ALTERNATIVE INFORMATION AND INTERACTION APPROACHES TO
PUBLIC PARTICIPATION IN WATER RESOURCES DECISION-MAKING
A STATE-OF-THE-ARTS REPORT

by

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ABSTRACT

This project is a state-of-the-arts presentation on research dealing with the information and interaction approaches to public participation in water resources decision-making.

Public participation has been viewed from the standpoint of public administration, concentration on the advantages and disadvantages of the information and interaction approaches to participation for water resources agency personnel and the publics.

A series of decision-participation models including the various actors, their roles, and the exemplary techniques associated with each are discussed. A review of the literature shows the many different techniques employed by agency personnel to involve the public in the decision-making process. The information in the interaction suggests a great deal of interest in and concern for public participation; however, few practical efforts have been made to include the public beyond the limited stage of the traditional public hearing.
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SUMMARY AND CONCLUSIONS

The review of the literature shows that public hearings are by far the most frequently used method for involving the public in the decision-making process. While public hearings are the most popular method in use, their effectiveness is reduced because of the limitations imposed by the technique itself. For example, time and place of the hearing, and the dominance of vested interests and agency experts in the proceedings increase the problem of effective participation by the average citizen.

Other approaches have been used which involve the public to a greater extent but in turn increase the agency costs, in terms of time and money, and personnel.

A review of 45 project publications and the Southern Water Resources Information Center's list of active projects showed that the public hearing was by far the most frequently used technique. The use of task forces, committees and advisory boards, workshops, newsletters and surveys alone and in concert with other techniques, provides evidence that multiple techniques are being used in an effort to get citizen involvement in planning.

In this paper, an attempt has been made to provide some of the rationale for the rising pressure for public participation and to place the efforts in the context of various models of decision making ranging from the elitist or authoritarian approach to the participatory or "democratic" approach. In doing so, it has been evident that the kind of program achieved is a function of the kind of agency and citizen commitment without which no effort to broaden citizen involvement can succeed.

An annotated bibliography is provided at the conclusion of the report for those desiring further information on the theoretical basis of participatory democracy, use of techniques of participation, and specific studies mentioned in the text.
RECOMMENDATIONS

It is apparent that the demands for increased citizen participation in the planning process are strong and gaining in legitimacy. The problem, particularly for agencies involved, is how to structure this participation in such a way as to maximize returns for the effort involved. It is recognized that public participation is a costly process. Since it now seems desirable and necessary that such activities be incorporated into agency processes, it is suggested that attention be paid to assessment of various involvement techniques in terms of relative cost effectiveness.

In order to carry out such an evaluation, it will be necessary to develop empirical indicators of effectiveness which reflect other things than economic returns. Some suggested indicators might be number of persons involved, number of comments, value of comments, the extent to which reactions or dialogues modified the planning process, etc. Quantifying such concepts would be difficult but not impossible. This would make it possible to test various techniques in terms of their differential ability to produce amount and quality of participation. This, over time, would seem to be the step to be taken if progress is to be made in gaining meaningful, useful public participation.

It is recommended that agencies make extensive efforts to inform the public both about activities presently underway and about future developments. In addition, agency personnel should examine their goals, determine at what stage of the planning process input from others would be useful, and use those techniques for public involvement most adapted to the stage of plan development. It is recognized that this may involve diverse and multiple approaches ranging from the public hearing to develop awareness to workshops in which exchanges of information may occur and back to public hearings to notify people of progress
made. The adoption of the multi-faceted approach to participation will demonstrate the commitment of the agency to public involvement and act as an information generation device thus increasing the probability of citizens becoming committed to problem resolution.
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INTRODUCTION

A great deal has been written and even more said about public participation in agency decision making. It has become a subject much like motherhood which, before the advent of the Zero Population Growth Movement, was something everyone favored; the popularity of the subject is such that one tends to forget that it is a relatively recent movement. Bernard Berger, Director of the Water Resource Center of the University of Massachusetts, notes that:

The rise of the "big" government after World War II appeared to have had a stifling effect on public participation in decisions affecting the environment. In retrospect it appears that, for roughly 20 years until the mid-sixties, public interest increased in matters of broad governmental policy while it lessened in the particulars of governmental action.

Nevertheless, the thread of more traditional concern with the particulars of governmental action persisted. This was evident in the broad interest in investigative reporting of specific governmental actions, and in the techniques used by government to measure the costs and benefits of its public works projects.

Increasingly over the last decade, the confidence of citizens in their own judgments has grown with a corresponding reduction of confidence in the reliability of expert judgment.

It has also been noted that the present public participation movement is a reaction not only to big government but to the development of independent agencies staffed by experts which often become a "governing body" uncontrollable by the citizen. The protests of the 1960's are well-documented by Reich in his article, "The Law of the Planned Society" and by others who portray this movement as efforts of citizens to have direct input into the decision process where no institutionalized channels exist.

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The public goes through cycles in which change in the existing state of affairs is demanded. New ways replace the old. Reform becomes the name of the game. Public administration as an approach to government arose as an attempt to rectify the "disorganization, haphazardness, amateurism and dishonesty" which characterized the governmental administration of the period which spawned it. These problems were thought to be the result of the fragmentation and parceling out of powers and functions of government. The proposed cure was an emphasis on centralization, hierarchy and discipline—bureaucracy—in order to achieve the desired state of efficiency. Over the years this approach has been reinforced by the idea of accountability to the people through the political structure. Historically, bureaucracy and the rationalization of the relationship between the bureaucracy and the executive, legislative and interest group structures has been the mold within which public policies have been developed.

An unintended consequence of this system has been a lack of freedom to experiment with alternative decision-making systems. This, combined with a disenchchantment with the "bureaucratic orientation," a perceived gap between promises and delivery of programs, and a perceived lack of governmental responsiveness in important areas of public concern, has been a part of the rise in interest in participative administration. Government operations are perceived by many as too large, too remote, too impersonal, too complex to be efficient and too inflexible to face the problems of today's society.

These frustrations have in recent years been focused at the principal point of contact between citizens and government—i.e., public administrative

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agencies—and have resulted in demands for increased citizen participation in the activities of the governmental agencies. Many of the protests would seem to substantiate this view. How general the movement is among the nation's people is not known, but it has had its effect at all levels of government as well as in many other areas.

Despite the basic tenets of public administration previously mentioned, there has long been the acceptance of a legitimate participative role in the administrative process by various interests outside the duly constituted governmental agencies. Labor, business associates, regulated industries or industry groups have long had a say in some agency activities; however, traditionally the role has been representing their interests in agency policies as members of advisory committees, etc. Citizen participation admittedly has been selective.

The 1930's brought out a participation program in the agricultural sector. A system was created by which local farmers, through elected boards, controlled the content of erosion control programs. Acreage and crop quotas were the result of referenda among farmers.

The Workable Program Requirements of urban renewal in the 1954 Housing Act called for the cities "to encourage citizen participation through the establishment of citizens' advisory committees to examine constructively the workable program goals."4

Ten years later, the Economic Opportunity Act of 1964 included provisions in its Community Action Program for "maximum feasible participation of the poor" in its anti-poverty efforts.5

4Department of Housing and Urban Development, "Citizen Participation in the Model Cities Program," Community Development Evaluation Series No. 2.
5Ibid.
Revision of policies of both programs came with time and experience. In 1969 the Model Cities program revised its requirements to include consultation with, rather than co-optation of citizens, on the premise that planners and policy makers could not understand problems of low-income people.\(^6\)

The National Environmental Policy Act (NEPA) of 1969, which applies only to actions of the Federal Government, attempted to remedy some of the problems involved in environmental decision-making. Government decisions basically made trade-offs between environmental factors and economic factors, with environmental factors being undervalued or overlooked. The NEPA sought to remedy this situation by establishing the Council on Environmental Quality to insure that governmental decision-makers were aware of the environmental factors involved in each activity and by requiring that environmental impact statements accompany any proposed Federal Action. One of the shortcomings of the NEPA is that it does not deal specifically and comprehensively with the issue of public participation. However, the Water Resources Council, "Principle and Standards for Planning Water and Related Land Resources" of 1973, deals directly with this issue. It realizes the importance of public input and proposes to accomplish it by soliciting public opinion early in the process, holding public meetings throughout the planning process and making information available to the public.

And recently, increased demands for a return to "grass roots democracy" coupled with increased concern for the environment has brought about provision for "public participation" in water resources decision-making. These efforts have now been canonized as a part of the rules of the Environmental Protection Agency and guide many activities and efforts throughout the country.

\(^6\)Ibid.
DISCUSSION OF TERMS

However, in all the noise and confusion, it would appear that the answers to two basic questions which are critical to implementation have not been clearly defined. These are: "Who is the public?" and "What is participation?" Perhaps it is the difficulty of answering these questions that explains why they have not been handled. However, an assessment of the areas being treated depends upon the definitions applied. Similarly, it is difficult to know whether "public participation" is adequate if one doesn't know what it is and how it can occur. Therefore, before looking at the techniques of citizen involvement, these critical concepts must be reviewed.

Who is the public? As Warner noted:

The term public, like the term participation is frequently left relatively undefined and ambiguous. For program administrators, this lack of specificity can act both as a blessing (providing generous room for interpretation) and a curse (leading to frustration in coming up with practical implementation procedures)." Warner, p. 25.7

However, one answer to this question is grounded in orthodox democratic theory. This view assumes that every citizen has or ought to have views about what the country needs. Therefore, the answer to this question becomes "everybody" is the public. That this view permeates the planning field is indicated in the Environmental Protection Agency publication, "Toward a Philosophy of Planning: Attitudes of Federal Water Planners," in which it is noted with some chagrin that "around half" of the planners "glibly" defined the term to mean "everybody," the general taxpayer, or simply all those outside government. 8 Although


the viewpoint does not seem dominant nor really strongly held, it does exist. It is interesting to note that this is not the version which is included in the EPA Guidelines.

The second view is that there is a set of interests common to a certain number within the population and that the term public designates this transitory, amorphous, and relatively unstructured association of individuals with certain interests in common. By these criteria any persons interested in a subject become members of the public for that particular subject. While this is useful for research purposes and for political discussions, the term public as defined in this way is not much better for action purposes than that of the previous definition. It is the effective publics—i.e., action bodies—that are sought, and this rests upon the development of more formal and institutionalized groupings.

What, then, is the public, or better, what are the effective publics of water resource decision makers? In Public Participation in Water Resources Planning: A Multi-Media Course, among the public identified are conservation and environmental groups, service clubs and civic organizations, professional groups, sportsman groups, and individual citizens who do not express their preferences through or participate in any of the groups or organizations listed above. It would seem, then, that all those organized groups and individual citizens having an interest in the subject are the publics. Does this mean only those who have, in the past, expressed an active interest or does it include those who suddenly awake to discover that they are interested?


It would seem to include both. Some of the objections now being raised relate to the refusal by agencies to recognize new publics. However, because all agency decisions are political decisions or at least have political consequences, it is not possible to select just the interested groups. Input from interested individuals not a part of groups must also be accepted. Public agencies, then, would seem to have two types of publics: interested groups and interested individuals.

The second critical concept--"participation"--is also generally vague. As it is used, it has various meanings ranging from reaction to idea generation, and from advising to actual involvement in the plan development. The Corps of Engineers, for example, defines public participation as a continuous two-way communication process which involves: promoting full public understanding; keeping the public fully informed; and actively soliciting from all concerned citizens opinions, perceptions, needs, etc. 11

The Environmental Protection Agency, while not specifically defining the term, appears to consider the availability of informational materials, assistance to the citizen groups, consultation, and active notification processes as exemplary of public participation. 12 At the other end of the scale is an example drawn from the Model Cities Program--Boston's South End Urban Renewal Project. In the second part of this effort, the Planning Team Director, using a pluralistic model of power, worked with neighborhood groups to produce several discrete plans for various subareas, then coordinated them into a whole through communitywide citizen planning bodies. The major thrust of this

The effort was that citizens were actively involved in the process of planning throughout the effort.\textsuperscript{13}

The purpose of the above is to show that where the planner begins determines the techniques which will be used and ultimately what is included in the planning process. A review of the literature concerning public participation in water resources planning showed a variety of techniques were used. The most popular techniques appear to have been public hearings and citizens advisory committees. The annotated bibliography included with this report indicates the wide variety of circumstances in which citizen input of a feedback or interactive type is used. Apparent in this review, though, is a paucity of evaluations of techniques used. This is understandable in view of the difficulty of establishing effectiveness criteria. The problems associated with demonstration of cost-effectiveness relations and the legal requirements that public hearings be held would appear to have reduced experimentation with a variety of techniques.

Because most available reports are of case studies of participation and discussions of advantages and disadvantages of various approaches to participation, this report will discuss models of participation, techniques associated with each as they relate to information-response and interaction-dialogue approaches to planning. For summaries of case studies involving citizen participation and planning, the reader is referred to the annotated bibliography.

A number of such definitions or "models" of participation have been developed. They appear to vary primarily in the way they answer the two basic questions posed as follows:

1. Who will participate? That is, who are the relevant publics?

2. What does participation mean? That is, what part are citizens expected to play, what are the specific relations between agency planners and citizens and at what point or points in the process will publics be involved?

This paper will examine the information-response and interaction-dialogue aspects of participation. These terms reflect different approaches to participatory planning.

Information-response normally would mean the planner would generate information and ask for a reaction from the public. In this way the citizens will have been involved in the planning process. The major techniques associated with this approach to participation are public hearings and meetings, survey questionnaires, and public inquiries. These techniques are, for the most part, planner oriented, in that the planner disseminates information on completed plans to the public for their reaction. Citizens are involved in a review of the plans rather than in the actual plan formulation process. They tend to involve a minimum expenditure, in terms of time and money for the planning agency, and, at the same time, provide maximum efficiency and expediency while still meeting the federal guidelines for public participation.

Other techniques are available which involve a greater expenditure on the part of the agency, but involve the publics more directly in the plan formulation stages. This method of involving the publics is referred to as the interaction-dialogue approach. The planner attempts to meet with public groups and exchange ideas with them, getting and giving information about situations, problems, and plans. In its most extreme form, this approach would make the agency and the publics equals and co-planners. Included in this category are such techniques as workshops, interviews, advisory boards, informal contracts, study group discussions, seminars, and charettes.

It should be noted that although these two approaches to public participation are conceptually distinguishable, some aspects of each are usually found
in the attempts to implement them. They are also distinct in that they may be seen as directed toward different types of publics, involve different modes and timing of participation as well as reflecting different roles of citizens in the planning process.

To elaborate this point, a series of discussion-participation models are included. The various actors, their roles, and the exemplary techniques associated with each are discussed. It should be noted that multiple techniques are generally necessary to reflect the intent of many of these models so it is often not possible to attach a single label to them. These models tend to be static in nature. In order to demonstrate the time flow in each model, a time sequence diagram will follow each static model. It must be noted, however, that the time phases are not necessarily equivalent. For example, time one may take three months, time two may take five months, and time three may take four months.

Model 1, which is essentially an information-generating or one-way model, involves a planner or decision maker who considers the goals, diagnoses the problems, formulates alternatives, and presents them for reaction from various relevant publics. He considers the reactions and develops a final plan. This is probably the extreme of the elite conception of planning in which the experts plan for the citizens. It has been one of the most frequently practiced forms of planning. Among its strengths are:

1. efficiency of plan development, and
2. minimum amount of conflict during development period.

However, it also has weaknesses:

1. tends to be authoritarian,
2. will not work unless it reflects the needs and goals of the affected publics, and
3. assumes the planner is the most knowledgeable about the situation.
Figure 2. Model 1 - Information generation - time flow
The technique which fits best in this model is the public hearing. It is the most frequently used of the information-response techniques. Among its advantages are:

1. the cost is relatively low,
2. it is a very simple form of citizen participation, and
3. it is an accepted mode in that it has a long tradition reflecting back to the town meeting.

However,

1. it usually involves only a relatively small proportion of the relevant publics and then only superficially;
2. there is generally no decision making in the hearing—it generates awareness and gets reactions only; and
3. time and place generally restrict participation by citizens.

Model 2 (Information with Feedback) is a modification of the previous one in which the planner uses information from relevant publics about the problem at hand. The planner integrates this information in the plan in terms of the goals and problems diagnosis he has made and makes planning decisions. These decisions are then presented in the form of plans to community officials, staff, and other relevant publics for comment. On the basis of the comment received, the planner decides to proceed or modify the plan. The public's role in this case is twofold: to offer information about the problem as conceived by the planner and to react to the solution offered. Decision making remains the prerogative of the planner.

The strengths and weaknesses of this approach tend to be similar to the previous model, although the feedback mechanism involves more publics in more

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depth. This might make the planner more knowledgeable about the problem and the acceptable responses to it. It would tend to slow the planning process and would be more expensive than the previous model. In most likelihood, if enough publics have been considered and listened to, the potential for conflict should be reduced.

The public hearings with prior contact is the most frequently used technique associated with this model. Among its advantages are:

1. more publics are involved over a longer period, and
2. planning is improved.

Other techniques which can be used in conjunction with this model are: citizens' advisory groups, public hearings, and contact with agencies. 15

In the previous set, the planner established goals and diagnosed problems, the publics added information and reacted. In what follows, interaction-dialogue seems the most characteristic approach.

In Model 3 the focus changes. The planner is at the center of an information wheel: he gathers from the relevant publics what they consider the basic problems which need resolution and distills these inputs and comes up with a plan after constantly testing alternatives with each of the various interests. Publics are involved throughout the planning process by continuous communication flow between each group and the planner; however, there is no communication between the groups.

Group meetings involving separate published workshops are possible techniques to be used with this model. There are several advantages in using this

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Figure 3. Model 2 - Information and feedback
Figure 4. Model 2 - Information and feedback - time flow
approach. The planner is made aware of a broader perspective with regard to problems and the potential for conflict is reduced through contact with and consideration for the various publics.

This can slow the planning process, however, and make the planning more difficult. The planner's role also changes to that of coordinator from his role as information disseminator in the previous models.

The following model (Model 4 in the series) further modifies the role of the planner in that he acts as a coordinator and catalyst between various publics. It differs from the previous model in that representatives of the various publics are communicating with one another as well as with the planner. The planner synthesizes objectives, coordinates interests and helps to work out conflicts. He encourages interaction during the process of planning. Out of this process the planner develops a plan which he perceives as representative of the needs and goals of the various interests involved. The advantages of this approach are that it involves different publics in both the planning process and in the working out of differences which are part of public planning.

However, it is conflict laden and is a slow process since the conflicting needs and goals of the various groups must be settled before plans can be developed.

The workshop would be a technique to develop this model. It provides an excellent opportunity for agencies to include the community in the decision-making process. Due to its nature, the workshop provides a high degree of two-way communication. This allows the public to have real input in the plan formulation process. However, for a workshop to be effective, relatively few people can be involved. Therefore, the planner must be selective in his choice of participants in order to ensure representativeness. Another problem associated with the workshop is the length of time involved for the planner and the public.
Figure 5. Model 3 - Planner in Information Wheel.
Figure 6. Model 3 - Planner in information wheel - time flow
Figure 7. Model 4 - Planner as coordinator
Figure 8. Model 4 - Planner as coordinator - time flow
In order to provide information to the participants and follow-up with dis-
cussion, neither the number of meetings nor the length of the meetings can be
limited.

Model 5 introduces an additional role in the process—the ombudsman or
advocate. He acts as a link between the various publics and the planner.
His job is to translate the needs and goals of the various publics to the
planner. Together planner and advocate develop alternative plans. The
ombudsman gets the reaction of the publics, then the process is repeated until
an acceptable plan is developed. The major advantage of this approach is that
the planner works with a person who represents the interests of the various
publics. It shifts responsibility for dealing with publics to the ombudsman
rather than the planner. Many of the disadvantages of the previous models
still apply particularly with regard to the speed of decision. The ombudsman
might well use interviews and surveys as a part of this job.

A well-designed survey questionnaire\textsuperscript{16} can provide better representa-


\textsuperscript{16}See Fulton, J. K. "Development and Evaluation of Citizen Participa-
tion Techniques for Inland Lake and Shoreland Management," Ann Arbor, Michigan:

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Figure 9. Model 5 - Ombudsman as advocate
Figure 10. Model 5 - Ombudsman as advocate - time flow
alternatives presented by the planner and the publics. There are two possible techniques that may be used with this model: the public meeting and the public inquiry. These can be theoretically distinguished from the public hearing, but no use of those techniques was found in the literature. The public meeting does not have as well defined procedural due process as the public hearing; therefore, due to the more informal nature, there is more public-planner discussion and exchange of information throughout the planning process.

The format of the public inquiry is similar to that of the public hearing except that the inquiry chairman is not from the planning agency and the inquiry may extend over a considerable period of time. The disadvantages of the inquiry are similar to those of the public hearing; however, public inquiries have several advantages over the hearing:

1. a longer time involvement makes possible more deliberation in the proceedings,
2. greater participation is possible due to several meetings at different locations,
3. independent inquiry officer avoids agency bias, and
4. puts planners on participant status which tends to encourage presentation of opposition viewpoints.

Model 7 often labeled Plural Planning is the last of the types of decision models to be presented. In this case each of the publics offers a plan for the resolution of the problem. These alternatives are considered and largely through discussion and compromise a composite plan is developed. In this case, the agency is one of the publics involved having no more centrality or importance than any other. All the publics are actively engaged in planning. The charrette\textsuperscript{17} technique is most useful for this model. The charrette is similar to a public meeting in that all participants are brought together on an equal

\textsuperscript{17}See Hyman, Herbert H., op. cit.
Figure 12. Model 5 - Hearing officer - the flow
Figure 13. Model 7 - Charrette
Figure 14. Model 7 - Charrette - time flow
basis, but a time constraint is included. Model 7 has the same advantages and disadvantages as Model 6; however, the addition of a time constraint does lessen to some degree the time problem faced in Model 6.

What has just been presented are a number of models of the participation process varying from an elitist perspective to a democratic one. Some of the existing techniques for participation have been mentioned in association with the models outlined. Many others are available, such as citizens' advisory boards, informal contacts, surveys, public meetings other than hearings, and task forces. All of these serve different functions in public involvement. A very thorough process of participation would involve a number of these techniques either simultaneously or in sequence. Since they vary in the degree to which the various publics are actually involved in the planning process, they are more or less useful depending on the type of planning which is desired.

It has not been possible to determine with any certainty how extensively the various techniques discussed here are being used. However, a review of 45 project publications in which techniques of participation was discussed generated the following list:

<table>
<thead>
<tr>
<th>Technique</th>
<th>Number of Projects</th>
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<tbody>
<tr>
<td>Public Hearing</td>
<td>17 projects</td>
</tr>
<tr>
<td>Committees or Advisory Boards</td>
<td>17 projects</td>
</tr>
<tr>
<td>Mass Media</td>
<td>12 projects</td>
</tr>
<tr>
<td>Task Forces</td>
<td>5 projects</td>
</tr>
<tr>
<td>Workshops</td>
<td>4 projects</td>
</tr>
<tr>
<td>Interviews</td>
<td>3 projects</td>
</tr>
<tr>
<td>Meetings</td>
<td>3 projects</td>
</tr>
<tr>
<td>Seminars or Symposium</td>
<td>3 projects</td>
</tr>
<tr>
<td>Information Contacts</td>
<td>1 project</td>
</tr>
</tbody>
</table>

65 projects

In the above, it is evident that multiple techniques are being used in an effort to get citizen involvement in planning. However, a limited number of projects actually account for the multiple techniques used.

A review of the Southern Water Resources Information Center's list of active projects generated 110 projects in which techniques of participation
were mentioned. Of these, 91 indicated that the public hearing was to be the vehicle. Other techniques were committees and advisory boards—5 projects; workshops and forums—4 projects; newsletters—3 projects. Task forces, seminars, brochures, surveys and public meetings were also mentioned. In part, the dominance of the public hearing is, of course, a function of the legal requirement that one will be held.

One of the difficulties of participatory planning is that it is unpredictable. The point has not been reached that one can choose a technique and be certain that it will work in all situations. At this level human behavior is so diverse that not enough is known about the stimulus-response relationship to have a high predictability. Certain techniques can be knowledgeably chosen, but their success is often dependent on variables beyond immediate control. Agencies interested in involving citizens are dependent on committed citizens. They, in turn, must be aware of problems and solutions. Because of this, it would seem that techniques involving relatively small segments of the total public would be the most useful from an agency's standpoint.


Boyle, Thad L., and Charles H. Williams, "Citizen Involvement and Public Services," Newsletter, The Institute for Research in Social Science, The University of North Carolina, Chapel Hill, Volume 59, Number 1, March 1974. --Presents results from a nationwide survey to determine citizen contact with government officials and agencies.


Citizen Advisory Committee on Environmental Quality, "Citizens Make the Difference--Case Studies of Environmental Action." Washington, D. C., January 1973. --Collection of studies concerning specific environmental problems and how they were resolved.


Cuyahoga County Regional Planning Commission, "Study Design for a Regional Sewer and Water Plan," Cleveland, August 1971. --Outlines commission's role in the development of the water plan and in particular the commission's relation to the other public agencies and private groups concerned with similar problem.


Ertel, Madge Olson, "The Participatory Role of Citizen Advisory Groups in New England Water Resources Planning: A Preliminary Study." Amherst, Massachusetts: Water Resources Research Center, the University of Mass. at Amherst, June 1972. --Surveys the citizen advisory groups in New England, identifies types of groups and points to their costs and benefits.


Fulton, J. K., "Development and Evaluation of Citizen Participation Techniques for Inland Lake and Shoreland Management." Ann Arbor, Michigan: Huron River Watershed Council, December 1971. --Used a mailed contact-response program, citizens opinions were sought and information disseminated by the project staff.


Herman, M. Justin, "Citizen Participation with Renewal Bureaucrats is the Order of the Day," Journal of Housing, Volume 25, Number 1, January 1968, pp. 25-28. --Case study of urban renewal in San Francisco's Hunter's Point neighborhood; reviews how and with which agency citizens participated.

Hufschmidt, Maynard M., "Water Resources Planning in the Urban Metropolitan Context," Chapel Hill, N. C.: Department of City and Regional Planning and Environmental Sciences and Engineering, University of North Carolina, January 1971. --An effort to determine the changes required to enable water resources planning to better handle the problems.


Hyman, Herbert H., "Planning with Citizens: Two Styles," Journal of American Institute of Planners, March 1969, pp. 245-252. --Studies the urban renewal project of Boston's South End and the two methods (power elite and pluralist) of citizen participation within the project.


Ingram, Helen, "Patterns of Politics in Water Resources Development: A Case Study of New Mexico's Role in the Colorado River Basin Bill," The Division of Government Research, The Institute for Social Research and Development, the University of New Mexico, 1969. --A development of a political model to test the feasibility of water resources proposals.
Jones, A. R. and H. M. McLeskey, "Water Politics in Mississippi: A Comparative Analysis of Two Water Resource Development Organizations." State College, Mississippi: Water Resources Research Institute, Mississippi State University, 1969. --Shows how two water resources organizations promote their interest, secure funding and support from the various levels of government.


Kaynor, Edward R., "Historical, Political and Social Factors Affecting Public Policy on River Diversion: Out of Basin Diversion of Connecticut River Flood Waters to the Boston Metropolitan Area," Publication 25. Amherst, Massachusetts: Water Resources Research Center, the University of Massachusetts, 1972. --A study of the support for and opposition to the out of basin water diversion plan.


Loring, William C., Jr., Frank L. Sweetser and Charles F. Ernst, "Community Organization for Citizen Participation in Urban Renewal." Boston: Housing Association of Metropolitan Boston, Inc., Massachusetts Department of Commerce, 1957. --Deals with the citizen groups, their dominant elements and the relations among different groups.


Mogubf, Melvin, "Coalition to Adversary: Citizen Participation in Three Federal Programs," Journal of American Institute of Planners, July 1969,
pp. 225-232. --Discusses issues, problems and needs of citizen participation. Identifies roles that citizen participation can play in the planning process.


Pease, James Robert, "Public Service and the Public University: Environmental Problem Solving and Research," Publication 24. Amherst, Mass.: Water Resources Research Center, the University of Massachusetts at Amherst, November 1971. --Deals with the role of a land-grant university in water resources problems.

Peterson, John H., Jr., and Rodney N. Friery, "Community Organization Programs and Relationships in Watershed Development." State College, Miss.: Water Resources Research Institute, Mississippi State University, 1972. --Characteristics of leaders of organizations have an effect on attitudes toward watershed development.

Peterson, John H., Jr., "Community Organization and Rural Water System Development." State College, Miss.: Water Resources Research Institute, Mississippi State University, 1971. --Determines the influence of community organization on water systems by comparing selected rural systems.

Proceedings of the Workshop for Sociological Aspects of Water Resources Research, Report No. 1. Social Science Instructional Series, Utah State University, April 1968. --Held to develop interest in and understanding of water resources problems for sociological research.

Reddick, Kit and Ed Todd, "Public Participation in the North Carolina Water Plan: A Pilot Study Project Dealing with the Definition of the 'Publics.'" Raleigh, N. C.: Planning Division, Office of Water and Air Resources,
Department of Natural and Economic Resources, August 1973. --Attempt to develop a means for increasing public participation in the N. C. Water Plan.


Shore, William B., "Public Participation in Regional Planning." New York: Regional Plan Association, October 1967. --Discusses participation as related to an intensive questionnaire program developed by this association.


University, 1968. --Authors attempt to identify and conceptualize issues in the water resources area by a review of the literature.

Smith, Courtland, "Public Participation in Williamette Valley Environmental Decisions." Corvallis, Oregon: Water Resources Research Institute, Oregon State University, April 1973. --The purpose was to indicate kinds of public participation, identify settings for participation and determine factors which limit or stimulate public participation.

Spaulding, Irving A., "Social Status Variations in Attitudes and Conceptualizations Pertaining to Water Pollution and Supply." Rhode Island Water Resources Center. Not dated. --Questionnaire research to determine attitudes pertaining to water pollution and water resources in Rhode Island.


Tucker, Richard C., "Planners as a 'Public' in Water Resources Public Participation Programs," Water Resources Bulletin, Volume 8, Number 2, April 1972, p. 257. --Focuses on planners as a "public" and their part in planning, lists four requirements vital to an effective participation program, and reviews the Susquehanna study.

U. S. Government Department of Housing and Urban Development, Citizen Participation Today, Region IV Proceedings of a staff conference, July 3-4, 1968, Chicago. --Lists citizen participation components such as model cities and urban renewal and includes case studies of participation in programs of six areas and cities.


Water Resources Research Institute, Clemson University, "Private Sector Reaction to Normal Political Institutional Procedures and Outcomes When Water is an Issue," June 1973. Report of powerful citizens who organized themselves to prevent the building of a chemical plant in their area.

Water Resources Research Institute, Mississippi State University, Proceedings, Mississippi Water Resources Conference, 1968. --An exchange of technical information pertaining to water resources.


Wiebe, J. E., "Cluster Analysis and Water Project Evaluation," Water Resources Bulletin, Volume 8, Number 6, December 1972. --This study examines the relationship between the location of TVA projects and the economic well-being throughout the Tennessee River watershed.

Wilkinson, Kenneth P., "Local Action and Acceptance of Watershed Development." State College, Miss.: Water Resources Research Institute, Mississippi State University, July 1966. --Determines the effect of community structure on the course and outcome of local watershed development projects.


Wolff, Robert David, "Involving the Public and the Hierarchy in Corps of Engineers' Survey Investigations," Dissertation presented to the Department of Civil Engineering, Stanford University, November 1971. --The use of survey research to provide information for the Corps to effect a meaningful change in planning policies.