each councilperson to comment.

2. Ask the class for comments.

Instructor may prompt with such items as:

a. What happened when someone ad-libbed?

b. What happened when a "hole" was found in the presentation?

c. *What are the effects of too much detail?*

d. *What is the proper way of addressing the council members or mayor?*

e. *How real was the exercise to you?*

f. *Did the rehearsal help?*

g. *What were some of the best techniques?*

h. *What data did the council need to make the decision?*

i. *What are the questions to anticipate?*

3. *How important is the presentation? About as important as any other portion of the planning process!*

Do your homework!!

UNIT 9 HANDOUTS

CITY OF SUNVILLE
Council Session

AGENDA

I. Pledge of Allegiance

(Introduction of Councilpersons--each reads own profile.)

II. Minutes of Last Meeting

(Mayor to request dispensing with the reading of the minutes)

III. Old Business

(No old business)

IV. New Business

1. Fire Master Plan

(Review goals and objectives--ask city admin.)

a. Call for first presenter.

(City admin. to introduce)

b. Discussion/scoring following each presentation.

c. Public input to be held until after all presentations have been given.

First

Second

Third

Fourth

Fifth

Sixth

2. Public Input

3. Council Decision

4. Adjournment

FIRE SERVICE MASTER PLANNING

COUNCILPERSON: _____

You are the owner of a warehouse and are supported by business. You are not up for reelection for 2 more years. You are the president of a family-owned sprinkler company and do almost all of the sprinkler installations in town.

At your own expense, you have traveled to several recent high-rise fires and understand the value of sprinkler systems in life safety.

FIRE SERVICE MASTER PLANNING

COUNCILPERSON: _____

You are the owner of a number of small buildings as well as a chain of Early American furniture stores.

FIRE SERVICE MASTER PLANNING

COUNCILPERSON: _____

You are a regional administrator for a large petroleum firm and recently have learned that you will be relocated to a semi-hostile South American country. Should you survive, you can expect to be there for at least 3 years. If and when you return to the U.S., you will be assigned to corporate headquarters in Houston, Texas. While you care about Sunville very much, you will be resigning your council seat in 2 to 3 months. This news has not been released to the public at this time; however, the other council members have been informed.

P.S. The recent awards to city employees in the form of salary and associated benefits have caused you to question the benefits of local government. You have openly questioned the park department as to whether an outside contractor could not perform grounds maintenance at a lower cost and higher quality.

FIRE SERVICE MASTER PLANNING

COUNCILPERSON: _____

You are up for reelection in 4 months, and are being sponsored by the businessmen in the community. One of your campaign promises over the years has been that you will always watch out for the rights of the businessman.

You are the owner of a very successful lounge/restaurant in town and recently have decided to expand and build a motel adjacent to your present business.

FIRE SERVICE MASTER PLANNING

COUNCILPERSON: _____

You are up for reelection in 4 months, and are being sponsored by the community clubs. Your campaign has been based on the pledge that you will not let the citizens absorb any more of the city costs that are created by the business community.

You have a degree in physical education and direct the very successful Sunville Boys Club.

FIRE SERVICE MASTER PLANNING

COUNCILPERSON: _____

You are up for reelection in 4 months, and are labor leader in a local factory. Your support has come primarily from the low-income and working class. You are very appreciative and represent those interests well on the council.

Lately, you have tended to give long orations regarding the plight of the poor and less fortunate, causing many to think that you are campaigning for a state or federal position. The mayor has requested you make your comments brief and to the point in future sessions.

FIRE SERVICE MASTER PLANNING

MAYOR: _____

You have been the mayor of Sunville for the past 6 years and like the position. You are an ecology activist in the community, a former professor of business ethics at the local college, and a currently registered state lobbyist. You receive your support from both the business and neighborhood communities.

You will be in charge of the council meeting and are requested to keep the presentations to the 20 minutes allotted (30 minutes at the outside, if the flow of material is appropriate). At the end of each presentation, allow 5 minutes of question and answer time from other members of the council only, none from the audience until all presentations are completed. The flow of the meeting is:

A. Introductions (each member to give name and background information).

B. Conduct a review of the goals, objectives, and selection criteria.

C. Ask for the first presentation (20-30 min.).

D. Questions from council to presenters (15 min.).

E. Have the council complete the selection criteria.

F. Have the council complete the critique sheets.

G. Next presentation, etc.

Remember, you are the mayor and are expected to conduct the meeting as close as possible to a real council session.

No decision will be made until all presentations are completed.

Do not look to the instructor to control this session. You are the mayor, so take charge.

Presentation Objectives Worksheet

This chart will be used to record the concensus evaluation by the city council of each presentation after each is completed.

An instructor will record the evaluations on a flipchart size version of the chart.

There will be no discussion of these evaluations with the group until all presentations have been completed.

PRESENTATION OBJECTIVES WORKSHEET

	GROUPS					
	1	2	3	4	5	6
1. To provide the required fire attack capacity to 80% of the commercial occupancies.						
2. To provide the required fire attack capacity to 80% of the residential occupancies.						
3. To adopt a new fire code within 1 year.						
4. To implement a code enforcement program within 18 months.						
5. To provide BLS coverage to 90% of the community.						
Public Cost						
Private Cost						
Time of Presentation						

Sunville Presentation Evaluation Form

Each group will be instructed to complete the Sunville Presentation Evaluation Form.

This information must be presented to the instructors prior to the Council meeting.

The instructors will act as the City Manager for the Council presentation exercise and will introduce each group using the provided information.

This form will also be used to evaluate each presentation. Each City Council member and each instructor will complete this form.

SUNVILLE PRESENTATION EVALUATION FORM

GROUP #_____ **ASSIGNMENT**_____

MEMBERS

_____ _____

_____ _____

_____ _____

THE CITY ADMINISTRATOR TO INTRODUCE:_____

_____

COMMENTS:

Start time:_____ Stop time:_____

Target Audience

_____

_____

Use Of Visuals

_____

_____

Presentation Technique/Flow

_____

_____

Did Well:

_____

_____

To Consider:

_____

_____

UNIT 10: IMPLEMENTATION TECHNIQUES

OBJECTIVES

The participants will:

1. *Describe what they can do to implement the skills covered in this course.*

2. *Evaluate the course.*

METHODOLOGY

This unit uses a lecture.

ESTIMATED TIME
(Total Time: 20 min.)

5 min.	Objectives and Overview	IG 10-3
15 min.	Lecture	
	Returning Home	IG 10-3
	Class Evaluation Forms	IG 10-5
	Review of Take-Home Assignments	IG 10-5
	Graduation Ceremony	IG 10-5

AUDIOVISUAL

OHT 10.1

5 min.
OHT 10.1

I. OBJECTIVES

The participants will:

A. Describe what they can do to implement the skills covered in this course.

B. Evaluate the course.

II. OVERVIEW

A. Returning Home

B. Class Evaluation Forms

C. Review of Take-Home Assignments

D. Graduation Ceremony

15 min.
Lecture

This session is intended to provide students with methods and encouragement to commence using the information presented in this course as soon as they return home. It also identifies potential support persons and agencies.

III. RETURNING HOME

It can be predicted that when a student is away from work and the fire department for a week attending a training class, there will be backlogged work and other distractions which may prevent him or her from implementing the programs or ideas obtained at that class. It is common for students to postpone actions until they get caught up. As time passes the concepts and enthusiasm wane and frequently fade completely without any action being taken. This exercise is intended to help students anticipate those distractions and commit themselves to take some actions to keep the momentum going after they return home.

Using the form provided, the instructor asks each student to establish a work plan for:

*- **Actions to be taken the first day he or she returns home.** This may be limited to making an appointment with one of the key persons in your organization to discuss the concepts of master planning.*

*- **Actions by the end of the first week.** Set as an objective completing specific tasks by the end of the first week. In this case the student may complete a report to the members of the department outlining what occurred at the course with recommendations for action.*

*- **Actions by the end of the first month.** The student should plan to have some actions started at the department level as a result of his/her recommendations.*

IV. CLASS EVALUATION FORMS

The instructors distribute the class evaluation forms which can be completed at this time or returned in the morning during preparations for graduation.

Provide instructions regarding check-out procedures, transportation, luggage handling, and the graduation ceremony for the next morning.

V. REVIEW OF TAKE-HOME ASSIGNMENTS

Remind students to send back the plans that they will be developing after leaving the class.

VI. GRADUATION CEREMONY

Students assemble in classroom.

Instructors collect class evaluation forms which were not completed on previous afternoon.

Provide graduation ceremony instructions, placing students in alphabetical order.

APPENDIX

- Management by Objectives in Concept
- Excerpts from "Managing Fire Services"
- Activity "Analyzing a Fire Department"
- Features of Objectives
- The Chief's Job, Circa 2006

MANAGEMENT BY OBJECTIVES IN CONCEPT

1. Individual managers at all levels of the organization consider the objectives that have been set above them, then write out what they believe their own goals should be. While they do consider the feasibility of their goals, they do not at this stage make detailed plans, since MBO places emphasis on results rather than means. **However, it does not overlook means.**

2. Objectives are stated precisely, and in quantitative terms wherever possible.

3. The individual submits his/her objectives to his/her boss for review. Out of this discussion comes a set of objectives that has been agreed to by both individuals.

4. As the individual works toward his/her objectives, he/she reviews his/her progress with his/her boss as he/she passes preestablished checkpoints.

5. When the end of the objective-setting period arrives, the results achieved are measured against the objectives that were set previously. Evaluate causes when objectives are not met.

6. Objectives are reevaluated and established for the next objective-setting period, including corrective measures needed to meet objectives.

THE THREE CLASSES OF OBJECTIVES

Routine Objectives are statements which derive from the regular responsibilities of a job. For example, here are some responsibilities from which routine objectives might flow:

- An engineer must keep his/her apparatus and equipment ready for response.

- A firefighter must maintain his/her ability to raise ladders within established standards.

- A fire captain must submit a monthly report by the 5th of each month.

Problem-Solving Objectives also flow from job responsibilities. Naturally, every manager is responsible to see that deviations in the areas he/she controls are corrected. Some conditions which might give rise to Problem-Solving Objectives are:

- High rate of fire loss in apartments.

- Excessive downtime for apparatus.

- Large increase in sick leave usage.

Improvement Objectives are objectives of the highest order. They are the objectives which, if accomplished, move an organization to a new and higher level of performance. Here are examples of Improvement Objectives:

- We will computerize all training records by December 30.

- We will reduce injury accidents by 50%.

- Complete development of new middle management training program by August 1.

Notes:

SAMPLE OBJECTIVES

This sheet gives you an example of how objectives might be written for some areas. Note that the areas shown are examples only. They are intended to show you how to write objective statements. Don't let them influence what objectives you spell out for your own unique case.

Result Area	Sample Goal Statement
Self Development	Complete Community College Reading Improvement Program by October 15.
Cost	Attain reduction of apparatus maintenance costs by 18% at end of current fiscal year.
Citizen Contact	Present Fire Safety Program to 15 civic groups by June 30.
Personnel	Reduce complaints from employees about new overtime policy to zero in 30 days from this date by getting acceptance of the policy.
Relationships	Encourage closer cooperation and communication among company officers by December 31. (Note: this goal is not quantified. The supervisor who wrote it must make sure he/she knows how he intends to measure closer cooperation and communication. Otherwise, when December 31 comes, he/she may not know if he/she has been successful).
Quality	Correct all errors and list all new street and fire hydrant information on running maps by September 1.

CRITERIA FOR JUDGING OBJECTIVES

After you have written an objectives statement, check it against the criteria shown below. If your objective seems to be poorly written rather than well written, you should devote more time to improving the way you have stated it.

Well-Written Objectives Are:	Poorly Written Objectives Tend To Be:
Stated in terms of end results.	Stated in terms of process or activities.
Achievable in definite time period.	Never fully achievable; no specific target date.
Definite as to what is expected.	Ambiguous as to what is expected.
Practical and feasible.	Theoretical or idealistic.
Important to job success.	Of no real consequence.
Precisely stated in terms of quantities, where possible.	Too brief and indefinite, or too long and complex.
Those which require stretching to improve results or personal effectiveness.	Those which lack requirement for improvement. Those which follow established routines and procedures.

Source: Managing Fire Services, Municipal Management Series. Editors: Ronny J. Coleman and John A. Granito.

SETTING PROGRAM OBJECTIVES

The program manager must make certain that two sets of activities take place during the policy formulation or planning stage (see Figure 10-1):

1. Goals, objectives, and priorities must be set in terms of available resources and results to be accomplished in a given time.

2. Plans must be developed for accomplishing results.

It is useful to distinguish between goals--expected long-term results in three, five, or seven years, for example--and *objectives* of a shorter operating period, such as a quarter of the current budget year.

Program goals and objectives must be related to other organizational priorities. That is, they must be consistent with the general mission of the department, key service areas in which particular results are expected, and indicators of accomplishment. Then changes or new programs may be clearly related to ongoing services.

A mission statement describes why a department or other government unit exists and how one knows whether it accomplishes its generally intended purpose.[5] For example, a fire department mission statement might read as follows: "To contribute within appropriate authority to the maintenance and improvement of the quality of life in the jurisdiction through fire prevention, fire suppression, rescue, special service and fire alarm communication to all who live, visit, work, or invest here." Another example is shown in Figure 10-2.

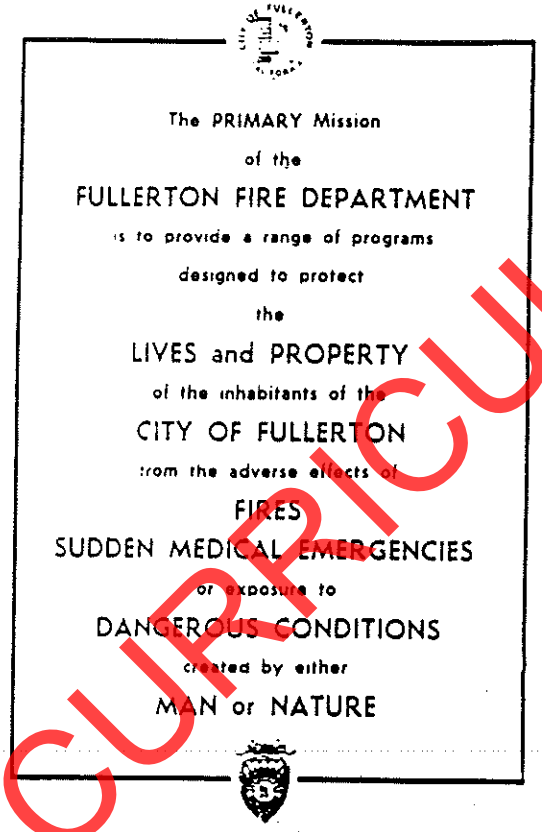
Key service areas generally define where time, money, and other resources are to be invested, and they should relate directly to the departmental mission. These might be fire prevention, fire suppression, emergency rescue, and so on, with intermediate measures, outputs, and outcomes expressed in terms of specific indicators of effectiveness. In the case of fire suppression, for example, an intermediate measure might be "average response time." An output might be "fire loss in dollar replacement value limited to a given amount." An outcome might be "reduced community fire insurance rates."

Before objectives can be properly set, it is essential to clarify the outputs and outcomes expected. Evaluation approaches and criteria are discussed in some detail later in this chapter and in Chapter 5. The important point to note here is that they must be identified and understood before implementation begins if objectives are to be accomplished.

Goal setting

One school of thought that advocates "scientific" techniques argues that "rational" models derived from the disciplines of economics and engineering

Figure 10-2
Departmental mission statement.



should be adapted for management programs and that emphasis should be on quantitative, empirical data and non-normative measures of alternatives. This school places great importance on goal setting not only to establish the desired end result but also to identify the stepping stones (objectives) by which to reach that end. This view usually is summarized as "If you don't know exactly where you are going, how will you know when you get there?"

Another school of thought argues that some factors are simply not quantifiable. Rather, goals and objectives should be set on the basis of an iterative process with emphasis on continuing feedback from the community and others involved. According to this school of thought, purely rational models cannot be effectively constructed for any but the simplest actions and are, therefore, not only of little value but may well be dysfunctional, as they create the false impression of being effective because they look complex and sophisticated.

In fact, elements from both schools of thought must be blended in the fire service if a manager is to be effective. An analysis without any quantified standards leaves the program manager not knowing what the results are to be measured against. But any cost-benefit analysis that does not constantly monitor informal inputs is probably without value.

Ideally, efficiency and effectiveness will result when the goals and objectives of the organization are the same as those of the individual. Early management texts for the fire service emphasized the importance of having the employee internalize the goals and objectives of the organization. Goals were therefore considered fixed, perfect, and immutable. The implications were clear. The employee had to conform to these stated goals, and the manager's role was to bring about this internalization by the employee.

Today's brand of goal setting is based in large measure on mutuality of self-interest. Grounded in MBO, goal setting is viewed as negotiations leading to a contract. The organization has goals and objectives that provide the general framework for this negotiation process. The individual employee has personal goals grounded in self-interest. The manager's role here is to communicate the organization's goals to the individual, help individuals articulate their own goals, and then align the goals of both so that the organization and individual will be able to engage in a contractual relationship.

The key to successful goal setting for the program manager is a clear and fundamental understanding of the organization's goals and a willingness to cooperate, coordinate, adjust, and adapt within the negotiation process.

Setting objectives

Objectives need to be stated in terms of expected behavior, a specific final result, dates for tracing accomplishments, and necessary resources and limits. For example, an objective related to an intermediate measure might be "To reduce average response time to fire from eight to seven minutes by the third quarter of this year, within present work force and budget levels." An output-oriented objective might be "To reduce residential fire loss by 10 percent during this budget year, within present work force and budget levels."

Typically, the local chief administrative officer and the fire chief share responsibility for formulating specific objectives, and the details are handled by those responsible for accomplishing them. Two-way communication is essential.

ACTIVITY "Analyzing a Fire Department"

Part 2 Writing Objectives

In order to write objectives, it is necessary to have a clear understanding of what you are dissatisfied with and what results you would like to achieve.

In order to actually write the objective you should first answer the following questions:

1. What do you perceive as the problem?
2. With what specific things are you dissatisfied?
3. What is the ideal situation?
4. How would you change the situation?
5. What limitations must be imposed? (time, cost, etc.)

You should then write the objective using the information gathered in questions 3 through 5.

The next step is to check against the following features:

1. Does it describe a result?
2. Is it specific?
3. Is there a time frame?
4. Is it achievable?
5. Is it consistent with other objectives?

If you can answer yes to all five of these features, then the objective can be utilized as part of your problem-solving process.

The following is an example of this process. Go through each step with the students.

1. What do you perceive as the problem?

   Nobody knows what to do during the initial stages of attacking an interior structural fire.

2. With what specific things are you dissatisfied?

   a. People fight over who will have the nozzle.

   b. When we stop at a hydrant, three people get off the pumper.

   c. We look silly running around with no organization.

3. What is the ideal situation?

   The ideal situation would be to have everyone know exactly what to do on the fireground in the initial stages of the fire.

4. How would you change the situation?

   I would develop an evolution that assigns specific tasks to specific individuals determined by where they ride on the apparatus for ensuring water supply on an attack line.

5. What limitations have to be imposed?

   Time only.

The Objective

Develop a water supply/attack line evolution within 30 days that assigns specific tasks to specific individuals determined by where they ride on the apparatus.

Check with features of an objective.

1. Describes a result--Yes

   We will have a water supply/attack line evolution

2. Is it specific--Yes

   Assigns tasks to individuals by where they ride

3. Time frame--Yes

   30 days

4. Is it achievable--Yes

5. Is it consistent with other objectives--Not applicable

Writing Objectives Activity

1. The instructor should separate the class into the same small groups that worked on part 1 of the activity.

2. The groups should write an objective for a task within their same assigned function from part 1 of the activity.

3. The class, as a whole, should discuss examples of the objectives developed in this activity as time permits.

FEATURES OF OBJECTIVES

1. DESCRIBE A RESULT
2. SPECIFIC
3. TIME FRAME
4. ACHIEVABLE
5. CONSISTENT WITH OTHER OBJECTIVES

THE CHIEF'S JOB, CIRCA 2006

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STATE UNIVERSITY OF NEW YORK BINGHAMTON, NEW YORK

Whenever I'm asked to give a speech, I agree and then wish I hadn't as the time draws near. That's how I feel today as I sit here, staring at the desk calendar and realizing that 14 October 2006 is only a week away!

My excuse is that I'm so busy as chief of the city's Department of Environmental Safety that I don't have time to prepare that guest lecture on "The History of Fire Management." What makes me even more anxious is the thought of all the boring speakers I was forced to listen to when I first joined the fire service back in 1981.

Those were the good old days; all we had to worry about was fire protection and a little EMS. Today, although like most oldtimers I still get a kick from rolling into a big one, fire suppression is probably the least of my worries.

We don't have many big ones now, even in this city of 200,000. With automatic detection and extinguishment systems in new construction for the past 20 years and pole-mounted fire sensing meters in each block of the older sections, not many fires get that big. It's difficult to believe that we used hoselines and water for all those years, even when we knew that the chain reaction of flames could be cut off by powder particles, laser beams, or certain high frequency waves. Now, our Wave Emission Trucks conveniently generate those waves, beam them into the flames, and extinguish the fire. Perfecting that method of extinguishment changed almost every aspect of suppression work.

I was talking about that recently with one of the crews when I visited a station. They had found a dusty old box of fire service magazines down in the basement and, although we chuckled over some of the articles, they seemed quite interested in how the service has progressed.

Back in the 70's, many so-called labor saving devices, such as radio-controlled hydrant valves, large diameter hose, constant flow nozzles, and mini-pumpers, had been developed. In the early 1980's, safer breathing apparatus, more effective protective clothing, and better heat detectors emerged, but we still based our operations on the concept that most fires had to be extinguished by the application of water, usually through hoselines advanced by hand. It wasn't until 1987 that we began to perfect mobile robot extinguishers. I still remember the first time I sat at the curb in a control van moving the handles while I monitored the robot's TV camera and heat sensor.

It was in the 80's too, that high technology and a tight economy began to stimulate technical improvements in detection, continuous monitoring, and

on/off extinguishing systems. This culminated in the widely publicized experiment with "fire safe" communities in the southwest, where cable TV monitors and computers could not only sense any kind of unsafe atmosphere in the house, but also trigger residential and station alarms and activate the on/off extinguishers. When that was tied to computer-aided dispatching, we thought the system was tremendous.

In 1982, the year after I joined the department, I remember we surveyed the entire city for PCB transformer locations and put them all into computer storage. Then as a call came in, the computer would radio a code word indicating a PCB location. From there, we moved into the computer storage of many types of hazard information. That led to the computerization of preplans, with hard copy printers in the stations and command vans. All of these advances helped convince the city that comprehensive prevention programs--from building plan approval to advanced inspections and new ordinances--had a greater economic payback than the continual purchase of new suppression equipment. Equipment costs were increasing yearly and we could only use it after fires had started.

If I discuss the prevention versus suppression argument in my lecture next week, maybe I could tell that old 1980 story about the mountain town that spent its federal revenue on a new ambulance, rather than on guard rails for a bad curve, because guard rails don't provide much excitement.

As you would expect, the difference in response statistics became apparent once the city had passed the auto-detection, sprinkler, and on/off extinguisher ordinances. Already, the fire department had engaged in arguments over who would provide EMS and had suffered anxiety about workload increase, burnout, extra pay, and the chain of command. Many of us still didn't want EMS, but when fire runs began to decrease significantly, the rescue business kept the city and the citizens behind us. Fortunately, we were able to manage both kinds of service quite well.

When I made lieutenant, I found that supervising fire medics was a little more complicated than managing firefighters, but I grew flexible fast. Running the pumper as a first response basic life support unit certainly helped us company officers develop a comprehensive understanding. We learned that the two jobs have a high degree of compatibility. Even before the mid 1980's, we were running a three-service department: prevention, suppression, and EMS. The management style of each officer had to reflect all three. EMS and fire prevention were no longer subsidiary duties; they were primary functions of the department.

When I think back, I realize the chief must have been pretty sharp to have kept control of the department during that time. It was just before he retired in 1990 that he recommended we take the word "fire" out of our name. Boy, did that raise a furor! Now we wouldn't call ourselves anything but the Department of Environmental Safety. Times change.

As I said to the station crew, the old man was sensitive to changes. He volunteered to be chairman of the city's master planning committee. He said the direction of the fire department easily could be set by outsiders once the traditional suppression workload got too small and the cost of operating the department too high. By the early 1980's, even those cities that always had given their fire departments outstanding support were beginning to have second thoughts. The chief wanted to remain in a key position as the situation changed, and he did.

It is difficult to argue against the concept of master planning because its goal is to coordinate all services to match the city's needs with its ability to pay. Master planning seeks cost-effective, nonduplicative services and operates on decisions made by groups of people representing various points of view, rather than by one person who represents a particular department. Getting different constituencies to meet together, much less to see eye-to-eye, is a challenge. But the old man knew how to get along with people, how to negotiate, and how to see things through someone else's eyes. It's only natural for us professionals to want to make the decision in what they used to call "our own area of expertise." However, as money grew tighter, people began to realize that some experts knew how to add but not how to subtract. Doing the job with diminishing resources calls for innovative management.

One interesting idea that received attention even before the 1980's was that the same personnel could provide both fire and police protection. A few cities tried it, and a couple even made it work, but it was a forced marriage between two fairly incompatible kinds of public service. The theory of multiservice departments proved valid, but those weren't the right services. Another idea had to do with commercial fire departments. I find it difficult to imagine that a profit-making business could do the job at less cost than a public one. However, I suppose the professor who invited me to speak would say that is due to the high cost of bureaucracy, plus the fact that citizens expect more service from public departments. At any rate, because of the desire to control their own fire, police, water, and sewer services most cities continued to run their own departments--if only as leverage to get the city budget passed.

The desire for home rule also hindered most of the attempts to form the large, regional departments that promised the most cost-effectiveness. Not many county departments were developed, especially in large city areas, and the volunteer departments didn't want to relinquish their identity or autonomy either. So, instead, we ended up with computer service regions. Most areas have a number of separate departments, but their inventory, planning, alarm, dispatch, purchasing, recordkeeping, and, sometimes, even training functions are provided by a regional center. This approach appears to satisfy the advocates of both cost-effectiveness and local control. It's always a problem, of course, for big cities like ours not to alienate smaller units in our service region. This requires a management style that is sensitive to smaller units and to volunteers. Given today's organizational structures, it's almost impossible for a chief with an ego problem or a desire to control everything to manage well.

If I mention any of this to that college class in public administration next week, I will talk in terms of broad-based decisionmaking and shared planning responsibility. That's the way a textbook would state it. It's not really very new, though; volunteer chiefs always had to pay close attention to what the members say, and chiefs of unionized career departments always had to conduct business with union officers. The big difference today is that the entire process is built into the system formally, even in the small departments. The taxpayers have even more say about our mission than we insiders do. In our city, there is more of a team operation under the city manager than there was in the 70's and 80's. Most all-volunteer departments use the same coordinating system within their computer service regions and provide the same multiservices we do.

The station crew wondered if it was difficult to have every decision made by a committee--but that's not really the way it works. Once the team goals are agreed upon, the department heads run the show, with progress checks along the way. I suppose it's an improved version of the old "management by objectives" approach, which never was well accepted by the fire service, because it sounded as if the officers had lost control of work supervision and performance evaluation.

I believe today's methods hold significant advantages to those department chiefs who want to exercise leadership, rather than simply manage goals set by the city. Both master planning and city-wide team operations practically force you to predict what the community will be like in future years, at least from the perspective of your own department.

Once you make that prediction to the group, you have to prove you're correct and describe how your department will meet the challenges. That's leadership. The process automatically provides a budget request, because that request is part of your planning document. This approach makes me feel 'proactive" rather than reactive, and this basically is how my professional knowledge benefits the citizens. Back in the 80's, the old man had to be an advocate of the department and its personnel. Now, the dust of change has settled, and I am free to be an advocate for the citizens. I veiw it as more of a win/win situation.

What happened? As we assumed a larger role and added other services to fire suppression delivery, taxpayers began to view us as a more important service department. This meant we could be less defensive about ourselves, our budget, our job protection, and our right to make all the decisions. Simply put, we were able to sway public concern back in our favor, after it declined in the late 70's and early 80's.

Now, people don't talk much about decreasing protection; we provide too many kinds of service in addition to putting out fires. Environmental safety chiefs today lead multipurpose units, but they are all designed to protect people and the environment from natural and technological dangers. If I wanted a slogan painted on our rigs, I'd use: We protect the biosphere!

Looking back, it all seems far more logical than it did as I moved up through the ranks. When I was a firefighter, the letters on the door of the rig read "Fire Department." By the time I made lieutenant, they read "Fire-Rescue." When the department moved into prevention and fire protection engineering services in a big way, the sign changed to "Department of Fire Protection and Rescue."

By that time, I was on the captain's list and, luckily, I had made a move to increase my technical knowledge.

Before joining the department in '81, I had enrolled in a two-year college fire science program. I finished that as quickly as I could and enrolled in an upper division program that was heavy in administration courses. Immediately after I received a four-year degree, I passed the lieutenant's exam and volunteered for EMT training. That gave me the technical knowledge and skills in fire and rescue, but they also needed information on community planning, budgeting, personnel management, and the use of computers. So I learned any way I could. I believe an officer should have basic technical knowledge of each function in his unit. As the department increased in scope, I tried to learn something about each new service and responsibility.

All of this was in addition to the basic liberal arts, science, and administration courses that were part of my regular college program.

As a matter of fact, those general courses, rather than the fire science work, probably saved me in the long run. As we got into computers, high technology communications systems, hazardous materials, dangerous atmosphere detection and correction, remote sensing, robotics, waterway safeguarding and pollution control, weather-related emergencies, land movement security, and advanced structure inspection, I leaned heavily on basic science and math. I think it would have been very difficult to move into higher positions without that broad, basic technical background.

The changes in supervision and management have been tremendous. The organizational structure of the department changed, so that we could provide many services with a minimal budget. We needed a functional and cost-effective design, and that means you can't duplicate administrative and service functions. And you can't have separate environmental safety crews for each kind of function, because there are too few kinds of high incidence emergency runs.

Most of our work is hazard analysis, compliance inspection, and dangerous situation amelioration, or DSA. We had a typical DSA run this morning. The remote cargo manifest reader buried under the truck lane of the interstate highway did its job and fed our computer a specific hazardous materials reading. This is triggered by a programmable transmitting device located on the underside of the truck trailer. From that single remote scan, our computer learned the shipper, the type and volume of the cargo, its destination, its specific hazards, the best emergency action plan, and the ID number and color of the trailer. It also recorded the frequency of the rig's emergency locater transmitter

and triggered one of our multifrequency receivers to track the vehicle within the city boundaries. When the accident occurred, we had a rapid intervention vehicle (RIV) responding long before the police called in.

The point is that the RIV officer and crew responded from an inservice inspection of the marine dock area and handled the leaking tank truck. However, they were equally prepared to fight a structure fire, handle a rock or mudslide, size up a cracked RAM waste container, or provide emergency medical service. That's a multipurpose crew, and it requires a knowledgeable officer who has a variety of motivational and command styles, as well as many ways to handle anxious citizens. Managing an environmental safety department takes the same kind of broad-gaged approach.

We use a wide variety of volunteers; in fact, I suppose I'm actually the chief of a combination department. There is no way to employ enough people to handle infrequent but large-scale disasters, so we use trained and organized field operations volunteers to supplement our career crews. We couldn't operate without them. There's another tremendous value to having volunteers, too. It's what I call the SS roster. Like most combination departments, we maintain a computerized list of volunteers with special skills, who are willing to help us handle special situations. We list everything--from chemists to computer programmers, filmmakers to radio experts, chopper pilots to tug boat captains.

It may surprise you to learn that each volunteer pays a $2 annual membership fee and buys his own ticket to the annual banquet. Field operations volunteers attend 12 drills and meetings per year, held at their neighborhood station and conducted by a career officer. We page volunteers when we need extra crews, but they work under their elected crew chiefs, who rank under a career lieutenant.

Every two years our volunteers elect a city-wide deputy staff chief, who reports to me and has administrative authority over the volunteer crew chiefs.

Special skills volunteers don't attend drills or participate in regular field operations. They provide us with advice and technical assistance.

The city considered paying volunteers an hourly rate, or providing some kind of pension plan, but settled instead on a point system. Each hour of training or work earns points, and 100 points per year earns a free admission card to one of the city-sponsored recreational, cultural, or educational programs, such as the municipal swimming pool, golf course, musical series or adult education program. It's our way of recognizing and rewarding volunteer service.

When we first organized volunteers, about 15 years ago, our career people were uneasy, thinking that the city intended to replace at least some of them with free labor. That wasn't the case. We needed to increase the capacity of the department to handle a full spectrum of services, but without a commensurate increase in cost. Volunteerism was the only way we could actually protect the integrity of the department, ensure a solid future for it, and

provide multiple services to the city. As more career and volunteer departments became full-service environmental safety units, instead of fire departments, we knew we would have to do the same. Otherwise, the taxpayers would never agree to our budget, with outer communities receiving more services at the same or less cost per capita. When I was promoted to chief five years ago, I was accustomed to working with volunteers in my battalion, so being chief of a combination department held no surprises.

Since I joined the fire department in 1981, the management trends have been apparent. Community master planning, a tight economy, and a spirit of consumerism have led to broader based decision-making and goal-setting groups. Taxpayers became accustomed to tradeoffs, and the bottom line grew more important. The realization that prevention work had a higher rate of return led to a gradual shift of emphasis and budget percentages from suppression to prevention. Emergency medical services and a host of other activities to protect citizens and the environment from natural and manmade disasters grew in importance. Because of the economy and because more people wanted direct involvement, the use of volunteers in combination departments became more widespread. Interestingly enough, while tax bases in the suburbs grew through the addition of industries and businesses, daytime volunteer responders became fewer, so career personnel were added to many all-volunteer departments.

Emergency service managers have always needed a particular combination of skills, abilities, and knowledge. They still do, but the list is longer. The concept of team management grew rapidly. Broad education in the liberal arts and sciences and wide training in technical subjects beyond fire service have become necessary. The skill and ability to plan and work cooperatively with different groups, to lead organizational change smoothly, and to meet new challenges are also necessary.

It isn't difficult to describe what's happened over the past 25 years. Now if I can only think of some catchy way to say it, I'll be all set for next week's lecture.

About the author: Dr. Granito has been an active fire department member for 21 years and has held all offices through the level of chief. A New York State County Fire Instructor for four years, he has also served as an elected fire commissioner. He is well known to the fire service as an author, lecturer, instructor, and consultant who has an exceptionally broad background in the fields of management and education.

Sunville Fire Department
Page No. 1

EMS PATIENT RECAP OF SYMPTOM CODES
Numbers: All
EXCLUDED: 34 Patient Zero Records & 6 Invalid Records

02/20/89

EMS Code	Number	Percent	Severity 0	Severity 1	Severity 2	Severity 3	Severity 4	Severity 5	Severity 6	Severity 7	Severity 8	Severity 9	Description
110	8	1.04	0	0	1	6	1	0	0	0	0	0	Trauma-Head-Closed Minor Injury
111	3	0.39	0	0	2	1	0	0	0	0	0	0	Trauma-Head-Closed Fracture(s)
113	1	0.13	0	0	1	0	0	0	0	0	0	0	Trauma-Head-Open Fracture(s)
114	13	1.69	0	0	4	7	2	0	0	0	0	0	Trauma-Head-Open Injury
119	1	0.13	0	1	0	0	0	0	0	0	0	0	Trauma-Head-Severe Multiple Injuries
120	6	0.78	0	0	0	5	1	0	0	0	0	0	Trauma-Face-Closed Minor Injury
121	3	0.39	0	0	1	2	0	0	0	0	0	0	Trauma-Face-Closed Fractures
124	13	1.69	0	0	1	8	4	0	0	0	0	0	Trauma-Face-Open Injury
125	1	0.13	0	0	1	0	0	0	0	0	0	0	Trauma-Face-Burn
126	1	0.13	0	0	0	1	0	0	0	0	0	0	Trauma-Face-Closed Internal Injury
128	1	0.13	0	0	1	0	0	0	0	0	0	0	Trauma-Face-Shock
130	35	4.56	0	0	5	29	1	0	0	0	0	0	Trauma-Neck/Back-Closed Minor Injury
131	4	0.52	0	0	2	2	0	0	0	0	0	0	Trauma-Neck/Back-Closed Fracture(s)
132	2	0.26	0	0	2	0	0	0	0	0	0	0	Trauma-Neck/Back-Injury with Neurovascular Impair.
134	1	0.13	0	0	0	1	0	0	0	0	0	0	Trauma-Neck/Back-Open Injury
136	1	0.13	0	0	0	1	0	0	0	0	0	0	Trauma-Neck/Back-Closed Internal Injury
139	1	0.13	0	1	0	0	0	0	0	0	0	0	Trauma-Neck/Back-Severe Multiple Injuries
140	4	0.52	0	0	0	4	0	0	0	0	0	0	Trauma-Chest-Closed Minor Injury
141	1	0.13	0	0	1	0	0	0	0	0	0	0	Trauma-Chest-Closed Fracture(s)
144	2	0.26	0	0	1	1	0	0	0	0	0	0	Trauma-Chest-Open Injury
150	26	3.39	0	0	2	18	6	0	0	0	0	0	Trauma-Arms/Legs-Closed Minor Injury
151	31	4.04	0	0	18	13	0	0	0	0	0	0	Trauma-Arms/Legs-Closed Fracture(s)
152	1	0.13	0	0	0	0	1	0	0	0	0	0	Trauma-Arms/Legs-Injury with Neurovascular Impair.
153	2	0.26	0	0	1	1	0	0	0	0	0	0	Trauma-Arms/Legs-Open Fracture(s)
154	17	2.21	0	1	6	8	2	0	0	0	0	0	Trauma-Arms/Legs-Open Injury
156	4	0.52	0	0	1	3	0	0	0	0	0	0	Trauma-Arms/Legs-Closed Internal Injury
159	1	0.13	0	0	1	0	0	0	0	0	0	0	Trauma-Arms/Legs-Severe Multiple Injuries
160	1	0.13	0	0	1	0	0	0	0	0	0	0	Trauma-Abdomen-Closed Minor Injury
161	1	0.13	0	0	1	0	0	0	0	0	0	0	Trauma-Abdomen-Closed Fracture(s)
166	4	0.52	0	0	2	2	0	0	0	0	0	0	Trauma-Abdomen-Closed Internal Injury
169	1	0.13	0	0	0	0	1	0	0	0	0	0	Trauma-Abdomen-Severe Multiple Injuries
170	4	0.52	0	0	0	4	0	0	0	0	0	0	Trauma-Pelvis/Hips/Genital-Closed Minor Injury
171	12	1.56	0	0	9	3	0	0	0	0	0	0	Trauma-Pelvis/Hips/Genital-Closed Fracture(s)
173	1	0.13	0	0	1	0	0	0	0	0	0	0	Trauma-Pelvis/Hips/Genital-Open Fracture(s)
176	2	0.26	0	1	0	1	0	0	0	0	0	0	Trauma-Pelvis/Hips/Genital-Closed Internal Injury
190	25	3.26	0	0	7	17	1	0	0	0	0	0	Trauma-Multisystem-Closed Minor Injury
191	5	0.65	0	0	4	1	0	0	0	0	0	0	Trauma-Multisystem-Closed Fracture(s)
192	1	0.13	0	0	1	0	0	0	0	0	0	0	Trauma-Multisystem-Injury w/ Neurovascular Impair.
194	8	1.04	0	0	5	3	0	0	0	0	0	0	Trauma-Multisystem-Open Injury
195	1	0.13	0	1	0	0	0	0	0	0	0	0	Trauma-Multisystem-Burn
199	19	2.47	0	8	11	0	0	0	0	0	0	0	Trauma-Multisystem-Severe Multiple Injuries
211	11	1.43	0	0	9	2	0	0	0	0	0	0	Hypotension/Shock
212	26	3.39	0	9	16	1	0	0	0	0	0	0	Suspected MI
213	9	1.17	0	0	7	2	0	0	0	0	0	0	Angina
214	3	0.39	0	0	1	2	0	0	0	0	0	0	CHF (inc.pulmonary edema)
215	10	1.30	0	0	8	2	0	0	0	0	0	0	Hypertension
216	6	0.78	0	0	6	0	0	0	0	0	0	0	Cardiac arrhythmia (not arrest)

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EMS PATIENT RECAP OF SYMPTOM CODES
Numbers: All
EXCLUDED: 34 Patient Zero Records & 6 Invalid Records

02/20/89

EMS Code	Number	Percent	Severity 0	Severity 1	Severity 2	Severity 3	Severity 4	Severity 5	Severity 6	Severity 7	Severity 8	Severity 9	Description
217	13	1.69	0	13	0	0	0	0	0	0	0	0	Cardiac arrest due to presumed heart disease
218	14	1.82	0	14	0	0	0	0	0	0	0	0	Cardiac arrest due to other cause
219	9	1.17	0	0	5	3	1	0	0	0	0	0	Other cardiac
221	35	4.56	0	0	30	4	0	0	0	0	0	0	Respiratory difficulty (shortness of breath, etc)
222	1	0.13	0	0	1	0	0	0	0	0	0	0	Choking/Aspiration
223	1	0.13	0	0	1	0	0	0	0	0	0	0	Inhalation (gas,smoke,ect.)
225	3	0.39	0	1	0	2	0	0	0	0	0	0	Respiratory depression
229	3	0.39	0	0	2	1	0	0	0	0	0	0	Other respiratory
231	42	5.47	0	0	11	24	7	0	0	0	0	0	Seizure
232	21	2.73	0	0	4	16	1	0	0	0	0	0	Syncope
233	1	0.13	0	0	0	1	0	0	0	0	0	0	Headache
234	19	2.47	0	4	14	1	0	0	0	0	0	0	CVA/Stroke
235	2	0.26	0	1	1	0	0	0	0	0	0	0	Coma,unknown cause
236	19	2.47	0	0	14	5	0	0	0	0	0	0	Decreased level of consciousness
237	1	0.13	0	0	1	0	0	0	0	0	0	0	Neuromuscular symptoms
239	1	0.13	0	0	0	1	0	0	0	0	0	0	Other Neurologic
241	9	1.17	0	0	1	6	2	0	0	0	0	0	Abdominal pain
242	1	0.13	0	0	0	1	0	0	0	0	0	0	Internal bleeding
249	13	1.69	0	0	3	7	3	0	0	0	0	0	Other abdominal (incl. nausea, vomiting, diarrhea.
251	4	0.52	0	0	2	1	1	0	0	0	0	0	Diabetic Ketoacidosis
252	2	0.26	0	0	1	1	0	0	0	0	0	0	Insulin shock
254	1	0.13	0	0	0	1	0	0	0	0	0	0	Bleed problem (hemophilac, sickle cell)
261	2	0.26	0	0	1	1	0	0	0	0	0	0	Genito/Urinary problem
271	6	0.78	0	0	4	2	0	0	0	0	0	0	Seizure (febrile)
279	1	0.13	0	0	0	1	0	0	0	0	0	0	Other pediatric
281	3	0.39	0	0	1	2	0	0	0	0	0	0	Non-cardiac chest pain
282	12	1.56	0	0	0	12	0	0	0	0	0	0	Undefined musculo-skeletal pain
283	4	0.52	0	0	1	2	1	0	0	0	0	0	Hyperventilation
284	4	0.52	0	0	1	3	0	0	0	0	0	0	Fever/infection
285	2	0.26	0	0	0	0	2	0	0	0	0	0	Heat Stroke/exhaustion
287	3	0.39	0	0	2	1	0	0	0	0	0	0	Post-operative complication
289	1	0.13	0	0	1	0	0	0	0	0	0	0	Terminal illness
290	13	1.69	0	1	2	7	3	0	0	0	0	0	Other drug related illness
299	12	1.56	0	0	1	9	2	0	0	0	0	0	Other illness
301	3	0.39	0	0	3	0	0	0	0	0	0	0	Active labor
303	1	0.13	0	0	1	0	0	0	0	0	0	0	Vaginal bleeding
309	2	0.26	0	0	1	1	0	0	0	0	0	0	Other Ob/Gyn
401	7	0.91	0	0	0	6	1	0	0	0	0	0	Anxiety/grief reaction
402	7	0.91	0	0	1	5	1	0	0	0	0	0	Depression
403	3	0.39	0	1	0	2	0	0	0	0	0	0	Hallucination/bizarre behavior
404	1	0.13	0	0	0	1	0	0	0	0	0	0	Agitation/assaultive behavior
409	6	0.78	0	0	1	5	0	0	0	0	0	0	Other psychiatric
501	82	10.68	0	0	0	4	74	0	0	0	0	0	No injury or illness
502	17	2.21	0	0	0	0	17	0	0	0	0	0	DOA
504	18	2.34	0	0	0	2	14	0	0	0	0	0	Special service (other)
506	3	0.39	0	0	0	0	3	0	0	0	0	0	False Alarm
507	6	0.78	0	0	0	0	6	0	0	0	0	0	Alarm suspended (code green)

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EMS PATIENT RECAP OF SYMPTOM CODES
Numbers: All
EXCLUDED: 34 Patient Zero Records & 6 Invalid Records

02/20/89

EMS Code	Number	Percent	Severity 0	Severity 1	Severity 2	Severity 3	Severity 4	Severity 5	Severity 6	Severity 7	Severity 8	Severity 9	Description
*** Total ***	768	99.93	0	57	253	292	159	0	0	0	0	0	

Sunville Fire Department
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BY AGE/SEX
Numbers: 880000 to 889999

02/22/89

EMS PATIENTS

Incident Number	Patient Number	Coded	Patient Control Number	Patient Name	Age	Sex	Transport To	Transport By	Condition Cause	Symptom	Severity	Outcome
880556-00	0	Y	013848		0				XX	504	4	
880376-00	1	Y	013720	Hernandez, Dario	16	1	062	39X07	MV	111	2	
880442-00	1	Y	013751	Sneve, Stephanie	17	2	062	39X07	MD	231	3	
880217-00	0	Y	587262	n/a	0	0			XX	506	4	
880218-00	0	Y	587261	n/a	0	0			XX	506	4	
880219-00	0	Y	587260	n/a	0	0			XX	507	4	
880220-00	0	Y	587263	n/a	0	0			XX	506	4	
880139-00	0	Y	587213	n/a	0	0			XX	506	4	
880196-00	0	Y	013726	n/a	0	0			XX	506	4	
880194-00	0	N	013728		0	0			XX	506	4	
880353-00	0	Y	014578	Unknown	0	0			XX	501	4	
880408-00	0	Y	013741	Walnut Grove Nursing Home	0	0			XX	504	4	
880433-00	0	Y	013774	Uknown	0	0			XX	506	4	
880466-00	1	Y	013786	Unknown	0	0						
880540-00	1	Y	013832	N/A	0	0			XX	501	4	
880254-00	1	Y	587290	Summers,Michael	0	1	062	39X07	MV	501	4	
880289-00	1	Y	014526	UNK	0	1	000	00000	AS	120	4	
880330-00	1	Y	014561	Delap, Allan	0	1			XX	504	4	
880384-00	1	Y	013706	Martinez, Carlos	0	1			MV	150	4	
880483-00	1	Y	013794	Boast, Darin	0	1	102	39X07	SP	190	3	
880486-00	1	Y	013797	Goedhart, Mike	0	1			AS	124	4	
880490-00	1	Y	013807	Bates, Dustin	0	1	062	39X07	MD	279	3	
880384-00	2	Y	013707	Laws, Ruth	0	2			MV	150	4	
880418-00	0	Y	013737	Wahl, Janice	0	2			XX	506	4	
880513-00	1	N	013817	Lapp, Ida	0	2			XX	501	4	
880539-00	1	Y	013831	Dorris,Dorothy	0	2			XX	501	4	
880040-00	1	Y	587443	O'Brien,Shane	1	1	062	39X01	MD	225	3	
880350-00	1	Y	014570	Butler, Levi	1	1	062	39X07	AS	114	3	
880409-00	1	Y	013740	Cullen, Tyler	1	1	062	39X07	DR	225	3	
880529-00	1	Y	013841	Schultz,Lee	1	1			XX	124	4	
880047-00	1	Y	587448	Nowlan,Amanda A.	1	2	000	00000	MD	501	4	
880043-00	1	Y	587445	Laragoza,Michael	1	2	062	39X01	MD	231	3	
880123-00	1	Y	587204	Uribe, Adam	2	1	062	99V04	MD	271	2	
880254-00	4	Y	014502	Abiams,Timothy	2	1	062	39X07	MV	130	3	
880297-00	1	Y	014535	Schultz,Terry	3	2	062	39X07	XX	501	4	
880469-00	2	Y	013789	Martinez, Anita	4	2	062	39X07	MV	130	3	
880222-00	1	Y	587264	Palamino, Daniel	5	1	0000	00000	PV	501	4	
880249-00	1	Y	587281	Sanchez, Yolanda	5	2	062	39X07	BL	124	3	
880462-00	5	Y	013784	Koopal, Kimberly	5	2	062	39X07	MV	199	1	
880002-00	1	Y	587414	Mitchell, Frederick	6	1	062	39X01	MD	271	2	
880370-00	1	Y	014589	Barnes, Brandy	6	2	062	39X07	MV	124	3	
880462-00	4	Y	013779	Koopal, Kelley	7	2	062	39X02	MV	199	1	
880308-00	2	Y	014545	Liebert, Lisa	8	2	062	39X07	MV	130	3	
880426-00	1	Y	013743	Gomez, Rigoberto	9	1	062	39X07	AN	154	3	
880258-00	1	Y	014501	Shermen, Steven	11	1	062	39X07	MD	231	3	
880383-00	1	Y	013705	Herrera, Eric	11	1	062	39X07	MD	231	3	
880530-00	1	Y	013833	Rodriquez,Charles	11	1	062	39X07	FA	154	3	
880462-00	3	Y	013778	Koopal, Kristy	11	2	062	39X07	MV	191	2	

Sunville Fire Department
PAGE NO. 1
03/01/89

INCIDENT RECAP BY SITUATION
DATES: ALL
NUMBERS: ALL, SITUATIONS: ALL
EXCLUDES MUTUAL AID GIVEN

Code	Number	Percent	Description
** 1			
11	52	5.36	STRUCTURE FIRE
12	9	0.93	OUTSIDE STRUCTURE FIRE
13	38	3.91	VEHICLE FIRE
14	47	4.84	TREES, BRUSH, GRASS FIRE
15	20	2.06	REFUSE FIRE
17	1	0.10	OUTSIDE SPILL, LEAK WITH ENSUING FIRE
** Subtotal **	167	17.20	
** 2			
29	1	0.10	NOT CLASSIFIED
** Subtotal **	1	0.10	
** 3			
31	2	0.21	INHALATOR CALL
32	565	58.19	EMERGENCY MEDICAL CALL
34	2	0.21	SEARCH
39	2	0.21	NOT CLASSIFIED
** Subtotal **	571	58.82	
** 4			
41	19	1.96	SPILL, LEAK WITH NO IGNITION
43	3	0.31	EXCESSIVE HEAT
44	1	0.10	POWER LINE DOWN
45	18	1.85	ARCING, SHORTED ELECTRICAL EQUIPMENT
46	2	0.21	AIRCRAFT STANDBY
47	1	0.10	CHEMICAL EMERGENCY
49	2	0.21	NOT CLASSIFIED
** Subtotal **	46	4.74	
** 5			
50	1	0.10	UNABLE TO CLASSIFY FURTHER
52	6	0.62	WATER EVACUATION
55	2	0.21	ASSIST POLICE
56	3	0.31	UNAUTHORIZED BURNING
59	6	0.62	NOT CLASSIFIED
** Subtotal **	18	1.86	
** 6			
60	2	0.21	UNABLE TO CLASSIFY FURTHER
61	42	4.33	SMOKE SCARE
62	1	0.10	WRONG LOCATION
63	12	1.24	CONTROLLED BURNING
65	4	0.41	STEAM, OTHER GAS MISTAKEN FOR SMOKE

PAGE NO. 2
03/01/89

INCIDENT RECAP BY SITUATION
DATES: ALL
NUMBERS: ALL, SITUATIONS: ALL
EXCLUDES MUTUAL AID GIVEN

Code	Number	Percent	Description
69	14	1.44	NOT CLASSIFIED
** Subtotal **	75	7.73	
** 7			
70	3	0.31	UNABLE TO CLASSIFY FURTHER
71	10	1.03	MALICIOUS, MISCHIEVOUS FALSE CALL
73	34	3.50	SYSTEM MALFUNCTION
74	36	3.71	UNINTENTIONAL
79	9	0.93	NOT CLASSIFIED
** Subtotal **	92	9.48	
** 9			
99	1	0.10	NOT CLASSIFIED
** Subtotal **	1	0.10	
*** Total ***	971	100.03	