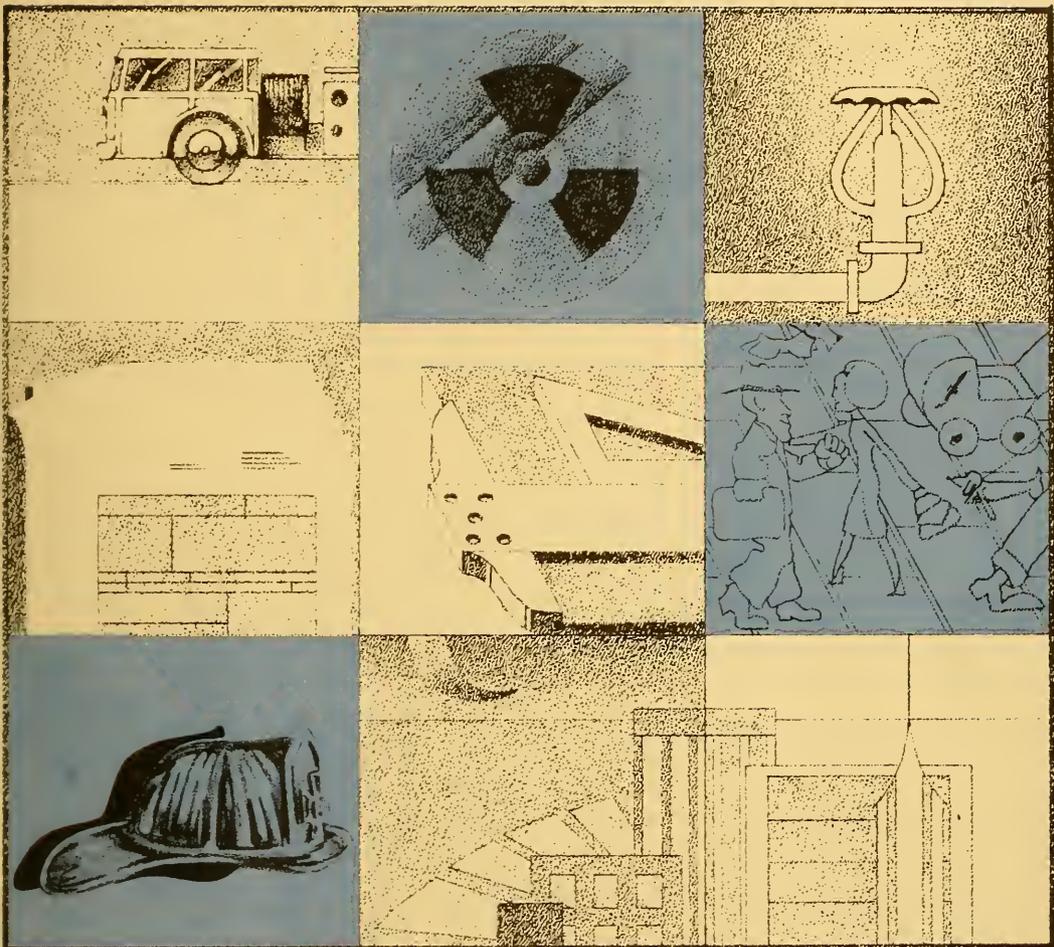


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U.S. DEPARTMENT OF
COMMERCE

NATIONAL FIRE
PREVENTION & CONTROL
ADMINISTRATION

National Fire Safety &
Research Office

INTRODUCTORY SUMMARY

FIRE PREVENTION AND CONTROL MASTER PLANNING

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U.S. DEPARTMENT OF COMMERCE
National Fire Prevention and Control Administration
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PREFACE

The purpose of this document is to introduce you to the National Fire Prevention and Control Administration (NFPCA), and to its Master Planning Program. You are reading this document because you asked for it, received it at a conference, or were asked to read it by a colleague; so we assume you are interested in fire protection.

With that interest in mind, then, we would like to tell you something about fire prevention and control MASTER PLANNING, and to anticipate some questions likely to occur to you, so that you can make a reasoned decision on whether or not to develop a fire prevention and control master plan for your community.

First of all, what is fire prevention and control master planning? In simplest terms, it is the development of an affordable plan which involves the whole community looking at today's "fire situation" and anticipating tomorrow's fire problems. The "master plan" is the end result of a process in which the principals involved in delivering and receiving all public and private aspects of fire protection **define** what they desire, what the community can afford and what risk level is being accepted.

In 1974, the NFPCA was mandated by its enabling Public Law (93-498) to investigate and "report on the establishment and effectiveness of master plans in the field of fire prevention and control throughout the Nation". In fact, "The Administrator is authorized to encourage and assist . . . States and political subdivisions in such planning activities, consistent with his powers and duties . . ." We hope this document encourages you; the NFPCA master planning procedural Guides now being developed provide much of the necessary assistance.

The planning methods used in the Guides are straightforward, much as used by professional planners; in this case, reduced to one-step-at-a-time procedures written in jargon-free english. The procedural Guides are intended to be used at the local level, by local people, without a requirement for extensive support from, or involvement at, the National level. The Guides simply help local people through a systematic analysis of their community, its fire prevention and control problems, different ways of solving problems, and the selection of the "best" local fire defense "system".

As important and fruitful as master planning is, it is not for everybody. It is not a guaranteed cure for all the ills of fire protection; it is not easy and simple; it can be costly and time-consuming; and it does require the commitment and cooperative participation of diverse groups with diverse interests. However, given the resources and the commitment, **it does work** and **has** led to decreased costs and fire loss, and increased support for fire protection.

The balance of this document will:

- In Section I, introduce you to the NFPCA Master Planning Program, and
- Provide you with a conceptual Overview of the planning process;
- In Section II, discuss with you some benefits, problems, and solutions;
- In Section III, talk about the resources and costs which may be involved;
- In Section IV, provide a decision aid in getting started.

For further reading we have enclosed with this pamphlet excerpts from two of the master planning guides:

- **Basic Guide**, Step Two—Determine the Fire Problem
- **Advanced Guide**, Section B.3.0—Define the Fire Situation

These similar sections of the two Guides may be contrasted to gain insight into their two different levels of sophistication.

Also included are:

- Some examples of the experiences of communities who have initiated Master Planning Programs
- A reference list of Communities which have used the master planning process.
- “A Tale of Two Cities”—a fictional narrative about fire defense master planning, produced independent of NFPCA by the Institute for Local Self Government.

I. AN INTRODUCTION TO THE NATIONAL FIRE PREVENTION AND CONTROL ADMINISTRATION MASTER PLANNING PROGRAM

In compliance with its Congressional mandate, the NFPCA's Master Planning Program is designed to facilitate the development **and** implementation of fire prevention and control master plans Nationwide—at all levels of government. The program includes: an introductory briefing; orientation in the planning process; training in the skills needed; complete, accurate, and current planning materials; and support for the local planning process, if desired.

The NFPCA Master Planning Library

The program plan includes the development of a "library" of materials to help you in your master planning efforts. At the present time, one "volume" in this library has been completed and tested by validation communities across the Nation. Other volumes are either in development or under consideration.

Advanced Guide for Fire Prevention and Control Master Planning—The Advanced Guide provides planning material for larger population areas where there is a clear responsibility (and statutory basis) for fire protection. This Guide introduces the master planning concept and provides an overview of the process. The procedural material following is highly explicit, self-explanatory, and comprehensive. This Guide also provides general procedures for managing the implementation of the Master Plan, and specifically, for updating the Plan on both a regular (annual budget cycle) and a special basis. This **Advanced Guide** is available now (see Page 29).

Basic Guide for Fire Prevention and Control Master Planning—This Guide provides explanatory and simplified procedural information keyed to the special fire protection problems of communities. The various sections of the document introduce the planning process concept, and provide a step-by-step procedure for preliminary assessment of fire protection needs and the development of a general fire protection system plan. The Guide also helps the user to make a clear decision as to whether or not a detailed Master plan is necessary. The **Basic Guide** is currently under development and will be available for general distribution in the Fall of 1977:

The following guides are under consideration for inclusion in the master planning library:

Fire Prevention and Control Master Planning and the State—This Guide would concentrate on the assessment of fire protection status statewide. Procedures for analyzing statutory bases and selecting acceptable state “roles” would also be provided

Fire Prevention and Control Master Planning Reference Series—This series of documents would provide an open-ended library catalogue of current information of interest to fire protection planners and practitioners. The intent is that the Reference Series provide up-to-date information to aid in the selection of such attributes as levels of service, system characteristics, and performance levels. General information categories would include:

- Descriptive material concerning what constitutes a fire protection system.
- Codes and standards.
- Legislative and statutory information.
- Alternative system goals, objectives, and system concepts.
- Illustrative examples (to supplement procedures).
- Exemplary programs in State and local jurisdictions.

Fire Prevention and Control Technical Assistance Series—This series would be intended to provide special technical supplements to the Master Planning Guides. Subjects would include:

- Assessing fire-flow requirements.
- Specifying fire control apparatus.
- Determining risk level/staffing relationships.
- Forecasting methods.
- Special considerations in Rescue and Emergency Medical Services.
- Special considerations in Public Education.

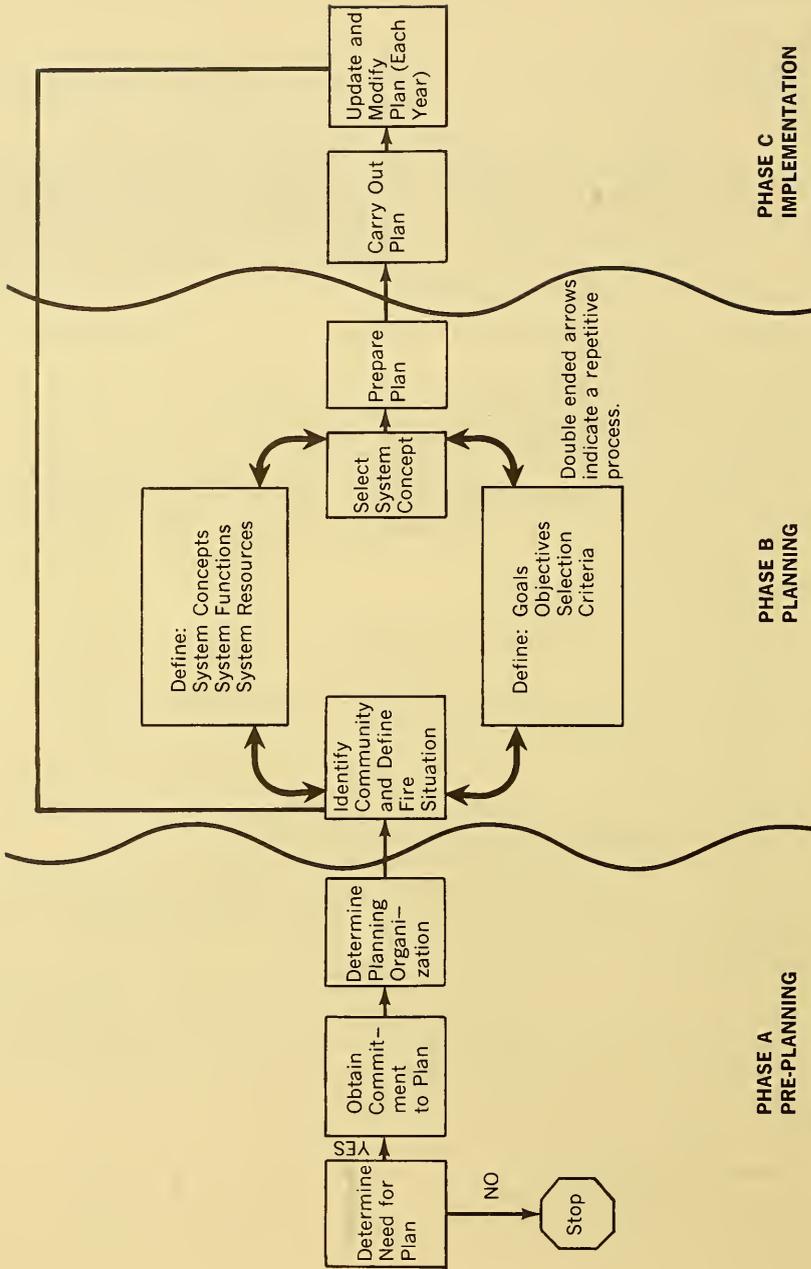
Education and Training

The NFPCA will provide local master planning overview seminars for decision-makers and training workshops for Planning Team Leaders.

The Decision-Makers’ Seminars will expand on the material contained in this document. The 1-3 hour seminars, held in conjunction with interest group conferences, will be organized so as to permit interested people to discuss Master Planning issues in a peer group setting.

The Planning Team Leader workshops, planned to require a week’s time, will help the leaders learn to use the Master Planning Guides, in a classroom setting. The workshops will closely simulate local experience, even to the point of utilizing data base information derived from the planning experience of a real city. The step-by-step workshops will be interrupted at appropriate points to review the underlying management methods such as:

- data collection and analysis
- systems analysis
- cost-benefit analysis
- program planning and budgeting
- forecasting
- management by objectives



THE PLANNING PROCESS

Planning Assistance

The NFPCA intends to support local planning teams by means of a two-level assistance program: specialized technical information provided through a national clearinghouse in Washington, and “on-scene” assistance, as possible.

An Overview of the Planning Process

As you read this section of the document you should have a few management definitions in mind:

- **Purpose of Master Planning**—Master planning is a **participative** process which should result in the establishment of a fire prevention and control system which:
 - is goal oriented, long term, and comprehensive
 - provides known cost/loss performance, and
 - adapts continually to the changing needs of your community.
- **Scope of Master Planning**—Master planning should consider all community elements, public and private, geographical and organizational, present and future, which affect or are affected by, fire prevention and control system elements.
- **Key Concept of Master Planning**—Master planning involves the participation of all interested parties in the development of a defined cost/loss relationship which equates your community’s loss expectations to the level of comprehensive public and private fire protection it is willing to pay for.
- **Method of Master Planning**—Master planning allows you and your fellow community leaders to systematically analyze fire prevention and control through common-sense procedures for: fire situation assessment; problem definition; goal setting; alternative systems definition; system selection; and plan preparation and updating.

The NFPCA planning process has three phases—Pre-Planning, Planning, and Implementation, as illustrated in the accompanying figure.

In the Pre-Planning Phase, the community prepares itself for the Planning Phase:

- by obtaining the commitment to do the master planning;
- by identifying the functions and the membership of an advisory committee and a planning team;
- by identifying the approvals needed for the products of the planning;
- by estimating the resources, costs and schedule for doing the planning;
- and by formally approving the planning plan.

Then, in the Planning Phase,

- local information is acquired and analyzed to determine “what there is to burn” and to identify management considerations of importance in the geographical area and for the time period (present and future) for which the Plan is desired;
- goals and objectives are set, and approved, which state what the fire protection desires of the community are and what level of service (or level of risk) the community is willing to accept;

- selection criteria are established (measures by which various fire protection systems are compared);
- alternative fire protection systems are defined, analyzed, and compared, and the best one is selected and approved;
- the Master Plan, which contains the programs, costs, and schedules to develop and maintain the selected fire protection system, is prepared and adopted.

Master planning allows you to look at fire prevention and control as a **system**. All facets of fire protection—from prevention through public education through to private protection to conventional suppression,—are examined with regard to what **should** be done (goals). Various ways (alternative systems) of doing what should be done are defined. The alternative systems may be at any level of sophistication; from basic suppression forces only, to heavy reliance on built-in protection enforced by codes and augmented by comprehensive public education programs. The master planning process permits evaluating these various alternatives **before** they are put into effect, to determine which of them is best for the community—not only for the present but also for the future. It is the “futura” of master planning which allows you to control, or master, your fire environment.

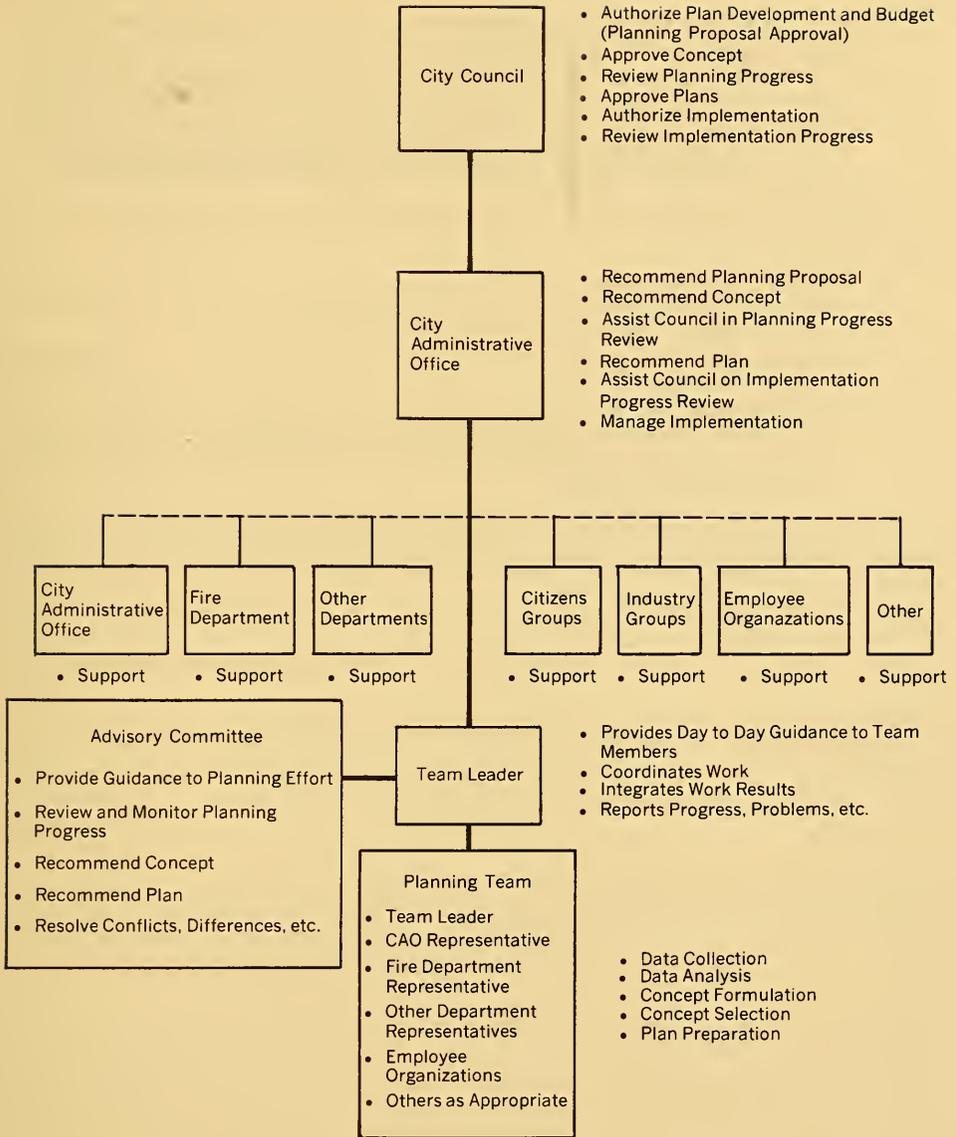
The Implementation Phase never ends because to be effective in the long term, the Master Plan must be incorporated into a regular local government planning process and be kept current so as to reflect changing conditions. Each year new information is added to the data base, the Plan is reviewed for continuing adequacy, and the planning period is extended by one year. In this Phase, the programs are carried out in accordance with the Plan, budgets are prepared, as always, and progress is monitored. The success of the fire protection system, and therefore the Master Plan, is measured by the quality of the planning objectives, and by whether or not, and how well, the objectives are met. If the objectives are met, all may be well, but perhaps they should be re-examined in the light of experience: if they are not met, then the Planning Phase should be re-entered at an appropriate point, and the Master Plan, and the system, revised as needed. In this way, the Master Plan and fire protection system are always responsive to change, and in fact may force change.

Organization for Planning

Organization for planning may take many forms depending upon the community. In general, however, the organizational memberships and functions shown in the accompanying figure have worked well in practice.

The most important elements of the organization are:

- The **City Administration** (City Manager, Mayor, Commissioner, etc.) is responsible overall, and provides the formal liaison between the planning effort and the community governing body. The Administration also is responsible for guiding the implementation of the Master Plan, upon formal adoption.
- The **Advisory Committee** is an ad hoc group convened especially for the Pre-Planning and Planning Phases, but some communities doing master planning have retained this group in the Implementation Phase. Some communities



MASTER PLANNING ORGANIZATIONS AND FUNCTIONS (EXAMPLE)

have had small Advisory Committees (about 10), whereas at least one city has had a large Committee (about 60).

- **The Planning Team** is a small group (3 or 4 persons) headed by a permanent Planning Team Leader. The Planning Team Leader is ideally a high-level community executive who is planning and management oriented. The Planning Team can, and should, be augmented by resource persons as needed for special duties such as data collection, goal setting, analysis, and the like.

With regard to individual roles in the planning process, success appears to hinge on three key individuals:

- **The City Administrator, or Mayor, or . . .**, who must strongly and publicly support the program, and who must provide the means for effective interdepartmental cooperation in the planning effort.
- **The Fire Chief**, who must genuinely and fully support the program—for obvious reasons.
- **The Planning Team Leader**, who must untiringly, intelligently, and perceptively steer the process through misunderstandings, frustrations and political sensitivities. He should be the closest thing to Superman that you can get to take the assignment.

If the prospect of fire prevention and control master planning seems interesting now, read on through some Benefits, Problems and Solutions.

II. BENEFITS, PROBLEMS AND SOLUTIONS

Benefits

Each community will have its own reasons for fire defense planning, stemming from its unique situation and its pressing problems.

Perhaps the most important reason to plan is to guide the active improvement of community fire protection through the setting and achieving of goals and objectives **which establish the long term character of fire protection in the community**. Setting the goals and objectives is a process in which the community, and especially its **several** public agencies, play a large part; and in so doing become **involved** in fire protection, and identify with needs, risks, **and costs**. The planning process itself tends to effectively develop the administrative staff in a community.

The cost of fire protection is probably causing you concern, as are costs of all other community services. Identifying costs, reducing costs, transferring costs, increasing fire protection for the same cost, and justifying improved service levels and associated costs, **with known consequences** are all valid reasons for doing master planning.

Master planning permits you to begin to assume **control** of your **recognized** fire situation, instead of simply reacting to a largely undefined fire problem. By controlling the fire situation **within known and accepted limits**, costs can be controlled, life safety can be increased, and property loss can be reduced.

Master planning can provide the incentive, and identify the way to obtain and maintain information concerning the fire environment in the community. By building and regularly updating a fire management data base, you always have a current picture of what the fire protection system is expected to protect and how effective the protection is. Incorporation of the fire protection Master Plan as an element of a Community General Plan is, of course, highly desirable. No longer must fire prevention and control be something that only the fire department is concerned about; it can become a matter of awareness and concern for everyone in the community.

Problems and Solutions

Master planning is not without its problems, however; in truth, many of the problems encountered are the very problems which master planning seeks to overcome. Some of these, and some solutions from real life experience are discussed below:

COMMITMENT

Public Apathy

Most people, outside of the fire service, just don't view fire as a problem—"it won't happen to me. Besides, the fire department is supposed to take care of it, aren't they? Anyway, I'm insured."

Interest can be, and has been, aroused by use of a cooperative media campaign which points up the **real significance of fire** to the community, and the responsibility of citizens. The NFPCA is developing materials to assist in this—this Introductory Summary is one example.

Time

Because **effective** master planning cannot be done quickly and because results are not instantaneous (usually), it may be difficult to sustain community, and, especially, worker interest in the program.

Commitment (interest) can be maintained by placing responsibility and authority for planning at the highest possible level of community government; by establishing clear personnel assignments for master planning on a continuing basis; and by establishing citizen participation in both assisting and advising the professional cadre of planners.

Funding

Nothing is ever free. Master planning does have direct costs associated with it—personnel, perhaps computer time, other overhead costs; and indirect costs, such as the need to sacrifice other important assigned duties.

Recognition of the costs of doing planning is part of the commitment. Funding, in time and dollars, can, and should, be identified in the community budget for supporting the planning. The cost is low, however, compared to the payoff. Good planning will more than save its cost.

Political Support

Formal support by elected community officials can be a mixed blessing. Such support can open doors, but may also promote hasty decisions to satisfy political needs.

Political support can be **informal** (advisory) rather than formal; this may be more productive. A program of regular informal briefings (perhaps on an individual basis) can prevent surprises and maintain support. A motivated Advisory Committee can be very influential in obtaining and maintaining political support.

SKILLS

Professionalism

Master planning is a job for a variety of specialized professionals—fire, planning, water, building, management, and others. A community may feel it does not have the skills.

The key person in master planning is the Planning Team Leader. The Planning Team Leader should be a **manager** with responsibility and authority. Such a person can be found in any community—either in or out of the fire service. The planning process helps **develop** necessary staff skills.

Availability

Capable people will be needed for a long term. Such people are already busy and in demand.

Commitment is the key here. When the need for master planning is recognized and accepted, the involved agencies **can** commit capable people.

SCOPE

Special Interests

Change in fire protection philosophy resulting from master planning may be resisted by special interests.

Cooperative (special interest advisory) involvement, resulting from commitment, can lead to compensating agreements. For example, builders might accept built-in protective devices (sprinklers, detectors) if insurance costs are reduced.

Overt hazard identification may provoke antagonism. Nobody likes to have his or her property labeled a “firetrap”

Here again, careful wording and pre-knowledge through cooperation and involvement can lead to compensating “tradeoffs”.

It may be difficult to assemble a suitable planning team—one which represents the broader context of public and private system elements.

A cadre of professionals supported by resource persons (together, the Planning Team) and an Advisory Committee (representing a broad spectrum of community interest-group leaders) can be, and has been, effective in involving potentially dissident groups in a successfully cooperative planning effort.

Preemption

Important fire protection elements may be preempted by higher government levels; for example, two states (Virginia and New Jersey) have enacted a “mini-max” building code applicable statewide.

As part of the ongoing master planning, higher governmental activity related to fire prevention and control can be monitored. Responsive action can be taken, both at the local level and at the higher governmental level. Specific restrictions seldom preempt **all** planning options. Also, legislation **can** be changed.

Organization

Protocol may impede planning—fire captains just do not tell city department heads or apartment building owners what to do about planning.

The Planning Team Leader, **working through the administrator**, is all important here. The Planning Team Leader should have, or be able to get, high-level coordinative responsibility and authority within the public and private sectors. Participants should have a clear understanding of their roles.

Competition

Fire prevention and control competes for revenues and management attention with all other equally important community needs.

Master planning concepts and procedures are applicable to other community services as well. Fire protection master planning can be a stimulus for other agencies—this has been demonstrated in practice. Perspective can better be maintained by involving many agencies in planning largely for one agency. Fire protection may be a worthwhile lead issue in developing a community-wide **planned** balance between competing agencies and other demands.

DATA

Collection

Planning is only as good as the data available. The old computer programming adage "GIGO"—Garbage In, Garbage Out—applies to planning as well. Experience has shown that data are often non-existent, or scattered, or confidential, or conflicting in format, or difficult to interpret, or costly, or all of the above.

Collection of useful data has proven to be the most time consuming and frustrating task in master planning. Identification of what data are needed (to avoid collecting too much or too little), and identification of data sources and means of access are extremely important. Establishment of means to update the data base for continuing maintenance of the Master Plan is important too. All who have undertaken planning thus far have solved their data problems in unique ways. Communities working with the National Fire Incident Reporting System (NFIRS) or other standardized data systems have a head-start in collecting much of the needed data. The key is think about what you need **first**.

Analysis

Skilled interpretation of the meaning of the data collected may be difficult because of inconsistencies, gaps, and subjective documentation.

No complete solution is possible, but good judgement and experience can often bridge areas of uncertainty. Also exact and/or totally comprehensive information is seldom really needed.

None of the validation communities has found its problems insurmountable, and their suggestions have resulted in a validation Guide which should work better for you. Your suggestions can, in turn, further improve the Guide for future users.

At this point, it might be well to review the prospects for successful fire protection planning in your community. On the next page you will find a Master Planning Feasibility Guide which reflects the experience of a number of communities, and which will help you assess some pertinent issues. Following the Guide you will find a Section on Resources and Costs.

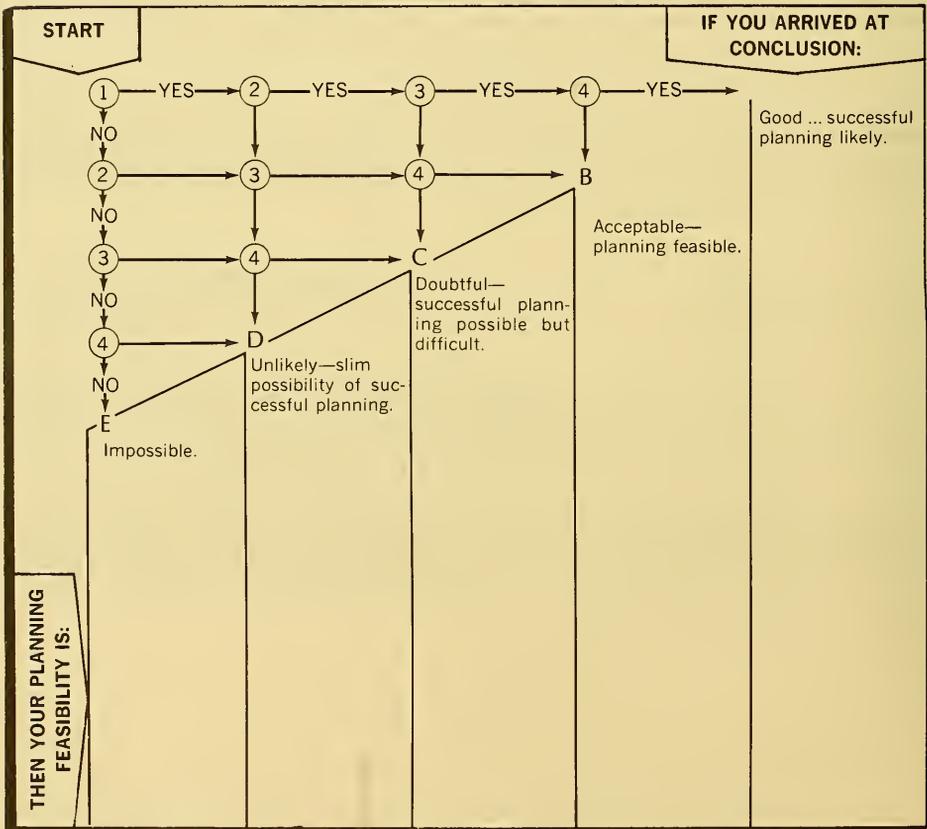
MASTER PLANNING FEASIBILITY GUIDE

How feasible is a master planning effort in your present situation? What are the barriers to such a planning effort? Use this guide to determine planning feasibility, and to highlight barriers to master planning.

Work through the guide by answering **"yes"** or **"no"** to the following questions:

1. Will local citizens back the implementation of a public system which may cost them money?
2. Is a fire protection problem evident?
3. Can local government budgets support a limited system?
4. Will local government support (in principle) the implementation of an organized fire protection system?

("No" answers are barriers to the planning effort.)



III. RESOURCES AND COSTS

We emphasize here again, issues touched upon earlier in this document.

Staffing

The quality and quantity of planning are very much proportional to the skills and the time brought to the effort by the people assigned to do the work. Continuity of key involvement is important, otherwise the process is a series of starts and stops, with each start repeating a learning process, wherein 12 months of effort may, in reality, be 1 month repeated 12 times. Ideally the Planning Team Leader would be assigned full time, on leave from an important job, and the team members would serve continuously for the period in which their expertise is required. To the degree this ideal is degraded, and it will be, the planning will, at least be prolonged, and, at some level of detachment, begin to suffer in quality as well. The people involved will know when this point has been reached. Department heads **can** find ways of committing their key people—if it is important enough to them to do so.

You will need a Planning Team Leader who is: knowledgeable of, and accepted in, the local government; has **demonstrated** planning and management skills (he doesn't have to be a professional planner); reasonable rank; and **wants to lead the program**. You will also need people who can represent the various agencies involved; cooperatively, at the decision level, with adequate time commitment, and with some enthusiasm for the program. Given these kinds of people, lower level workers will not present a resource problem.

Time

It is possible, perhaps even desirable, to approach FIRE PREVENTION AND CONTROL MASTER PLANNING as a repetitive process whereby the first effort is admittedly rapid and somewhat superficial, and each succeeding (annual) update refines the plan. In this way, even a fairly large city (approx. 100,000 population) may complete a first level plan in a budget year.

It is equally possible to approach the process with initial thoroughness, assuming one chance only to commit the resources, and merely correct the plan (annually) on the basis of new information. This latter approach may take several years (1-3), with larger cities requiring longer times.

Funds

Regardless of time commitments, some “out-of-pocket” planning costs are likely to crop-up. For example, travel in the local area, or perhaps to the state capital, will surely be required. Your city may have a wealth of data stored in its computer, which you can’t access without paying for the computer time, or the services of a programmer. You may even feel the need for assistance from professional planning agencies (sub-state regional groups) which you may have to pay for. Anticipation of such costs (if any) can save the program, not to mention the embarrassment experienced when elected officials react negatively to surprise requests for money. It may be wise to begin the planning process early in the political cycle in order to afford the longest period of support and continuity for the project. If the results of this examination of fire defense planning feasibility in your community were favorable, the next section will help you choose the correct set of planning documents, and to place an order.

IV. HOW TO GET STARTED

The Master Planning Level Guide on the next page may help you determine which of the two planning guides would be the most useful in your community—the **Advanced Guide** or the **Basic Guide**. It has been designed to reflect the experience of communities which have undertaken FIRE PREVENTION & CONTROL MASTER PLANNING using drafts of the NFPCA procedural Guides. You may also want to review some of the material enclosed with this document, particularly the sections of the **Basic** and **Advanced Guides**.

Remember, the **Basic Guide** will not be available until the Fall of 1977. If you've decided to order the **Advanced Guide**, please write to us (using the enclosed order form) at:

National Fire Prevention and Control Administration
P.O. Box 19518 (ATTN: NFSRO)
Washington, D. C. 20036

If you wish to discuss planning with someone before deciding, call us at 202/634-7722 or 634-7195.

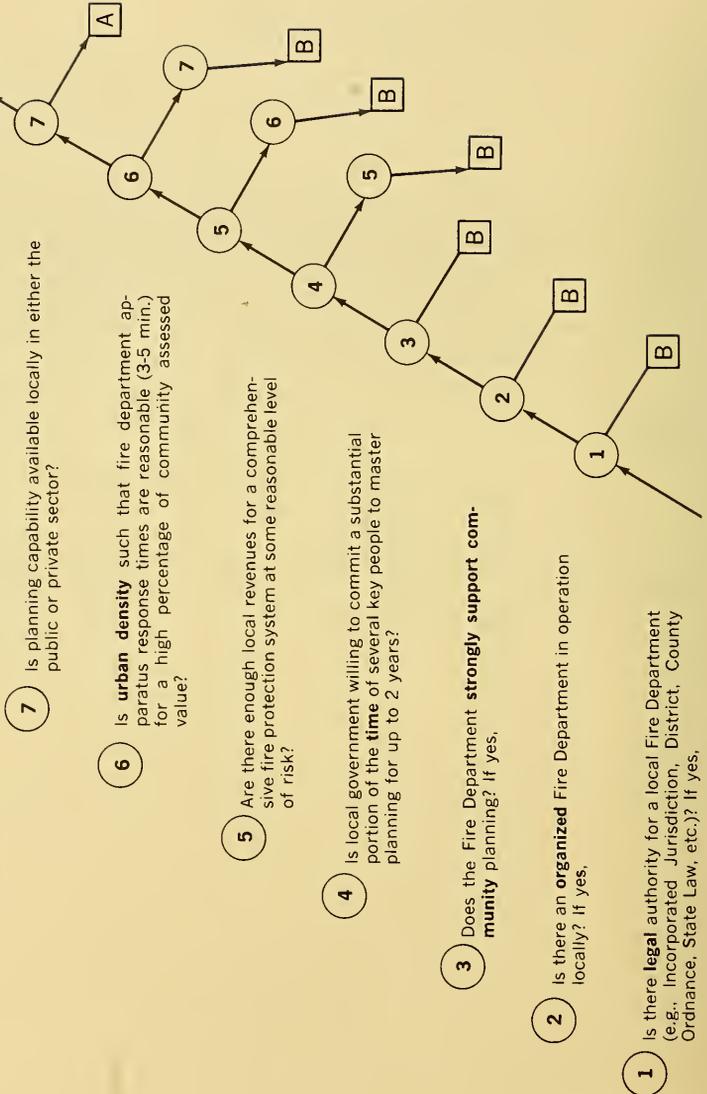
Best wishes and good fortune!

MASTER PLANNING LEVEL GUIDE

This chart will help you to select the level of planning sophistication most likely to be successful in your area.

A = Advanced Planning Guide
B = Basic Planning Guide

FACTOR



START HERE

