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PUBLIC CONSULTATION IN PUBLIC POLICY INFORMATION:

A STATE-OF-THE-ART REPORT

by

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CHAPTER I

INTRODUCTION

Purpose of the Study

The purpose of the National Waste Terminal Storage (NWTS) Program is to site, construct and operate nuclear waste repositories at several locations. Recent experience indicates that the public is aware of the problems of nuclear waste disposal, and correspondingly there is public concern about how and where to dispose of nuclear wastes. The selection of sites involves a wide range of considerations including geological, technical and environmental feasibility. In addition to these, it is important that societal acceptance of repository options also be taken into account in moving forward with the NWTS Program. Such an incorporation of social considerations and preferences correspondingly implies the need for public consultation in the site selection process.

In exploring the concept and state-of-the-art of public involvement in public policy decision, a number of important questions are relevant:

1. What are the basic objectives of public participation in policy formation and program decisions?

2. Who are the "publics" that should be involved and how can they be identified?

3. What information should be communicated between the agency and the publics?

4. What techniques are available to elicit public participation and involvement and what are their capabilities?

At the outset, it should be noted that the purpose of this paper in addressing these questions is not to design public participation procedures for the NWTS program. Rather, the above are questions that provide a broad framework for developing an understanding of citizen participation in public policy decisions, such as nuclear waste disposal. In this sense, the following discussion is to provide a context and guidance for approaching the problem of organizing and structuring public involvement in the NWTS program.

Rationale for Public Involvement

Need for public participation

Greater public awareness of proposed public policy decisions is making the life of the agency technical staffs and decision makers much more complicated. Forced from the relative comfort of decisions based on technical factors alone, agencies must also consider incorporating into their analyses the social preferences and values of various public interests. With broadening citizen interest in public decisions, government agencies cannot isolate themselves from the public.

In the past, planning or policy decisions were largely based on technical and economic feasibility. The limits of social, environmental, and political feasibility, were often ignored and left to be determined after an alternative was recommended on technical grounds. More often than not, these missing ingredients were the ultimate cause of public rejection of the proposed solution. This points up the need for refining the limits of social and political feasibility throughout the entire planning process. Public involvement in planning accomplishes this end by constant communication with individuals and organizations who in the end are the determining influences.

The purpose of citizen participation is to see that the decisions of government reflect the preferences of the people. The basic intention of citizen participation is to insure the responsiveness and accountability of government to the citizens. Secondary reasons for citizen participation are: it helps create better plans, it increases the likelihood of implementing the plan, and it generates support for the agency. In the final analysis, however, its contribution to the democratic process is the significant factor (Jordan, et al., 1976).

While these objectives of public participation are commendable, it should also be recognized that individuals and groups who participate may come to the process with certain predispositions and political objectives that influence their posture in the decisions process. For example, nuclear opponents are apt to oppose repository siting decisions. A citizen participation program cannot be assumed to begin in an atmosphere of neutrality on the part of participants. It should, however, be developed so as to give a balanced opportunity for participation to all concerned interests.

Definitions of public participation

Public (or citizen) participation (or involvement) are the general terms used to refer to inclusion of members of society in the government agency decisions which affect their lives. These

terms all seem to reflect the same general meaning in the context of the literature on the subject, and are used interchangeably in this report.

In exploring the concept of public participation, a number of definitions have been offered to describe its purpose and function in the public decision process. Several of these are presented in the following:

Participation can be viewed as an act or series of acts by which the "citizen" has the opportunity to influence the distribution of benefits or losses which may be visited upon him (or upon those people he represents) as a result of Federally supported activity (Mogulof, 1969).

Citizen participation is "defined" as interaction among citizens, elected and appointed officials, and the planning staff early enough to afford the public full opportunity to influence transportation decisions (Yukubousky, 1973).

The purpose of citizen participation . . . is not simply a means of clearing the way to project implementation but to achieve more effective decision-making in the public interest (Kinstlinger, et al., 1973).

Citizen participation is defined as an open process in which the rights of the community to be informed, to influence, (and to be informed, to influence) and to get a response from government are reflected and in which a representative cross section of affected citizens interact with appointed and elected officials on issues of transportation supply at all stages of planning and development (Highway Research Board, 1973).

Stated most simply, it (citizen participation) views the citizen as the ultimate voice in community decision-making. Citizens should share in decisions affecting their destinies. Anything less is a betrayal of our democratic tradition (Burke, 1968).

The general objective of a public participation program as part of a planning study is to provide an organized set of activities which serve to establish functional communication between the planner and the many "publics" so as to most efficiently transmit information which is pertinent to the particular stage of the planning process and which will elicit feedback from the publics on perceptions of needs and preferences for plans (Bishop, 1970).

. . . the processes by which citizens seek to exercise power, influence or control over decisions affecting their lives (Verba, 1967).

. . . participation applies to acts involving those who are not formally empowered to make decisions but who nonetheless intend to influence the behavior of those who are so empowered (Mittenthal and Spiegel, 1968).

Summarizing the essence of these several definitions, citizen participation is the continuous involvement of the affected members of a community at all stages of the planning process.

Recent Evolution of Public Participation

Federal legislation and federal agency regulations represent recent steps taken to promote broad public involvement in governmental decision making. The legislation and the implementing policies promulgated by the agencies themselves have fully legitimized the concept of an open decision process which incorporates a program of public involvement throughout.

Such legislation directed to promote broad public involvement in their planning studies include the National Environmental Policy Act of 1969, the Clean Air Amendments of 1970, the Federal Highway Act of 1970, the Federal Water Pollution Control Act Amendments of 1972, and the National Forest Management Act of 1976. These provide for public disclosure of information, public hearings, and soliciting feedback for management decisions.

Likewise, Executive Order 11514 (1970) issued in furtherance of NEPA directed that agencies "develop procedures to insure the fullest practicable provision of timely public information and understanding of Federal plans and programs with environmental impact to obtain the views of interested parties. These procedures shall include, whenever appropriate, provisions for public hearings, and shall provide the public with relevant information, including information on alternative courses of action."

Federal agencies that have issued regulations, guidelines and instructions to promote broad public involvement in their planning studies include the Army Corps of Engineers, the Federal Highway Administration and others. The net result is that the public's role in the planning and implementation functions of government resource and management agencies is well established and is indeed a fact of life so far as public decisions are concerned.

Relating this expanding role of public participation in planning to the question of how agency policy making and decision procedures respond to this requirement suggests that the following precept should apply:

> That public participation must necessarily be an integral part of the decision process, and not merely an illusion of involvement, the opportunity

> to speak without being heard, the receipt of token benefits or the enjoyment of stop-gap, once-every-summer palliative measures. (Cahn and Camper, 1971)

Nevertheless, government programs and projects have often excluded many citizens and interest groups from meaningful participation with the possible result being decisions which are not fully responsive to the needs and wishes of society. In this regard the Water Resources Council (1973) has stated in connection with the Principle and Standards for Water Resources Planning that:

> The success of water and related land resources planning depends on meaningful participation of interests concerned with each objective at each step in the planning process. The leaders for water and related land resource planning have the challenging responsibility of achieving such participation while managing effective planning studies and facilitating decision-making. This responsibility will require an aggressive program to involve all concerned interests in identifying an area's problems and needs, in planning alternative solutions, and in decisions as to action.

In response to the need for continually improving interaction between agency decision-makers and concerned public interests, the body of literature addressing public participation issues has been rapidly mounting in a number of areas. These include forestry (Reich, 1962; Folkman, 1973), transportation (Manheim, et al., 1972; Giel, et al., 1972; Yukubousky, 1973), land use (Scoville and Noad, 1973), city planning (Detroit City Planning Commission, 1968; Burke, 1968), and water resources (Bishop, 1970; Warner, 1971; Wolff, 1971; Allee, 1972). The literature from these various sources generally conclude that: (1) a fact of life for present day planning is that the public must be heard, and (2) the task of involving publics in planning and decision-making processes is not an easy one.

One difficulty is reconciling the ideal of public participation with the principles of rationality and efficiency that underlie the management of large-scale organizations. Furthermore, integrating participatory democracy with the complex needs of technical expertise in decision-making often proves to be a dilemma (Burke, 1968; Folkman, 1973). Another problem arises from the conflicting needs and demands of various publics and interest groups. Not only do economic, recreational, environmental and aesthetic interests frequently result in fundamental conflicts, but local needs must also be evaluated and balanced with long-range and larger geographic concerns (Reich, 1962). A number of planning agency experiences have demonstrated that increased efforts to involve publics often end in conflict and controversy rather than support for proposals.

Evaluators of these efforts have noted in some of these cases that the controversies that developed were largely attributable to the failure of the agencies to provide opportunity for public participation at an early enough stage in the planning process to permit their having significant input into the development of proposals (Borton, et al., 1970; Allee, 1970; Bultena, et al., 1973; Wolff, 1971; Warner, 1971). It should also be pointed out, however, that conflict avoidance need not necessarily be a goal of citizen participation, or a measure of program success. Indeed it is likely that such conflicts will arise and can be healthy if there are adequate decision mechanisms to resolve them.

Ironically, a problem frequently recognized by agencies as a deterrent to public participation in water resources planning is apparent apathy or disinterest on the part of publics unless controversy or conflict emerges (Warner, 1971; Bishop, 1970). There are at least two plausible reasons for this lack of response. First, publics have not been convinced that their participation will have any impact on decision-making (Warner, 1971; Seaver, 1968). Citizens do not as yet trust the agencies' call for public participation as anything more than a meaningless bureaucratic form. Some case experiences of agencies versus the public appear to give some validity to this opinion. A second reason for the lack of public response is that only a minority of the population has an interest in public affairs (Stars and Hughes, 1950; Spiegel, 1953), including the planning and management of public resources. As a result, few are initially receptive to information on the subject, resulting in a communication gap between agencies and the general public.

Without question, both the responsibility and the challenge of coordinating involvement of publics in public resources planning are considerable, but proponents stress that early and continuous involvement of publics in planning and decision-making activities makes possible the identification and resolution of potential conflicts and the development of mutually acceptable alternatives "before decision makers are entrenched into positions of opposition from which they cannot retreat," (Bishop, 1970; Warner, 1971). In the case of nuclear decisions, however, the situation may be more difficult because of polarization that has already taken place on nuclear power issues. Nevertheless, in some sense, public participation may be viewed as a "form of insurance on the investment involved" in developing resource management plans (Bradley, 1971).

Organization of the Paper

The objective of a "state-of-the-art" paper is to provide a survey of existing literature and current practice in a particular field of knowledge. The concept of public involvement in governmental administrative and policy decisions represents a major shift in agency planning and decision procedures in the 1970's. In

developing approaches for public participation, the underlying principles and concepts have been drawn from a number of disciplines. At the same time, techniques and methods have emerged from the many efforts to develop and implement public participation programs. To reflect these two aspects of the art of public participation, the paper first develops the basic principles and concepts upon which public involvement programs are based (Chapter 2), and then the specific methods and techniques are described (Chapter 3). The final section of the paper (Chapter 4) relates some public participation experiences, and lessons learned, and approaches to structuring public participation programs.

CHAPTER 2

BASIC PRINCIPLES AND CONCEPTS

Purposes and Objectives of Public Involvement

If public involvement in agency decision making is sought, there should be a stronger and more specific basis for doing so than simply "It's a good thing to do." Without a clear and well-defined set of objectives, attempts at public participation may result in useless waste of resources on counter-productive "public meetings" and contacts. The basic purpose of public involvement is to present information which will assist the publics in defining their social needs, and to provide them a structured opportunity to influence and shape the formulation of alternatives and express their preferences in choosing a course of action. The term publics is used to emphasize the fact that the public is heterogeneous in nature, composed of a diversity of citizens and interest groups as well as many public agencies and government decision levels.

As a basis for development and organization of public involvement in planning, a set of specific program objectives is required. Planning in context of this paper is an ongoing process for reaching decisions about major public facilities with long lives, such as highways, mass transit, urban redevelopments, water projects, and waste disposal sites. The following objectives and specific applications are relevant to public participation in planning processes:

1. Information and education

a. Educate citizenry on the program purpose, the decision process, and how they can participate.

b. Disseminate information on study progress and findings.

c. Disclose data on social and environmental impacts.

A flow of information from the planner to the public throughout the study is essential if there is to be an opportunity for constructive participation. A well planned and executed program for providing the public with information will help to insure this.

2. Liaison with other federal, state, and local agencies

The policies and decisions of the agency should be coordinated with the functions of other federal, state, and local entities.

An integration of concurrent planning requires multi-agency coordination throughout a public involvement program. Public will also bring in other agencies as support.

3. Legitimization of the agency's role and building public trust

To a degree, the satisfaction of the public with any policy decision depends on the public's satisfaction with the role and performance of the responsible agency. Hence, a prime objective of any public involvement program should be the development of public trust in the agency and its decision making process. This implies a sensitivity to local needs and suggests that a particular individual should be designated as a focal point of contact for citizens and interest groups on every study.

4. Identification of problems, needs, and important values

a. Identify "societal values" important to publics in the area.

b. Define problems and needs in relation to project under study.

Impacts on areas of high social concern may represent key factors in policy decisions. These may include attitudes toward environmental aspects, economic development, community disruption, and so forth.

5. Idea generation and problem solving

a. Surface alternatives which have not been considered.

b. Brainstorm ideas for mitigating measures for adverse social and environmental effects.

6. Reaction and feedback on proposals

a. Assess impacts as perceived by publics on proposed actions.

b. Probe the public's perception of proposed actions in relation to community values.

The presentation and discussion of proposed alternatives during the planning process allows for reaction and feedback to be used in modifying proposals and dropping or adding alternatives before reaching a final decision point.

7. Evaluation of alternatives

a. Provide "value" information about the significance of the various consequences of proposed policies.

b. React to value tradeoffs in selecting among alternatives.

Generally, the public's values for various alternatives can only be expressed in response to fairly specific proposals. Public involvement should provide the opportunity for value information to flow from public to planner in order to evaluate preferences for alternatives.

8. Conflict resolution and consensus

a. Mediate differences between interests.

b. Develop mechanisms for compensation.

c. Avoid unnecessary and costly litigation.

d. Work toward consensus on preferred action.

Interaction of various public groups and citizens through participation in the planning process may serve as a means to resolve conflicts, achieve compromise, and create a broader consensus as to the planned course of action to be followed. The result, hopefully, is decisions which better satisfy the needs and preferences of a broader base of public interests.

9. Develop support for implementation of decisions

Participation in the planning and decision making process creates a commitment to the objectives, plans and decisions that result. Conversely, individuals and groups resist decisions which are imposed upon them. There is more likely to be support for a decision and assistance in carrying it out if citizens, community groups, and other agencies share in the process. Working through problems and providing input to decisions are factors that tend to coalesce support for implementation.

If the desired objectives for each public participation activity are clearly specified, there is a much better chance for productive public involvement. Without objectives, involvement programs tend to focus on the mechanics of participation techniques with no clear picture of what is to be accomplished.

Identification of Publics

The publics

Perhaps the most elusive aspect of "public participation" is the publics themselves. The public is diffuse, but at the same time highly segmented into interest groups, geographic communities, and individuals. Who are the "publics" that should be involved?

and, How can the planner pinpoint them so he can direct some of his efforts toward them? These questions are difficult to answer in view of the continual flux of the planning process. One thing is sure--the "wait for the public to come to us" approach will not produce effective participation. Many groups either affected by the problem or the solution may not become involved until late in the game when it is much more difficult to modify proposals. The agency needs to engage in an aggressive program to draw out public interests relevant to the impact assessment problems. To do this requires a framework for identifying publics that goes well beyond environmentalist groups. Some considerations for developing such a framework are shown in Figure 1, which indicates an identification of participants according to issues and interests and their relation to the study.

The matrix illustrates a cross-categorization along two important lines. The first breaks out the groups that have organized around common interests and issues presently existing within the social and political structure. The second identifies the "publics" relation to the planning study, whether affected by the problem and/or proposed solutions, and in what way. Categorizing publics within this schema is paramount to understanding and recognizing the roles and interests that various groups and individuals will play in a planning study. Circular No. 1165-2-100 from the Office of the Chief of Engineers and dated May 28, 1971 states the following:

> Water resources development impacts broadly on people with different philosophies and points of view and on plans, programs and aspirations of other agencies, groups, organizations and individuals. Public participation must reflect this broad impact. Every effort must be made to identify and bring into the process influential groups and independent individuals (those who do or can significantly influence decisions as well as those who can actually make them). Local, regional and national aspects should be considered. The working list of independent individuals, groups and organizations should be continuously reviewed and updated as studies progress.

This advice is of prime importance. Since public participation is essentially a social communication process, without the identification of the public involved in this process it cannot operate effectively.

Identification of publics is an effort to determine who will be communicating in the planning study. This entails not only an inventory of various agencies, organizations, individuals, and influentials, but also some picture of the institutional structure in the study area. Publics can include governmental officials,

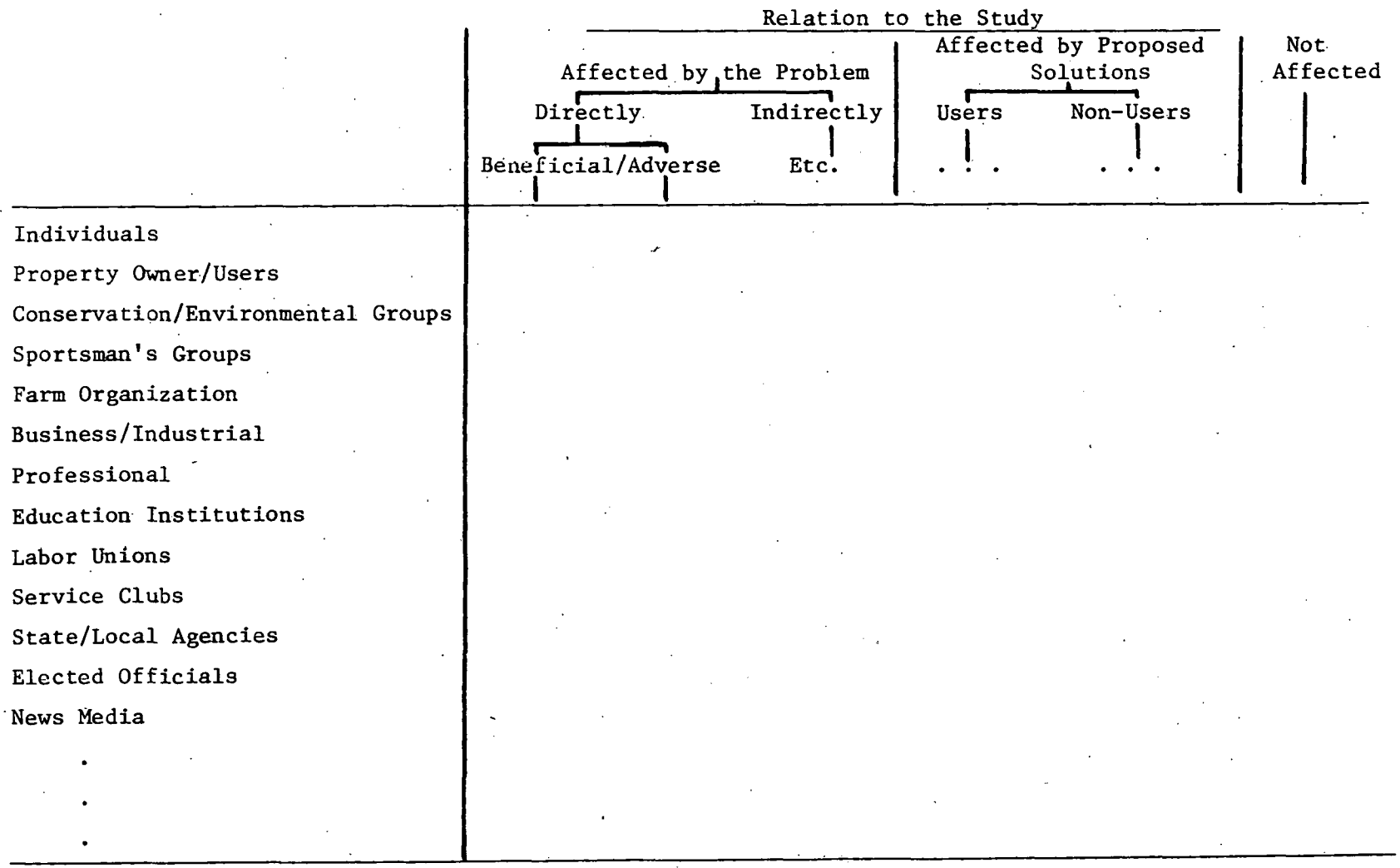

Figure 1. Schema for identifying publics

both elected and non-elected. Non-elected officials will include those working within other operating agencies. Organized groups existing within the region should also be inventoried. Those groups with special interests related to the existing problem and potential solutions will be fairly obvious. However, groups, clubs, and organizations including lodges, civic groups, educational groups, religious groups or organizations, neighborhood groups, professional groups, unions, and any other groups with which persons in the area may become associated should all be considered.

Interest groups which might be more inclined to participate in waste repository siting decisions include property owners in the immediate area, environmental groups, special interests supporting or opposing nuclear power, and local businessmen and labor leaders. Since this is a volatile issue, the entire region can easily become involved as a result of activist groups and media coverage.

Of the publics initially identified by the agency, some will follow through, others will drop out, and some previously unidentified interests will enter the arena of participation. Indeed, controversies in resource planning have often occurred as a result of new participants entering at the end of the process in opposition to proposed actions. Many of these difficulties might be averted if the agency had a clairvoyant on its staff. Personnel with this qualification being hard to come by, three other approaches can be taken: (1) actively seek out and engage at the outset of a study a broad and representative range of public interests, (2) keep as much flexibility for as long in the process as possible insofar as selecting a plan or recommending action, and (3) document the process and the public inputs relating to alternatives and impacts studied.

Techniques for identification of publics

There are a number of techniques available for identifying publics with whom communication should be established in a planning study. The techniques which can be most satisfactorily employed by the agency will of course depend on time, staff, and budget limitations, as well as the particular nature of the study itself. Basic approaches to identification, as noted by Willeke (1974), can be classified generally into three groups: (1) self identification, with or without staff help, (2) staff identification, and (3) third party identification. It is likely, and probably desirable, for the planner to use methods from three groups to adequately identify publics in a planning study. The following abstracts from Willeke (1974) give the essentials of these identification techniques.

Self identification. Citizens may identify themselves by corresponding with the planning agency or a related agency and by appearing at public meetings dealing with water resources planning.

The usefulness of such means can be enhanced with little effort and cost. At public meetings, identification cards with space for supplying information useful in categorizing and correctly corresponding with the person or group can be used. In newsletters and general circulation newspapers, advertisements may be taken with the same kind of information requested. A toll-free telephone number may be established for those who would prefer to communicate by telephone. Radio and television announcements may be used to publicize the willingness and desire on the part of the planner to have people identify themselves.

Third party identification. Third party identification is much like self identification except that it is done by someone else. One purpose of citizen committees may be to identify those groups and individuals who should be involved in planning or who are affected by proposed plan alternatives.

Staff identification. While in self identification and third party identification the planner's role is primarily that of a facilitator, in staff identification nearly all the work involved in identifying publics is done by the agency.

1. Analysis of associations. Analysis of associations is a process of consulting available lists of organized groups and picking out those who appear to the planner to have possible interest in being involved. Having identified a tentative list of interested groups, the groups are contacted and queried about their interest. Lists of associations are usually available in any community, though the lists are almost always incomplete. The Yellow Pages of the telephone directory, the Chamber of Commerce, newspaper lists, city and county directories are all ready sources. Going beyond these free lists, available to anyone, there are lists available on a national and state basis, sorted by ZIP code, and categorized by type. The cost is quite low, about $25 per thousand addresses, with a 10 percent surcharge for State selections. Sociology and political science departments at local colleges and universities often maintain lists of organizations in a particular area.

2. Geographic analysis. Geographic analysis involves study of maps and photographs to determine areas that should be singled out for special attention in the planning process. Flood plain dwellers, those downstream from a dam or sewage treatment plant, those displaced by a reservoir, etc., are obvious groups to be identified from map studies.

3. Demographic analysis. Demographic analysis may be used in two ways, alone and in combination with geographic analysis. When it is used alone, a public is defined as that group of persons having a given set of demographic characteristics. When used in combination with geographic analysis, the demographic analysis is

tied in with territories. Thus, in the latter case, one might look for those territories that had unusually high percentages of elderly or non-white or middle income or any other characteristics of interest. When demographic analysis is used alone, its value is primarily as a tool to be used in selecting one-way mass media communication to reach a particular audience. The more useful application of demographic analysis is in combination with geographic analysis. The U.S. Census is the primary source of information on demographic traits. It may be supplemented with special surveys or field work.

4. Historical analysis. Most projects and programs have a history. The history is documented by reports, correspondence files, and newspaper accounts. Reference to such data can provide a means of discerning what the various publics have done in the past, relative to policy issues. Historical analysis is made somewhat easier when clipping files are available. Besides the agency itself, newspapers and libraries sometimes keep such files on particular projects.

5. Field interviews. The field interview, particularly snowball methods, has been a much-discussed method of identifying publics. In the snowball methods (really a special case of third party identification) the planner begins his work by interviewing a group of prominent people and asking them to identify persons likely to be interested in policy issue. The process is repeated until no more new names are received. The snowball method will identify those persons who have in the past been influential on an issue, but will not identify less well-known persons who have a legitimate interest in involvement. The snowball methods have become so closely identified with power structure studies, and there have been so many power structure studies done in U.S. communities that the method has limited value at the present time.

6. Affected publics. In the latter stages of planning, i.e., at some time after alternatives have been formulated, the planner can identify those groups of people who in some way are likely to be affected by the proposed project or program. This is one of the best ways of rounding out the identification process. Examples of groups that could be identified in this way include those who would gain or lose economically, those physically in the path of some project element, communities whose pattern of activity would have to be changed in some way, etc.

Planning and Policy Formation Models

Just as with the technical analysis and data, if decision makers are to successfully deal with situations involving social aspects, they need models which describe processes of social policy formation and decisions. Such models should describe the agency-public interaction processes and the range of choices open

to both groups in deciding the means by which to approach decision problems. This should include the types of decisions that are made, the process by which they are made, and the relationships of the participants in the process. With such understanding, the agency can operate more effectively in its role of meeting the public interest. To do this, it must focus not just on the end product or program decision, but on how to structure the process in order to produce a product or decision that achieves a more widely accepted solution to the wants and needs of society. This section presents a number of theoretical descriptions or models of public planning and decision making processes. While none of them are fully representative of reality, they do provide a number of insights and perspectives which are useful in understanding the policy formation process.

Linear sequential model (the Rational Ideal)

The linear sequential view of planning and decision processes is basically the scientific, engineering and technical approach to problem solving. It generally assumes that there exists a set of analytical tools which, when properly applied to the problem, will yield the appropriate solution. This rational comprehensive method of problem analysis follows the systems approach:

1. Define the problem
2. State the objectives
3. Formulate alternatives
4. Analyze effects
5. Select the best alternative

This procedure represents the rational ideal in problem solving and is perfectly suited for the technical decision making. However, when the social and environmental values and preferences for effects of alternative courses of action must be taken into account in the decision, the rational ideal must give way to other socio-political decision processes which can express these values.

Incrementalism

The concept of the incremental approach in public policy decisions was formulated by Lindbloom (1959) in contrast to the rational comprehensive method. He describes it as a method of "successive limited comparisons" characterized by a branching approach of continually building out from the current situation. Therefore, any policy decisions represent only incremental small changes from the status quo. However, many decisions on agency programs and public works investments involve rather extensive and innovative changes from the present situation, especially when viewed from the level of local impacts. In this type of decision environment the incremental approach does little to help in making large leaps to a new state of affairs.

Planned Change

Viewing public policy formation as a process bringing about social change is a model proposed by Lippitt (1958), and the agency personnel can be identified as Lippitt's "Change agent" and citizen and public groups as the "client system." The interaction of agent and client during the change process is described by five phases:

Need for a change. Development of a process of planned change typically begins with problem awareness. This must then be translated into a need and desire for change. In developing the need for change, an important consideration is recognition by the agent and the client of the existence of a problem which demands a study of feasible solutions.

Establishment of change relationship. A workable change relationship between change agent and client system is essential to the success of the planning and decision process. The establishment of the proper working relationship between the agency and affected interests in the community is often neglected.

Establishing a successful change relationship requires a legitimization of the agent role and the planning process. This entails a full understanding between the agency and the public as to the procedures for the study, the institutional arrangements and responsibilities, and the possible ultimate outcomes. All parties need to recognize that the purpose and intent of the study is to develop feasible alternatives and that a decision will be made.

Working toward change. The phase of working toward change involves three tasks that are essential to formulating decision alternatives.

1. Diagnosis of the system. A diagnosis provides information on the perception of the concerned publics about the problem under study.

2. Setting goals. This phase deals with transforming diagnostic insights into definite sets of goals and relating them to the potential changes that would be generated by alternatives.

3. Formulating alternatives. Alternatives for change are a transformation of intentions into actual change efforts. The objective of this phase is to develop a set of technically feasible alternatives. These alternatives must be understood to represent the ultimate physical realization of the change process. However, if any one of them is to be implemented, it must still gain sufficient acceptance and support of affected publics.

Stabilization of change. Looking at change in the behavioral sense, unless attributes are fixed by becoming institutionalized,

they may retrogress to their previous state. In public decisions, the process of change becomes stabilized through the period of public evaluation of alternatives. Choosing among alternatives requires, in part, direct public confrontation of the agency, and local government officials, interest and pressure groups, and individual citizens. Stabilization requires a period of adjustment to the decision by the affected parties and may not be complete until after the programs, plans, and/or projects have been implemented.

Achieving a terminal relationship. Adjustments and changes are often needed in programs and projects after they are operational. Thus, an active relationship between the client and change agent should extend beyond project completion in order to correct, where possible, any undesirable short and long term effects of the project which were not foreseen.

Iterative Open Planning Process (IOPP)

The iterative open planning process of Ortolano (1974, 1975) is based on the realization that the four traditional planning decision tasks--problem identification, formulation of alternatives, impact assessment and evaluation--are performed concurrently rather than sequentially. The process is flexible and calls for continued interaction between the agency and a wide range of interested publics and other government entities.

Figure 2 serves to emphasize one of the fundamental characteristics of the IOPP, namely the explicit recognition of the interdependencies among all four planning tasks. At any point in the process, information from each of the four planning tasks is integrated with information from other tasks. For example, as impacts are assessed, they may reveal new concerns of affected publics. Thus the information from the impact assessment task "feeds back" to the problem identification task.

Figure 2 also represents the nature of the relationship between planners and publics. The IOPP calls for open and continued interaction with publics, wherein public "input" is used to guide other study activities, and publics are made aware of how their contributions to planning have been used. The IOPP recognizes the public involvement as providing a key source of evaluative factors and an important part of the process of developing priorities among such factors.

It is worth emphasizing that the IOPP is, by definition, an iterative process. All four planning tasks are carried out concurrently and are repeated as the process unfolds. These iterations allow for the efficient use of planning resources and the continual clarification of study priorities. The IOPP recognizes the impossibility of generating all of the information that might conceivably be useful in decision making, and it uses new information from planners and publics to influence study directions and priorities as the planning is carried out.

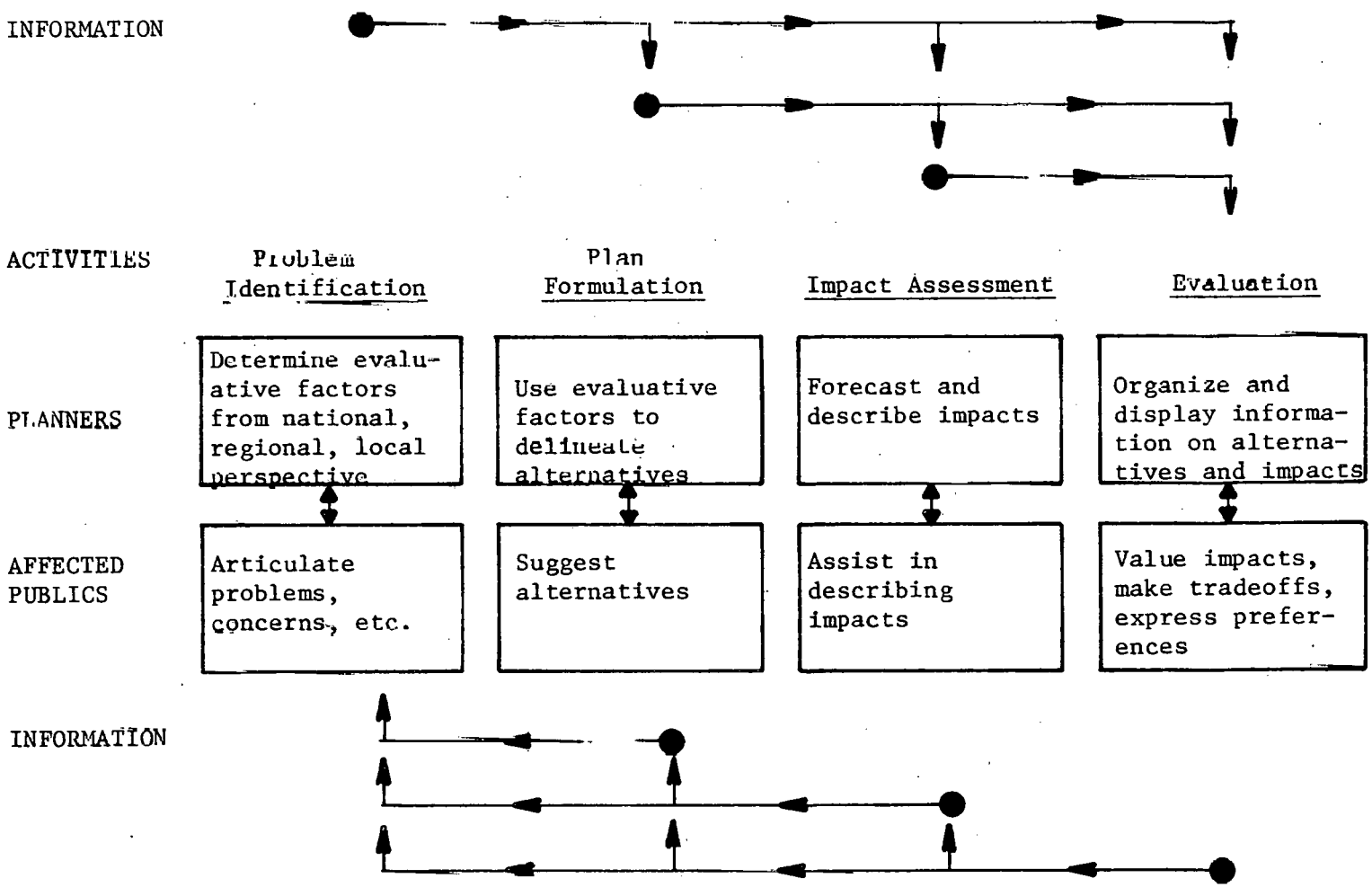

Figure 2. Information flow during any stage of the IOPP.

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PUBLIC CONSULTATION IN PUBLIC POLICY ADMINISTRATION:

A STATE-OF-THE-ART REPORT

by

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Mac McKee
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Policy formulation space

The process of public agency decision making is recognized by Bishop (1969, 1970) as transactions that are taking place in a three-dimensional arena. These dimensions are defined as:

1. The Hierarchical Structure of Decisions. The Hierarchical decision structure stratifies the types of decision by levels of content from those of broad policy down to detailed design.

2. The Sequential Structure of Planning Activities. The sequential planning structure charts the planning activities and decisions through the planning period.

3. The Institutional Structure--The Planning Participants. The institutional structure identifies the interest groups and decision makers interacting at any point in the process.

A visualization of the interaction of these three components is shown in Figure 3. The structural relations are intended to show only that planning is also a dynamic process over time, passing (and perhaps recycling) through a number of sequential phases involving many hierarchically related decisions made through the institutional interaction of various groups and individuals.

Conflict resolution--bargaining and negotiation

Working from Lindblom's (1955) definition of bargaining as the method or strategem by which controls among groups are made multilateral, a natural situation for bargaining exists whenever two or more interests can establish a claim, on any grounds, for influencing or participating in a decision process, and they have some conflicting interests as to the nature of the agreement reached. In order for a bargaining situation to exist, two things are required.

1. That there is the opportunity for multilateral control among the participants in the decision process.

2. That these controls can be made effective through the methods, strategems, and tactics recognized as part of a bargaining process.

In many bargaining situations, it is possible to identify offensive and defensive sides. The offensive side, distinguished by a desire to change the status quo, usually starts out by making a prominent demand for change. The demands are then often combined with a clear threat, supported by elaborate justification, and

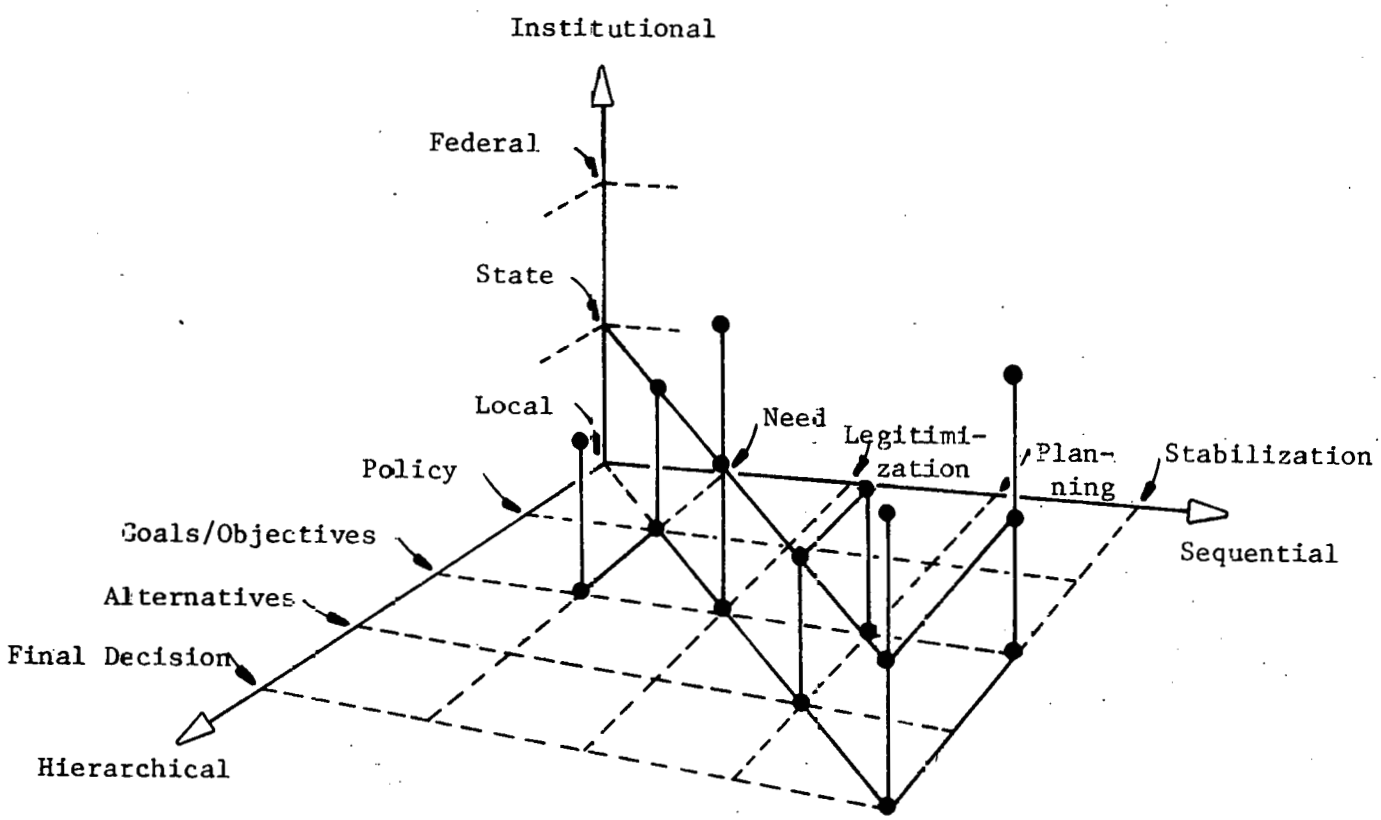


Figure 3. A Three-Dimensional Planning Space

usually maintained through a large part of the decision process if not to the end. The specific aim of bargaining tactics is to make effective the bargainer's power base by use of whatever means available so as to extend his control over other participants in order to alter their dispositions favorably. Some discussions of bargaining suggest the following ideas for classification of bargaining tactics:

Altering the situation. A number of specific tactics can fit under this classification. The use of threats, and making them credible, is a much used way of altering the opponent's perception of the situation. For example, the threat of court action with the

possibility of time delays and costly litigation is frequently used by project opponents. Another tactic effectively employed to alter the situation is to tie certain "rewards or punishments" as conditions to supporting a particular alternative. This may be accomplished by offering certain additional benefits or rewards as strings attached to a particular alternative in order to garner support from other pressure groups who value those rewards.

Information on proposals. Supplying information, truth or fiction, actual or faked, is another type of tactical maneuver in altering bargainers' dispositions.

Appeals to authority. Another tactic exhibited in the bargaining process is appeal to higher authorities, i.e., appeals to groups or individuals in the power structure who could exert an influence such that they must be obeyed or that the cost of opposing them is very high.

Negotiation mores--a concession for a concession. A final example of a class bargaining tactics is appealing to negotiation mores and to the opponents' sense of justice. If one participant alters his disposition favorably toward his opponent, then the opponent should reciprocate by favorably altering his disposition also.

Communication Theory and Concepts

Communication, as the basic component of public participation, must be continuous throughout the decision process. Communication, is the essential information exchange and evaluation function that drives the planning process towards decisions. When working in a communications role, the agency generally operates in two different modes: one requires professional expertise in collecting and using information to make professional evaluations and judgments; the other serves to organize and process information and data for publics to analyze, evaluate, and provide feedback. Communication between agency and public then is the heart of citizen participation in the planning process.

The importance of the communications role of government agencies is underscored in a study by Bohlen and Beal (1957). They state that:

> In all stages (of the adoption process) the complexity of the idea is related to the choice of sources (of information). The more complex the idea, the greater is the tendency (for publics) to rely on government agencies.

This statement seems to reinforce the importance of agencies developing and maintaining a highly efficient information program

to communicate with the public if the Agency's mission is to be accomplished. Offsetting this is the increasing tendency of citizens to mistrust government agency motives and information.

Elements of communication

A framework for the analysis of communications, adapted from Laswell's (1948) succinct description, is presented in Figure 4. Some of the considerations in using this description as a basis for analysis of communications, requirements, and effectiveness in planning are presented in Table 1. Types of analyses noted are those commonly used in communications investigations. Relating Laswell's description of communication more specifically to policy making suggests the following three elements:

1. Identification of Publics: The Who and to Whom
2. Communication Processes: The How
3. Information and Content: The What and the Effects

The "Who and Whom" aspect largely involves the problem of identification of publics discussed in a previous section. The "What, involving information content and flow, will be treated in a later section. That leaves the "how" for now.

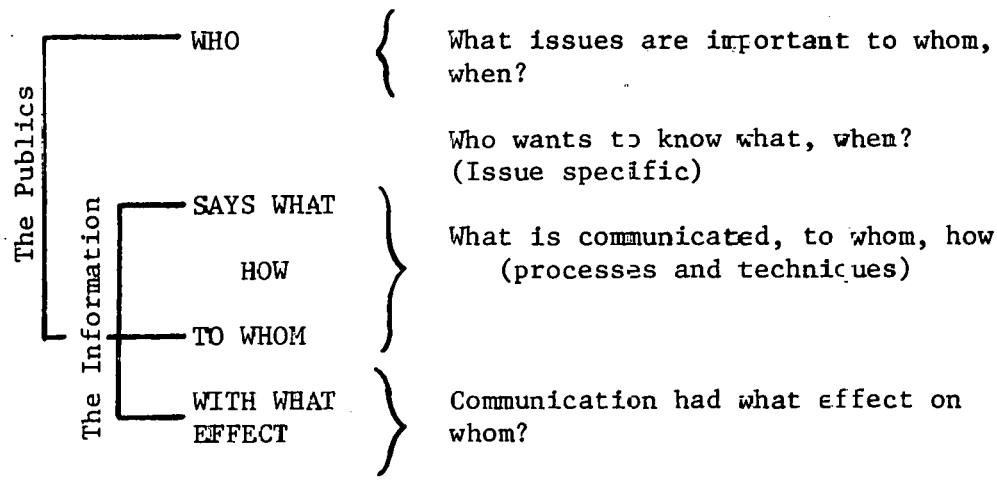


Figure 4. A Description of Communications

Table 1. Analysis of Communications Functions

Model Function	Type of Analysis	Components
WHO	Control Participation	Identification of parties involved at phases of planning process.
SAYS WHAT	Message content	1. Issue analysis 2. Message analysis relevant to issues (a) information, (b) persuasion, (c) requests inquiries, (d) attacks or accusations, (e) demands.
IN WHICH CHANNEL	Media	1. Encoding of message (Semantic Noise) a. Written--Technical vs. Layman's language b. Graphical & pictorial forms c. Verbal forms d. Mass media 2. Transmitting Device (Mechanical Noise) a. Written forms (reports, letters, press) b. Mass media (TV, newspapers) c. Group contact forms d. Individual contact forms
TO WHOM	Audience	1. Frame reference 2. Social context
WITH WHAT EFFECT	Effect	1. Interpretive response a. Promote understanding? b. Disrupt understanding? 2. Communication Goal: Produce rational decisions. Hence, did communication tend to: a. Reduce conflict? b. Produce conflict?

Communications models

The "how" of public involvement in the planning process is essentially the application of appropriate communications methods and techniques to engage the participation of the target groups. This section describes the general framework for communications, while the detailed discussion of methods and techniques will be reserved for Chapter 3. The purpose of this general discussion is to provide some insight into the functional elements of communication so that specific methods and techniques can be viewed within a systematic context.

Interpersonal communication. The basic components of communication may be represented by the simple communications model (abstracted from Shannon, 1948; Schram, 1971; Berlo, 1960; and Willeke, 1974b, and an excellent review of communications found in Kahle and Lee, 1974) shown in Figure 5.

The mechanism by which communication actually takes place is determined by the participants through their selection of message, i.e., the information content of communication, and the format, method, and techniques by which the message will be "transmitted." Shannon and Weaver (1949), using analogy to engineering and electronics,

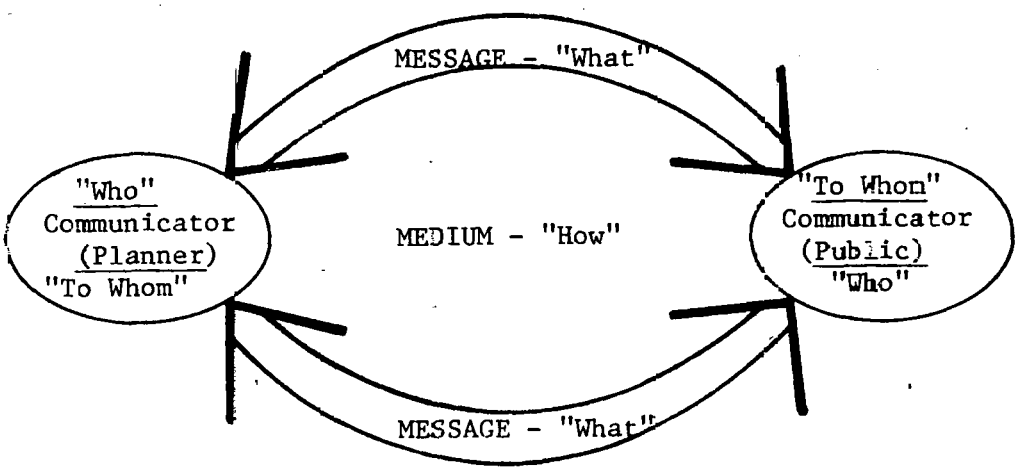


Figure 5. Elements of Communication

pointed out the function of the sender in encoding information to be communicated and the function of the receiver in decoding it. Berlo's (1960) Source-Message-Channel-Receiver (SMCR) model made explicit the operation of a channel in message transmission. From these models of the basic communications process, more elaborate descriptions of processes involving multiple senders, receivers, channels, and series of messages have been devised. In any case, true communication requires not only the dissemination of information, from planner to public, but must also provide the opportunity to complete the loop through feedback, from public to planner.

Diffusion and collection

The recognition of multiple media or channels also suggests the possibility of multiple access to target groups or publics through the communications system. The operational description of this is the diffusion process (Rogers, 1971) illustrated in Figure 6. In this process, the agency sends a message via different media to various target groups, who in turn transmit the message to still other groups or individuals. The net result enables the agency to reach a broader cross-section of the public in terms of the total impact than just the initial target group.

The diagram brings out three important points. First, communication is not just a single, but a multi-step process where target groups become senders in transferring a message to others through media which they can access. Corollary to this is the fact that the sender cannot completely control the communication process since intermediaries are present to influence or interrupt the process. Characterizing agency personnel as senders underscores the difficulty of agencies to control the communication and participation processes, and also explains the inability to make good predictions about the outcomes of socio-political decision processes. These points suggest the following needs. First, flexibility and capability to make continual course corrections in the program must be maintained. Second a target public can be contacted through several media, thus giving opportunity for reinforcing and clarifying the message. Third, if some media are inoperative due to frame of reference or noise problems the diffusion process can still get the message to target groups through other media types. The collection process can be seen as diffusion in reverse. It serves to obtain feedback to complete a communication link or to collect information. The messages may or may not return via the same media channels.

Information flow

Information, the "what with what effect," is essentially the "glue" that sticks activities in the planning process together. Information underlies the policy making process in two important ways: Firstly, each planning activity (discussed in Chapter 2) has

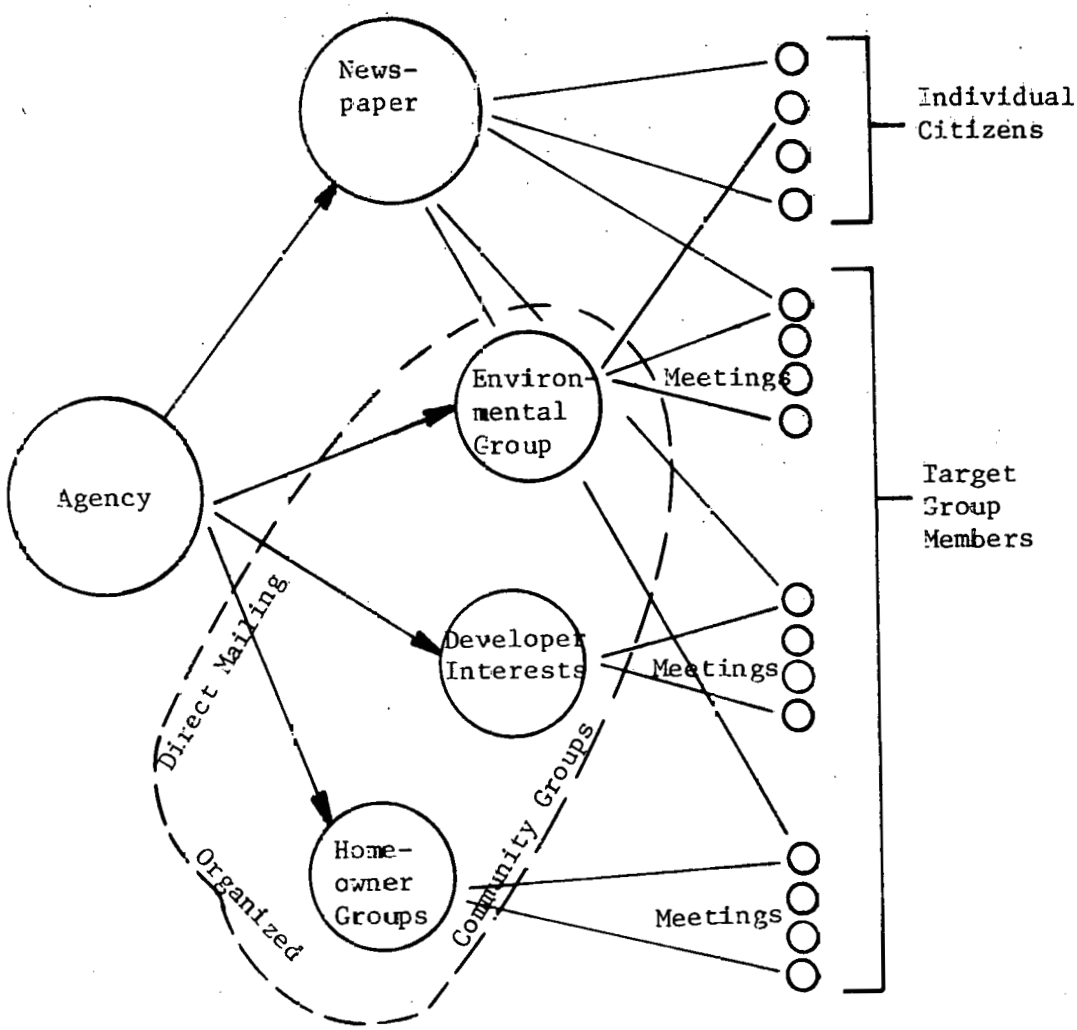


Figure 6. Example of a Diffusion Process

associated with it information and data that determine the degree of refinement of the task; and secondly, the flow of information between tasks is the basis for reformulating the output of a task in iterating the planning process. A key point is that the process must generate two kinds of information--technical and societal. At the same time the technical planning is being accomplished, value information on alternatives must also be generated, refined, and ordered by the policy decision-making structure in the planning process. Caulfield (1974) points out that when multiple objectives are involved in a decision, social values are being allocated by the political process. Thus social policy decisions inherently require public input.

In interfacing the technical output of the planning staff with the value expressions of the interested publics, the pivotal individual in the planning process is the person designated as the "Lead Planner" in Figure 7. According to Caulfield (1974), his objective is to lead the planning exercise in such a way, consistent with public policy impacting him from superior decision makers, that he will be able, through the necessary number of interactions in the plan formulation process, to obtain a viable coalition of public support for one of the alternative plans presented to the interested publics.

The diagram of information flow in the planning process (Bishop, et al., 1977) shown in Figure 8, relates in a general way how information and data for deriving public interest decisions on activities, programs, and projects, is generated from the planning process activities. Public input in the form of value information, the top row of boxes in the flow chart, consists of expressions of individual and societal wants, needs, and desires related to aspirations for the future (objectives) and preferences for evaluating resource management options. Correspondingly, planners input technical information, the bottom row, which relates resource availability and capability, alternative actions, and assessment of impacts in order to determine a viable (noninferior or non-dominated in the Pareto optimal sense) set of alternatives considering economic, social, and environmental objectives. The interaction of value information and technical information is brought into final focus through evaluation of the set of alternatives to select a preferred course of action.

Factors affecting communication

It should also be noted that there are a number of possible disturbances in communications which can hamper effectiveness. These factors may be conveniently considered in two groups:

Frame of reference. The idea of frame of reference is particularly important to the planner in developing a communication program for a study. As Figure 9 illustrates, parties A and B interacting in a communications setting have different frames of reference or experience that they bring to the planning process. The area M represents a commonality in A's and B's frames of reference in which they can communicate effectively with one another. The task of the planner then is to familiarize himself with the background and reference frame of various participants, then structure his message and utilize media which exploit the commonalities of the participant's experience and roles.

Noise. Types of noise in communication are classified into two groups: semantic noise, associated with putting information into written, oral, or graphic message forms; and mechanical noise, associated with the medium for transmission, such as mass media,

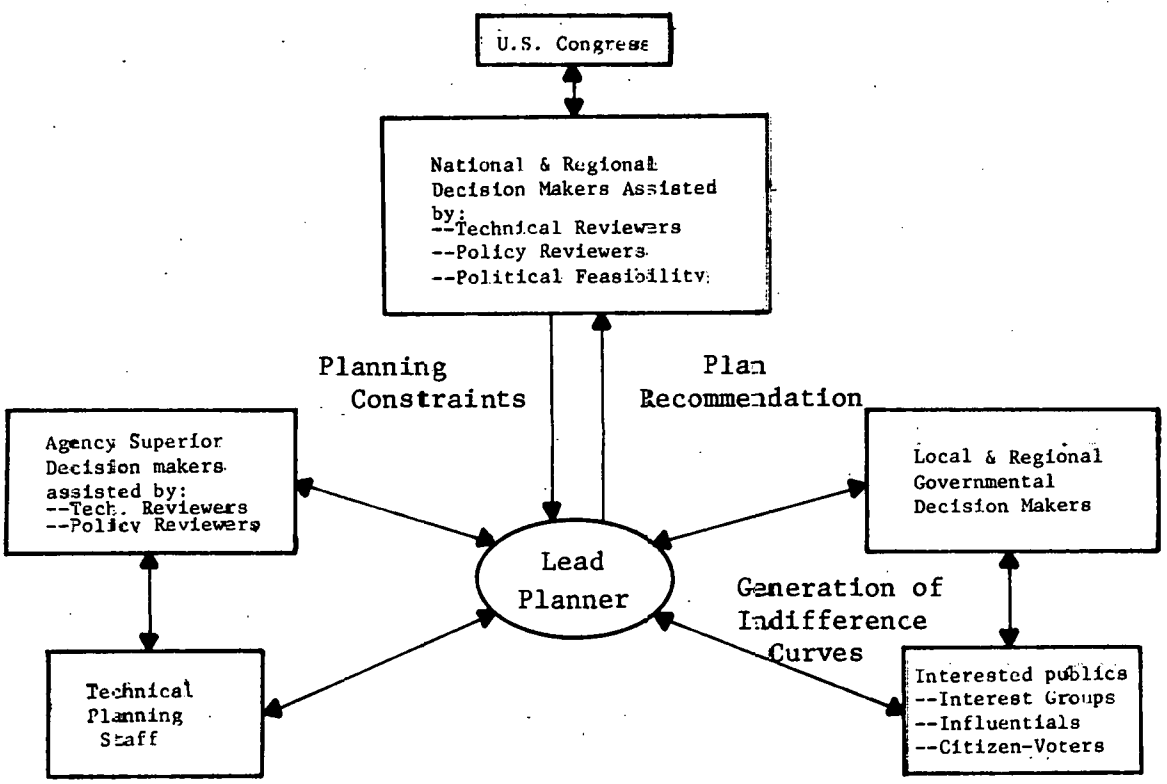


Figure 7. Decision Maker Interaction in Planning Process

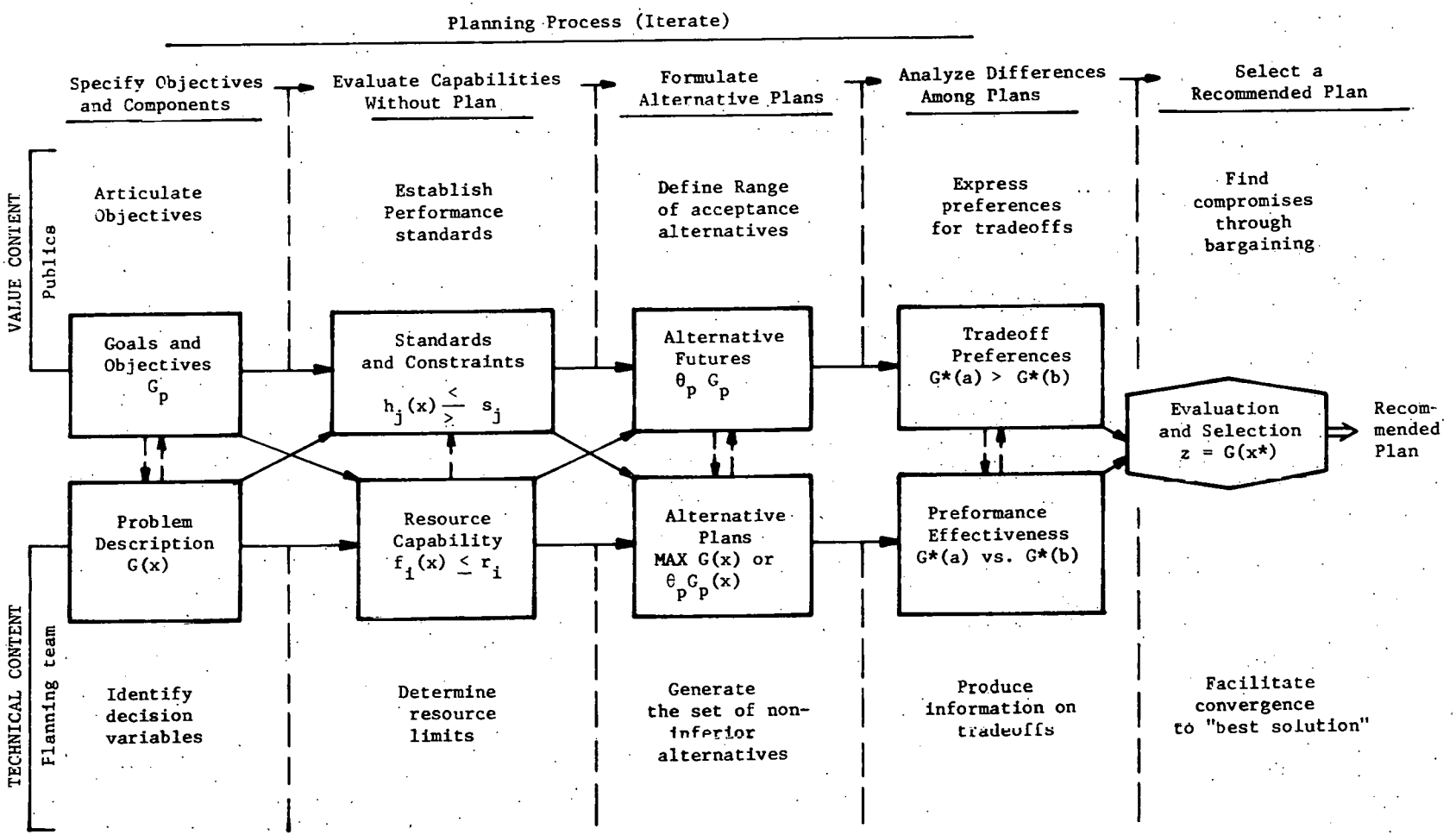


Figure 8. Information Flow in Planning

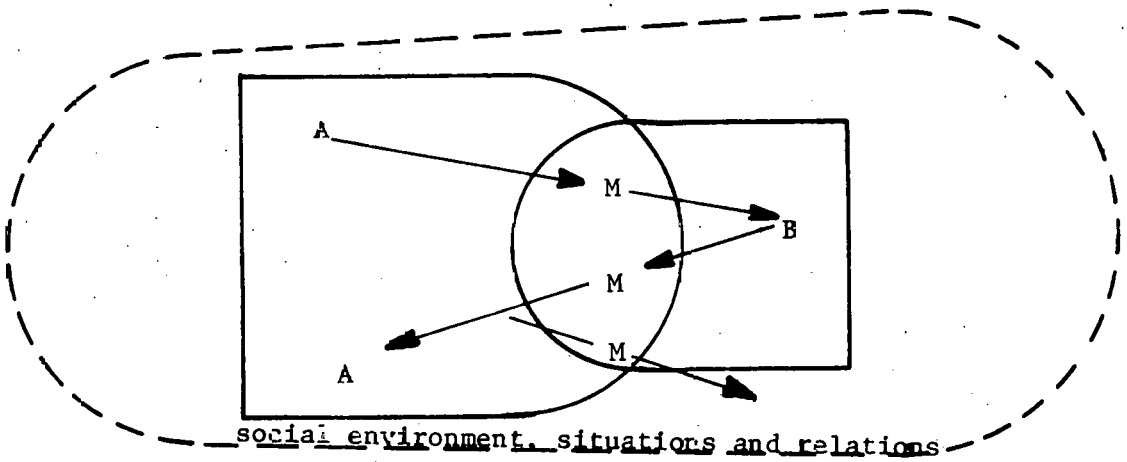


Figure 9. Communication Within Common Reference Frame

meetings, and so on. Figure 10 illustrates how noise in communications may arise.

Since communication effectiveness is conditioned to an extent by the message form and media used for transmission, the use of multiple message formats and media to transmit the same information increases the opportunity to convey a complete message and also the likelihood that the message will be received. While there is a need for a variety of media to disseminate planning information, this may also lead to problems of confusion of messages on the same subject but which are received from different sources. From the standpoint of the communicators the process of interpretive responses gives the key as to how problems of confusion or noise are overcome. Basically, this is accomplished through feedback on the messages between the communicators. This is illustrated in the diagram of Figure 11, where f_1 represents feedback to the planner by observing his own message and f_2 represents the feedback or interpretive response from the public. Through comparison of the two, the sender can evaluate whether the message has been correctly received, and if not take further steps to achieve clarification.

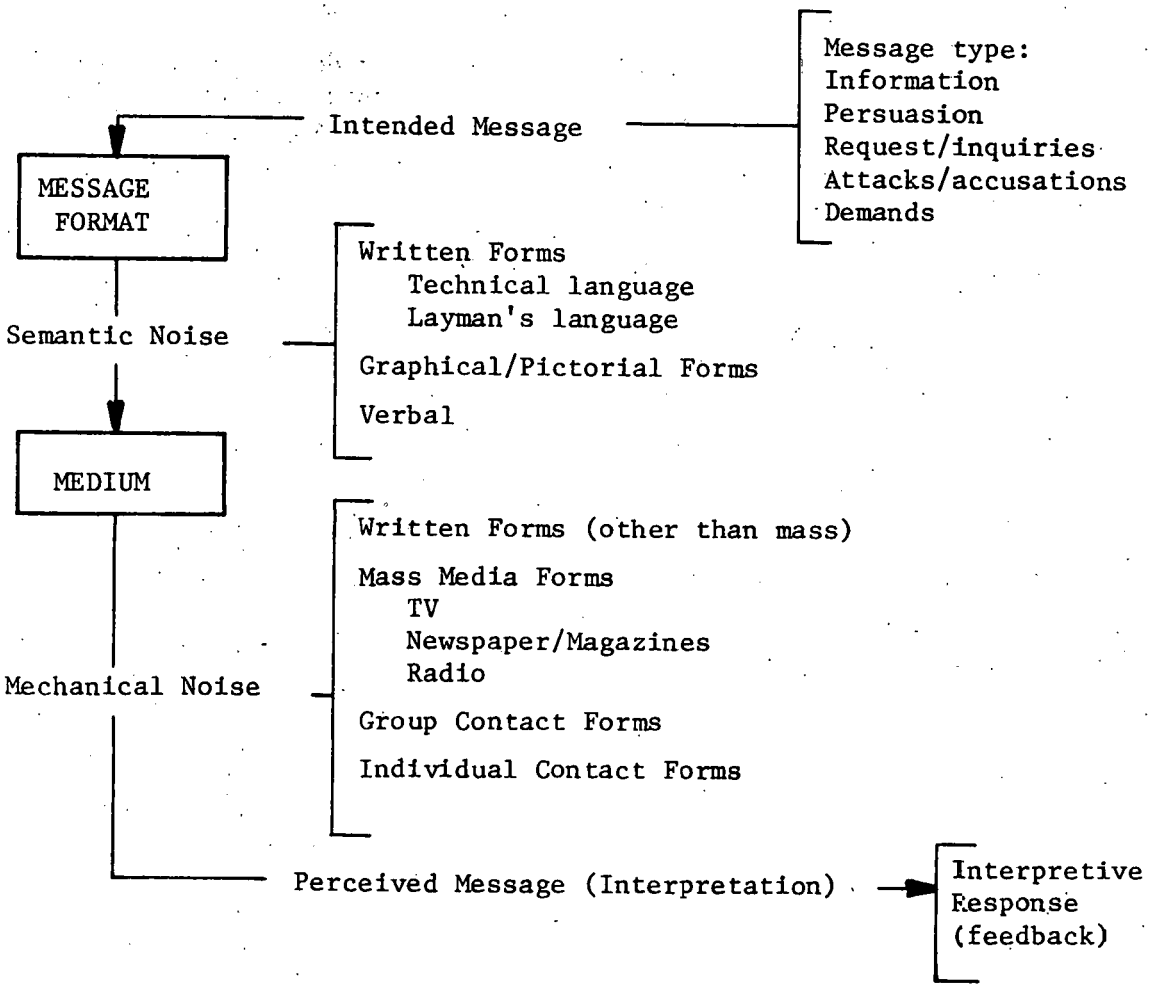


Figure 10. Forms of Noise in Communications.

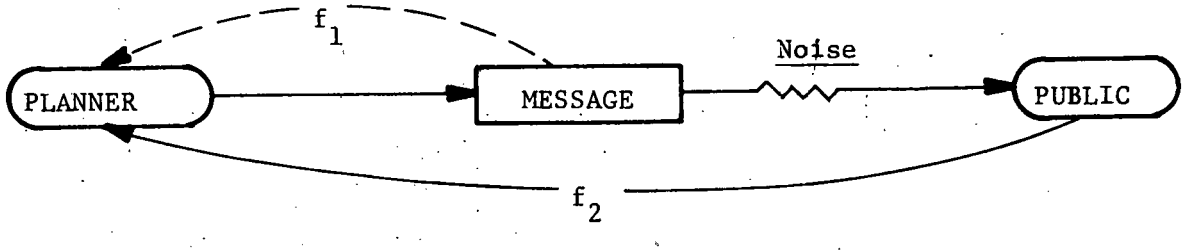


Figure 11. Compensation for Noise Through Feedback.

Role Structure and Decision Mechanisms

The nature of citizen involvement in public decisions depends to a large degree on the agency's approach to those concerned about or affected by a proposal in terms of their roles, their interaction, and the decision mechanisms. Thus the agency's overt and covert public participation "strategy" influences how, when, and to what depth various parties will participate in the planning, evaluation, and decisions. The concept of a "strategy" should be though of in the positive sense of formulating a participation program including affected citizen interests at an appropriate level of involvement. It should not, in any way, be an attempt to deceive, bypass or circumvent legitimate interests.

Planner (decision-maker) and public interaction

Several participative strategies defining different types of agency-public interaction have been generalized from planning studies and experiences (Bolan, 1967). Each of these, briefly summarized in the following, identifies a different agency public relationship. It should be emphasized, however, that no one of these is likely to be appropriate for an entire public decision process. Rather, several of these relationships would be established depending on the groups involved at different periods during a study's progress.

Strategy of information (Figure 12). In using a strategy of information, the agency conducts the study and controls the flow of information. Contacts with other government and community groups are made to present findings or gather information or data. Generally, alternatives and information by which to evaluate are not openly discussed, but widespread publicity is given by the agency when studies are near completion and a decision is imminent.

Information with feedback (Figure 13). A modification of the strategy of information is to provide channels for feedback of data and information from community groups. However, the planner still controls the study, develops alternatives and makes planning decisions. Alternatives are presented to community officials and public groups in order to elicit comment and feedback. Proposed plans may or may not be adjusted based on these responses. Open communication and exchange of information through a feedback loop throughout the process, rather than only at the time when alternatives are well-defined, ought to result in a wider range of alternatives and increase the likelihood of converging on a more acceptable and comprehensive solution. While the time required to generate alternatives may be extended, this approach may avoid considerable controversy and objection when evaluations and decisions are made.

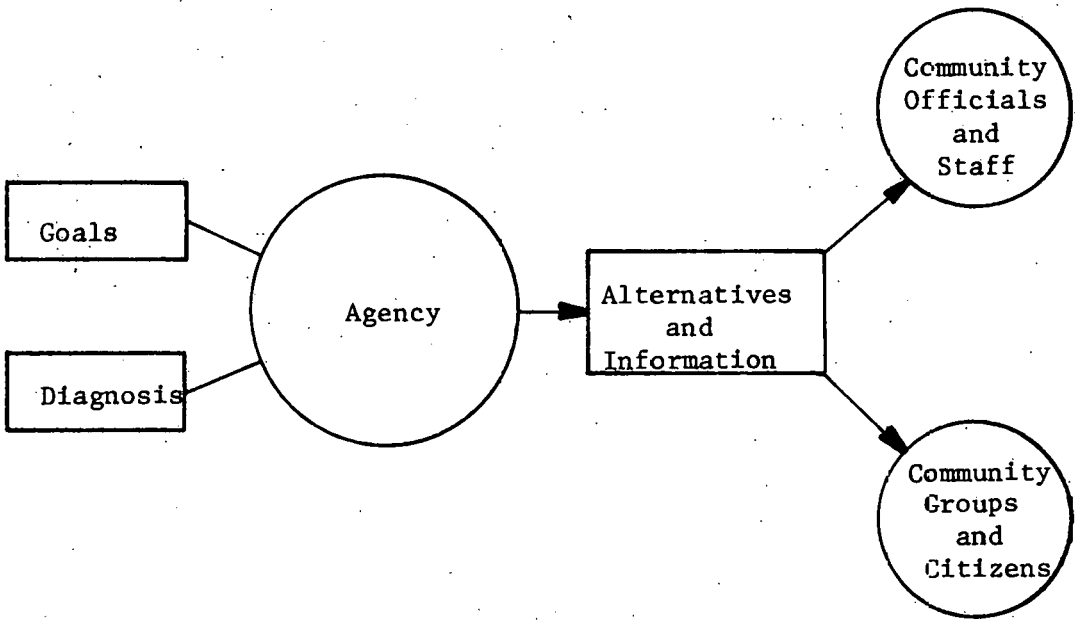


Figure 12. Strategy of Information

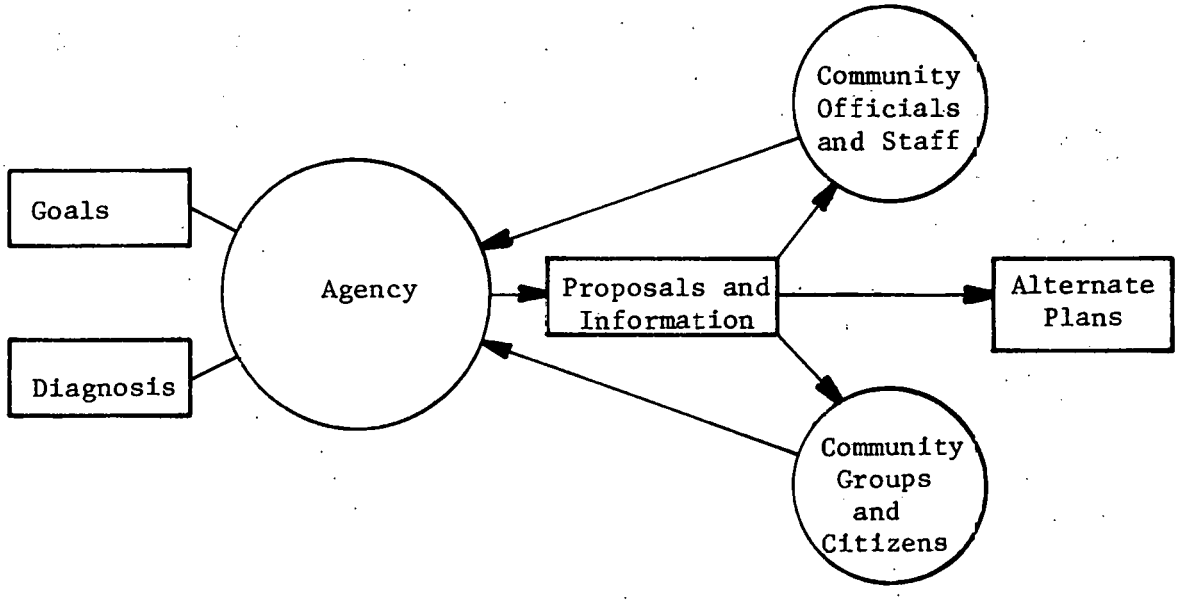


Figure 13. Information with Feedback

The coordinator-Catalyst (Figures 14 and 15). As a coordinator and catalyst, the planner would promote and use participation techniques that allow the affected parties to interact with one another. Under this approach, the planners supply methodological and technical skills and serve as the mechanism for synthesizing objectives, coordinating interests, and working out compromises in areas of conflict. One vehicle for such an approach might be a workshop group composed of representatives of the community such as elected officials, city planning and engineering staff members, business, commercial, and industrial interests, school districts and homeowner groups. The agency provides the analytical services and technical expertise. This approach should generate interaction between planners, decision makers, and affected parties so that viewpoints, values, and suggestions of all are considered.

Community advocacy planning--The ombudsman (Figure 16). As an advocate, the ombudsman, a specially appointed expert, works directly with the agency on behalf of community groups. The affected parties would supply him with data and information and inform him of their desires and preferences. He would represent these views in working with the planner to develop alternatives.

Arbitrative planning--A hearing officer (Figure 17). This strategy places an independent hearing officer between the agency and citizen groups to act as an arbitrator. He would come to the community at important stages during the decision process, for example, at the initiation of study, and when alternatives are being proposed. In each instance, the agency would present its current proposals. Citizen groups and state and community officials would offer criticism, suggestions, or other alternatives. The hearing officer would evaluate the testimony, attempt to arbitrate settlements on points where conflicts of interest exist, and recommend appropriate changes in the studies. Possibly he would make the final choice among alternatives.

Plural planning (Figure 18). The strategy of plural planning suggests that each interest has its own set of technical experts. Each group would be responsible for developing its own alternatives. Studies would also be prepared by the agency. This would produce a range of plans representing the positions of all groups. Either similar schemes would be consolidated into a set of alternatives from which a final plan would be selected, or a final plan would be developed through the political decision process. The major difficulty with the use of this approach is that the agency is usually the only organization with both the expertise and resources to perform analyses and develop alternatives. Broader planning participation along the lines of plural planning could become more feasible if economic methods for the use of a common computer data bank with time sharing methods of testing the effect of various alternatives are developed and implemented. Also more consideration could be given to financial assistance to groups to

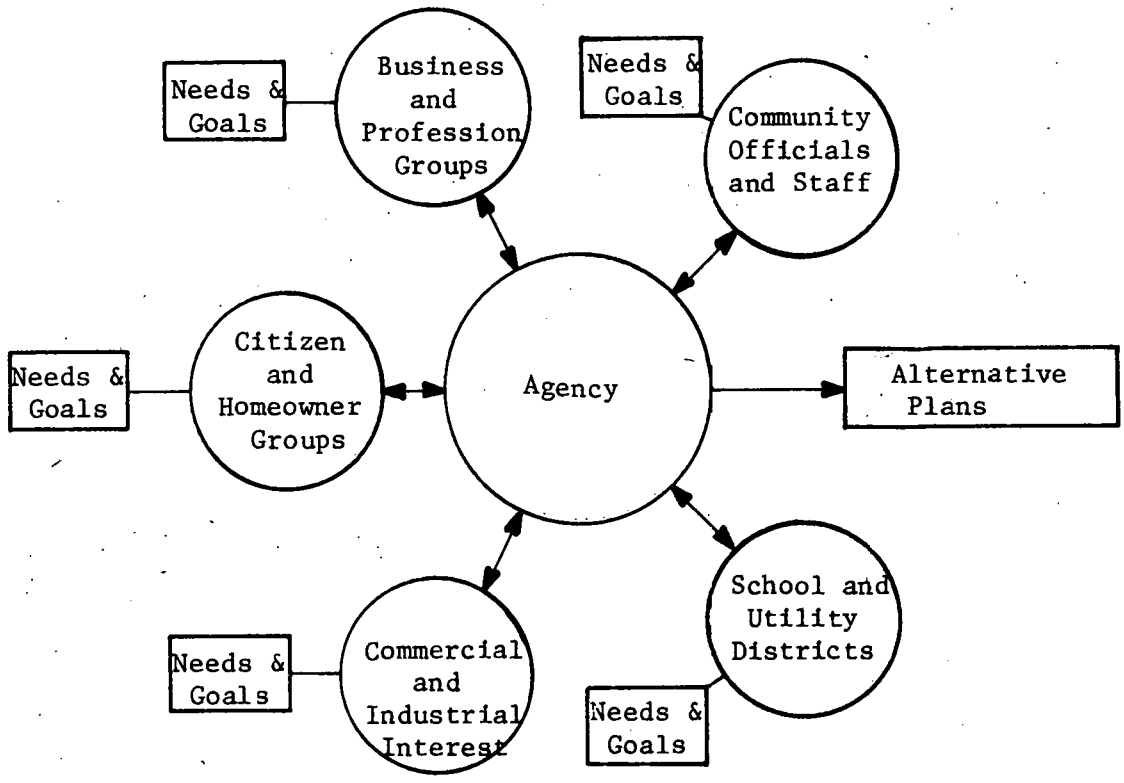


Figure 14. The Coordinator

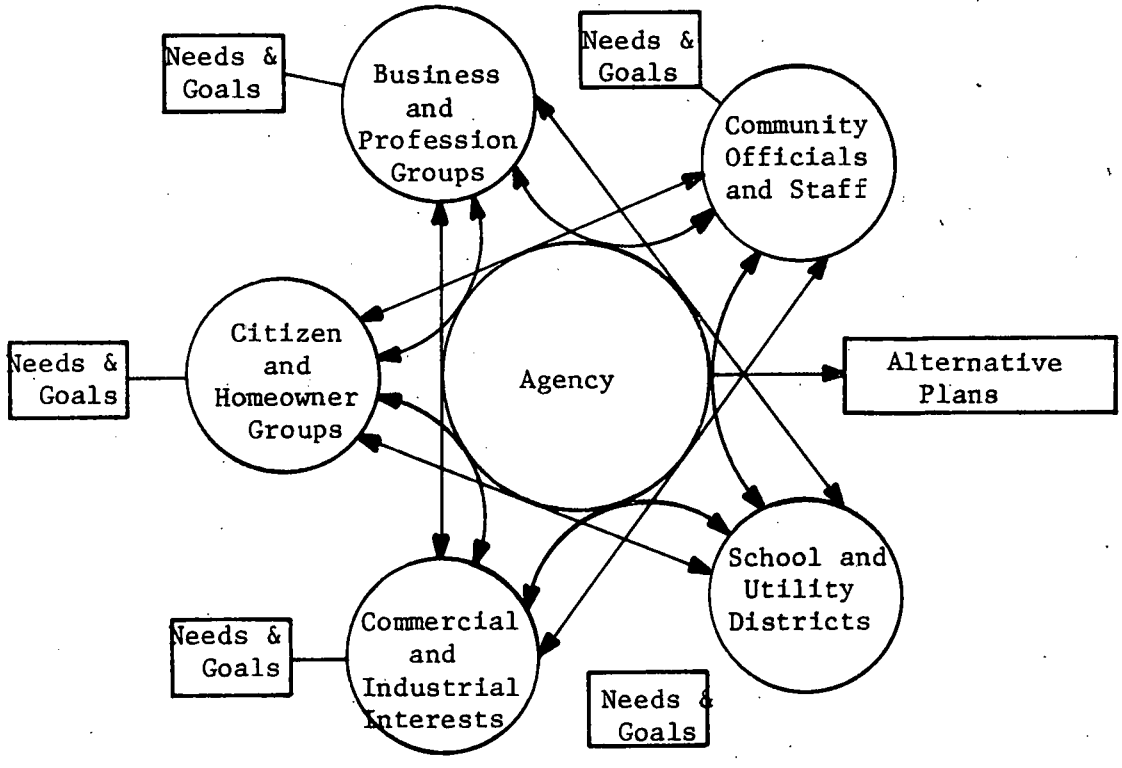


Figure 15. The Coordinator-Catalyst

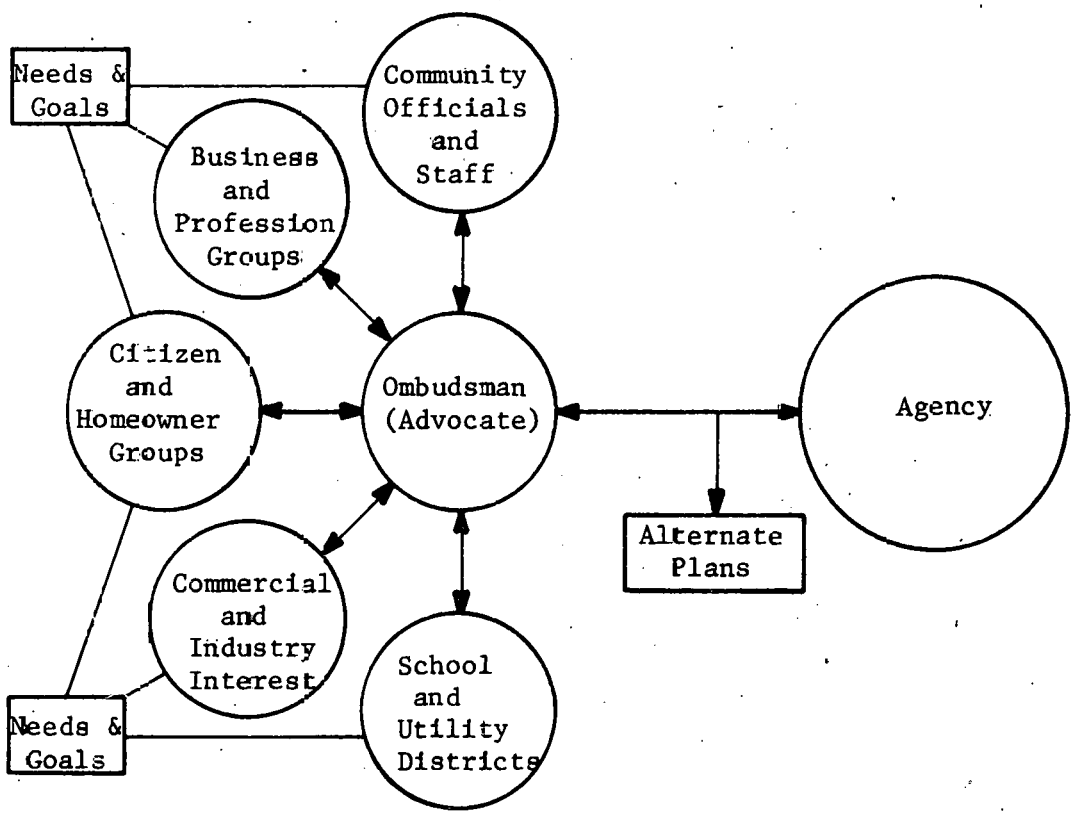


Figure 16. Community Advocacy Planning

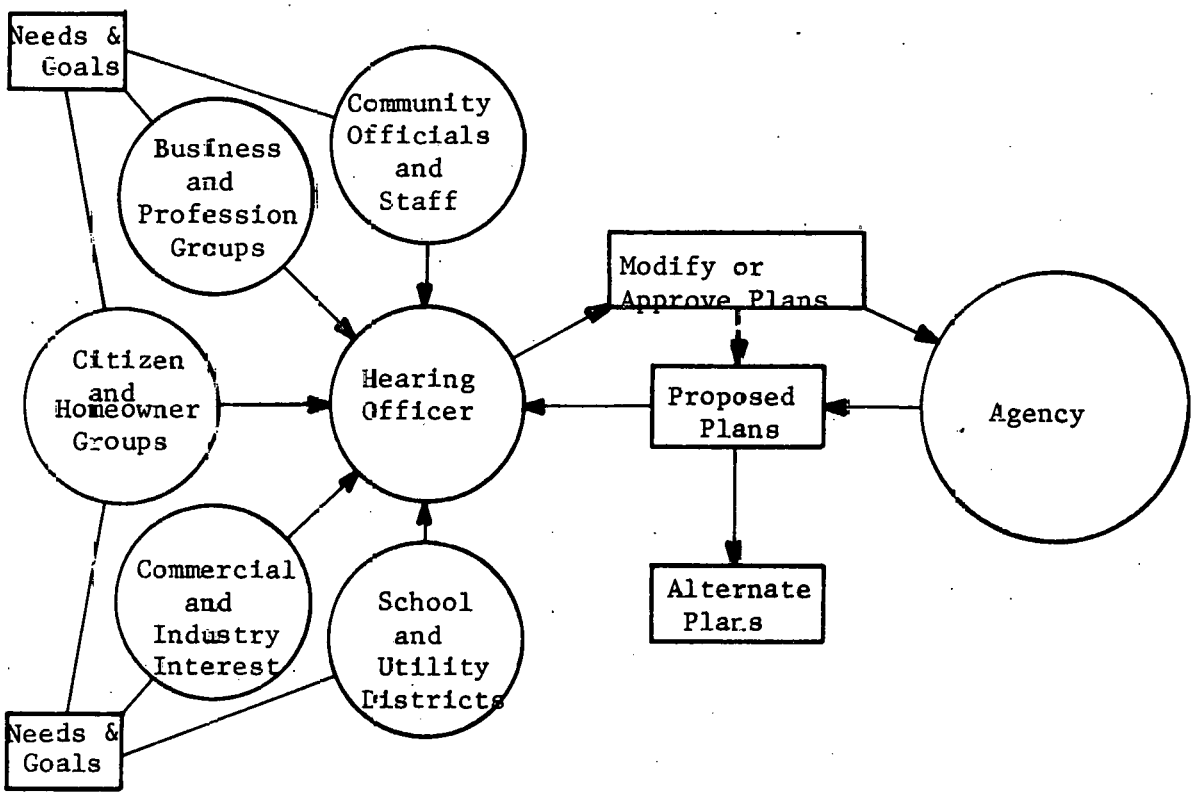


Figure 17. Arbitrative Planning

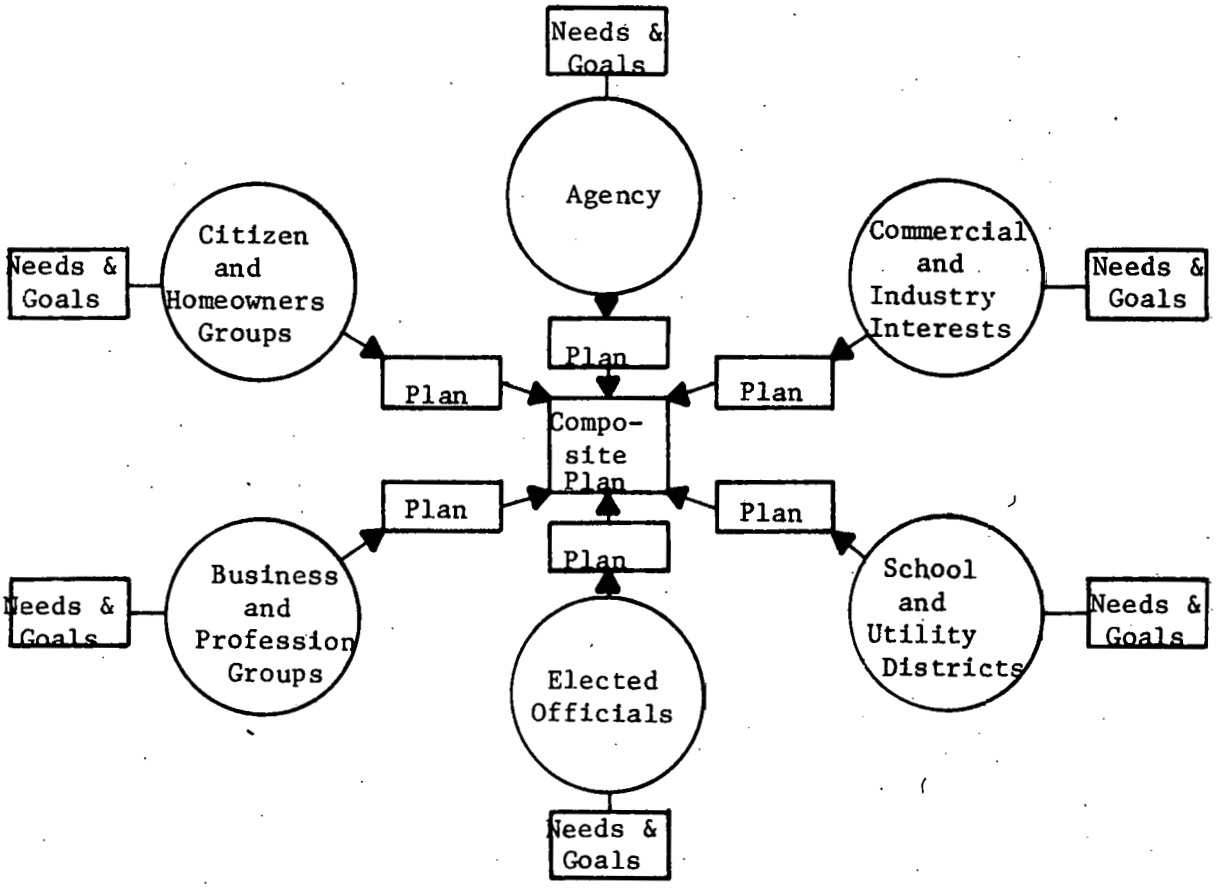


Figure 18. Plural Planning

develop related aspects of alternatives. It should also be emphasized that numerous agencies or jurisdictions are planning independently with respect to their own responsibilities and concerns. Thus, the agency should be sensitive to the opportunity to participate with ongoing planning in various sectors of the community. In this way, agency decisions will have a better chance of being compatible to policy decisions of other jurisdictions.

Decision mechanisms

In the policy formulation process, many decisions are made at various times by the agency and by the participants. The ultimate objective of the process is to evaluate a set of feasible alternatives and eventually choose a final plan or policy. For this decision to receive broad public support, it must be made through a decision mechanism that has been generally accepted as a fair and

reasonable way to select a course of action. The three general groups which have a natural interest and some claim to the right of making decisions are the agency, state and local elected officials, and citizens of the community. Combinations of these interests may be constructed as special commissions representing the public interest. It is possible to rest the decision responsibility with any one of these groups exclusively, with some combination of interests and representation from the groups, or with some specially appointed body which is outside any of the local interests and represents the broad public interests.

Administrative. Under this method, the agency would be responsible for the final determination. However, they could work closely with local officials and citizen groups in order to receive their preferences before making the final choice or recommendation.

Representative. The agency presents its proposals either directly to elected leaders, or at public hearings where all interested citizens and public officials could make their views known and register their support or objections. The elected officials would then be responsible for evaluating the proposals and the results of the hearings and making the final decision.

Citizen review board. One method of putting the decision in the hands of the public is to have a review board of citizens selected from representative community groups. The board would be responsible for reviewing proposals and recommending the final decision from among the alternatives. A modification of the citizen review board is a commission composed of individuals appointed by the appropriate executive level of government. Its viewpoint would be that of the state or the nation as a whole rather than the particular local interests. Formal public hearings are a standard and legally required part of the decision procedure. The commission either reviews hearings conducted by an appointed hearing official, or, on request or upon its own volition, conducts a public hearing itself before making a decision.

Referendum. The grass roots approach to public decisions is to derive a collective recommendation of all the citizens in the community by placing the proposals on the ballot. A majority or plurality decision rule would be used to decide which plan would be selected.

Summary

This chapter presents a range of process models and concepts that can be used to gain an understanding of public participation process dynamics. First, a foundation was laid in terms of the objectives of public participation and the means by which publics can be identified. Models of the planning and policy formation process were then developed to indicate the relationships among

participants, process progression through time, technical and evaluative information, and decisions. Further support to process models was then developed in the areas of communication theory and participant role interaction and mechanisms for decision making.

CHAPTER 3

DESCRIPTION AND ANALYSIS OF PUBLIC PARTICIPATION TECHNIQUES

Introduction

With the growing emphasis on citizen involvement and the efforts of agencies' to implement programs, a range of techniques and approaches for achieving public participation have developed. The purpose of this chapter is to provide a description and some analysis of techniques that currently appear in the literature or are being used by public agencies. The techniques described represent a mixture of both theory and practice in terms of the state-of-the-art of public agency planning and decision making.

Descriptive Dimensions of Techniques

If a public participation program is to be well organized and effective, various techniques of public interaction cannot be simply selected from a shopping list of available methods. To the contrary, an effective public participation strategy must be developed by choosing specific techniques with characteristics to accomplish specific purposes. Recent descriptions (Bishop, 1975; Jordan, et al., 1976; Hendee, et al., 1973; Wagner and Ortoland, 1975; Ross, et al., 1974) of methods and techniques have also endeavored to provide a basis for classification of approaches according to their functional purpose, their communications characteristics, and their capability to meet various participatory objectives.

Functional purposes

The functional purpose of public participation techniques primarily refer to their role in the planning-decision making process. Four general functional purposes served by public participation techniques are noted by Jordan et al. (1976):

Information exchange

1. Information dissemination. Information dissemination includes those techniques which are used to educate or inform the publics of agency activities and proposals and identify channels for public input in the process.

2. Information collection. Information collection techniques are aimed at gathering various kinds of information and

data from public groups. Depending on the scope of the problem or issues this may require surveying large numbers of people or working with small select groups.

Agency-public interaction

1. Initiative planning. Initiative planning refers to techniques in which citizens have the opportunity to offer planning proposals and decision options. The agency generally must supply data and technical assistance.

2. Reactive planning. The agency is primarily responsible for producing plans and options with citizens and community groups reacting those proposals. It is anticipated that participants take an active role in developing modifications.

Decision making. Decision making techniques are to facilitate analysis and formation of a sufficient base of support to accomplish decision making and implementation. While legal responsibility for decisions often rests on the agency, there are various legal avenues where citizens can challenge decisions. However, participatory decision making may reduce this possibility.

Participation process support. Process support techniques serve to make other participation methods more effective. These encompass techniques to enhance interpersonal communication, process dynamics, and understanding of impacts and consequences.

Communication characteristics

Information must be communicated between agency and publics through some medium in order to accomplish the desired participatory objectives. The selection of the media, or the public participation techniques to be used, depends on the type of information to be communicated, the publics at which it is directed, and the response or feedback that is desired. In terms of communication, public participation techniques can be described by the three following characteristics:

Level of public contact. This refers to the number of people participating in the planning process through a given technique. Low level contact techniques are inherently more effective with small numbers of people than with large. On the other hand, high contact level types of communication are more efficiently used for large scale public contact.

Ability to handle specific interests. This indicates the degree to which publics can be reached by a method of communication. Some techniques will involve certain publics more readily than will others. Techniques with low specificity will generally involve a wide cross section of publics, where those with high specificity are effective in communicating with specific publics.

Degree of interaction. The degree of interaction refers to whether the technique tends to serve basically as an information dissemination and collection device, i.e., low interaction one-way communication, or as a face to face information exchange mechanism, i.e., high interaction two-way communication.

Capability to meet participation objectives

Of key importance in designing a public participation program is some idea of which techniques are best suited to accomplishing particular participation objectives. The general objectives to be achieved by a public participation program were discussed in Chapter 2. It is interesting to note that a given technique carries an objective orientation that is appropriate in relation to numbers and types of people that will be involved. The techniques to use for the various planning tasks and different stages of the process will depend on the particular objectives in communication, the publics to be contacted, and the desired degree of interaction.

Description of Techniques

Drawing from the general descriptive dimensions for categorization of communications techniques, the following sections present a description of the techniques (listed in Table 2) that have been used to achieve public involvement in planning activities. It is essentially a survey of the techniques that have been used or are discussed in the literature. The variety of communication possibilities that the planner has at his disposal are organized into four groups: information exchange, planner-public interaction, decision-making, and process support. In structuring a public participation program, the following descriptions will be useful in identifying techniques that can be used together or in a pattern to accomplish desired program objectives.

Information Exchange

Exchange of information among agencies and publics is the basis for interaction in various phases of a study. Agencies must inform the public of their programs in order to elicit responses from them. Through the use of information dissemination techniques, the public can be informed of important factors concerning the operation of particular agencies and can be given a telephone number or address at which they may contact the agency to receive more information on the subject of interest. On the other hand, information collection techniques aim at gathering data from publics to aid in policy formulation or obtain feedback on proposals.

Dissemination techniques

Information meetings. Information meetings are designed to present basic facts on the agency work program and alternatives.

Table 2. Summary of Public Participation Techniques

Techniques	References: Discussion of Technique	References: Examples of Application
INFORMATION EXCHANGE		
Dissemination Techniques		
Information Meetings	Jordan, et al. (1976) Warner (1971)	Sloan (1974)
Seminars	Bishop (1975)	
Drop in Centers/Field Offices	Jordan et al. (1976) Bishop (1975)	Ewald (1973), NIPC (1973)
Hotline	Jordan et al. (1976) Ueland et al. (1974)	
Media Programs	Bishop (1975), HRB (1973) NARC (1973), Ueland et al. (1974)	Sloan (1974)
Television	Bishop (1975)	
Cable Television	Baer (1971, 1973), Desola and Pool (1972), Etzioni (1972)	
Videotaped Programs	Bishop (1975)	
Telelecture	Bishop (1975)	
Radio	Bishop (1975)	
Newspapers		
Direct Mail		
Magazines		
Motion Pictures		

Table 2. Continued.

Techniques	References: Discussion of Technique	References: Examples of Application
Dissemination Techniques (continued)		
Slide Tape Presentations		
Newsletters and Fact Sheets		
Planning Brochures		
Information Brochures		
Collection Techniques		
Public Hearings	Bishop et al. (1969) Bishop (1975), Jordan et al. (1976), Walton and Saroff (1971)	Standard practice
Focused Group Discussion	Jordan et al (1976); Maier (1967)	Little (1970)
Field trips and site visits	Bishop (1975)	
Displays and Model Demon.	Bishop (1975)	
Surveys	Gordon and Arven (1973); Jordan et al. (1976)	Stein (1975), Bishop (1969)
Delphi	Dalkay (1967), Helmer (1967), Wagner and Ortolano (1975)	
AGENCY-PUBLIC INTERACTION		
Initiative Techniques		
Workshops	Jordan et al. (1976); Bishop (1975); Creighton (1973)	Sargent (1972); Sloan (1974); Borton et al. (1970)
Open public		
Invitational		
Invitational/open		

Table 2. Continued

Techniques	References: Discussion of Technique	References: Examples of Application
Initiative Techniques (continued)		
Charettes	Rosenman (1971); Schuttler (1974); Jordan et al. (1976)	Kohn (1969), Shumway (1973)
Task Forces or Committees	Warner (1971); Bishop (1975); Jordan et al. (1976)	PSCC (1970)
Community Planning Authorities	Ebbin and Mottur (1974); Mottur (1972)	Reiner et al. (1971)
Advocacy Planners	Bramhall (1974); Davidoff (1965); Peattie (1968)	NIPC (1973)
Ombudsman	Ascher (1967); Hartke (1974)	Goodstein (1972)
Reactive Techniques		
Public Meetings	Bishop (1975); Hendee et al. (1973)	
Informal Small Group Meetings	Bishop (1975)	
Citizen's Advisory Committees	Hendee et al. (1973); Brown (1972); Clavel (1968); Sigel (1967)	Ertel (1972) Schimpeler et al. (1973)
Citizen representatives on public bodies	Bishop et al. (1969), NIPC (1973)	Chenault and Brown (1971)
Fishbowl Planning	Jordan et al. (1976)	Aggerholm (1973); Ragan (1973); Sargent (1972)
Policy Capturing	Stewart and Gebbard (1976); Flack and Summers (1971); Jordan et al. (1976)	Steinmann et al. (1973)
Personal Contacts	Hendee et al. (1973)	

Table 2. Continued.

Techniques	References: Discussion of Technique	References: Examples of Application
DECISION MAKING		
Arbitrative Planning	Bishop et al (1969); Bolen (1967)	
Referendum	Bishop et al. (1969)	
Citizen Review Boards	Arnstein (1972), Bishop et al. (1969)	Marshall et al. (1970)
Media based issue balloting	McManus (1975)	Champion (1974); Connors (1974)
PARTICIPATION PROCESS SUPPORT		
Citizen Employment/Honoraria	Bishop (1975); Jordan et al. (1976); Stenberg (1972)	NIPC (1973)
Technical Assistance	Warner (1971)	Sloan (1974)
Games/Simulations	Jordan et al. (1976); Bishop (1975)	
KSIM	Wagner and Ortolano (1975)	
Priority evaluation game	Pendse and Wyckoff (1976)	
Croup Dynamics	Jordan et al. (1976)	

These general meetings are usually held at the outset of the study and periodically during the course of work. The meetings are generally widely publicized to reach all interested parties. The meeting format usually features a presentation by the agency program manager followed by a question and answer period. On the positive side, the meetings do provide a forum for information dissemination, and are apt to build citizen confidence that the agency is open and forthright. The meeting dynamics can be useful in exposing points of view. On the negative side, the agency must be prepared to undertake the logistical and publicity efforts, as well as preparation of good presentations and visual material.

Seminars-information/coordination. This technique is not used to inform the general public directly, but serves to inform and coordinate with special interest groups, specific individuals and groups representing segments of the public. Often public interests and needs are voiced through key individuals, elected officials and non-elected leaders, rather than by involvement of the general public. Seminars could be effectively used with the following groups.

1. Community and group leaders--individuals noted for community leadership and action.

2. Public agencies or officials--County Commissioners, State Officials, special boards and councils.

3. Special interest groups--environmental groups, civic groups, university organizations.

Seminars are a low key way of keeping elected officials up-to-date on a regular basis, providing specialized information to interest groups and clarifying policy and plans to any group or agency. These seminars could also aid in developing coordination between cooperating agencies. Seminars can be used as one technique for advance preparation for workshops and special committees. This is an efficient method of providing select personnel with information necessary to perform a prearranged future function. A major advantage to the seminars is that they have a low time budget. They can be organized on a regularly scheduled basis or only when needed.

Drop in centers and field offices. Drop-in centers are located in an easily accessible place in or near the area of study. Citizens stop by to see or pick up information and ask questions. They must be staffed by people capable of giving accurate responses in laymans terms. The drop-in center can be a convenient way for people to receive information. They also represent a tangible ongoing commitment by the agency to communicate. However, if the level of interest in the study is not high, the operation of a center might not be justified.

Another approach, the field office, combines the information function with other agency tasks such as data gathering and analysis.

In studies requiring close local coordination in formulation of alternatives the field office can also serve effectively. This is particularly true where the agency offices are remote from the study area.

Hotline. The "hotline" is a telephone based system which allows the public direct access to agency personnel or a recorded answering system where calls can be returned. The number should be easy to remember and widely publicized. The hotline puts information virtually at the fingertips of those with telephones, but its capabilities are limited to inquiries not requiring detail and graphical explanations. It is particularly useful in providing times and places of public meetings, and requests for publications, reports or other prepared information.

Media programs. Effective use of the modern mass media available today is an extremely important element of successful public participation programs. Large (mass) audiences are relatively accessible through the more common forms of mass media--radio, television, newspapers, magazines, direct mail, motion pictures, cable television, and others.

The use of mass media for dissemination of information to citizens and communities of a region is increasingly being stressed. Researchers have concluded that the mass media continue to be important in transforming contemporary social life. A study by Kahle and Lee (1974) showed how insight into attitudes towards water resources could be applied in designing an information program using mass media, with special attention to radio and newspapers.

There exists a wide variety of media for communicating with the public. Careful selection and use of mass media techniques can successfully carry information to large numbers of citizens. While mass media are generally considered to be one-way communication from sender to receiver, features can be built into media programs which elicit feedback.

1. Television. In its short history, television has become the most popular of all mass media in this country. It commands the largest audience of all communication media. Over 95 percent of all American homes are equipped with a TV set. More than 30 percent own two or more TV sets, and more than 1/3 of American homes own color TV receivers. The television audience includes all ages, races, income and education levels. Women dominate the viewing audience overall, but during the hours when men are available to the TV set, their numbers are about equal. Local, regional and national audiences are available via television because the local stations, which can originate programs of interest to their local viewers, hook up with adjacent stations for coverage of regional activities or join the national networks for programs of national interest.

The use of commercial television to convey messages (either commercial or public service) is relatively expensive. Production techniques which involve both visual and verbal presentation are also relatively expensive. Commercial television broadcast time is relatively difficult to obtain and may be prohibitive if it is necessary to buy broadcast time. Some of these problems, however, may be overcome by working with the educational television station serving the study region. These stations are generally operated by universities so there is the added advantage of involving professionally qualified staff in developing the information programming.

2. Cable television. The communication possibilities of cable can dramatically increase the existing offerings on TV and open up important new services for the public. Cable TV--with tremendous channel capacity and two-way capability--could become the most important medium of communication in the future, providing not only entertainment and information to the viewer, but also providing access to many social services for the individual or family. At the present time, Cable TV can provide local access channels for communication with cable subscribers wherever such a system exists. In the future, the two-way communication channel will become much more available. With advance planning, listeners/viewers feedback can also be provided via telephone facilities which are readily available.

3. Videotape programs. The television industry has developed and has made wide use of videotape recording of both picture and sound on magnetic tape. This technique permits the use of all of the production techniques and methods of television. It greatly facilitates the use of two or more cameras, film, slides, graphics, and similar materials into a single program. Color is also available on some videotape machines. By using videotape production techniques, it is possible to produce a program which may be used on television, cable TV, or played back to individuals or groups on portable videotape equipment.

4. Telelecture. When it is necessary to involve an expert in a local meeting or discussion telelecture equipment, available from the local telephone company, can often overcome problems of time, distance and money. With telelecture equipment a speaker can address a group remote from his own office, present a slide-lecture, and show charts and graphs. Members of the group can in turn, ask questions and interact with the speaker as if he were present in person. Several meetings can be conducted simultaneously by a single speaker in one central location, with other meeting places connected so that they can listen and participate with each other. The cost of telelecture equipment installation or rental is moderate, and even inexpensive as compared to paying travel fees, honoraria, etc.

5. Radio. Conventional AM (Amplitude Modulated) radio provides the second largest of all audiences in the mass media.

This audience is also the most quickly available because of the ease of radio broadcast production. FM (Frequency Modulated) radio is similar in many respects. However, because of its higher quality reception, FM radio generally offers a more selective type of audience. The higher quality of FM transmission encourages wider use of the classical and semi-classical music, thus appealing to a more selective audience. Radio is primarily a local medium of communication. Each radio station serves its local (or regional) audience and designs its programs to appeal to a specific segment of the audience within its geographical area. The type of audience reached by each radio station is generally defined by the type of programming (music, news and public affairs). By selecting the proper radio station and the proper time of day, a user can generally focus his radio messages to reach the type of audience which is of primary interest to him. Managers and Program Directors of local radio stations will gladly assist the radio user in making this kind of a selection.

A radio broadcast is simple to initiate. All that is needed is a telephone line (generally provided by the local phone company) or a battery-operated remote transmitter, a tiny amplifier, and microphone. With this simple equipment and a broadcaster with experience, radio broadcasts can easily originate in city council meetings or from public hearings or events of interest.

6. Newspapers. Newspapers are and have been traditionally one of the prime sources of information for Americans. Newspapers are very popular and studies indicate that 80 to 90 percent of the homes in many areas subscribe to the local daily newspapers. Local subscribers want to know what is happening in and around their own community. No other medium provides such in-depth service.

Compared to the electronic media, there is always a short time-lag in the news coverage of newspapers due to mechanical methods of production and distribution. However, the newspaper clippings provide an excellent documentation of events for later reference. In order to receive maximum benefit from local newspaper coverage of events or activities, it is important to keep the local editor advised of such happenings well in advance. An invitation to attend meetings, hearings, or other events should be extended several days before they occur. If the local editor cannot attend such events, an organization or agency should offer to have someone in the organization or agency write up the events and possibly supply pictures for the editor's consideration. Manpower shortages are common in most local newspapers.

7. Direct Mail. The use of direct mail is one of the most expensive, but also one of the most effective means of communication. It is often difficult and costly to obtain the correct mailing list, prepare the printed information, address it and have it delivered to the target groups. However, if these problems can be overcome at a

reasonable cost, direct mail can aid in information dissemination by focusing the message to a selected audience without the wasteful shortgun approach of other media. In addition, computers are increasingly being used to personalize and individualize direct mail efforts to overcome the objections of some people to receiving too much junk mail.

In spite of heavy costs for preparation, postage, and audience selection, direct mail can be effectively used to reach a clearly identified audience. It can also provide easy way to solicit responses by including forms or questionnaires to be filled out and returned to the agency.

8. Magazines. Magazines, like direct mail, provide the user with a clearly defined, homogeneous audience. Recent attempts by certain magazines to tailor some articles for specific sub-groups of subscribers with common interests have made this media even more effective in this regard. Magazines, however, are relatively expensive media for the user. A good sized ad, especially in color, is expensive to purchase. Regional or specialized magazines (appealing to readers of a common special interest) could, however, be most effective in directing a message to that audience. As with newspapers, a time factor is involved in the publication and distribution of a magazine. The "lag time" is even longer between the actual event and its publication in a magazine, hence more advance planning is necessary.

9. Motion pictures. Motion pictures have been used widely to inform and entertain for many years. The basic appeal of the medium is very strong. People like to view movies, even if they are supposed to learn something from them. However, motion picture production is relatively expensive. A professionally produced 16-mm movie takes a large crew of experienced film makers and much expensive equipment. The trend toward production of 8-mm, super-8 and hand-held 16-mm movies is an obvious attempt to overcome these difficulties. However, the quality of the final motion pictures may obviate all of these savings if it does not do the job it was designed to do. Motion pictures are also relatively short-lived and may become totally obsolete because of a minor change of a law, a news situation, or even by fashion changes. It is expensive and difficult to up-date a motion picture film to overcome these problems.

10. Slide-tape presentations. To capitalize on many of the advantages of motion pictures--color, representation of actual objects or situations, etc.,--the slide-tape presentation offers certain advantages. Using regular 35-mm colored slides, an automated projector (or several), plus a synchronized tape recorder, it is possible to present a visual and sound program that is nearly as attractive as a motion picture and at much less expense. Multiple screen projection, fades, flashes, and other special effects have also made this medium attractive and effective. Besides overcoming many of the costly restrictions of the motion picture films, the

slide-tape presentation can be revised or up-dated by the simple procedure of substituting a new 35-mm slide for an obsolete one, or by a new narration tape to reflect a change, or to meet the language requirements of another audience.

11. Newsletters and fact sheets. Newsletters and fact sheets can be produced at suitable intervals to provide interested people or the general public with up-to-date reviews of the study. It can also stimulate considerable feedback. Any of these written distributions should contain explicit requests for pertinent comments. Information of this sort can be disseminated by a regular mailing list, or random or blanket distribution in a particular area depending on the size of the area and what is to be accomplished. Newsletters and fact sheets may be most useful when sent prior to any public forums or workshops.

12. Planning brochures or workbooks (technical format). These are not for use by the general public, but by other agencies, groups, or individuals with a degree of professional expertise or access to it. They should provide a written record of alternatives proposed and discarded, by whom, and why, and may take the form of modified sections from initial planning studies, impact statements, benefit/cost analyses, etc.

13. Planning brochures or workbooks (less technical). This type of brochure is prepared for the layman who does not have the technical expertise, but who is willing to spend some time and thought on the information presented. It serves the same purpose as the technical brochure, but with the very important addition that it brings in the opinions of the interested general public. The emphasis should be on a clear, concise text, well presented alternatives, pros and cons, and easily interpreted drawings and/or overlays. Brochures of this type can be used for alternative formulation and evaluation. Therefore, they often may go through a number of drafts to insure inclusion of all pertinent alternatives. The agency should always include a "do nothing" alternative to avoid accusations of suffering from the "do something" syndrome. This type of brochure, professionally planned and compiled, can serve both the professional and the layman. For an excellent in-depth discussion of a workable public brochure refer to Aggerholm (1973).

14. Informational brochure or pamphlets. These are intended to be strictly informational in nature. This type of brochure may serve as a brief introduction to the proposed project and planning study. It may have a regional or quite local focus, or it can cover some particular point or issue of interest. It can be geared to stimulate interest as well as inform.

Summary. The use of mass media techniques in the early stages could center on the introduction of an idea or proposal or the

initiation of the planning process. By informing a wider general audience, responses from interested publics not already identified will serve to broaden the list of publics that desire to participate. The use of media capable of directing a message at specific audiences may be more appropriate during the middle stages of a planning study. Finally, as alternatives are considered and public preferences are sought, the use of the mass media to insure the participation of all possible interested parties would seem to be appropriate. Over all, the use of mass media would seem profitable in the early stages of the planning process for information dissemination and identification. Use of mass media may be reduced in favor of more specific and direct communication methods during the middle portion of the study, with renewed broader use of mass media as additional alternatives are considered that might involve additional interested parties.

Collection techniques

Public hearings. Public hearings are a formal and highly structured technique for eliciting community response. However, there seems to be a trend away from this formality while still maintaining appropriate records, i.e., the transcript and written statements for the record. Because of the cost and delay in developing the hearing record, public hearings should generally be used only at stages in the study where a formal record or transcript is required. In this regard, public hearings do serve an important function because of their high degree of legitimacy. A legally required hearing assures citizens of an opportunity to be heard and support or challenge proposed actions of the agency (Jordan et al., 1976). Although hearings have a major advantage in public acceptance there are disadvantages. Public hearings offer only limited one-way communication. Views are presented as formal testimony with little interaction with the agency or other public groups. Thus, they are more useful for collection of information that summarizes positions than resolving issues (Jordan et al., 1976). Also Bishop (1970, p. 79) points out that "public hearings provide no guarantee of representativeness; and thus there is a high potential for bias. If the chairman is from the agency, he may also strongly bias the hearing. Open ended statements presented are hard to interpret and use in planning, and often persons testifying do not completely understand the issue or the plan to which they are speaking. This is especially true if . . . the plan is first presented and explained at the public hearing." Others have questioned the value of initial public hearings since there is little information available at this early stage in the study. Although this is true, initial study hearings have value in establishing the agency as a professional expert willing to consider all views. This can be of benefit in other communication activities as the study progresses. The hearings can be used as a forum for providing information about alternatives. Hearings can also be coordinated with the production of brochures or public workbooks, which focus the discussion for increased public input. This too can be a productive method. However, some of these more functional aspects of the hearing can and are being taken over by the less formal, but more workable, public meetings.

Focused group discussion. A focused group discussion usually involves eight to twelve people working with a trained moderator. In the group, participants are asked to express their opinions about a specific topic or proposal under discussion. The objective is to elicit information, attitudes and opinions about the issues being considered. Jordan et al. (1976) provide a detailed description for conducting focused discussion including the scope of topics, composition and recruiting of participants, place and conduct of the meeting, role of the moderator, and the use of the data and information produced. Variations of the focused group discussion could involve the use of field trips or site visits, and the use of models and other visual displays.

1. Field trips and site visits. The citizen visits are initiated as non-professional "show-me" trips. These visits can be used to accurately inform public groups, local officials, and the media about the specifics of a plan and to solicit the response and feedback.

2. Displays and model demonstrations. Under appropriate conditions, displays and demonstrations can provide stimulation for appraisal of alternatives, evaluation of impacts, and feedback on a number of project-related issues.

Surveys. Perhaps the most systematic and sophisticated information gathering technique is the survey. Comprised of questions framed to elicit attitudes, opinions and the level of citizen understanding of proposals, it can provide planners with specific information required to assess needs to proceed with the development of plans and policies. It is also the only technique capable of being statistically representative of all citizens through appropriate sampling procedures. While the survey cannot be considered a substitute for interactive techniques, it does give a representative group of citizens an opportunity to speak their piece. Thus, it should be viewed as an aid to understanding, a guide to policy formation, and a key to developing further information and participation programs.

A survey should be carefully designed and pretested in order to be valid and effective. Several types of information may be gathered including respondent's knowledge and attitudes, their reactions to proposals or ideas, and their ideas for modifications of proposals. Size and selection of the sample should be accomplished through statistically acceptable procedures for experimental design. The survey data may be collected through a number of methods such as personal interviews, telephone interviews, mailout questionnaires, and newspaper questionnaires. Significance of the data is evaluated using statistical procedures.

The extensive use of surveys in recent times is causing some difficulty in the use of survey techniques. The major problems are

disinterest of citizens in taking part, fear of talking to interviewers, and concern about invasion of privacy.

Delphi. Delphi is a method for systematically developing and expressing the views of a panel of selected individuals concerned with an issue. Originally developed as a tool for gaining consensus among a group of experts, a "policy delphi" involves a series of questioning rounds with a panel composed of citizens representing various interests and experts associated with the issues at hand. During each round, the panel responds to issues or options by discussing the pros and cons. Results are summarized by a monitoring team, who construct the instrument for the next round. After several cycles of response and feedback, there is generally a convergence to a common set of goals and options, or else a revelation of difficulties in gaining consensus. One advantage of this procedure is the anonymity of respondents which avoids some of the problems of personal interactions in which domineering personalities and unwillingness to take positions are hinderances to open expression. Another advantage is the diversity of opinion that can be marshalled thus minimizing the possibility of overlooking important viewpoints. There are also some constraints in this procedure such as the non-random selection of participants, reducing the input of less literate segments of the population, the workload of data reduction and structuring each new round, and the slow turn-around time in completing the process.

Agency-Public Interaction

These techniques are characterized by interactive group processes among the agencies and citizen interests. The approaches are generally based on a high degree of immediate two-way communication. The purpose of interactive techniques is to discuss and discover information, point out and resolve planning conflicts, determine public needs, and gauge attitudes towards planning studies. The techniques are classified in two general groups from the viewpoint of the citizens. In initiative planning, citizens can lead out in making proposals on policies or suggesting modifications. In a reactive mode, citizens respond to proposals from the agency.

Initiative techniques

Workshops. A detailed discussion of the organization, structure and conduct of workshops is presented by Bishop (1970) and Borton, et al. (1970). Since the success of workshops depends in large part on the degree of advance preparation, this should be as comprehensive as possible. Advance preparation for workshops might include distribution of the various types of brochures, planning visits, coverage by the media and direct contact of interested parties. Workshops can be structured in several ways depending on the planning activity and stage of the study, the publics to be contacted, and the subject matter for discussion.

1. Open public workshops. This type of workshop, in practice, is the most common. However, one major disadvantage of the open workshop is the uncertainty in the number of people that will attend, and their interests. With large numbers, there is a more limited opportunity for discussion and the high degree of interaction that is desired in a workshop.

2. Invitational workshop. As implied by the name, invitational workshops are geared toward particular individuals and groups and around issues or alternatives that are somewhat specific in nature. This type of workshop has the advantage of being highly interactive, involving only interested publics on specific, critical issues.

3. Invitational/open. This workshop approach, a combination of the first two, provides a means of bringing all concerned publics into the planning process and providing a productive interchange. The workshop is structured to focus the beginning discussion with an invited group of interests, e.g., a panel, then opening the meeting up to the general public.

There are, of course, several modifications to these three workshop types that can be introduced. Several varieties of mini-workshops are proving to be effective in stimulating interaction. Publics attending a workshop can be divided into small discussion groups, each with a leader to exchange ideas on different subjects. Under certain circumstances revolving groups can be instituted, where individuals spend a set amount of time on one issue or subject, and then break up with each individual going to a different group.

Charettes. The charette functions as a highly intense, resolution oriented meeting. The charette goes beyond the interaction levels of an ordinary workshop and is problem solving and decision oriented in its structure. Hence, it presupposes a certain amount of advance preparation to assure a thorough understanding of the subject and a common ground on which to begin. Charettes can function at the interagency or community levels, with special interest groups. In this setting the planner is often a negotiator among community interests. The intensity of charette sessions are certainly not necessary in all planning studies, but in certain cases resolution and/or decision comes only through this type of interactive situation.

Ad hoc task force/committee. Planning problems of a technical or local nature can often be effectively approached by a committee or task force which works towards solutions and advises the planning agency of local preferences on those particular study problems. A committee or task force is generally limited to consideration of a special or regional problem. When controversial aspects of a plan are involved, a group representing all sides of the issue is necessary for lasting conflict resolution or problem solution. Since both ad

hoc committees and special task forces are set up to work on a particular problem area, they should be dissolved once a solution has been rendered.

Community planning authorities. The community planning authority represents one way of implementing the plural planning model of agency-public interaction discussed in Chapter 2. This approach enables citizen and community groups to plan independently for their objectives within their areas of responsibility. To assure the availability of necessary technical assistance, multidisciplinary professions may be employed by a community based citizen organization or board with representation of various groups. To be independent, the board needs to operate with its own funds, but funding is a problem.

Advocacy planners. Advocacy planners are independent professionals directly employed by affected groups to advance and protect their interests in the policy making process. Thus, they are directly accountable to their clients and serve their interests in developing alternatives, dealing with the agency, and reviewing agency proposals. The concept and rationale is to create parity between the citizens and the agency professionals, and open the opportunity to explore issues without the encumbrance of agency constraints. However, advocacy planning tends to emphasize opposition and an adversary process. Thus, issues are polarized and cooperation is made more difficult.

Ombudsman. The ombudsman is usually an independent government appointed officer who serves as a representative of citizen interests and a mediator between citizens and government. In the more limited interpretation, he acts only on complaints after other available remedies have failed, and his function is to seek redress of grievances. In a more expanded view he is the watchdog and protector of citizen interests in governmental policy making processes. Problems with this approach are that interaction with citizens is generally on an individual basis, and that citizens views are diverse making it difficult to consistently represent the full range of interests.

Reactive techniques

Public meetings. Public meetings are organized by the agency to provide the opportunity for participation by a wide cross section of the public. Generally, the agency conducts the meeting and presents its plans and proposals. Citizen interests are then given the opportunity to question and respond. The agency uses this feedback to modify proposals as it chooses. Public meetings seem to have most of the advantages of the hearing without the rigidity and formality and the problems of cost of permanent records.

Informal small group meetings. The format of small group meetings is much the same as a public meeting. In this respect, small group meetings may function as a series of small scale public meetings to allow more intimate contact with publics from various geographic or interest group areas. General community meetings may be of this sort. Meetings of general interest may be advertised by public notice while others will perhaps be invitational if a particular specialized discussion with key individuals or community leaders is to be held. The basic idea of this meeting, as with large meetings, is to present information and to ascertain the needs, desires, and opinions of the affected or interested public. The format should emphasize informality to the point of a round table type of discussion if feasible.

Citizens' advisory committees. The advisory committee is formed by a group of citizens representing the diverse interests in a community. They are usually requested to serve, by the agency or local government, in giving consultation and advice on proposals. The generic term of citizens committee covers a variety of councils, commissions, or committees with varying powers and operation functions. The tasks of a citizens' committee are threefold: (1) to provide fact supported suggestions or arguments on various problems or issues; (2) to act as a sounding board to reflect community or subregional interests and preferences in regard to issues and alternatives; (3) to act as a catalyst for the expansion of public participation by utilizing other techniques (workshops, small group meetings, etc.) to involve the committee members' constituency.

The success or failure of citizens committees seems to hinge on selection of committee members and timing. Selection of members often becomes the responsibility of the agency, but organizations or local officials should be invited to designate members or at least suggest names. Representatives from certain major groups must be included from the very beginning, with additions or changes being a function of the committee or the supporting organizations. The committee's purpose and the issues to be addressed should also help to determine its membership.

Committees are often unproductive because they are initiated too late in the planning study. In this situation, members feel they are little more than a token gesture and can contribute nothing that will influence what has already been determined. On the other extreme, beginning too early when the members have nothing on which to work may result in apathy and dissolution of the committee.

The citizens' committee can be an effective tool for public involvement in planning; however, there are some major difficulties. First and foremost of these is the time commitment required of the planners and the participants. The planner usually must spend a great deal of his time organizing and participating in committee functions. The committee members, if they take their task seriously, must also devote a considerable amount of time to the committee.

Considering these factors individual citizens committees, on the average, may not have a long life expectancy. In studies where there is not a considerable degree of opposition and interest, apathy takes its toll. It is also difficult to determine the extent of the public interests that a committee's advice or actions may represent. Since a committee with a true advisory capacity is difficult to staff with people representing a broad range of community interests as well as expertise pertinent to the study, this type of committee often ends up serving a limited or issue specific function. However, a committee that is broadly representative can be extremely useful as a sounding board for study proposals.

Citizen representatives on public bodies. Electing or appointing citizens to public policy bodies is a technique frequently used to give citizens representation in policy making. These groups may be in the official decision structure or simply advisory to those that are. Representation on public bodies is one of the most direct methods for citizens to play a role in policy making. However, the credibility of the process can be jeopardized if citizens appear to be co-opted by the agency or if the representation is only tokenism and not involving a broad enough spectrum of viewpoints.

Fishbowl planning. According to Jordan et al. (1976), the term fishbowl planning is used to denote an open planning process in which all the public interests can express support or opposition to alternatives before they are adopted. Alternatives are described by the agency in a series of brochures and public meetings. Groups and individuals are encouraged to comment pro or con on the alternatives, and assist in restructuring the alternatives. Fishbowl planning allows all the parties to be involved from the cutset of the process. Through iteration, unacceptable alternatives can be screened out, and all groups share information equally. On the negative side, it has been pointed out that the public is presented with only limited information and the alternatives presented are controlled by the agency. The process does have good potential for resolving conflicts and issues because of the openness and opportunity for modification of alternatives.

Policy capturing. Policy capturing refers to mathematical analysis to make explicit the values of participants in a policy making process. The technique derives from the observation that people assign different value weights to the important variables or consequences in a decision situation. To quantitatively define these values requires an instrument on which individuals can indicate preferences for various values. Multiple linear regression techniques are used to statistically analyze the data to show participants the variables on which their preferences and points of view are based. Policy capturing offers a statistical procedure for examining alternative plans in terms of their value sets. In using such procedures, however, some ethical questions have been raised since citizens are asked to reveal their personal values. This is a possible

invasion of privacy and might also lead to possible manipulation of citizens in the decision process.

Decision making techniques

Those techniques in the decision-making category are aimed at helping the publics and the agency reach a broad enough base of consensus and support that the policy or alternative can be implemented. The methods noted here are not meant to replace legally constituted decision making channels, as discussed in Chapter 2, but rather to provide mechanisms for reaching consensus or sharing of citizens in reaching final decisions.

Arbitrative planning. In order to effect planning and policy decisions the agency and public interests refer unresolved issues to an independent party who acts as the arbitrator. If the various interests agree in advance to accept the decision, then this approach can serve as a final decision technique. However, heavy emphasis is placed on the skill and diplomacy of the arbitrator. Finding such an individual, one that is recognized for fairness and impartiality may be a difficult task in itself.

Referendum. A referendum places the final decision before the electorate in the form of a ballot proposition. The vote then selects the course of action from the several alternatives presented. The referendum appears to be among the most democractic methods for citizen participation in public decision making with each voter having equal opportunity to express his views. The real extent of participation, however, may be limited by the previous decisions on what alternatives should be placed before the electorate, and the outcome may be affected by a lack of understanding of proposals by the electorate.

Citizen review boards. The citizen review board is delegated the full decision making authority for selecting plans or policies. Members of the board may be either elected or appointed by the agency or elected officials. A form of the review board used frequently in public works decisions is the citizen commission which represents the public interest in agency actions. Considering the wide diversity of views in a region, it may be difficult to structure a commission that is fully representative of the population served. Thus, its success depends on the openness and credibility of the members.

Media-based issue balloting. Issue balloting as a decision mechanism grows out of the concept of a town meeting. Broadening its use to solicit the views of a large number of citizens in a region requires a media approach consisting of three steps: issues are selected, alternative choices on each issue are presented via mass media, and the public is invited to vote on their preferred alternatives (e.g., by calling the TV station or returning a ballot clipped from the newspaper). Through this procedure, a large number

of citizens can be reached and involved in a decision. However, the choices are limited to those alternatives placed on the ballot with little or no opportunity for additions or modifications.

Participation process support

Process support includes activities that serve to make other public participation activities more effective. They are identified as supporting techniques since they can be used to enhance the capabilities or methodologies described for all of the functional planning categories.

Citizen employment and honoraria. Direct citizen representation may be accomplished by employment of community residents on the planning teams so that they can devote the necessary time and effort to the study, or by employment of outside professionals to specifically analyze or evaluate important aspects of alternatives in a study, or by employment of one or more ombudsman to coordinate and represent the several interests in the community. Care must be taken in the use of these methods so that in selecting direct representatives the interests in the community are afforded a balanced vote. Rather than direct employment, citizens may also be paid honoraria for service on citizens committees, task forces, or other bodies representative of public interests in the study.

Community technical assistance. As part of a study the agency may also provide technical expertise to communities and groups for dealing with related planning problems. This usually involves designating some of the agency personnel to work directly with community groups as their technical support. This gives citizens a better capability to respond in seminars, small community meetings and community task forces. While providing technical assistance requires commitments of time and technical personnel and resources, the payoff in terms of increased credibility and coordination with local interests is usually worth it.

Game simulation. Game simulations attempt to create the planning and decision making environment in a laboratory setting. This enables the various citizen interests and the agency to interact experimentally with alternative policy options and examine their impact or outcomes before having to make any real commitments of resources or binding decisions. Generally, a game requires description of roles of those involved and a set of rules that define the scope of action appropriate to the various roles. Computer assisted models are often used to simulate the quantitative relationships and results of decisions to commit physical and economic resources. A key ingredient of the learning process is the behavioral interaction among the participants and the opportunity to experience the different goals and values involved in a policy decision. As a cautionary note, gaming is still in a developmental stage, and most are a simplification of the real world problem. Therefore, empirical results should be used with caution.

Group dynamics. The term group dynamics is used generically to classify a variety of techniques and exercises designed to facilitate group interaction, improve communication skills, increase interpersonal sensitivity, and develop problem solving and leadership capabilities. These techniques can be employed in a number of settings requiring agency and citizen participation in the study, such as workshops, task forces, advisory committees and so on. Some of the communication and facilitation techniques include conflict utilization opinionnaire, empathy, feedback, relations diagramming, and videotaped group review. Techniques aimed at enhancing problem solving capabilities are brainstorming, force field analysis, nominal group process, role playing, synetics, and thrust problem analysis. Care should be used in employing these techniques for two reasons: first, many of them focus only on group dynamics and do not directly address the planning and decision problems; second, the use of several of the techniques requires the guidance of a well-trained and experienced group leader.

Comparison and Assessment of Techniques

Analyzing participation and communication requirements as related to the functional categories of techniques just discussed should be useful to the planner in structuring a public participation program. Figure 19 (Bishop, 1976) presents a list of public participation methods that have been used in planning studies. It gives an overview and perspective of techniques available for the inclusion of various publics in the planning process. It summarizes their characteristics as communication mechanisms and indicates the techniques most compatible with specific public participation objectives. It also provides the communication capabilities of the techniques in terms of the level of public contact achieved, the ability to handle specific interests, and the degree of two way interaction or communication. The matrix, as such, is intended as a tool for characterizing capabilities of techniques, and not as a rigid guide for selecting among techniques. A comprehensive public participation program which is operational throughout the planning process undoubtedly will have to draw on a wide variety of these communication methods.

Also important to the selection of techniques in structuring a public participation is relating the appropriateness of the various methods to the activities involved in the planning and policy making process. Figure 20, adapted from Jordan et al. (1976) identifies a number of planning process activities, and indicates those techniques that are the most appropriate as determined from their function, purpose, or from actual application experience.

As a limited indication of the use of techniques and their perceived effectiveness, Ross et al. (1974) surveyed 30 agencies engaged in various facets of water planning and development in Mississippi. A picture of the agencies' use and assessment of

Communication Characteristics			Public Participation Techniques	Communication Objectives					
				General		Specific			
Level of Public Contact Achieved	Ability to Handle Specific Interest	Degree of 2-Way Communication		Inform/Educate	Reaction/Feedback	Identify needs, issues, concerns	Get ideas/solve Problems	Review and Comment on Data and Analyses	Provide Preferences Resolve Conflict/ Consensus
M	L	L	Public Hearings		X	X		X	
M	L	M	Public Meetings	X	X	X		X	
L	M	H	Informal Small Group Meetings	X	X	X	X	X	X
M	L	M	General Public Information Meetings	X					
L	M	M	Presentations to Community Organization	X	X	X			
L	H	H	Information Coordination Seminars	X	X			X	
L	M	L	Operating Field Offices		X	X	X	X	
L	H	H	Local Planning Visits		X	X		X	
L	H	L	Planning Brochures and Workbooks	X	X		X	X	
M	M	L	Information Brochures and Pamphlets	X					
L	H	H	Field Trips and Site Visits	X		X			
H	L	M	Public Displays	X	X		X	X	
M	L	M	Model Demonstration Projects	X	X			X	X
H	L	L	Material for Mass Media	X					
L	H	M	Response to Public Inquiries	X				X	
H	L	L	Press Releases Inviting Comments	X	X			X	
L	H	L	Letter Requests for Comments		X		X	X	
L	H	H	Employment of Community Residents			X	X		X
L	H	H	Community Interest Advocates				X	X	X
L	H	H	Ombudsman or Representative		X	X	X	X	X
L	H	H	Workshops		X	X	X	X	X
L	H	H	Charettes				X	X	X
L	H	H	Advisory Committees		X	X	X	X	
L	H	H	Task Forces			X	X	X	

L = Low, M = Medium, H = High

Figure 19. Capabilities of Public Participation Techniques.

CITIZEN PARTICIPATION IN THE PLANNING PROCESS

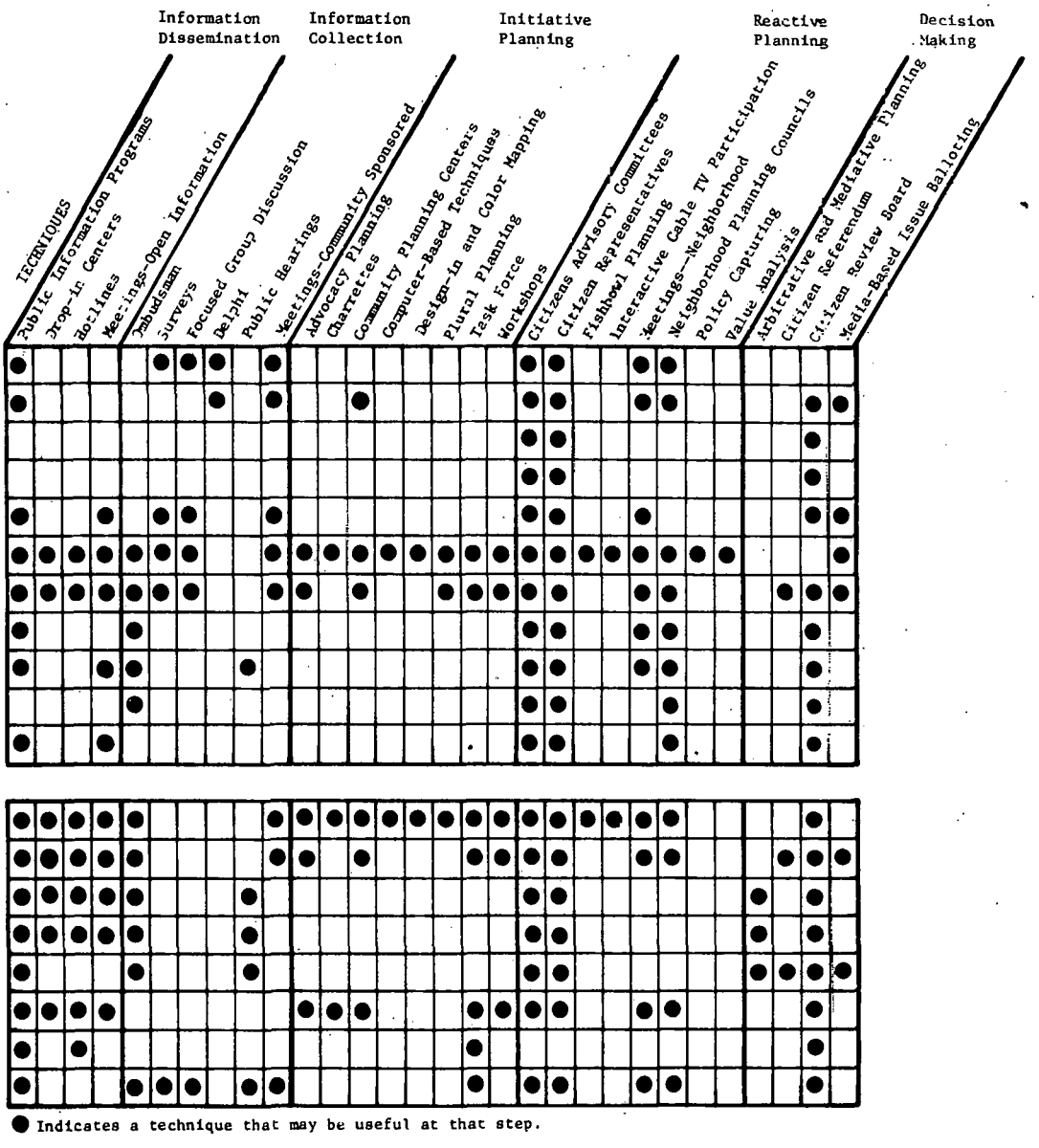


Figure 20. Citizen Participation in the Planning Process

various techniques is indicated in Figure 21. It is interesting to note that the techniques most frequently used are the standard public information office methods--news releases, speeches, letters and informal contacts. It is also not surprising that these are correspondingly thought to be most effective. However, the most revealing aspect of these data are that techniques that involve direct agency and public interaction are very little used. In other words, the agencies are mostly conducting indirect public information activities.

Another dimension to be considered in the selection of public participation techniques is their effectiveness in reaching various segments of the public. Bishop (1976) presents a summary of effectiveness of various media in reaching a cross-section of publics (see Figure 22). It attempts to indicate, in general, those techniques that have a high, moderate or low effectiveness with a selective classification of publics.

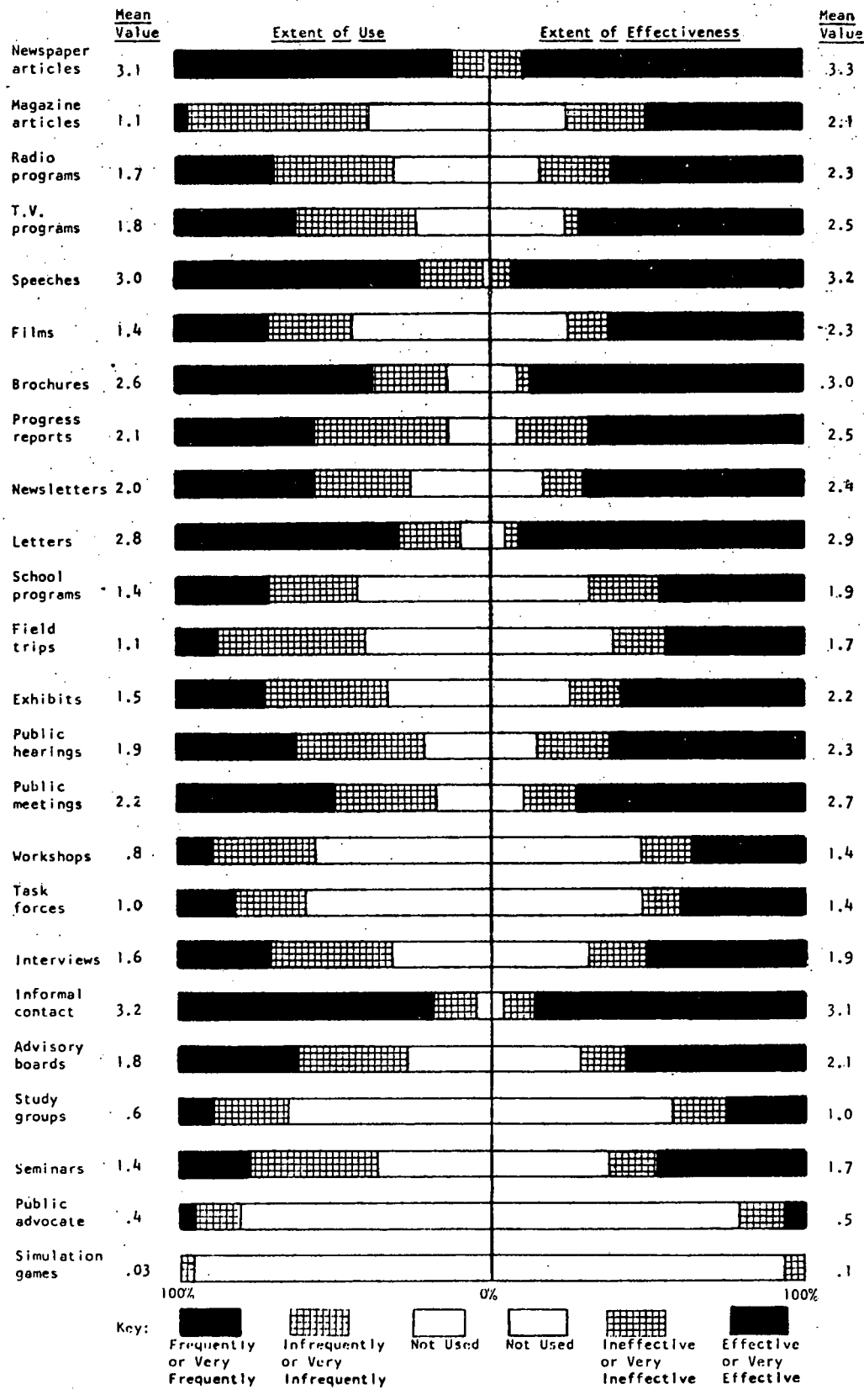


Figure 21. Agencies' Use and Assessment of Effectiveness for Selected Communication Mechanisms.

Publics	Public Hearings and Meetings	Printed Brochures	Radio Programs and News	TV Programs and News	Newspaper Articles	Magazine Articles	Direct Mail and Newsletters	Motion Picture Film	Slide-Tape Presentation	Telelecture
Individual Citizens	M	L	H	H	H	L	L	M	M	L
Sportsmen Groups	M	M	M	M	M	H	H	H	H	M
Conservation-Environment Groups	M	M	M	M	M	H	H	H	H	M
Farm Organizations	M	M	M	M	M	H	H	M	M	M
Property Owners and Users	M	L	H	H	H	L	L	M	M	L
Business-Industrial	L	L	M	M	M	M	H	M	M	L
Professional Groups and Organizations	L	L	M	M	M	M	H	M	M	L
Educational Institutions	M	L	L	L	M	M	H	M	M	M
Service Clubs and Civic Organizations	L	L	M	M	M	M	L	H	H	M
Labor Unions	L	L	M	M	M	L	L	M	M	L
State-Local Agencies	H	M	L	L	L	M	H	H	H	H
State-Local Elected Officials	H	M	L	L	L	L	H	H	H	H
Federal Agencies	H	M	L	L	L	L	H	M	M	M
Other Groups and Organizations	H	M	M	M	M	M	H	H	H	M

H = Highly Effective

M = Moderately Effective

L = Least Effective

Figure 22. Various "Publics" Using Different Media.

CHAPTER 4

STRUCTURING PUBLIC PARTICIPATION PROGRAMS

Introduction

While some may debate whether government agency administrative planning and management lies wholly within the realm of technical experts, or if the public has a legitimate role to play, the fact is that concerns of public groups and private citizens have already generated a considerable degree of "public" involvement in planning issues. Referring to citizen participation, Russel Train (1973), Chairman of the Council on Environmental Quality, stated that "Government at all levels must dramatically change its attitudes about public participation in environmental decision-making before we can have truly effective management systems. We must really level with the public. ". . . Public participation in decisions must be an integral part of good public management, . . . " This paper has largely been developed from the perspective of planning as a function of governmental agencies, and of the planner as one on the agency's technical staff. Thus, the challenge for agency planners is to design and implement programs through which citizens can become involved in ways that will contribute most constructively to formulating alternative proposals, in assessing their economic, environmental and social impacts, and in selecting a preferred course of action.

Designing Public Participation Programs

Design Criteria for Effective Public Participation

According to Conner (1975), there are certain characteristics which appear to be essential if a public involvement program is to be developed and managed effectively. The absence of these elements increases the probability of ineffective operations or outright failures. Conner (1975) points out that a sound public participation program should be designed with the following elements in mind:

Process-oriented. Citizen involvement must be integrated into the policy making process in a supportive manner. As the planning process moves through various stages, public participation must be designed at the beginning to fit and support these activities. For instance, citizen input must contribute successively to the indentification of goals and priorities, to the development of alternatives and to selection among them.

Direct and continuous involvement. In any major public works project, citizen participation is not an intermittent activity which can be done on a part-time basis--at least one person from the planning group will need to be responsible for organizing and executing the public involvement program.

Rapidly responsive. There must be a capacity to reply quickly to changing issues and to unforeseen developments in the planning process through various participatory techniques. Inherent in this responsiveness is a respect for the citizens and acceptance of them as valid sources of data, priorities, preferences, some technical expertise and potential alternative solutions. Cooperation as the pervading process in relationships with groups and agencies is also implied in this responsiveness.

Mutually educational. The public should become more aware of planning matters, planners should become more understanding of community concerns, and all parties ought to develop a broader and shared perspective of the opportunities, the problems, the alternative solutions and the criteria for a satisfactory decision.

Multimedia. The program must use not only various means of mass communication as appropriate, but also techniques appropriate for individuals and groups of diverse cultural backgrounds as may occur in the project area. This is particularly important in ensuring that as many persons as possible become aware of the project, its implications for them and the opportunities they have for participating at different stages of the project.

Multidirectional. Information flows must be provided upward, downward, and across the population considered. One-way communication is anathema in a participatory program. Realistically, this often calls for a translation from the language comfortable for one group into that of others involved; area-wide forums, for instance, are often needed to foster lateral communication between groups affected by a project.

Encouraging responsibility. Individuals and groups involved must develop a sense of personal commitment to the outcome.

Political acceptability. This is necessary so neither the project, nor its public participation component will be curtailed, but will be supported. The program's viability usually rests on continuing to keep political leaders informed of project activities and involved in them as appropriate.

Participatively managed. The spirit and style of the administration of the public participation will be reflected in its field operations. The quality and quantity of public participation is

unlikely to exceed that within the agency study team. If they are traditional and defensive, these same characteristics will probably pervade the citizen involvement phase of the project. If an innovative spirit, mutual trust and cooperation prevail in the agency team, they will be more easily fostered among public participants.

Adequately funded. Data gathering, analysis, output and response activities for public participation must be appropriate for the project. This requires sufficient allocation of funds.

Suitably staffed. Enough competent persons must be available as required. This involves experience and training in applied social science, adult education and the media appropriate for the project situation. One or more of these persons will work as specialists in public participation. Other technical staff who also deal with the public will need to be selected with this factor in mind and given some on-the-job opportunities to increase their interpersonal skills. (These will be valuable within the project team as well as in working with citizens.)

Questions in Developing Participative Strategies

A public participation strategy has been defined by Bishop (1970) as "a procedure, established in advance, which determines how, when and in what depth various parties will participate in planning, evaluation and decisions." Developing such a strategy requires answers to such questions as:

a. Who should participate, i.e., who has a legitimate interest?

b. Who will, or is likely to participate?

c. How much participation is desirable? How much is possible?

d. On what issues should there be citizen participation? What is the appropriate timing for participation? At what stages?

e. How should expressed views be weighted?

f. Does residence in a particular area, at a particular place, increase the weight to be attached to views on issues that have a geographic impact? How are areas or communities defined?

g. How does the lack of interest, lack of time, lack of knowledge, or apathy of substantial portions of the people affected by almost any public action influence the evaluation of participation?

h. What weight should be given to the expression of organized and articulate interest groups, when it is recognized that many who may be affected by public action are not represented and do not express their interests? (Wengert, 1971)

In general, Conner (1975) suggests that a public participation program should provide a wide range of appropriate opportunities for people, as individuals and groups, to obtain information, ask questions and respond to issues and alternatives. As citizens all have both a responsibility and an opportunity to participate in their society; those who wish to will do so. The remainder pass up the opportunity on their own responsbility.

Selection of Participation Techniques in Program Design

The design of a public participation program eventually boils down to the selection and use of several of the techniques discussed in Chapter 3, to facilitate public involvement during the planning and decision process. It is evident, then, that the public participation program must be keyed into the agency's technical analysis procedures and activities. The basic issues concerned are (Ueland et al., 1974) where can citizens most logically and effectively enter the process, and what are the public participation purposes and objectives needed to accomplish the planning activity.

As a framework for structuring a public participation program, it is useful to describe or diagram planning procedures and identify the key decision points. The development of the diagram serves two purposes: (1) to evaluate the openness of technical planning procedures and identify participative opportunities, and (2) to relate key public participation objectives to the accomplishment of planning activities. An analytical example illustrating these points is described in the following section.

Participative Opportunities in Planning Process

An analysis of present planning procedures can point up both the opportunities and deficiencies for citizen participation (Bishop, 1969, 1970, 1975). In the case of deficiencies, the process itself may require modification in order for an effective public participation program to be implemented. An example of this point is the environmental impact statement process required by the National Environmental Policy Act of 1970.

An important aspect of the National Environmental Policy Act (NEPA) is that of providing a broader base for public involvement in the plans and actions contemplated by the federal resources management agencies. The council on Environmental Quality guidelines for Federal Agencies under NEPA states that:

> In accord with the policy of the National Environmental Policy Act and Executive Order 11514 agencies have a responsibility to develop procedures to insure the fullest practicable provision of timely public information and understanding of Federal plans and programs with environmental impact in order to obtain the views of interested parties. These procedures shall include, wherever appropriate, provision for public hearings, and shall provide the public with relevant information, including information on alternative courses of action. (1)

The key issues regarding the public's participatory role in environmental impact assessment center on the questions: What is "timely public information?" What procedures should be used to disseminate it? How should public response be incorporated into the Environmental Impact Statement (EIS), and the plans and actions proposed by the agency?

Required NEPA Procedures. So far the above issues have been largely handled by agencies along the traditional lines for preparing highway, water resources, airport, navigation, and electrical power plans . The agency gathers the basic plan formulation data, examines various alternatives, and determines a course of action to be placed before the public in the standard public hearing.

With this approach, the public's opportunity to respond to environmental impact assessment is concentrated at the end of the process and confined to a review and critique of the EIS. This is illustrated by Figure 23, which shows an overview of the general procedures now being followed by most agencies. The diagram highlights some important points relative to public participation in the environmental impact assessment process:

1. There is a notable lack of environmental information available to the public during the bulk of the planning process, when the major resource problems are being justified and defined, data and planning information assembled, and plans formulated and selected.

2. The agency usually determines whether a proposed action is of sufficient magnitude to warrant an EIS. Public notice of the status of potential environmental impacts comes either through the issuance of a "negative declaration" that there are no significant environmental impacts or a "notice of intent" to prepare an EIS. By responding to the negative declaration the public can make known their perceptions of the seriousness of a project's environmental impacts, but at the same time it may be difficult to react because of limited information about the project.

3. The draft EIS is the major vehicle for public input to the impact assessment process under current procedures. The idea of the

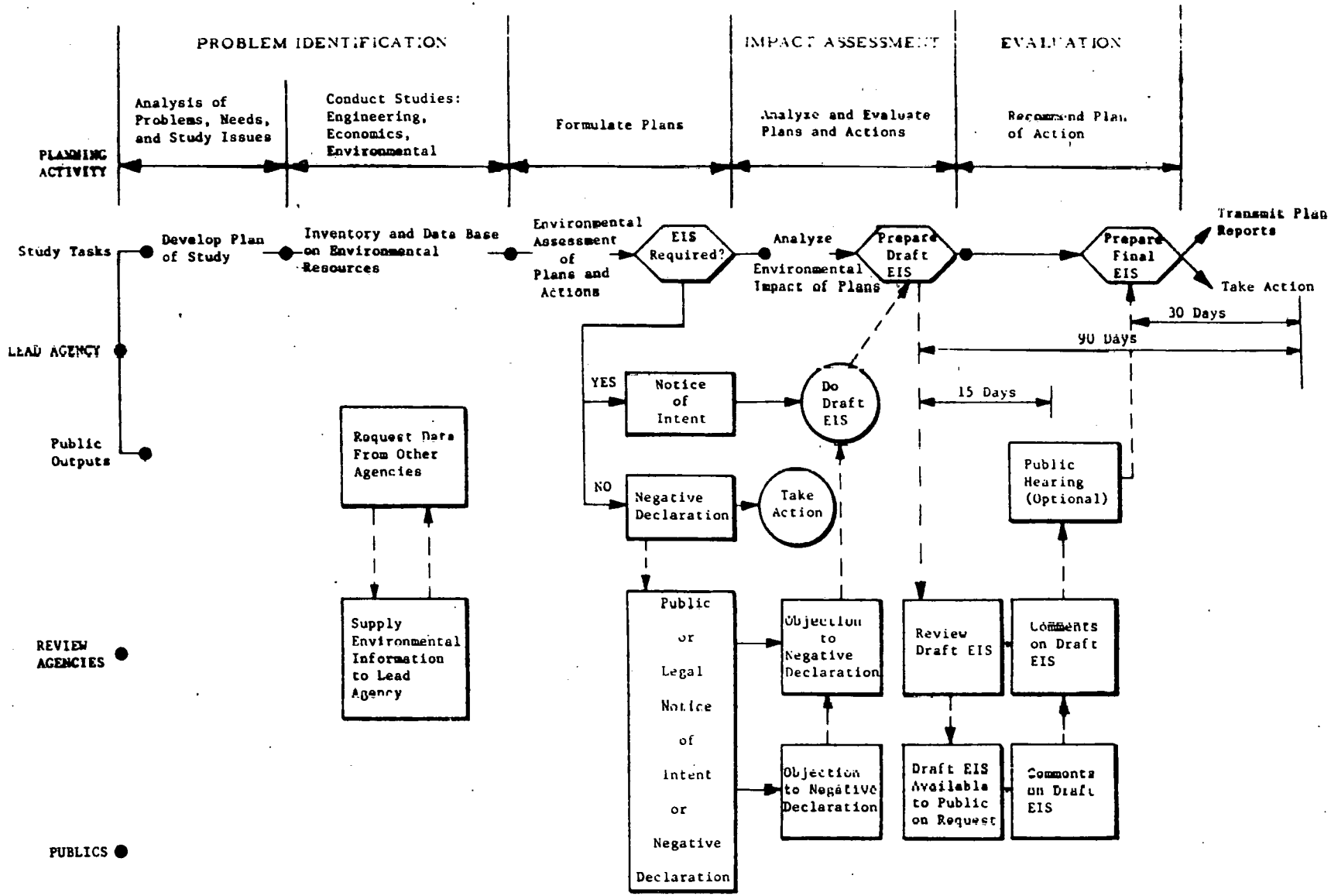


Figure 23. Public Information in the Present EIS Process

draft EIS is an excellent one from the standpoint of eliciting public response. Two problems, however, limit its overall effectiveness. First, there is usually no general distribution of a draft EIS to publics and interest groups. Most are made available only on request. Second, the draft EIS is often lengthy and detailed, thus presenting a considerable problem for the average citizen to digest it and respond effectively. These two problems are compounded by the relatively short time periods required between the issuance of the draft EIS and a formal public hearing (15 days) or taking final action (90 days).

As a result of these problems in the present procedures, about the only participatory options open to the public are either to endorse the action or oppose it. This places the agency and the publics in an adversary position and opposition usually focuses on the EIS as a basis for litigation in holding-up or stopping projects. The upshot of this is that the agency submits an EIS, then holds its breath and hopes for the best.

Modified NEPA Procedures. The expanding role of public participation in the environmental impact assessment process suggests that the following precepts should apply:

1. Environmental impact assessment must necessarily be an integral part of the planning process, and not merely an exercise in ex post facto justification of environmental impacts of planned actions.

2. A corollary is that the emphasis should shift from the EIS as an end product to the EIS as a means of achieving public interaction regarding environmental aspects of plans.

These tenants are reflected in Figure 24, which offers a revised view of how public participation would fit within the environmental impact assessment process. The diagram indicates a continuous flow of information to and from the public at all stages of the impact assessment process.

In the early phases of a study, the level of public interaction aims at developing an "overview" impact assessment with public input to identify environmentally sensitive areas and to develop resource and environmental inventories. As the study progresses, involvement focuses on the formulation of alternative courses of action and delineation of their impacts. At this point, a final determination as to whether an EIS will be required can be made. The issuing of either a negative declaration or notice of intent should be standard practice. The negative declaration procedure provides several beneficial advantages: the public is informed of the agency's determination that there are no serious environmental impacts; if publics disagree there is an opportunity to make it known; and finally, the agency receives early feedback of a possible

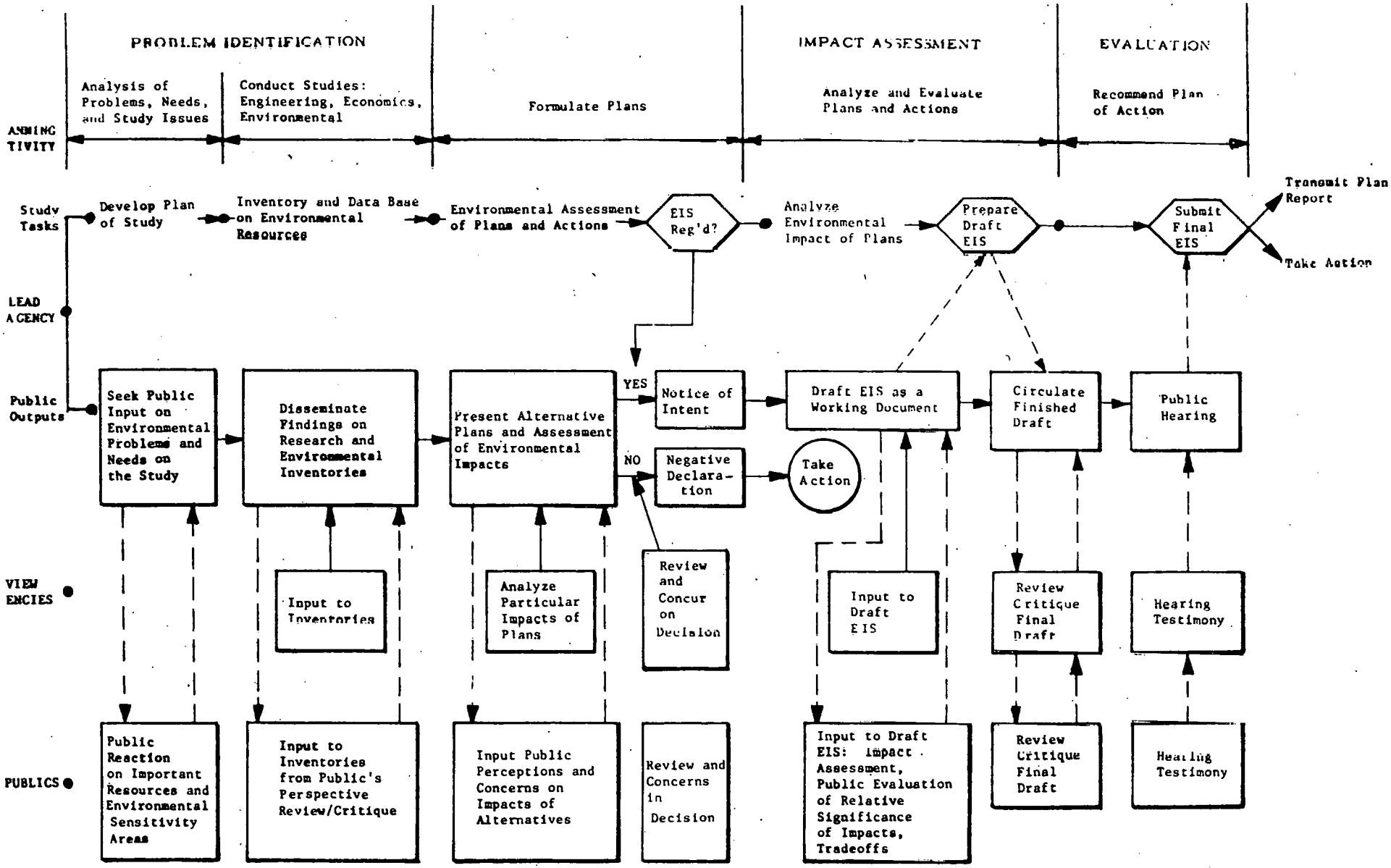


Figure 24. Public Participation in Environmental Impact Assessment

error in not preparing an impact statement. Likewise, if the agency decides an EIS should be prepared, the notice of intent will alert some public interests that are not yet aware of the study and draw out their participation at an earlier stage during the drafting of the EIS.

By continuing with a well organized program of public involvement after issuing the notice of intent, the draft EIS can become a working document for interaction among public interests in providing guidance on the environmental effects of each alternative. Public perceptions and consensus in these areas may provide impetus for abandoning highly problematic or controversial solutions in favor of seeking other approaches to mitigate serious environmental damages.

The draft EIS then represents a documentation of public input to the process and most public interest groups should be well familiar with its content. Under this mode of operation, it seems desirable to simply discuss the alternatives without favoring any particular one, unless there is a high degree of consensus for a certain course of action. A circulation of the final draft and a formal public hearing provides a final check to insure that all important considerations have been taken into account and will be appropriately summarized in the final EIS.

Participation Objectives of Planning Activities

Identifying participation objectives for various technical planning activities provides one of the keys for selecting appropriate public participation techniques. Ueland et al. (1974) developed a detailed system for selecting public participation techniques for the Pennsylvania transportation planning process. In the process diagram shown in Figure 25, public participation objectives are keyed to the various technical activities. These objectives included:

a. Notification
b. Citizen feedback
c. Presentation
d. Dialogue
e. Advice
f. Community staff
g. Task force
h. Negotiation
i. Monitoring

A series of forms are used to select the appropriate techniques by identifying the main participative objectives and other characteristics of the situation such as budget available for public involvement, time for completing technical activities, and the prevailing situation with community groups regarding level of trust and understanding of issues.

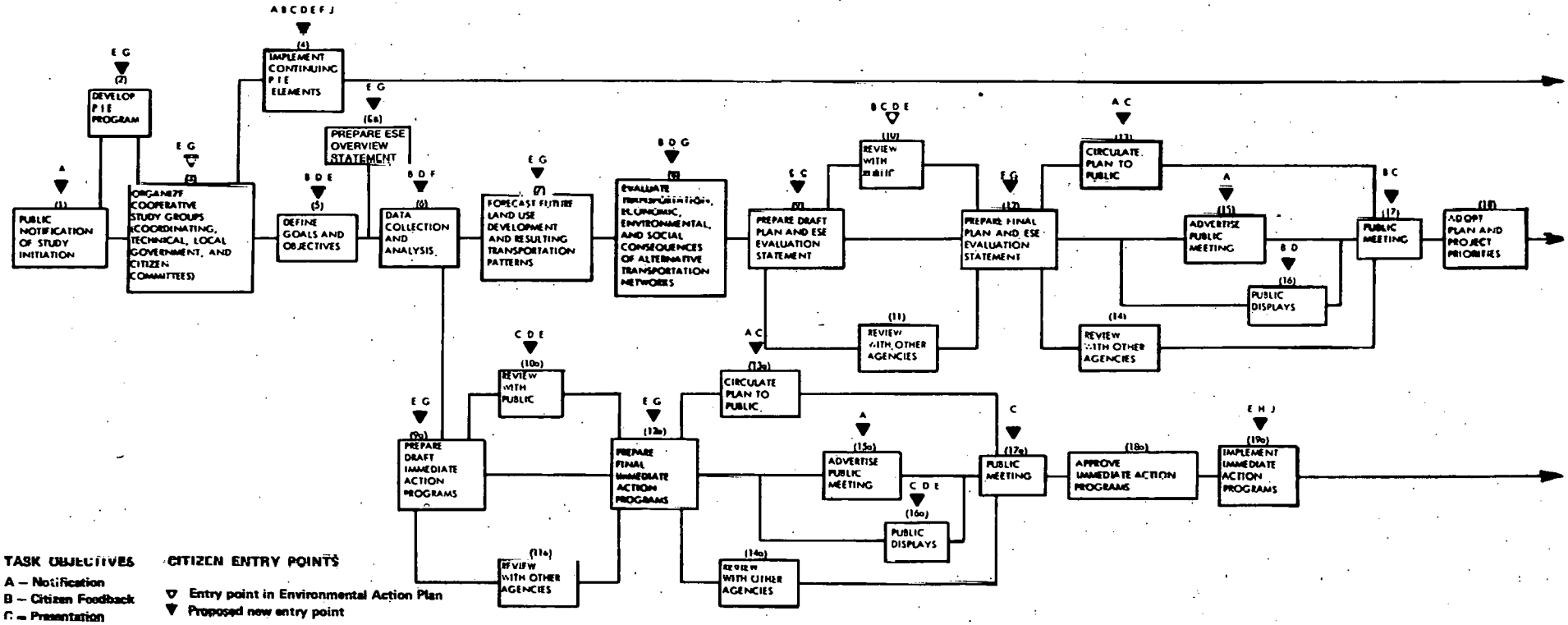


Figure 25. **INITIAL SYSTEMS PLAN DEVELOPMENT (5 Years Average) AND SUBAREA PLAN DEVELOPMENT**

Relation of Public Participation to the Planning Process--Some Examples

Matching public participation requirements with technical planning procedures leads to a selection of techniques and the organization of a public participation program. Two very simple examples of the process are presented in the following sections. They are intended only to illustrate an approach in conceptualizing programs for public participation. It should be emphasized that each situation is unique and thus requires its own tailored approach. Furthermore, programs must remain flexible so that adjustment can be made to the evolving planning situation.

Region Planning and Policy Making

The two main characteristics of regional policy planning problems are likely to be geographic and demographic diversity. The regional geographic setting will typically have a number of population centers with industry, commerce, and sometimes rural agricultural activities. With the juxtaposition of these activities and variations in lifestyles, developing an effective communications program which can respond to the many geographic, economic, social and political subunits becomes a difficult challenge. In covering a region, time and distance represent further problems that must be overcome in the communication effort.

Against this general background for regional policy studies, two general points in developing the communication program seem appropriate:

1. Programs should be organized and carried out on a subregional basis to adequately treat geographic, economic, and social differences to insure good local input.

2. It will likely fall to the planner to represent the broad regional interest in integrating local desires into a comprehensive plan, and to set a participatory mechanism through which incompatibilities and conflicts among subregional interests can be resolved.

The following represents an example structure for a communications plan for planning at a regional level, such as a river basin plan (Bishop, 1975). The example is not meant to represent an ideal program nor is it necessarily presented as a model to follow. Rather it should be a point of departure or basis for discussion and critique in developing a program which recognizes the unique aspects of the particular policy planning study.

The accompanying activity diagram in Figure 26 details the public participation activities for three groups of publics involved during five planning phases of the study. Participants are grouped as follows:

PUBLIC PARTICIPATION PLAN

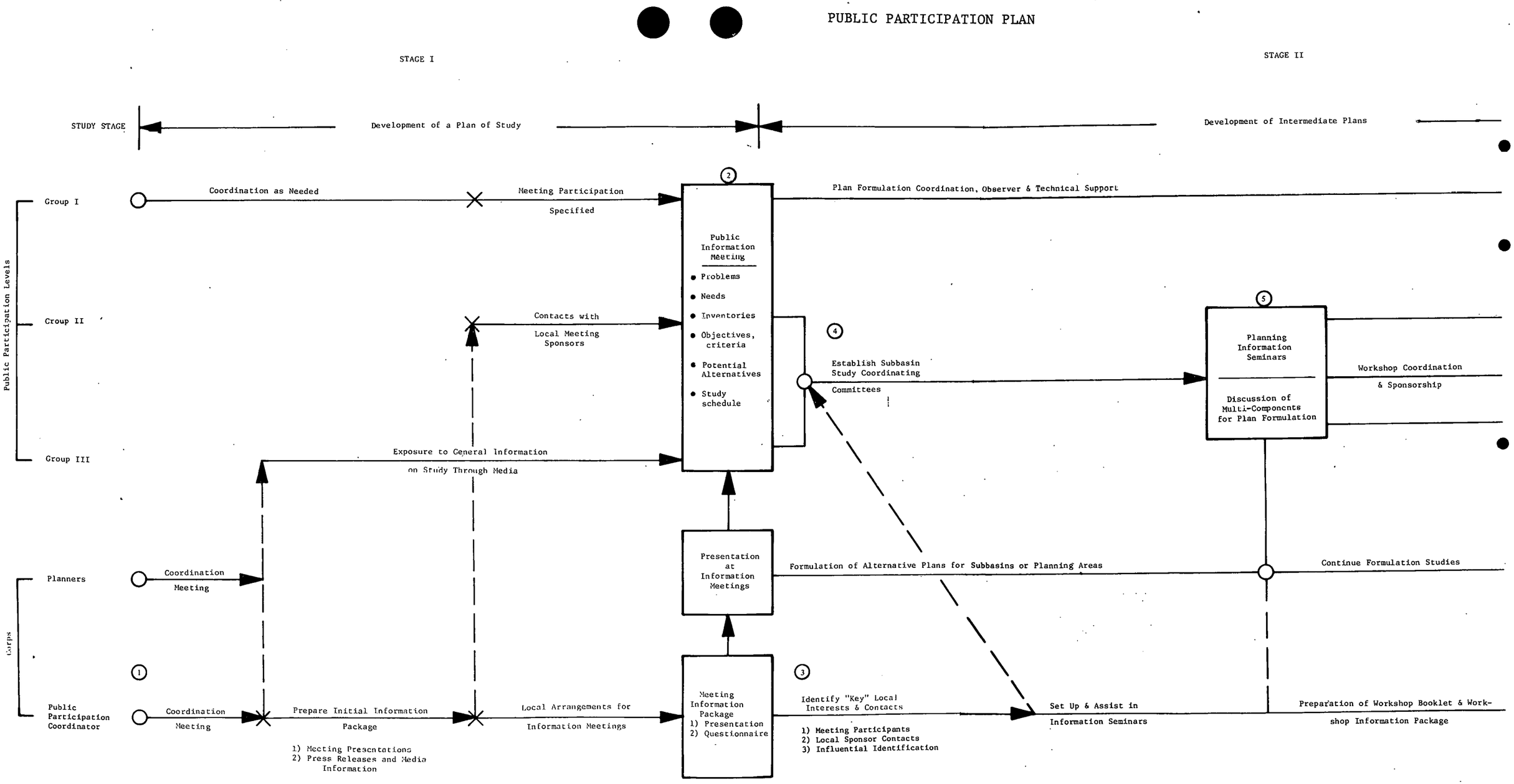
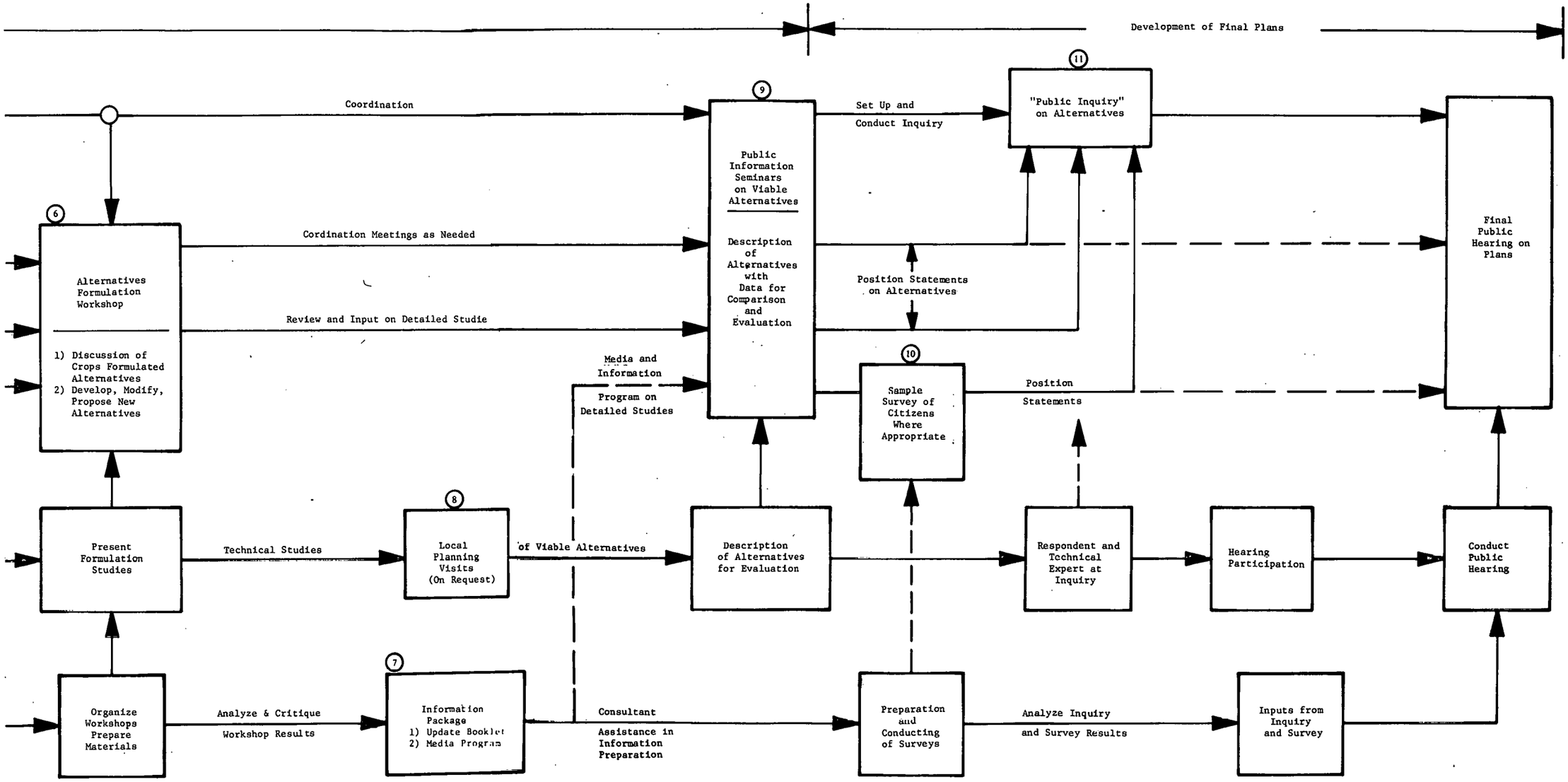


Figure 26. Public Participation Plan

STAGE III


Development of Final Plans
Coordination
Cordination Meetings as Needed
Review and Input on Detailed Studie
Media and Information Program on Detailed Studies
Set Up and Conduct Inquiry
Position Statements on Alternatives
Position Statements
Consultant Assistance in Information Preparation
Analyze & Critique Workshop Results
Technical Studies
of Viable Alternatives
Analyze Inquiry and Survey Results
6
Alternatives Formulation Workshop
1) Discussion of Crops Formulated Alternatives
2) Develop, Modify, Propose New Alternatives
9
Public Information Seminars on Viable Alternatives
Description of Alternatives with Data for Comparison and Evaluation
11
"Public Inquiry" on Alternatives
10
Sample Survey of Citizens Where Appropriate
Final Public Hearing on Plans
Present Formulation Studies
8
Local Planning Visits (On Request)
Description of Alternatives for Evaluation
Respondent and Technical Expert at Inquiry
Hearing Participation
Conduct Public Hearing
Organize Workshops Prepare Materials
7
Information Package
1) Update Booklet
2) Media Program
Preparation and Conducting of Surveys
Inputs from Inquiry and Survey

Group I. Federal and State agencies

Group II. Local government officials, regional planning agencies and councils of government, leaders of public service organizations, clubs and special interest groups, and other identified "influentials."

Group III. The general public as individual citizens

Key elements or activities in the public participation plan are identified by a number in order to facilitate the following summary description of these activities.

1. Public involvement specialist. The task of the "public involvement specialist" as a member of the planning team is to effectively coordinate, assemble, and prepare information and data, and develop communications among the three participant groups. The specialists work should be, in part, to provide a link between the agency planning team and the public interests. He should also maintain contact with any outside organizations contracted to do parts of the study. It is essential for the specialist to be fully familiar with the study progress, and to have full ability to prepare informational brochures, packets, progress reports, and summaries of data and information. A key responsibility of the specialist should be the preparation of a non-technical summary of all study findings and reports. The summary can be included with the main report and also issued as a separate document for Group I and II public participation activities and to Group III upon request.

2. Public information meeting. Public information sessions would be conducted according to the description in Chapter 3.

3. Identification of "Key" local contacts. An identification of "key" local contacts should be undertaken. This could be managed through observations and contacts made in setting up the public information meetings, through identification of attendees at the meetings, and as part of a questionnaire to be filled out by meeting attendees. The purpose is to develop a master list (as well as an updated mailing list) of all individuals or leaders of groups who are in a position to influence the outcome and acceptance of the planning effort. The identification should indicate the basis for inclusion on the list, the group represented and appropriate ways to maintain contact and coordination.

4. Sub-regional coordinating committees. A valuable asset in maintaining continuity in local contact throughout the study would be some type of local committees for sub-regions within the study area. These committees may be precipitated through the public information meeting of above, (2) and then strengthened by drawing in those identified as "key" locals as discussed in (3). The local committees

would be in a position to act as a focal point for organizing future planning meetings and also as a contact for obtaining local input and participation in the formulation and development of viable alternatives.

5. Planning information seminars. In order to encourage the effective participation of Groups II and III in the study, one or more informational seminars could be held at the agency office and/or other appropriate locations. The agency would discuss its findings to date and an opportunity for Group II and III participants to make an input would be provided. Advantages of the agency office as a meeting place is the availability of data, maps, and other materials, and the opportunity for citizens to get a first-hand look at the organization and operation. On the other hand, it is the agency's home turf and may represent a threat to citizens.

6. Alternatives formulation workshop. As a means of getting public input into the plan formulation efforts, a series of formulation workshops would be held for Group II and III participants. The purpose is to fully familiarize participants with the components of alternative plans in order for them to respond and contribute to synthesizing several viable alternative plans. Again the planners must take an active role in presenting and discussing study findings.

7. Information package. Materials developed by the "public participation coordinator or specialist" should be disseminated through information channels and in cooperation with Group I study cooperators and cosponsors. Mass media should especially be used to reach Group III, and individual information packages, brochures, and mailings to reach Group II.

8. Local planning visits. Follow-up to the information package can be accomplished through local planning visits as requested. The information package should contain instructions on who to contact and how to arrange the visits.

9. Public information meetings. As a prelude to deriving public input in the evaluation of viable alternatives, it is important to provide an adequate understanding of the final set of planning proposals so that comment and feedback can be made on the basis of accurate information and data. The mechanism for accomplishing this would be a series of information meetings where the set of proposals can be discussed openly and in the context of no commitment to any final decision. Sponsorship of the seminars could well be handled by the sub-region coordinating committees. It should be noted that the "public inquiry" (11) is provided as the opportunity to make formal position statements for or against alternatives.

10. Sample survey of citizens. In order to derive a component of citizen input at this phase that may not have been tapped earlier in the study, a random sample survey of citizens could be conducted.

The objective of the survey would be to identify the important values held by the citizens in the sub-basins and how these values intersect with the components of the viable alternatives. This information will then be available to assess important social, economic and environmental values at the public inquiry.

11. Public inquiry. Often the agency or an equivalent regional authority will act as the decision making body for approval of the final plans. If so, such an agency would be the appropriate authority to conduct a public inquiry. The public inquiry will insure that final input information from Levels II and III is achieved. The inquiry should be open from 2 to 3 days. The format should allow individuals and representatives of groups to present testimony, information and data at any convenient time during the day for the benefit of the planners and decision-makers. This procedure avoids the formality and structure of a hearing and encourages the free and open dialogue necessary as planning nears completion.

Public Participation in Urban Settings

Another area of policy planning, which represents a different public participation setting, is that or urban areas. The key factor in the urban setting is the relatively high population density, i.e., large populations concentrated in a relatively small geographic area. In addition there is likely to be a bewildering number of political jurisdictions and special districts, as well as a broad range of social and economic groups, neighborhoods and special interests. The direct participation of a large majority of the citizens in urban areas is difficult to imagine, let alone to expect to accomplish. In this context, it seems appropriate to structure the communication program along the lines of the following general concepts.

1. The direct communications program should be aimed at involving community and governmental leaders, and representatives of citizens groups as a link between planners and the general public as constituent groups.

2. Mass communications should be developed to provide information to the general public and point out the channels for feedback and participation for those who wish to be directly involved.

The following presents an example communications program for an urban study area. Again, it is intended only as an illustration of how communication methods might be organized for such a study. Naturally, each study will have its own unique setting. The accompanying activity diagram of Figure 27 details the public participation activities for three general groups during three general planning stages. Some of the key activities in a public participation plan are identified by number in order to facilitate the following summary description of the activities:

URBAN STUDY - PUBLIC PARTICIPATION PLAN

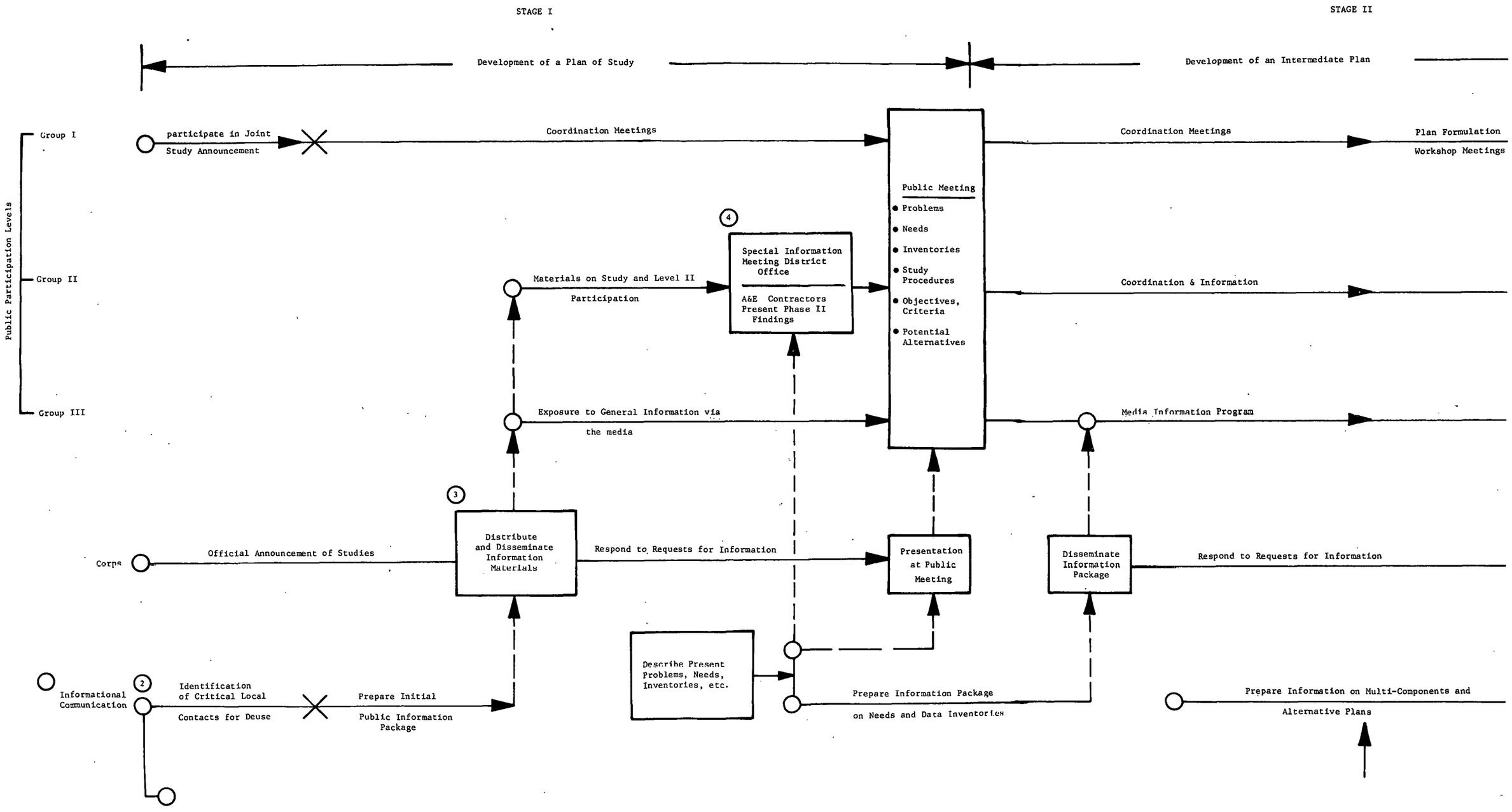
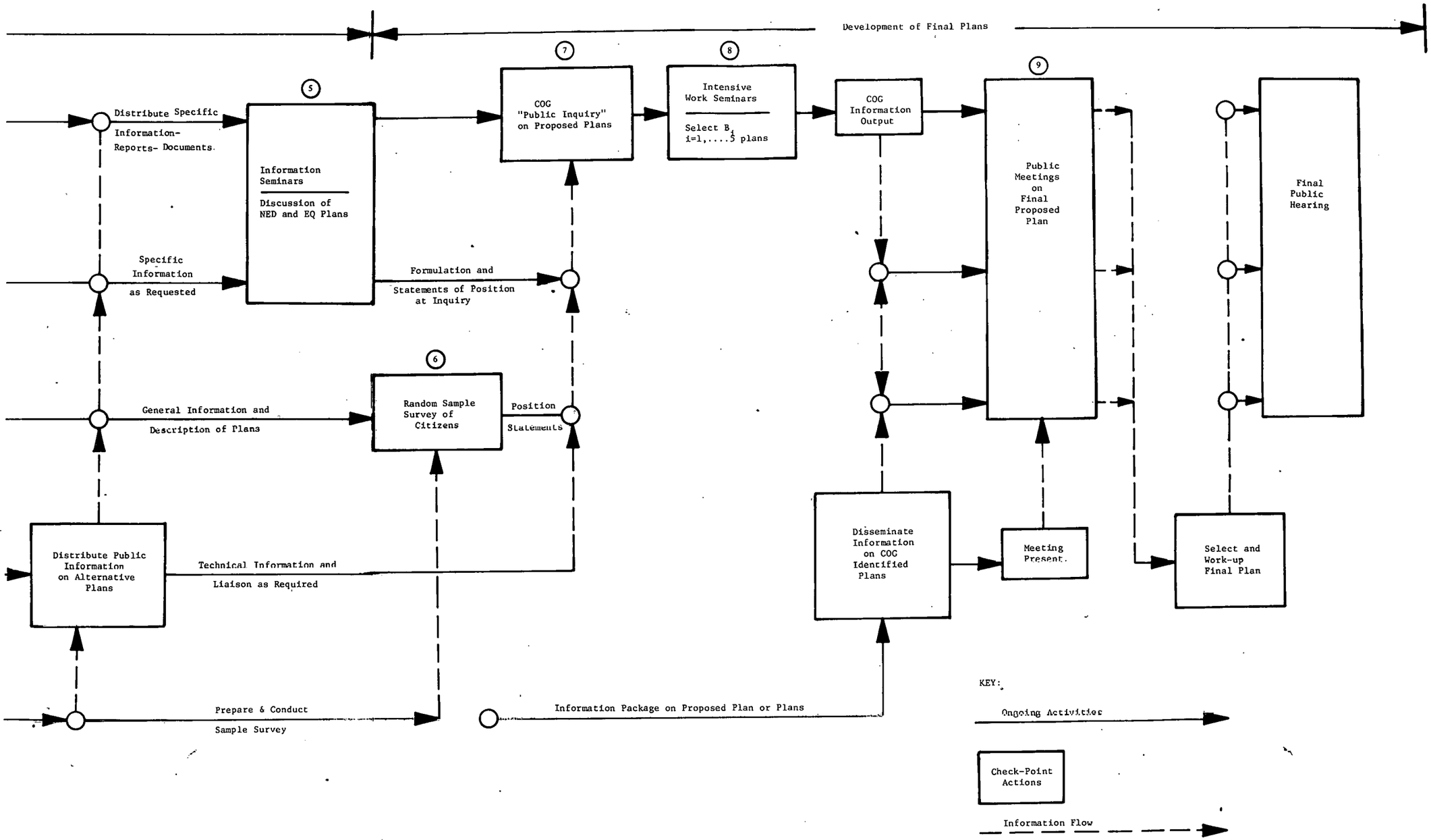


Figure 27. Urban Study--Public Participation Plan

STAGE III


Development of Final Plans
5
Distribute Specific
Information-
Reports- Documents
Information
Seminars
Discussion of
NED and EQ Plans
Specific
Information
as Requested
7
COG
"Public Inquiry"
on Proposed Plans
8
Intensive
Work Seminars
Select B_i
i=1,....5 plans
COG
Information
Output
9
Public
Meetings
on
Final
Proposed
Plan
Final
Public
Hearing
Formulation and
Statements of Position
at Inquiry
6
General Information and
Description of Plans
Random Sample
Survey of
Citizens
Position
Statements
Distribute Public
Information
on Alternative
Plans
Technical Information and
Liaison as Required
Prepare & Conduct
Sample Survey
Information Package on Proposed Plan or Plans
Disseminate
Information
on COG
Identified
Plans
Meeting
Present.
Select and
Work-up
Final Plan
KEY:
Ongoing Activities
Check-Point
Actions
Information Flow

1. Public involvement specialists. Since urban studies involve large populations and a complexity of problems and institutions, a public involvement specialist may be needed as a member of the planning team. The specialist should work in close cooperation with the agency. The specialist would maintain close contact with all professionals working on parts of the study in order to be fully familiar with the study progress and have full ability to prepare informational brochures, packets, progress reports, summaries of data and information. A key responsibility of the communications specialist will be the preparation of a non-technical summary of all project reports which are to be included with the main report. This can be issued as a separate document for Group I and II public participation activities and to Group III upon request.

2. Identification of key local contacts. An identification of key local contacts must be undertaken in order to identify community leaders for the direct communication elements of the program. This could be managed by a short duration effort, preferably undertaken by individuals familiar with the urban area's institutions, governmental jurisdictions, as well as community and social groups. The purpose would be to develop a master list of all individuals or leaders of influential groups who are in a position to influence the outcome and acceptance of the planning effort. These are people with whom contact should be maintained by the agency study leader or his delegated representative. The identification should indicate the basis for inclusion on the list, the individuals' means of access to planning decisions, and appropriate ways to maintain contacts and coordination.

3. Distribute information materials. Materials developed by the communications specialist should be disseminated through media channels and in cooperation with Group I study cooperators and cosponsors. Mass media should especially be used to reach Group III, and individual information packages, brochures and mailings to reach Group II.

4. Special information meeting. In order to encourage the effective participation of Group II in the study, one or more informational conferences might be held at convenient locations. The study team will present its findings, and an opportunity for knowledgeable Group II participants to make an input would be provided.

5. Information seminars on plans. As a prelude to the development of one or more "detailed" plans for analysis, a series of information seminars could be held for Group I and II participants. The purpose would be to fully familiarize these people with the basic components of alternatives. These components serve as a basis for response in synthesizing several plans representing various "mixes" of objectives.

6. Sample survey of citizens. In order to derive a component of citizen input at this phase in the most accurate and usable form, a random sample survey of citizens could be conducted. The objective of the survey would be to identify the important values held by the citizens in the study area and how these values intersect with the components of the policy plans. This information would then be available to assess important social, economic and environmental values at the next key checkpoint.

7. COG public inquiry. A Regional Council of Governments (COG) or some agency of equivalent authority could act as the decision-making body for the selection of the one or more final plans. A public inquiry format could be used to insure that inputs are received from Group II and III. The inquiry should be open for 2 to 3 days and the format should allow individuals and group representatives to present testimony, information, and data at any convenient time for the benefit of the COG planning decision-makers. This procedure avoids the formality and structure of a hearing and encourages a free and open interchange necessary for this point in the planning.

8. Charette sessions. With all of the studies and information now before them, a COG planning work group could move into intensive work sessions to hammer out the final plan(s). The sessions would be planned for a conference facility with accommodations for a conference of a few days duration. The approach would be along the line of the "total immersion" or charette concept, in which the group works together without outside distractions until the final plans have been agreed upon.

9. Public meeting and final plans. In keeping with the guidelines on public meetings in the plan formulation, a general public meeting sponsored jointly by COG and the agency would be held on the plans selected for final study. Based on any final reactions at the public meeting, modifications could be made before the final plan is recommended.

Public Participation and Radioactive Waste Repositories: Some Observations

Background Setting

The determination of citizens to become involved in governmental policy decisions id evident in areas of water resources, transportation, and urban problems. Agencies have responded to these external initiatives and to legislative requirements by developing programs designed to increase planning process visibility and provide greater opportunity for public access to it.

The public is also deeply involved through its own initiative in nuclear issues. Beyond the broad issue of whether nuclear power

or how much, the policy decisions most directly affecting citizens and public interest groups are siting of nuclear power plants and disposal of radioactive wastes. As with virtually all public policy issues, the question of types and locations of repositories for radioactive wastes involve technical requirements and tradeoffs among the economics or cost-effectiveness, health, safety and environmental values. To develop disposal options which are responsive to these factors for various types of radioactive waste problems will necessitate the siting and operation of different kinds of facilities. To address this problem, efforts are being made to classify types of waste in a manner that will facilitate determination of the appropriate kind of repository. Depending on the nature of the materials, their radioactive characteristics, and the possible pathways in nature that could impact on man and the environment, the disposal method may range from isolation in deep geologic burial to confinement and control in shallow land burial to possible handling in well operated sanitary landfills.

Determining the need for and required numbers of various kinds of facilities will involve an assessment of waste problems nationwide. The study and selection of sites will involve detailed technical economics and environmental studies and significant public input.

Nuclear Policy and Public Participation

An extensive literature has developed on the public regulation of nuclear facilities, particularly on site selection for nuclear power plants. Contributions have been made from a wide range of professional viewpoints. This literature indicates there is wide dissatisfaction with present procedures, and there have been many proposals for reform of the regulatory process (Kelma and West, 1976). In the case of plant siting, the basic opportunity for direct citizen action is through intervention in the Nuclear Regulatory Commissions licensing proceedings for power plants. To do this, however, typically requires a lawyer and substantial resources (Lash et al., 1974). Furthermore, participation through intervention is available only at the end of the decision process and not during the period of analysis leading to a siting application.

In the case of radioactive waste disposal, the potential for ad hoc intervention of citizens through their initiatives to examine issues and raise the public consciousness is well demonstrated in the case of the proposed Federal radioactive waste repository at Lyons, Kansas. Presently, there are many avenues for citizen involvement in the siting of nuclear generating plants and radioactive waste repositories. Besides litigation and ad hoc intervention, there are also other opportunities and legal bases for citizens to participate in nuclear power and radioactive waste decisions.

Environmental impact statement process. Recent environmental legislation has provided a set of external controls that place some

limits on the authority of the Department of Energy and the Nuclear Regulatory Commission. The National Environmental Policy Act requires that environmental impact statements be prepared on the consequences of facilities operation and the reasonable alternatives to them. This legislation plus outside pressure led the AEC to belatedly prepare environmental assessments of existing and prospective radioactive waste management practices and alternatives (Lash et al., 1974). Continuation of these efforts might benefit from the preparation of a generic environmental impact statement for nuclear wastes. Preparation of such a statement would provide a forum for national level information and education on the problem with opportunity for discussion and input prior to focusing on local site studies and issues. Then later, site specific studies and preparation of EIS's can address the regional and local problems of site evaluation.

Multilateral decision authority. The questions and issues of nuclear facilities siting involve regulations by all levels of government authority in the federal system. Federal agencies are empowered with regulatory oversight on matters of public health and safety, the application of antitrust legislation to monopolies, and the protection of common property resources which constitute the environmental quality of the nation. Thus decision making on radioactive waste disposal issues will be shared among several agencies. Recent court rulings indicate that the licensing of nuclear power plants by the Nuclear Regulatory Commission must also take into account the waste disposal aspects. The actual waste disposal sites will also require licenses. The Environmental Protection Agency is empowered to set ambient radiation standards for air emissions under the Clean Air Act, and to control toxic and hazardous substances that could be released into the environment. The Department of Energy is involved in the monitoring and management of facilities that both generate nuclear wastes and store them. They are all involved in programs to investigate and develop permanent solutions to the problem.

At the state level there is regulation of the structure and performance of public utilities, environmental quality standards and plans. States have also passed legislation to regulate the siting of nuclear facilities. Statements by DOE officials have also given strong assurances that no facilities would be forced on states without their participation and agreement. Local governments are intimately involved with land use policy, zoning and location of industrial facilities affecting community health, safety, and amenities. Multiple authorities and decision makers, each responding to its own constituencies, are involved in establishing an overall facility decision. This again emphasizes the value of an integrated program of public participation as a mechanism for coordinating the policy making process with other decision authorities, and as a means of involving them and their constituencies.

General Context for Site Selection

In order to view the problems and objectives of public participation in radioactive waste management, it is appropriate to describe in general terms the typical history and evolution that would be involved in the selection, development and operation of a waste repository. It is interesting to note that there are a number of similarities and differences between waste repository siting and decisions on other major public works facilities, such as water resources or transportation projects. Comparing these in Table 3, one important contrast between siting of radioactive waste repositories and other major public facilities is the strong overtone of national debate regarding nuclear power. However, irrespective of questions of whether or not to expand nuclear power generation, it should be emphasized that the radioactive waste disposal problem must still be dealt with even if no more reactors are built. In terms of public participation, a reasonable approach would be to separate the waste disposal question from the other broader issues and establish it as a problem that must be permanently solved to guarantee future health and safety under the present situation.

Table 3. Comparison of Nuclear Waste and Public Works Decisions.

Radioactive Waste Repository	Major Public Works Decision
Similarities	
Long Term	Long Term
Reversible only with great difficulty	Reversible only with great difficulty
Large capital investments	Large capital investments
Differences	
Very few projects nationally	Many projects nationwide
Nationally visible decision	More local and regional decision (with exception of very controversial cases)
Part of larger nationally controversial issue	Tend to be associated more with local needs

Planning and decision process. The general procedure involved in the site selection process is parallel in many aspects to the process of planned change discussed in Chapter 2.

1. Develop a broad selection of alternative sites. At the outset a broad selection of alternative sites should be developed. This can be done based on general criteria for site physical requirements for alternatives in all regions around the country. This should be accomplished before the detailed investigations of any specific sites begin. Public participation at this early phase would place more emphasis on informational and educational activities, and on establishing who are the interested publics.

2. Analyze technical feasibility to narrow choices. In the next phase, studies would be carried out to narrow choices on technical grounds. This would involve evaluation of physical criteria that must be met by the site as a basic requirement. The other important factors that must be evaluated include economic, environmental and social parameters for which the input would be obtained from an intensified use of communication activities in a public participation program.

3. Selection of sites. The selection of one or several sites would be made in the context of a coordinated overall national program. With the technical feasibility of the site established and economic, environmental and social impacts assessed, the final decision would be largely based on competing values and tradeoffs. Particularly during this phase, the aspects of conflict resolution and decision making must be facilitated by the public participation activities. The desired result is to turn conflict to constructive opposition that improves the decision.

4. Site development and operation. The development of the facility and its operation represents a continuing final phase of the process. During this period, community public groups and citizens must adjust to the facility. This should also be facilitated by continued interaction with the local interests in order to make adjustments during construction and operation that will minimize the impacts on the local community. Hopefully, the participation effort will respond to the question of how the community can live with the facility on the best terms.

Participation Problems and Issues. The study process underscores the need for developing a program for public participation that will encourage citizen input throughout the planning process. Viewing the regulatory and siting process and procedures in light of the added dimension of a continuous parallel program of public participation, two common issues in public works decisions are apparent.

1. Increasing Time Required. The long lead times required to fulfill site selection and licensing procedures before initiating construction is often cited as a major problem, particularly in the face of rising construction costs and increasing demands for electrical power. A number of reasons have been given for the

lengthy siting process including poorly defined administrative requirements, lack of coordination in review and decision making, complexity of construction, permit and licensing procedures, and the increasing tendency to litigation as the basic tool of public intervention. Many of these are problems of poor coordination with government at all levels and with citizens. While there is certainly a possibility that expanded public involvement in the process could increase the length of the process, a well organized program of public participation could significantly improve the the present lack of coordination and the tendency to litigation.

2. "Not in My Backyard" Syndrome. The cases of nuclear plant and radioactive disposal siting are particularly vivid examples of the "not in my backyard" problem in policy decisions. The public may demand the development of alternative sources of energy and the need for expanding nuclear capacity but insists that it be located some other place. In this respect, objective decision making may be hampered by a parochial view of the decisions. The purpose of the public participation process in this setting is to inject a broad spectrum of interests and values into the considerations to eliminate narrowly based decisions.

Public Participation Process--A Summary

At the outset of this paper, four general questions were set out regarding the development of public participation programs. In developing the state-of-the-art review, the principles and concepts related to these questions were presented. This concluding section briefly addresses these questions as they apply to nuclear waste repositories. The discussion is by way of summary and is intended only to lay a beginning foundation for designing public participation strategies for future planning efforts.

Objectives for a Public Participation Program. The disposal of radioactive wastes from various sources is clearly a national problem. However, the solutions to the problem--safe handling, transportation, and storage of wastes--will impact primarily at the regional and local levels. Thus, the public participation program objectives must be viewed from two levels: (1) the national picture and policy perceptions as part of the overall nuclear energy issue, and (2) the regional and local participation involved in evaluating various siting alternatives. The question of program objectives is somewhat complicated by the fact that while siting alternatives may be studied in several different regions of the country, only a few of those will likely be selected. Since only a few sites will be developed, problems could arise over equity among regions in decisions as to who gets them.

In any case, a review of public participation objectives indicates that they are generally applicable to nuclear waste disposal planning studies:

1. Information and education. Recognizing the emotional dimension of nuclear issues, information and education most certainly must be a major objective of public participation efforts. The program should include, in general, information on the need to solve the waste disposal, organization of the study and progress, and information on alternatives and impacts. It would seem to be particularly important in this case to establish the need for a permanent solution to handling radioactive waste materials regardless of the future policy decisions regarding nuclear energy.

2. Liaison with federal, state and local agencies. Liaison with other agencies will be extremely important in studies on nuclear waste repositories becuase of the regulation powers and decision controls that they can exercise. At the federal level, this requires compatibility with legislation dealing with environmental quality, health, safety, and use of natural resources. State and local authorities exercise powers in areas of land use, zoning, transportation access, water and sewer permits.

3. Legitimize agency role and build trust. This will be an important but difficult objective to achieve. DOE's lead role must relate to regulatory powers of other agencies. Local interests will be skeptical of the openness and fairness of the study.

4. Identification of problems, needs, values. Here again, the importance of this objective is emphasized by the national, regional and local aspects of the problem. At the national level the concern is with establishing the appropriate criteria to be met by different disposal sites. Regional and local concerns will be impacts on community such as health, safety, economics, aesthetics, and so on.

5. Idea generation--Problem solving. While many of the issues are technical, much is gained by promoting the objective of real citizen participation in the process of generating ideas and proposing alternatives. It opens new sources of information and ideas to the planners and contributes to developing alternatives that citizens have had a hand in.

6. Reaction and feedback. Without the objective of obtaining reaction and feedback on proposals, much of the true communication purposes of public participation would be lost. Nuclear waste repository siting should be handled as part of a coordinated national plan. Therefore, feedback on specific alternatives as part of the overall national plan should be sought, and input from the local level is needed particularly to evaluate the characteristics of specific sites.

7. Evaluation of alternatives. While technical merits of alternative sites must be examined and carefully evaluated by experts, the relative importance of economic, environmental and social impacts must be evaluated through citizen participation. Tradeoffs will

perhaps be more difficult because various alternatives in the national program have widely different regional impacts.

8. Conflict resolution and consensus. There will undoubtedly be conflict in arriving at final program decisions. While it is unlikely that a concensus decision would be reached, the resolution of as many issues as possible will certainly facilitate decisions.

9. Support for implementation. A program to solve a problem is of little value if the program or plan cannot be implemented. The final key object, then, in the public participation program is to develop support for implementation. Again, because of the national and local nature of the solution, support must be developed at both levels for a proposed management plan and specific sites.

The Publics and Their Identification. Many large public works projects generate an interest and visibility beyond the immediate area of implementation and impact. This is particularly true where decisions are viewed as affecting major or unique national resources or involve issues being debated at the national level. In these situations, as will undoubtedly be the case with the siting of radioactive waste repositories, a wide range of publics must be identified as potential participants in the process. These will range from local citizens and interest groups to national organizations. Techniques described in Chapter 2 of the report are aimed primarily at identifying local or regional citizens. National organizations are readily identifiable from their involvement in similar national issues in the past.

Besides the need to identify private citizens and groups, coordination will be needed with a variety of governmental entities at the local, state, regional and federal levels. City and county government agencies overseeing land use, transportation, water and waste disposal should be identified. State agencies with land and water resources and environmental responsibilities present other possible interfaces. Regional councils may make input through the A-95 review process. At the federal level, several agencies have related program responsibilities including EPA, NRC, DOI and DOE.

Information Communicated. It is difficult to characterize in a general way the information transfer that would be appropriate to the radioactive waste repository siting process. Information and communication needs will vary with the phases of the study and the particular interest groups that are targeted. One of the keys in designing an effective public participation program is to specify the important types of information and feedback needed. The generalized description of planning process information flow requirements in Chapter 2 provides a framework for assessing the particular requirements for nuclear waste repository sitings.

Involvement Techniques. A wide range of public involvement techniques, some extensively used and others new and untried, were discussed in Chapter 3. An organized program of public participation will draw upon many of these techniques in order to establish and maintain effective communication with the variety of citizen interest groups likely to participate in radioactive waste repository decisions. The problem of developing procedures for siting facilities for isolation of nuclear wastes requires a search for ways to integrate direct participation with the usual administrative and regulatory mechanisms used to render public policy decisions. This is borne out by a recent analysis of citizen perceptions of public participation in energy decision making (Curry and Olsen, 1977). Respondents to a survey in Washington state were asked to rank the effectiveness of eight citizen influence techniques and also to rank the same techniques according to their preference for them as a means for exerting citizen influence. The comparative rankings shown in Table 4 indicate some significant and interesting contrasts. In regulatory and legalistic processes, the primary base of influence for citizens is through court suits or through association with interest groups or lobbies that are organized to exert political pressure. However, citizens would prefer to be involved in a participatory process through such mechanisms as control boards, hearings, participation programs, and advisory committees. The same attitude toward participation in public policy decisions is evidenced in surveys done by Bishop (1969).

Table 4. Effectiveness and Preference for Participatory Techniques

Rank	Effectiveness	Preference
1	Court suits	Control Boards
2	Interest Associations	Formal Hearings
3	Control Boards	Participation Program
4	Formal Hearings	Advisory Committees
5	Participation Programs	Public Meetings
6	Advisory Committees	Personal Contacts
7	Public Meetings	Interest Associations
8	Personal Contacts	Court Suits

The general capabilities of the various involvement techniques, as summarized in Chapter 3, provide some guidance in selection methods appropriate for various phases and objectives in formulating a public participation strategy.

Summary

To summarize, as procedures are developed for making policy decisions on nuclear waste disposal, they must be capable of fulfilling regulatory objectives--public health, safety, safeguarding radioactive materials, protecting the environment--as well as providing opportunity for participation of affected interest groups to inject a dimension of public interest and values into the process. However, it should be reiterated that public participation does not necessarily obviate controversy, and in some cases may stimulate it. There is nothing to indicate, in any case, that controversy is necessarily bad if it leads to constructive decision making. An organized participation program to accomplish this would incorporate a range of techniques appropriate to the planning process and the participatory objective.

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ANNOTATED BIBLIOGRAPHY

Introduction

The entries in this bibliography have been drawn from a large number of sources. Collectively, they span a wide variety of issues, techniques, and types of applications in public participation and planning.

The Index System

The contents of the cititations of the bibliography have been roughly identified in terms of a set of key words. These key words have been aggregated into six categories: (1) Participation Theory and Policy, (2) Planning Processes, (3) Decision Making, (4) Techniques and Methods, (5) Communications and (6) Applications and Experiences.

These major categories are given in the index along with an alphabetical listing of the key words that apply to each of them. Following each key word is one or more numbers. These numbers identify the citations in the bibliography for which the corresponding key word applies. To use the index to identify citations dealing with a certain topic, one must first decide which of the six major categories the topic would likely fall under, and then scan the list of the key words within that category to find the key word or words that match or most closely approximate the topic. The potentially relevant citations will be the ones whose numbers appear next to the key words thus identified. For example, to find those citations that deal with the use of brochures in public participation, it is simply necessary to examine the category, "Techniques and Methods" until the key word "brochures" is encountered. Next to this key word are the numbers of the appropriate citations: 45, 73, 75, 80, and 85. These citations are then easily found in the annotated bibliography.

1. Allee, David J., Ed. 1974. The Role of Public Involvement in Water Resources Planning and Development. Technical Completion Report No. 79, Water Resources and Marine Sciences Center, Cornell University, Ithaca, New York.

Results of an experimental program, aimed at encouraging expanded public participation in water resources management in several river basins are reported. The project presupposed the "public" to be composed of interest groups, some of which were latent and subject to stimulation. The report includes guidelines for the role of public involvement in water resources planning, with particular emphasis on the role of the university in public education and involvement.

Keywords: water planning; interest groups

2. American Bar Association Panel. 1972. Symposium on Public Participation in the Location of Facilities Dedicated to Public Use. 24 Administrative Law Review, No. 1, Winter.

The principal issue addressed by the Symposium was the conflict between the need to give the public the widest possible degree of participation in planning processes and, at the same time, the need for swift and certain executive decisions. Judge Irving Kaufman (U.S. Court of Appeals) asserts the major blame for ineffective public participation in power planning in the U.S. to the fragmented government regulation of power development. Chairman John N. Nassikas's (Federal Power Commission) stresses that because of fragmentation of authority there is no orderly provision for public participation in siting decisions to conform to the various standards of different regulatory authorities.

Keywords: power plant licensing; judicial intervention; plant siting; regulatory proceedings; public facilities

3. Arnstein, S. R. 1969. A Ladder of Citizen Participation. Journal of American Institute of Planners, 35(4):216-224.

A typology of citizen participation of offered using examples from three federal social programs (Urban renewal, anti-poverty, model cities). The typology is arranged in a ladder pattern with each rung corresponding to the degree of citizens' power in influencing the planning and decision making process. The rungs in the ladder are "non-participation" (manipulation, therapy), "degrees of citizen power" (partnership, delegated power, citizen control).

Keywords: citizen participation; citizen control; citizen power; urban planning

4. Ashton, Peter M. 1974. Accountability of Public Water Resource Agencies: Legal Institutions for Public Interaction. Proceedings of the Conference on Public Participation in Water Resources Planning and Management, Water Resources Research Institute, University of North Carolina, Raleigh, North Carolina, pp. 51-75.

   Administrative agencies are substantially cutoff for public intervention by the courts. Substantial problems are inherent in seeking to force accountability through court action. Possible legal remedies for assuring greater public involvement in agency decision making activities are discussed including the public trust doctrine, common law remedies, a constitutional amendment, and an environmental court The author is concerned with the issue of whether public involvement is desirable. He suggests that legal remedies which allow agencies to perform their technical tasks without harrassment and yet permitting a system of checks and balances for public protection, may be the ultimate solution.

   Keywords: judicial intervention; water resources

5. Bishop, A. B. 1970. Public Participation in Water Resources Planning. IWR Report 70-7. Corps of Engineers Institute for Water Resources. Ft. Belvoir, Virginia.

   Public concern over the use of the nation's natural resources has led to increased citizen participation in the public works planning process. This report focuses on the development of water resources in relation to the role of the planner in communicating and interacting with the publics in planning. It describes the institutional and behavioral aspects of planning as a process of social change, offers a descriptive model of the planning process, and with this as a framework discusses methods and approaches for developing public participation in planning studies. Six public participation program objectives are set forth to guide the organization of citizen involvement in planning studies. Initially, the planners should identify concerned local interests and establish working relationships with them in order to legitimize the study. A number of methods for working with the public are described, including information campaigns, sample surveys, group advocacy, informal contact with local interests, community workshops, citizens' committees, special task forces, public inquiries, and public hearings. The use of a factor profile is discussed as a method for presenting, discussing and evaluating the social, environmental and community effects, together with the economic effects of alternative planning proposals.

   Keywords: planning theory; communication; decision-making; social aspects; evaluation; water resources; decision hierarchy

6. Bishop, A. B. 1975. Structuring Communication Programs for Public Participation in Water Resources Planning. IWR Report 75-2. U.S. Army Institute for Water Resources, Kingman Building, Ft. Belvoir, Virginia.

This report examines the communications aspects of the public works planning from the standpoint of both communication theory and communications techniques and approaches. Elements of communications theory are related to the planning stages including who is involved and how they are identified, models of communications processes, and the factors affecting communication as a two way process. A number of techniques used in communicating with citizens and interest groups are described together with some programs for citizen involvement.

Keywords: Communication theory; participation models; planning process; water resources ; mass media

7. Bishop, Bruce, Clarkson H. Oglesby, and Gene E. Willeke. 1970. Community Attitudes Toward Freeway Planning: A Study of California's Planning Procedures. Highway Research Record No. 305, Highway Research Board, Washington, D. C.

This paper examines the present methods of the California Division of Highways for planning freeway locations. A mail survey of the attitudes of local government officials and citizens was conducted. The survey was used to evaluate possible modification of the present procedures. A coordinator-catalyst approach seemed most appropriate. The findings of the survey show that the decision-making process can be improved by getting local communities involved early in the planning process. To be effective, this approach must accomplish 3 major objectives: (a) have the communities participate in establishing planning procedures; (b) get the communities to define their goals; and (c) develop freeway plans that will augment other efforts to reach community goals. Development of broader community participation has the following implications for the Division: (a) development of educational and research programs to give personnel a broader view of community problems; (b) development of continuous interchange with local communities; and (c) assignment and education of personnel to carry out the function of the planner as a coordinator and catalyst to develop community consensus.

Keywords: Planning process; questionnaires; coordinator catalyst; transportation; commissions.

8. Bishop, A. Bruce, Mac McKee, T. Ward Morgan, and Rangesan Narayanan. 1976. Multiobjective Planning: Concepts and Methods. Journal of the Water Resources Planning and Management Division, ASCE, Vol. 102, No. WR2, Proc. Paper 12563, November, pp. 239-253.

Present day water resources planning encompasses social, environmental, and economic objectives in developing and choosing among alternative plans. Recent efforts to operationalize multiobjective planning have engendered a variety of new techniques. Where the emphasis has been on methodological developments, this paper considers how developing methodologies relate to the water resources planning process. In terms of the basic problem of multiobjective analysis, the function of the planning process is seen as integrating technical information from the planning team and social value information from the publics to arrive at a socially preferred alternative. A model of this process is presented and some desired attributes of multiobjective methods to support the process are identified. Several classes of multiobjective methods are described and compared as to their implementation requirements and their characteristics relative to both technical and value aspects of the planning process.

Keywords: decision making; multiple objective planning; planning process; public opinion; values; social welfare; water resources; planning models; legal feasibility; community preference

9. Bolle, A. W. 1971. Public Participation and Environmental Quality. Natural Resources Journal 11(3):497-505.

The thesis that government institutions should develop policies which facilitate greater public participation in the decision process of natural resources agencies is discussed. A case study is presented involving forestry resources.

Keywords: Environmental quality; natural resources; resource decisions; forestry.

10. Borton, Thomas E., Katharine P. Warner, and J. William Wenrich. 1970. The Susquehanna Communication-Participation Study: Selected Approaches to Public Involvement in Water Resources Planning. Report to U.S. Army Engineer Institute for Water Resources, Springfield, Virginia.

The author describes an effort to undertake a public participation program for a water resources planning study in the Susquehanna Basin. The objective of the study was to formulate and then evaluate a procedure for improving communications between administrative agencies and the public. The effort involved a series of linked contacts between agency planners and local residents. Local opinion leaders were identified and involved in workshops. Public forums were held. Post-study interviews demonstrated the techniques were effective in improving understanding between planners and local representatives. A public participation model is presented. The model relates public participation methods to goal and objective determination, data collection, discussion needs and systems for meeting the, development of alternatives, and presentation of formal plans.

Keywords: Water resources; participation model; linked contacts; workshops; public forums; opinion leaders

11. Burch, W. R., Jr. 1976. Who Participates--A Sociological Interpretation of Natural Resource Decisions. Natural Resources Journal 16(1):41-54.

The relationship between social structure and natural resources is explored. Public participation should be seen as a means for gaining accountability from social institutions.

Keywords: Natural resources; social structure; social institutions; allocation mechanisms.

12. Burke, E. M. 1968. Citizen Participation Strategies. Journal of American Institute of Planners, 34:287-294.

The thesis that citizen participation and participatory democracy are often in basic conflict with professional expertise is discussed. Some of the problems encountered in this conflict can be resolved by recognizing and adopting a strategy of participation which is specifically designed to fit the role and resources of the planning organization. Five types of strategies are identified.

Keywords: Participatory democracy; urban planning; planning strategies; education-therapy; behavioral change; cooptation; community power.

13. Burke, Roy III, James P. Heaney and Edwin E. Pyatt. 1973. Water Resources and Social Choices, Water Resources Bulletin, 9(3):433-447.

Water resource management is viewed as requiring a type of "collective decision" mechanism. The current state-of-the-art usually involves an "individual decision" format without explicit consideration of the social decision system. This paper explains the need for intertwining technical planning activities with established societal systems and then proposes a public decision format to satisfy this requirement. The big element in the procedure is a generalized "bargaining area" which serves to link technical activities with the social system. A case involving regional water quality management is used to illuminate the procedure.

Keywords: water resources; bargaining; conflict resolution; social aspects; water quality

14. Carrol, J. D. 1971. Participatory Technology. Science 171:647-653.

A discussion of the problems of participatory processes in relation to the theory and practice of representative government is presented. Litigation, existing and proposed processes of technology assessment, and ad hoc activities of individuals and groups beyond the scope of these two structured processes are considered.

Keywords: litigation; technology assessment; participatory processes; representation

15. Clark, R. N. and D. H. Stankey. 1976. Analyzing Public Input to Resource Decisions; Criteria, Principals, and Case Examples of the Codinvolve System. Natural Resources Journal 16(1):213-236.

This article discusses the development, application, and problems associated with a system for analyzing public input to decision making. A discussion of the development of the codinvolve system, its basic assumptions, the basic steps in using the system, and several case studies of applications of the system are presented.

Keywords: CODINVOLVE; natural resources.

16. Clavel, P. 1968. Planners and Citizen Boards: Some Applications of Social Theory to the Problem of Plan Implementation. Journal of American Institute of Planners 34(3):130-139.

A study of planning as expert advice to nonpartisan citizen boards is presented and the means by which the expert advice is implemented or blocked in a semirural county is discussed. Social theory is applied to explain plan implementation obstacles in light of the "exchange" propositions of elementary social behavior.

Keywords: Social behavior; social theory; citizen boards; planning;

17. Curran, Terence P. 1971. Water Resources Management in the Public Interest. Water Resources Bulletin, 7(1):33-39.

Water resource planning objectives have been broadened beyond economic efficiency to include greater attention to social goals. The water resource manager is therefore required to consider the public interest in his decision making. The public interest, however, is much more of political theory than an operational objective. This monograph recommends expanded efforts toward greater citizen participation and more attention to sampling surveys, public hearings and meetings and public information programs. In the last analysis, the decision making process should combine the expertise of the manager and citizen participation through the political process.

Keywords: Water resources; questionnaires; public hearing; social aspects; public interest

18. Curry, M. G., and M. E. Olson. 1977. Citizen Involvement in Energy Decision Making. Battelle, Pacific Northwest Laboratories, Richland, Washington, 14 p.

The purpose of the study reported in this paper was to learn more about the perceived effectiveness and appropriateness of citizen influence techniques. The study was a part of the Pacific Northwest Regional Assessment Program, and focused on nuclear power decision making because of both its national and local visibility, and because it is representative of other resource development issues in which citizens are becoming highly involved. The study used a questionnaire survey of a random sample of citizens from the state of Washington. The principal aim of the questionnaire was to determine the perceived effectiveness and preferred usage of eight citizen influence techniques: personal contacts and lobbying, open public meetings, organized participation programs, formal public hearings, interested organization activities, citizen advisory committees, court suits, and citizen control boards. The study offers a ranking of the eight citizen influence techniques according to their apparent effectiveness and also according to their preferred usage.

Keywords: Nuclear power; citizen influence techniques; questionnaire; decision making

19. Curry, M., J. Goodrieght, N. Green, D. Merwin, and R. Smith. 1977. Improving Regulatory Effectiveness in Federal-State Siting Actions: State and Local Planning Procedures Dealing with Social and Economic Impacts from Nuclear Power Plants. Human Affairs Research Centers, Batell Memorial Research Institute, Seattle, Washington.

This report focuses on the roles of state and local agencies in planning for and managing social and economic impacts of nuclear power plants. A comparative case study approach was used, analyzing 6 sites in 3 west coast states. All three of the states have moderately centralized procedures for siting power plants and all have strong environmental laws. However, the problems facing local government, particularly in less populated regions, are typical of similar communities anywhere faced with the need to plan for the rapid changes that come about from the construction of all large industrial or commercial installations. Major conclusions are offered about two types of issues: substantive impacts such as schools, housing, and public facilities, and process oriented issues which affect the intensity and effect of the substantive impacts. The reports includes chapters on the identification of social and economic impacts, the state role in energy facility siting, local government actions and the participation of local officials in siting decision making, fiscal issues and analysis of interrelationships.

Keywords: Nuclear power plant siting; local officials; social aspects

20. Davidoff, P. and T. A. Reiner. 1962. A Choice Theory of Planning. Journal of American Institute of Planners 23(2):103-115.

Planning is defined as a process for deciding appropriate future action. Choices are made at three levels in the planning process: the selection of ends and criteria, the identification of alternatives, and the guidance of action towards ends. The main thesis is that since choice is a part of the entire planning sequence, a clear idea of the way choices are made and of the ends pursued should inform the planners actions. A general theory is presented.

Keywords: Planning theory; choice; values; alternative evaluation

21. Davidoff, P. 1965. Advocacy and Pluralism in Planning. Journal of American Institute of Planners 31(4):331-338.

The major thesis of the article is that appropriate policy in a democracy is determined through political decisions and that planners should engage in the political process as advocates of the interests of government and other groups. Plural plans (rather than a single agency plan) could then be presented to the public.

Keywords: Urban planning; public policy; advocacy planning; pluralism

22. Davis, Adam Clarke. 1974. Information Response and Interaction-Dialogue Aspects of Public Participation. Proceedings, of Conference on Public Participation in Water Resources Planning and Management, Water Resources Research Institute, University of North Carolina, Raleigh, North Carolina. pp. 19-49.

A survey of public participation techniques indicates a wide variety of approaches. A series of seven models are proposed to show variations in types of participation, timing, procedures, and groups involved. They range from an information generating or one way model, to a "plural planning model" (involving publics on a level equal to that of the planning agency). A state-of-the-art survey of water resources agency personnel shows that most preferred personal contact as their primary source of input from others and nearly three-quarters preferred public meetings or hearings as the primary way to disseminate information.

Keywords: Plural planning; water resources; public hearings; participation models

23. Davis, Adam Clarke. 1973. Public Participation in Water Pollution Control Policy and Decision-Making. Water Resources Research Institute, University of North Carolina, Chapel Hill, North Carolina.

This project involves an attempt to ascertain the extent of public awareness and concern about stream pollution and public hearings held by the North Carolina Board of Water and Air Resources. The extent and type of citizen involvement in the hearing were also evaluated. After each hearing household surveys were carried out. The results of the surveying showed that while citizens demonstrated concern over stream quality, most had little knowledge about the regulatory agencies involved in controlling stream pollution. Respondents also showed little knowledge of public hearings.

Keywords: public hearings; water quality; questionnaire

24. Davis, L. S., A. Polchow, J. Baden, and L. Royer. ____. Citizens and Natural Resources: A Perspective on Public Involvement. Department of Forestry and Outdoor Recreation, College of Natural Resources, Utah State University, Logan, Utah.

This pamphlet discusses the history, purpose, and procedures of public involvement in natural resources issues from the perspective of establishing citizen power. It discusses citizen power, the process of identifying or predicting the management inputs and social outputs of natural resources development plans, public involvement procedures, and practical guides to citizen power.

Keywords: Natural resources; citizen power; planning process;

25. Dodge, B. H. 1973. Achieving Public Involvement in the Corps of Engineers Water Resources Planning. Water Resources Bulletin, Vol. IX, pp. 448-454.

Since 1971, the Army Corps of Engineers has found a new emphasis on public involvement has arisen. This paper describes Corps programs for involving the public directly in its water resource planning efforts. The program centers around: (1) a two-way information exchange between the agency and the public; (2) an identification of the publics involved; and (3) consideration of new approaches for communication. A procedure was developed and implemented for a study area.

Keywords: Water resources; information exchange; Corps of Engineers; public identification

26. Doerksen, Harvey R. and John C. Pierce. 1975. Citizen Influence in Water Policy Decisions: Context, Constraints, and Alternatives. Water Resources Bulletin, 11(5):953-964.

The desirable level and the proper mechanism for citizen involvement into policy making are twin issues which engender substantial conflict. This paper examines the historic and contemporary contexts of the controversy and presents a discussion of alternative processes for citizen involvement called linkages. The processes include citizen advisory committees, the pressure group model, the electoral model and the bureaucrat model. Each linkage process is examined in terms of who is the considered public, how the public influence works, and the adequacy of the process.

Keywords: Water resource, linked contacts; public influence; citizen boards; participation models

27. Dorcey, A. H. J. 1973. Effluent Charges, Information Generation, and Bargaining Behavior. Natural Resources Journal 13(1):118-133.

Effluent charge strategy is discussed in relation to the likelihood of producing the expected improvement in water pollution control. The results of an empirical study are presented which indicate that an effluent charge can be very inefficient in achieving ambient water quality standards. Past experience indicates that an iterative approach to implementing effluent charge strategies result in bargaining situations. The conclusion is drawn that the effluent charges will not necessarily be more effective than other strategies, given the results of the behavioral characteristics of pollution control. A more effective strategy might include a management plan for efficient achievement of standards, cost sharing to increase political acceptability of such plans, and structured bargaining among all affected parties.

Keywords: Effluent charges; information dissemination; bargaining; cost sharing; political acceptability

28. Downs, Anthony. 1972. Up and Down with Ecology--the "Issue Attention Cycle." The Public Interest, Summer, pp. 38-50.

The author contents there is a systematic "issue-attention cycle" governing American public attitudes and behavior. The cycle has five states: the preproblem stage; alarmed discovery and euphoric enthusiasm, realization of the cost of significant progress, gradual decline of intense public interest, and the postproblem stage. The author would like us to believe that environmental concern has begun to move toward the fourth stage.

Keywords: Public interest; environmental quality

29. Dysart, Benjamin C., III. 1974. Education of Planners and Managers for Effective Public Participation. Proceedings of Conference on Public Participation in Water Resources Planning and Management, University of North Carolina, Raleigh, North Carolina, pp. 77-127.

A mail-out questionnaire was used to determine what educational programs are needed by water resource planners and managers to help them formulate public participation activities. Key problem areas delineated by the survey include: (1) inadequate communication skills; (2) the willingness to consider the inputs of "non-professionals," and (3) insensitivity to changing goals of society. Educational programs to rectify these problems are proposed.

Keywords: Seminars; water resources; social aspects

30. Ebbin, Steven and Raphael Kasper. 1974. Citizen Groups and the Nuclear Power Controversy: Uses of Scientific and Technological Information. Massachusetts Institute of Technology Press, Cambridge, Mass.

This M.I.T. publication concentrates on the conflict of interests between those who favor rapid licensing and construction of nuclear power plants to meet energy needs and those who argue that environmental and safety controls must be enforced. The authors contend that the adversarial process as administered by the AEC was inhospitable to meaningful participation by the public. The regulatory process and case studies are examined in some detail. Specific recommendations are made including: (1) increased use of generic hearings; (2) establishment of a mechanism to permit the exchange of information among citizens groups; (3) applicant fees should support legitimate citizen group intervention; (4) public hearing should be made to a broader public; and (5) all participants in public hearings should be required to present all written statements in a language understandable to educated laymen.

Keywords: power plant licensing; public hearings; information exchange; regulatory proceeding; nuclear power; intervenor; interest groups

31. Finley, James R. and Anthony A. Hickey. 1971. A Study of Water Resource Public Decision-Making. Cornell University Water Resources and Marine Sciences Center, Ithaca, New York.

This monograph reports the results of an elite survey study. The authors attempt to identify and examine the factors affecting public participation in planning. They claim to have identified four subsystems of competing parties: the reactive subsystem (the threatened group); the advocates; the interpreters, and the decision makers. Negative and positive collective participation are both discussed. The conclusion includes suggestions for structured improvements in water resource decision making.

Keywords: opinion leaders; decision making; water resources; interest groups

32. Fox, I. K., and L. F. Wible. 1973. Information Generation and Communication to Establish Environmental Quality Objectives. Natural Resources Journal 13(1):134-149.

Public action is necessary to weigh the effects of natural resources uses and to determine to what extent they are worthwhile in view of the benefits society derives from those uses. Four broad categories of public procedures are examined for this purpose: Evaluating the consequences of individual actions at the time the action is proposed to determine whether the result will be socially optimal, establishment of limits or constraints on certain kinds of activities that are viewed as adversely affecting environmental quality, deciding upon the design of an environment and requiring that future actions be consistent with that design, and establishing environmental quality standards or objectives and then limiting activities so as to assure realization of the standards.

Keywords: Information exchange; communication; environmental quality; decision making.

33. France, E. A. 1971. Effects of Citizen Participation in Governmental Decision-making. Highway Research Record 356:1-5.

The article discusses several myths of public participation (in terms of who participates, expected antagonists, the desirability of formal public participation structures, etc.). It also discusses three models of public participation: the conflict model, which the author maintains is the dominant public participation approach; the "cop-out" model, where public officials knowingly or unknowingly "but-off" neighborhood residents while business preceeds as usual; and the coalition model, where groups of people with divergent interests come together to seek a compromise.

Keywords: Urban planning; decision-making; conflict; coalition.

34. Frauenglass, H. 1971. Environmental Policy: Public Participation and the Open Information System. Natural Resources Journal 11(3):489-496.

The author discusses an environmental policy management information system (a "people's information system") for resources managers on public lands. A key feature of the system is that managers must be willing to enter into a meaningful dialogue with both egional and local citizen groups and share with them the information gathering and evaluating programs, the goal-formulating, the planning, the establishment of priorities, and the actual implementation of policies.

Keywords: Public lands; resource management; management information; information system

35. Friedmann, J. 1973. The Public Interest and Community Participation: Toward a Reconstruction of Public Philosophy. Journal of the American Institute of Planners 39(1):2

The article is an editorial which recognizes that the idea of the public interest has fallen on bad times because many believe that those who justify their actions by claims of advancing the interest of the public are hiding their interest in private gain. The author argues that the idea of the public interest cannot be discarded without significant risk to the community.

Keywords: Public interest; social theory

36. Hanchey, J. R. 1975. Public Involvement in the Corps of Engineers Planning Process. U.S. Army Corps of Engineers, Institute for Water Resources, Fort Belvoir, Virginia. IWR Research Report 75-R4. 44 p.

This report discusses the design, implementation, and management of public involvement programs as integral parts of the Corps of Engineers water research planning process. The suggested approach to program development relies on several key concepts; first that planning should be viewed as consisting of several sequential stages, each of which has a definable output and therefore represents an implicit or explicit decision point; second, that public involvement programs should and can be approached on a stage by stage basis; third, that there should be public checkpoints at the end of each stage to provide the public and the reviewing elements of the Corps with citizen input as to the adequacy and responsiveness of the planning to date; fourth, that these public checkpoints are not in themselves adequate, but are only the combination of active participation during each planning stage by limited segments of the public; and fifth, that decision making responsive to public concerns requires the explicit consideration of public before key decisions are made at each stage. The report includes chapters on developing public participation programs, forums for obtaining citizen input, guidelines for developing public information programs, monitoring and evaluation of programs and staff organization and budgeting for public involvement activities.

Keywords: Water resources; Corps of Engineers; communication; information dissemination; water planning; costs of participation

37. Hansen, S. B. 1975. Participation, Political Structure, and Concurrence. American Political Science Review 69(4):1181-1199.

Political structure can affect city policy and the orientation of local government officials. A community's political environment may affect citizen-leader agreement in several ways. Five hypotheses are advanced about the relationship between political structure and concurrence at the community level. An opinion survey approach was used to test the hypotheses. The results are discussed and models of concurrence and its relationship to the political setting are offered.

Keywords: Political structure; urban planning; concurrence; questionnaire

38. Hart, D. K. 1972. Theories of Government Related to Decentralization and Citizen Participation. Public Administration Review 32:603-621.

The author contends that the most urgent question facing the United States is whether our present democratic institutions are capable of resolving the accelerating problems facing us in the near future. One suggestion for reforming our present institutions is to replace representative democracy with participatory democracy. The author discusses some of the arguments both for and against maximal citizen participation as an alternative to representative democracy.

Keywords: participatory democracy; citizen consent

39. Heberlien, T. A. 1976. Some Observations on Alternative Mechanisms for Public Involvement: The Hearing, public Opinion Poll, the Workshop and the Quasiexperiment. Natural Resources Journal 16(1):197-212.

This paper presents a review of several alternative techniques for public involvement and discusses their strengths and weaknesses so that managers may choose the technique most useful to their needs. The analysis is qualitative and based on the author's observations of public and private attempts at public involvement. The technique discussed are the public hearing, the public opinion poll, the workshop, and the quasi-experiment (a type of gaming situation).

Keywords: Public hearings; questionnaire; workshops; game simulation.

40. Hendee, J. C., R. N. Clark, and G. H. Stankey. 1974. A Framework for Agency Use of Public Input in Resource Decision Making. Journal of Soil and Water Conservation 29(2):60-66.

Obtaining and effectively utilizing public input in resource management decisions is a problem that confronts agency administrators at every level of government. This article proposes a framework for making use of public inputs in resource decision making. The major aspects of this framework are issue definition, the collection process, the analysis process, the evaluation process, and decision implementation. The article discusses some controversial issues in citizen participation including criteria for effective participation, professionalism and public involvement, kinds of public input, and weighing public input.

Keywords: Natural resources; decision making; evaluation;

41. Hendee, G. C., R . C. Lucas, R. H. Tracy, Jr., T. Stead, R. N. Clark, G. H. Stankey, and R. A. Yarnell. 1973. Public Involvement and the Forest Service: Experience, Effectiveness, and Suggested Direction. U.S. Forest Service.

This report is an assessment of forest service experience in public involvement. The report discusses the need for public involvement in natural resources decision making, public involvement in relation to other decision making factors, the stages of decision making which require public involvement, how credibility is gained and maintained, public involvement and political relationships, feedback to the public, when and how to involve the public, lead-time necessary for public involvement, the costs of public involvement, techniques issues and experiences related to collecting public input, and recommended concepts for analyzing and evaluating public input.

Keywords: Natural resources; decision making; planning theories; evaluation

42. Hendee, J. C., Robert C. Lucas, Robert H. Tracy, Jr., Tony Staed, Roger N. Clark, George H. Stankey, and Ronald A. Yarnell. 1973. Public Involvement and the Forest Service: Experience, Effectiveness and Suggested Direction. Report from the U.S. Forest Service Administrative Study of Public Involvement, May.

A study panel assesses the relationship between the Forest Service and the public and suggests possible ways to improve that relationship. To achieve the objective of enhanced public involvement, the agency must consider involving the public at five stages of the decision-making process: (1) issue definition; (2) collection of public input; (3) analysis of public input; (4) evaluation; and (5) decision implementatin. Recommendations for an improved public participation program are also offered. The panel made several points including the needs to (1) clarify objectives; (2) develop comprehensive plans with broad public

inputs; (3) develop clear and consistent procedures and (4) provide full disclosure and feedback to the public.

Keywords: decision making; forestry; citizen feedback

43. Highway Research Board. 1973. Citizen Participation in Transportation Planning. Special Report 142, Highway Research Board, National Academy of Sciences, National Academy of Engineering, Washington, D. C. 142 p.

This is a report of a conference held in May, 1973, and a conference session of the Boston Transportation Planning Review, January, 1973, during the 52nd annual meeting of the Highway Research Board. The report represents an overview of citizen participation in terms of how it should be defined, its effectiveness, and how it may be achieved. The report examines the essentials of information and funding for effective citizen participation, and it examines the relationship between citizens and decision making agencies in the planning process. It also makes some recommendations for new policies in citizen participation in transportation planning. The report includes papers on the techniques and politics of transportation planning, citizen participation and regional planning, citizen participation in urban and rural states, the influence of citizen participation on planning methodology, planning and design for transportation system management, ecological planning and highway design, and technical assistance and community liaison.

Keywords: Transportation; highway design;

44. Ingram, H. M. 1973. Information Channels and Environmental Decision Making. Natural Resources Journal 13(1):150-169.

The author asserts that the incremental and fragmented process by which environmental decisions are actually made imposes important restraints upon the flow of information is discussed. What determines which facts decision makers take into consideration and what motivates the generation and transfer of information is discussed. The possibilities of improving the current environmental information basis are examined.

Keywords: Information feedback; decision making; communication.

45. Jordan, D., S. Arnstein, J. Gray, E. Metcalf, W. Torrey, F. Mills. 1976. Effective Citizen Participation in Transportation Planning, Volume 1, Community Involvement Processes, Volume 2, A Catalogue of Techniques. U.S. Department of Transportation, Federal Highway Administration, Washington, D. C.

This report is a guide for those engaged in organizing or monitoring citizen participation in transportation planning. It identifies and describes 37 major techniques for citizen participation and relates them to the appropriate steps in the transportation planning process. The techniques include advocacy planning, charrette, citizen advisory committees, hot lintes, surveys, and workshops. Some techniques are from areas other than transportation planning, some have been used only experimentally, and some have been formulated only theoretically. Eight case studies illustrating the use of some of the techniques are reported.

Keywords: Citizen involvement; transportation; community interaction; value analysis; advocacy planning; coordinator-catalyst; arbitration; mediator; advisory groups; attitude surveys; charette; drop-in centers; fishbowl planning; game simulation; group dynamics hot lines; interviewers; ombudsman; policy capturing; task force review boards; referendum; technical assistance; mass media; workshops; public hearing; participation objectives; brochures; planner-coordinator.

46. Klema, E. D., and R. L. West. 1977. Public Regulation of Site Selection for Nuclear Power Plants. Resources for the Future, Washington, D.C. 129 p.

This booklet is an annotated bibliography with major sections dealing with the process of power plant siting, public regulation of power plant siting, the contemporary critique of regulatory experiences, and reform proposals.

Keywords: Nuclear power; plant siting;

47. Laitner, S. 1975. Citizens' Guide to Nuclear Power. Center for Study of Responsive Law, Washington, D.C.

Citizens often lack a clear understanding of how they can organize themselves to have an impact on energy decision making. This manual provides an overview of some of the problems of nuclear power, the research skills necessary to understand power plant economics and emergency planning, and available strategies for citizen action including federal pre-emption, administrative remedies, and legislative remedies.

Keywords: Citizen action; nuclear power

48. Lash, T. R., J. E. Bryson, and R. Cotton. 1975. Citizens' Guide: The National Debate on the Handling of Radioactive Waste from Nuclear Power Plants. Natural Resources Defense Council, Inc., Palo Alto, California. 50 p.

This pamphlet presents a general overview of the problems, management programs, and U.S. experience associated with radioactive wastes. It includes a chapter on the opportunities of citizen action in the management of radioactive wastes. This chapter discusses environmental impact statements, licensing procedures, the role of state governments and regional boards, and the importance of citizen action.

Keywords: radioactive waste; citizen action;

49. Kahle, Roger and Richard L. Lee. 1974. A Q-Methodological Study of Attitudes Toward Water Resources and Implications for Using Mass Media in Dissemination of Water Research Results. Missouri Water Resources Research Center, University of Missouri, Columbia, Missouri, 349 p.

To analyze audience attitudes, a Q-study of attitudes toward water resources in Missouri was undertaken. Four basic attitudes were isolated: ecologically aware, farmers advocates, rural optimists, and optimistic professionals. The study showed how this attitude information could be applied to designing a dissemination of information program utilizing the mass media, with special attention to radio and newspapers. Among the demographic variables that were found most pertinent to water resources attitude patterns were religious affiliation, age, and residents. A replication of Costantini and Hanf's environmental awareness scale failed to be internally reliable when transplanted to Missouri. However, the four basic attitude patterns closely resemble the four lema clusters described by Cortland Smith in an Oregon Study.

Keywords: Communication; information dissemination; values; public opinion; questionnaires; socialaspects

50. Leone, Richard C. 1972. Public Interest Advocacy and the Regulatory Process. The Annals of the American Society of Political and Social Sciences. Vol. 400, March, pp. 46-58.

This author feels that the regulatory agencies, in a theoretical sense, should be the foremost institutionalized advocates of the public interest. Their failure to live up to this characterization is viewed as being systematic of a failure in other institutions--the Congress, the press, etc. Public advocates perceive themselves as the reformers of the regulators. These advocates attempt to provide a public service by making issues understandable and by making issues understandable and by making issues understandable and by providing increased scrutiny of public decision making.

Keywords: regulatory proceedings; judicial intervention; public advocates

51. Liang, T. 1976. An LP-10 Model for Coordinating Multi-Group Inputs in Resource Planning. Water Resources Bulletin 12(3):601-624.

A model for assisting public and multidisciplinary study teams in water and related natural resources planning is proposed. Optimal location of economic activities is achieved by iterative use of the model. An example is discussed.

Keywords: Optimization; water resources; water planning;

52. Lind, A. 1975. The Future of Citizen Involvement. Futurist 9:316-328.

Eighteen Methods of citizen involvement are discussed and characteristics by which these can be compared are briefly suggested. These include accessibility, scheduling coordination, information and media properties, and process embeddedness.

Keywords: comparison criteria

53. Lindbloom, C. E. 1959. The Science of "Muddling Through." Public Administration Review 19(2):79-88.

Though short courses, books, and articles advise administrators to make decisions in more methodical and scientific ways, little analysis has been done of the decision-making process now used by public administrators. This process is investigated and described as incremental decision making as contrasted with the more "scientific" methods.

Keywords: Decision making; public administration; incrementalism

54. Lord, W. B., and M. L. Warner. 1973. Aggregates and Externalities: Information Needs for Public Natural Resource Decision-Making. Natural Resources Journal 13(1):106-117.

The information required for better natural resource decision-making from the point of view of three essential functions is discussed. These functions are; definition of the problems to be attacked and the propounding of effective solutions, exposure of the immediate additional conflicts which such solutions may generate, so that they may be addressed in the planning process, and avoidance of some of the broader adverse consequences of natural resource decisions in the aggregate, national level. The paper discusses the underlying demands for more and different information before public decisions concerning natural resources are made. The decision-making process is viewed as problem solving, pluralistic, and locally oriented.

Keywords: Environmental quality, information dissemination; natural resources; decision making

55. Lucas, A. R. 1976. Legal Foundations for Public Participation in Environmental Decision-Making. Natural Resources Journal 16(1):73-102.

The Legal case for public participation in environmental decision-making is examined. The extent to which there exists in law substantive rights to participate in typical natural resources and environmental decision processes is discussed, as is the question of whether legal actions, including actions to require public participation, provide an effective forum for public involvement. Emphasis is placed on Canadian law with comparisons offered to England and the United States.

Keywords: Decision making; legal foundations; legal actions

56. Manhein, N. L., H. W. Bruck, J. Clarkeson, F. C. Colcord, Jr., R. L. DeNeufille, A. Fleisher, J. R. Myer, T. B. Sheridan, J. H. Surbier. 1969. The Impacts of Highways Upon Environmental Values. Massachusetts Institute of Technology, Urban Systems Laboratory, Cambridge, Mass. Report Number USL-69-1.

This is a report of a research project to develop a practicable method for evaluating the effects of different types of highways and various design features upon environmental values. The evaluation method proposed in the report has two components: an evaluation technique and an evaluation strategy. An impact matrix displays, for each alternative action, the impacts on each interest group. The evaluation technique consists of a set of operations which can be applied to the impact matrix to provide analyses of the differences between actions, explorations of tradeoffs, sensitivity analyses, and break even or equivalence analyses. The evaluation strategy is a broader process which develops the information in which the evaluation technique operates. Evaluation strategy includes the development of alternatives, the identification of actors, and the prediction of impacts on them, in the gathering of information about the values of different actors. Location and design activities develop the alternatives and predict their impacts, thus generating the impact matrix. Community participation activities generate preference information, through interaction between location team members and elements of the community, occasionally using information from the impact matrix. The location team strategy is to use preference information and the impact matrix to accomplish an evaluation as needed.

Keywords: Transportation; evaluation; matrix analysis

57. Manhein, M. L., J. H. Shurbier, F. C. Colcord, Jr., A. T. Reno, H. Bleiker, H. Cohen, E. Bennett, R. Giel, M. Petersilia, and J. Tryens. 1971. Community Values in Highway Location and Design: A Procedural Guide. Massachusetts Institute of Technology, Urban Systems Laboratory, Cambridge, Mass. Report Number 71-4.

This document, which is directed toward state highway agencies, consultants, and other public and private groups concerned about highway and transportation decisions, is intended to present an approach for incorporating social and environmental factors into the transportation planning process. Techniques which might be used in implementing the approach recommended in the report are discussed in detail. The general approach calls for adoption of a basic philosophy of how a location team should view its role and how it should conduct its activities. In general, the location team should define its role as clarifying the issues of choice and assisting the community and making its decisions, not making the decisions itself; the team should work to enhance the political process by stimulating the constructive involvement of interest groups and individuals who do not usually participate, as well as those who usually do; it should consider a wide range of community and environmental factors when developing and analyzing alternative courses of action; and the location team should be fair, open, and responsive in its interactions with all elements of the community. The report includes chapters on the basic approach, location team management, development of alternatives, community interaction, impact prediction, evaluation, and legal, institutional, political, and administrative considerations.

Keywords: Transportation values; location team;

58. Maynard, W. S., Nealey, S. M. Hebert, J. A. and Lindell, M. K. 1976. Public Values Associated with Nuclear Waste Disposal. Battelle Memorial Institute, Human Affairs Research Center, Seattle, Washington. June.

This study assesses public attitudes toward nuclear waste disposal based on a survey of 465 respondents representing 5 different regions of the U.S. and 22 different participant grups. Three types of measures (ranking, ratio estimation and policy capturing) were used to evaluate the importance of four aspects of radioactive waste disposal methods. For the total sample long-term safety was given the highest priority, followed closely by short term safety and accident detection. Cost was a relatively unimportant factor. Comparison of respondent groups showed marked differences between environmentalists and nuclear technologists on a number of issues. An evaluation of acceptable levels of risk and sets of attitudinal statements was also made. Significant to public involvement was agreement of respondents that citizens should be consulted on nuclear waste disposal issues, and that the film and questionnaire approach used in the study was effective in eliciting input.

Keywords: Sampling survey; values; citizen involvement; interest groups; issue definition; questionnaires; nuclear wastes; questionnaire

59. McKenzie, L. (Ed.) 1972. The Grass Roots and Water Resources Management. State of Washington Water Research Center, Washington State University Pullman, Washington. 156 p.

This is a report of the proceedings of the May, 1971, conference sponsored by the Washington Water Research Center. At the time of the conference, the state of Washington was about to begin the preparation of a state water plan. There was substantial public dissatisfaction with some of the results of the water resources planning process in the state. The conference was organized to improve communication between the water resources planner and the people. The report contains a panel review of several case studies of public involvement programs in Puget Sound and adjacent waters, a panel review of public involvement programs of federal agencies, and a panel review of public involvement programs on wild, scenic, and recreational rivers.

Keywords: Grass Roots; water resources; workshops

60. Mogulof, M. 1969. Coalition to Adversary: Citizen Participation in Three Federal Programs. Journal of the American Institute of Planners 35(4):225-232.

Citizen participation has been an element in several federal urban development programs. The article discusses neighborhood involvement in the public-private policy coalitions of the delinquency program. The community action program of O.E.O., and the "adversary" relationships of the model cities program are also presented.

Keywords: Coalition; community interaction; urban planning; adversary planning

61. Mumphrey, A. J. Jr., J. E. Seley, and J. Wolpert. 1971. A Decision Model for Locating Controversial Facilities. Journal of American Institute of Planners 37(6):397-402.

Locating controversial public facilities which generate significant public opposition requires a more sophisticated methodology than the traditional least-cost procedures for minimizing physical costs. Two models for evaluating the effects of opposition on the expected total costs of implementation are discussed.

Keywords: Site selection; public facilities; welfare distribution; political placation; public opposition

62. Onibokun, A. G., and M. Curry. 1976. An ideology of Citizen Participation: The Metropolitan Seattle Transit Case Study. Public Administration Review 36:269-277.

The article evaluates some of the basic assumptions of the citizen participation concept. It discusses the extent to which citizens and planners share common opinions as to what the observed and the expected role of citizens is and should be in the planning process. The Metropolitan Seattle Transit Study Citizens' Participation Program is a case study for identifying strategies for accomplishing successful citizen participation. Some of the limitations of citizen participation in the planning process are also identified and discussed.

Keywords: Citizen participation; urban planning; citizen participants; recruitment techniques; transportation

63. Ortolano, L. 1975. Water Resources Decision Making on the Basis of the Public Interest. U.S. Army Corps of Engineers, Institute for Water Resources, Fort Belvoir, Virginia. IWR Contract Reports 75-1.

The concept of water resources decision making in the public interest is both fundamental and elusive. This report discusses alternative perspectives that have been suggested for defining the public interest and provides an overview of the decision making involved in a typical water resources planning study. It then examines various approaches to determining the public interest in pre-authorization planning and decision making. It also represents an argument in support of current trends away from reliance on economic efficiency as a basis for defining the public interest, and toward the direct involvement of citizens in determining the factors and weights used in defining the public interests. The argument proceeds in three principal parts, each of which institutes a chapter.

Keywords: Public interest; decision making; water planning; multiple objective planning

64. Ortolano, Leonard. 1974. A Process for Federal Water Planning at the Field Level. Water Resources Bulletin, 10(4):766-778.

The author describes a process for planning at the field offices of Federal water resource agencies. The process interacts the planners and publics in four planning activities: problem definition, formulation of alternatives, impact analysis, and evaluation. Goals, concerns, constraints, etc. are the evaluative factors. They serve to drive the entire process and cement the four factors together. Unlike other planning processes, the four activities are carried out together and iteratively from the beginning of the process. With each iteration, each activity is studied in more detail.

Keywords: iterative process; water resources; regulatory proceddings; plural planning; impact analysis

65. Ortolano, Leonard and Thomas P. Wagner. 1973. Alternative Approaches to Water Resources Impact Evaluation. Draft Report, U.S. Army Engineer Institute for Water Resources.

Chapter Six involves the construction of a model to outline the respective roles of planners and the public and the flow of information appropriate to the various stages of the planning process. Chapter Seven is a review of the literature on public participation techniques and more recent innovative techniques. An annotated bibliography of selected references on public involvement techniques is followed by a more comprehensive list of references

Keywords: participation models; water resources; information exchange

66. Pendse Dilip and J. B. Wyckoff. 1976. Measurement of Environmental Trade-offs and Public Policy: A Case Study. Water Resources Bulletin 12(5):919-929.

A methodology to quantify environmental trade-offs is proffered. The Priority Evaluation Technique (PET) simulates real world situations and allows respondents to evaluate their preferences. From interviewee responses, it is possible to establish the extent to which respondents are satisfied with the prevailing conditions, the magnitude and direction of changes sought; the policy trade-offs, and the relative value of different situations. The authors contend that PET is flexible and can accommodate alternative planning decisions, prices, incomes, and end factors.

Keywords: Water resources; simulation; policy trade-offs; environmental impact

67. Pierce, J. C., and H. R. Doerkson (eds.) 1976. Water Politics and Public Involvement. Ann Arbor Science Publishers, Inc., Ann Arbor, Michigan. 294 p.

This book approaches public involvement and water resources development from a variety of perspectives. It includes chapters on citizen influence in water policy decisions, participation in the administrative process, identification of publics and water resources planning, individual preferences and group choice, measuring political responsiveness, methods for acquiring public input, public opinion and water policy, and participatory democracy in a federal agency.

Keywords: water resources; decision making; participatory democracy; public influence

68. Potter, D. R., K. N. Sharpe, J. C. Hendee, and R. N. Clark. 1972. Questionnaires for Research: An Annotated Bibliography on Design, Construction, and Use. USDA Forest Service Research Paper PNW-140, Pacific Northwest Forest and Range Experiment Station, Portland, Oregon. 80 p.

Questionnaires as social science tools are used increasingly to study people aspects of outdoor recreation and other natural resource fields. An annotated bibliography including objective evaluations of each article and a key word list is presented for 193 references to aid researchers and managers in the design, construction, and use of mail questionnaires.

Keywords: Questionnaire; natural resources; sampling surveys

69. Ragan, James. 1975. Public Participation in Water Resources Planning: An Evaluation of the Programs of 15 Corps of Engineer Districts--Summary of Evaluation and Recommendations. Army Engineer Institute for Water Resources, Ft. Belvoir, Virginia. Supplement to IWR Contract Report 75-6, November, 54 p.

Ragan reports as a process used to evaluate the Corps of Engineers' performance in fifteen projects. Eight criteria were used in the evaluation. A total of 31 recommendations are made. They include: (1) identiy publics for each study according to location and interest, (2) develop ways to insure feed-back; and (3) provide improved information dissemination systems.

Keywords: public identification; citizen feedback; information dissemination; water resources; Corps of Engineers

70. Ragan, J. F., Jr. 1974. Public Participation in Water Resources Planning: And Evaluation of the Programs of Fifteen Corps of Engineers Districts. Summary of the Evaluation and Recommendations. U.S. Army Corps of Engineers, Institute of Water Resources, Fort Belvoir, Virginia.

This reports presents an evaluation of the public participation programs of fifteen Corps of Engineers Districts. The report concludes that while in theory, the U.S. Army Corps of Engineers has one of the most intensive and ambitious public participation programs in the federal government, for the most part, public participation techniques beyond the meeting requirements have not been applied by Corps of Engineers field offices in their planning activities.

Keywords: Water Resources; Corps of Engineers;

71. Ramey, J. T. 1970. Environmental Considerations in the Regulatory Process for Nuclear Power Plants in the USA: The Role of the Public and Public Understanding. In International Atomic Energy Agency (ed.) Environmental Aspects of Nuclear Power Stations, Proceedings of a Symposium held in New York August 10-14, International Atomic Energy Agency (Vienna, 1971).

The author discussed the role of the citizen in the licensing and regulation of nuclear power plants in the United States. The public participates in the formulation of policy and implementation of government nuclear activities through its elected officials and through various interest groups. The conclusion is reached that all interest groups and individuals should be allowed to participate in appropriate aspects of proceedings at all levels of government. The following is a partial list of subjects addressed: (1) the modes of public participation; (2) methods to increase the general publics confidence in nuclear power; and (3) the principle functions involved in nuclear power regulation.

Keywords: Regulatory proceedings; nuclear power; interest groups

72. Ross, Peggy J., Barbara G. Spencer, and John Peterson Jr. 1974. Public Participation in Water Resources Planning and Decision-Making Through Information-Education Programs: A State-of-the-Arts Study. Mississippi State University, Mississippi State, Mississippi, Water Resources Research Institute.

The authors proffer the thesis that the most important element of public participation in water resources decision-making is providing information to relevant "publics." The aim of this study was to assess the "state-of-the-art" of public information and education programs. Included in the report are the findings of a small scale study of information/education programs of Mississippi water resource management agencies. The authors conclude that agency success in involving publics in planning activities and in securing public support for proposed projects has not been commensurate with the effort expended.

Keywords: information dissemination; water resources;

73. Sargent, H. L., Jr. 1972. Fishbowl Planning Immerses Pacific Northwest Citizens in Corps Projects. Civil Engineering 42(9):54-57.

Public-works planners have often been secretive in their planning efforts and have told the public of public works decisions only a short time before construction. This article reports on the U.S. Army Corps of Engineers Seattle District's attempts to involve the public in project planning from the beginning of the planning process. The process is known as "fishbowl" planning because all choices and arguments are made highly visible throughout the study.

Keywords: Fishbowl planning; water resources; citizen boards; workshops; brochures;

74. Sax, Joseph L. 1971. Public Participation, Paper presented at the Atomic Industrial Forum Conference, Florida, October 17-21. Atomic Industrial Forum, Washington, D. C.

Sax finds that public hearing concerned with nuclear power plant construction are not very useful. He concludes that most are poorly structured for extracting information and most participants are poorly informed. In order to improve public proceedings, mandatory payment of a public inquiry investigation fee by the applicant to citizen organizations is recommended. Such fees would allow citizens to gain access to information that is currently only available to the nuclear power industry, and for which access by interest groups is now limited because of financial constraints.

Keywords: Public hearing; nuclear power; information dissemination

75. Bellevuld, R. P. 1972. Case Study: Public Involvement in Planning, U.S. Army Corps of Engineers. Proceedings of the Symposium on Social and Economic Aspects of Water Resources Development, Cornell University, Ithaca, New York, June 21, 23, 1971. The American Water Resources Association, Urbana, Illinois, pp. 56-60.

The author discusses the Corps of Engineer's Seattle District's commitment to "fishbowl planning," in which a maximum of information is made available to the public throughout the study process. The following techniques are used to get people involved: public meetings, workshops, news releases, invitational meetings, letters, and telephone contacts. A brochure is used to tie the process together. The major benefit of "fishbowl planning" has been to the planner; issues and problems have been isolated early in the planning process.

Keywords: Fishbowl planning; water resources; workshops; brochures; information dissemination

76. Sewell, W. R., and T. O'Riordan. 1976. The Culture of Participation in Environmental Decision-Making. Natural Resources Journal 16(1):2-21.

The public role in environmental decision-making is contrasted in the United States, the United Kingdom, and Canada. A discussion of Western political culture and how it can respond to pressures for increased public participation is offered. A checklist of seven criteria for evaluating the responsiveness of political and institutional culture to more broadly based participation is given. Future directions in public participation are discussed.

Keywords: Decision making; political structure

77. Smith, Courtland. 1973. Public Participation in Willamette Valley Environmental Decisions. Water Resources Research Institute, Oregon State University, Corvallis, Oregon.

The author analyzes environmental decision-making in the Willamette Valley in Oregon. The analysis is accomplished using information from four sources--surveys, interviews, record review and observation. Environmental decision in Williamette Valley have not been the result of environmental pressure groups; but rather have emerged after long debates during which citizens and groups, energized by emotional commitment, pursued their own self-interest.

Keywords: environmental quality; interest groups; citizen involvement

78. Stenberg, C. W. 1972. Citizens and the Administrative State: From Participation to Power. Public Administration Review 32:190-198.

The article examines the emergence and development of the concept of citizen participation. Topics such as who the citizens are, how they participate, the forms of involvement, the purpose of citizen participation, and the impact of citizen participation are discussed in a historical framework. An assessment of the direction of citizen participation in the 1970's and its implications for public administration is offered.

Keywords: public administration; urban development;

79. Stewart, T. R., and L. Gelberd. 1976. Analysis of Judgment Policy: A New Approach for Citizen Participation in Planning. Journal of American Institute of Planners 42(1):33-41.

A technique called "Analysis of Judgment Policy" for obtaining priorities and trade-offs among issues is discussed. The procedure is illustrated in a study of the judgments of city council members and members of local interest groups in Boulder, Colorado. Mathematical and pictorial descriptions of several points of view are developed and presented in the analysis. City council members were not able to predict the judgments of most interest group members as accurately as the methodologies used in the study. Analysis of judgment policy is offered as a means to obtain improved citizen input for planning.

Keywords: planning process; multiple regression; judgment policy

80. Tinkham, Lester A. 1974. The Public's Role in Decision-Making for Federal Water Resources Development. Water Resources Bulletin 10:691-696.

This monograph discusses the role of the Corps of Engineers in promoting public participation in water resource development planning and implementation. The author feels that planners must have beyond purely technical considerations and join with multidisciplinary groups to consider contrasting points of view when evaluating alternatives. Public attitudes, as measured by tecyniques ranging from public hearings to the circulation of brochures, should be considered. The author further suggests that public participation activities should be initiated during the early stages of the planning process.

Keywords: Corps of Engineers; public hearings; brochures; water resources

81. Thuesen, Gerald J. 1971. A Study of Public Attitudes and Multiple Objective Decision Criteria for Water Pollution Control Projects. Georgeia Institute of Technology, School of Industrial and Systems Engineering, in Cooperation with the Environmental Resources Center.

The author examines methods for incorporating public attitudes concerning water quality into water resources planning. Non-monetary factors of water that have impact on the public are emphasized. Three questions are addressed: (1) how to develop an assessment structure for quantitatively considering the impact of water quality; (2) how to quantify the value of the information provided by the assessment structure; and (3) how to display the information and decide which rules to employ in assessing alternatives.

Keywords: Social aspects; water quality; environmental quality; information theory

82. Thomsen, Arvid Lee. 1973. Public Participation in Water and Land Management. New York State Sea Grant Program, State University of New York, and Cornell University, Albany, New York.

The author discusses the factors constituting the "social dimension" of water resource management. It is suggested that the achievement of an effective public participation program requires public information, feedback and dialogues with management, identification of participants and continuous public participation in decision-making processes and other activities. A case study involving the operation of an international regional agency designed to manage the water and land resources of the Great Lakes Region is presented.

Keywords: water resources; social aspects; citizen feedback

83. Umpleby, S. A. 1972. Is Greater Citizen Participation in Planning Possible and Desirable? Technological Forecasting and Social Change 4:61-76.

Significant alterations in democratic forms of government are possible due to new communications technologies utilizing computers. Increased citizen participation is considered desirable due to the growth of planning in a democratic society. The need to restore a balance between available information and decision making opportunities and the need for common forums of government to deal with the public are discussed. Advocates of citizen feedback might hold contrary positions from those of establishment social scientists, technocratic planners and radical community activists.

Keywords: Computer communication; communication technology; citizen feedback

84. Wagner, T. P. and L. Ortolano. 1976. Testing an Iterative Open Process for Water Resources Planning. U.S. Army Corps of Engineers, Institute for Water Resources, Fort Belvoir, Virginia, IWR Contract Report 76-2. 67 p.

This report describes the field test and evaluation of an iterative open planning process (IOPP) in which traditional planning activities are carried out concurrently, although with different degrees of emphasis over time. The process is open to all affected interests by actively identifying and involving them at many stages of planning. The IOPP was used to formulate and evaluate alternative solutions to flooding problems in the San Pedro Creek California River Basin. In conjunction with Corps of Engineers San Francisco District Planners, the researchers designed a study procedure and participated in plan formulation and evaluation activities. The report describes the various problems encountered during the implementation of the IOPP technique and discusses means to avoid these problems and make the technique more effective and efficient.

Keywords: water resources; water planning; iterative process; comprehensive planning;

85. Wagner, Thomas P. and Leonard Ortolano. 1975. Analysis of New Techniques for Public Involvement in Water Planning. Water Resources Bulletin, 11(2):329-344.

Several techniques that have potential for overcoming some of the limitations of standard public involvement techniques (e.g., public hearings) are described by the authors. Delphi inquires, KSIM, gaming simulations, the priority evaluation game, computer based communication systems, and public brochures with feedback are examined in terms of ease of application, number of affected publics who can participate, kinds of results which can be expected in field level planning activities and the kinds of planned activities with which the technique can be used. The paper examines the potential utility of each new technique in water resource planning.

Keywords: game simulations; computer communication; brochures; water resources;

86. Warner, Katharine P. 1971. A State of the Arts Study of Public Participation in the Water Resources Planning Process. National Water Commission, Report No. NWC-SBS-71-013, Arlington, Virginia. p. 235

The author reviews public participation activities and procedures which have been utilized in connection with government planning studies. Results from an extensive survey of state, regional and local planning agencies and of environmentally-oriented citizen groups are presented. Conclusions and recommendations include: (1) increased availability of water resources information; (2) public involvement in the development of evaluation criteria; (3) increased resource commitment by agencies to participatory planning; (4) monetary support for participating publics; and (5) further research on effective public participation.

Keywords: water resources; information dissemination; evaluation;

87. Wengert, N. 1976. Citizen Participation: Practice in Search of a Theory. Natural Resources Journal 16(1):23-40.

Five perceptions of public participation are offered: as a policy, as a strategy, as communication, as conflict resolution, and as therapy. Stimuli for increasing participation in planning are discussed, as are the historical interpretations of participation and the philosophical basis for participation. The relations between public participation and the existing political system are examined.

Keywords: social theory; theory of citizen participation; perceptions of participation

88. Wengert, N. 1972. Where Can we Go with Public Participation in the Planning Process. Proceedings of the Symposium on Social and Economic Aspects of Water Resources Development, Cornell University, Ithaca, New York, June 21-23, 1971. The American Water Resources Association, Urbana, Illinois, pp. 9-18.

The author examines several questions involving public participation in the planning process including: (1) who should participate; (2) who will participate; (3) How much participation is desirable; (4) on what issues should there be citizen participation; and (5) how should expressed biews be weighed. He also expresses concerns about other issues. Any scheme for participation must be compatible with the regularly constituted political representative system. It must also deal with the problems of the silent majority. The scheme must also not deteriorate into a process where the public is merely manipulated.

Keywords: political structures; public identification; water resources; interest groups

89. Wengert, Norman. 1971. Public Participation in Water Planning: A Critique of Theory, Doctrine and Practice. Water Resources Bulletin 7:26-32.

The author suggests that the motive for public participation arises from a variety of concerns ranging from a commitment to democratic ideals to a reaction to the politics of confrontation. Although the desirability of citizen involvement is frequently voiced withint the federal bureaucracy, there has been little evidence amassed supporting the idea that better programs emerge from administrative participation. Agencies have traditionally tended to develop relationships with particular "publics," usually clientele and support groups. A more adequate approach would seem to require identification of all who are significantly affected by plans and proposals (even though they may not perceive their interest). But gaining greater participation does not make the planning job easier. It may increase tension and conflict; it may require difficult choices; and it can later existing power relationships and generate changes with considerable consequences for the agency and its programs.

Keywords: Confrontation; public administration; interest groups; conflict

90. Tucker, Richard C. 1972. Planners as a "Public" in Water Resources Public Participation Programs. Water Resources Bulletin 8(2):257-265.

The author maintains that urban and regional planners should be identified as one of the "publics" in any public participation program. Urban and regional planners, even those outside of the water resource area, are often intimately involved with local planning activities and knowledgeable about local attitudes. The efforts to establish a working-level public-planner contact, as part of the Susquehanna River Basin Study, are described. A regional study team comprised of an engineer and an economist from a federal agency and a state water resources planner met informally with planners, city managers, and local planning commissions to discuss issues related to water resources and the growth and development of local areas. This effort while only part of the overall public participation program yielded a number of benefits and if expanded and refined would be a very useful experience in other studies.

Keywords: Public participation; planning; water resources; water planning; urban planning; regional planning

91. Willeke, G. E. 1974. Identification of Publics in Water Resources Planning. Conference on Public Participation in Water Resources Planning and Management, Report No. UNC-WRRI-74-95, p. 3-18.

The author feels that it is necessary to identify all publics relevant to a water resource planning situation. Segments of a population (publics) should be identified, including: (1) major governmental units, (2) special interest groups, (3) local public interest groups, and (4) the "unreachables" who have a stake in planning but

chose not to participate or to be informed. Frequently groups identify themselves, and this can be enhanced by asking participants to identify themselves and their affiliation(s). Publics can also be identified by a third party such as a citizen committee which assists the planning agency by locating concerned publics. Planning staff can also identify those groups which must be considered in a particular project from lists of associations, maps showing affected geographic areas, and field interviews. Demographic analysis, especially from census data, is especially helpful in locating publics who may not tend to be vocal but must be considered. Finally, historical analyses of past projects may help the planning staff to generate a list of concerned parties including those who may gain or lose from projects. Multiple channels of communication to the public should be employed in order to reach as many of these publics as possible.

Keywords: Public identification

92. Wilkinson, P. 1976. Public Participation in Environmental Management: A Case Study. Natural Resources Journal 16(1):117-135.

A discussion of the concept of "open planning" is offered. A case study of the development of a trailer park on a lake in Ontario is examined with regard to implications for public participation in the planning and decision-making process. The conclusion is offered that there exists a need for public policy which facilitates citizen participation.

Keywords: Decision making; open planning; participation policy;

93. Wolpert, J. 1976. Regressive Siting of Public Facilities. Natural Resources Journal 16(1):103-115.

Recent experiences of facility projects which have not been structured to provide incentives for minimizing costly disamenities are documented. A case study is discussed involving a model and analysis of the issues in conflict and the interaction of community participants with policy-making and policy-implementating organizations. Research findings of empirical studies with the model are presented.

Keywords: Site selection; public facilities; conflict; community interaction

94. Wood, C. J. B. 1976. Conflict in Resource Management and the Use of Threat: The Goldstream Controversy. Natural Resources Journal 16(1):137-158.

The nature of decision-making at the metropolitan community level is described for purposes of interpreting the structure of the system in a case study of a planning conflict between economic growth and environmental quality. Attention is given to the form of conflict and the interaction between interest groups involved in the dispute. An analysis of the nature of community conflict is given along with ways in which public decision-making structures may be modified to incorporate input from interested citizens.

Keywords: Urban planning; threat; resource management; conflict;

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