PUBLIC PARTICIPATION IN STATEWIDE 208 WATER QUALITY PLANNING IN NORTH CAROLINA: AN EVALUATION

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ABSTRACT

The public participation effort of the North Carolina statewide water quality planning program is evaluated based upon a model of public participation in planning as an exchange process with three arenas: opportunities, information, and response. Data for the evaluation were collected through field observation of participation events, personal interviews with agency staff, and a two-wave mail survey of participants.

The participation program actively involved 1,600 persons in ninety-four meetings over a two-and-one-half year period, and cost approximately six percent of the planning budget. Participants were above state averages for all measures of socio-economic status used, were overwhelmingly male and white, and chiefly represented government, business, and farm interests. Participants were given opportunities to comment on most of the major decisions of the planning process, but not all because planners could not always identify significant decisions before the fact. In addition, opportunities were not always well publicized. A large number of staff had direct contact with participants, but those who did not were poorly informed about participant opinion. Six of the twelve major decisions of the planning process were substantially influenced by participation. Participants agree with fifty of the seventy-six plan recommendations.

The plan produced is probably less ambitious in its regulatory scope and stringency than it would have been had participation not taken place, and thus probably enjoys wider support among affected groups for implementation. Among the methods employed for participation, interaction/dialogue methods were found to be superior to review/reaction and informational/educational methods in terms of information exchange and effect on the plan, but the other types of methods were found to play a complementary role by involving broader sections of the public.

Recommendations for future participation programs include written reports of participation events by participation staff, greater attention to agency role as mobilizer of an environmental constituency, two-track events late in the program to introduce newcomers to the process without burdening seasoned participants, and greater attention to planning program design in structuring participation.

The evaluation concludes that the North Carolina 208 program was opened widely to citizens and that their participation significantly influenced the statewide 208 plan.
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This document is the final report of a two-and-one-half year study by the Department of City and Regional Planning and the Center for Urban and Regional Studies. The study group developed a methodology for evaluation of effectiveness of public participation in planning and applied that methodology to the activities of one program in the water planning field in North Carolina. This field-tested methodology could be used to guide and evaluate public participation in other environmental management programs in North Carolina and in other planning programs and other states.

The summary and conclusions of the study appear as the first section of the report. Following that the first chapter sets the context for study by describing the legislation, program definition, and participation requirements of the federal water quality planning program and the problems it experienced nationwide. Chapter Two describes the planning and participation organization of the North Carolina effort, and reviews other published assessments. The methodological approach to the research is described in Chapter Three, including the model of participation upon which the evaluation is based, the data collection methods and the analysis methods.

Chapters Four through Eight analyze the participation program. Chapter Four reports the number and socio-economic characteristics of the participants. Chapter Five examines the adequacy of participation opportunities; Chapter Six the exchange of information; and Chapter Seven the effect on outcomes. In Chapter Eight the dollar and staff time costs of the program are tabulated.

Several previous documents report preliminary thinking, or deal in greater depth with particular issues and therefore may be of interest. "Public Participation in 208 Water Quality Planning: A Case Study of Triangle J Council of
Governments, North Carolina" by Steven Herzberg (Research Memorandum No. 43; April 1978) tested an early version of the evaluation methodology in an *ex-post* study. "Public Participation in the North Carolina Statewide 208 Water Quality Planning Program: An Evaluation of the Problem Identification Phase of Planning" by Bruce Stiftel, Steven Herzberg, and David R.Godschalk (Working Paper No. 75; June 1979) applied the final methodology to the first year of the program discussed in its entirety in the present document.¹ "Evaluating Public Participation in Environmental/Land Use Management: Strategies and Lessons" by David R. Godschalk (January 1980) contrasts our participation evaluation methodology with other such methodologies developed recently in environmental and land-use planning contexts.²

This research has been supported through funds provided by the U.S. Department of the Interior, Office of Water Research and Technology through the University of North Carolina Water Resources Research Institute. Dr. David H. Howells of the Institute first recognized the North Carolina 208 program as a promising subject for participation evaluation. His cooperation and guidance as well as those of Dr. James Stewart and Mrs. Linda Kiger of the Institute are gratefully acknowledged. Additional funding has been provided by the North Carolina Department of Natural Resources and Community Development, the lead agency in the planning program under study. Many individuals in the Department and in the other agencies involved in the planning program have contributed time and effort to the research. We especially thank Rick Bailey, Jean Davis, Todd Llewellyn, and R.W. van Tilburg.

¹. Both Research Memorandum No. 43 and Working Paper No. 75 are available from the Center for Urban and Regional Studies.


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Establishment of a working rapport with staff is essential to conducting field evaluation research. We were fortunate to be studying a program whose staff was committed to participation and willing to cooperate with requests and questions. Maintaining this relationship has required that we play less than the role of detached observers. We have given advice on program design, and discussed hypotheses with staff. Perhaps the dual role of analysts and advisors reduced our scientific objectivity, but it also provided valuable inside insights.

Frank DeGiovanni of the Department of City and Regional Planning prepared and pretested the period I mail survey instruments. Staff interviews were conducted and analyzed by Steven Herzberg of the Department who also attended participation events as part of the field observations.

We appreciate the help of many in the Department of City and Regional Planning and the Center for Urban and Regional Studies who assisted in the completion of the research. In addition to the above, these include Roy Arnold, Sandra Cheatham, Anne Newton and Sue Snaman who coded responses; David Falk who assisted in data processing; Patricia Coke, Mollie Felton, Lee Mullis, Joyce Theobald and Janie Thomas who typed instruments and reports; and Bertina Baldwin, Carroll Carrozza and Mary Pettis who managed project administration.
SUMMARY AND CONCLUSIONS

Prior to the North Carolina statewide water quality management planning program, there had been few attempts beyond formal public hearings to involve publics in state water resource planning in North Carolina. Representation at previous hearings had been largely from affected economic interests. Thus, North Carolina was essentially starting from scratch in its ambitious statewide public participation effort under the 208 planning process. How did that effort turn out?

The North Carolina 208 planning program made a good faith effort at meaningful involvement of the public in a complex, technical planning process. Opportunities were provided for input into most of the planning decisions. Ninety-four meetings were held in which 1600 persons participated. Over 20,000 newsletters and reports were distributed. All told, the participation effort required 3.7 man-years of staff time and cost over $120,000—about 6% of the planning budget. Public participation activities consistently enjoyed support of top agency management and commitment of staff.

A considerable array of problems stood between commitment and complete success, however. Water quality management planning, under Section 208 of the Federal Water Pollution Control Act amendments, was a new and loosely defined program. It sought to control a wide range of pollution-causing activities without clear direction as to the appropriate national standards. Federal program objectives were stated in only the most general terms. Methods to achieve the objectives were not specified; although regulation, voluntary compliance, and land use plans were all mentioned. The data base upon which informed decisions might be made was essentially non-existent prior to the initiation of the program. The time horizon in which results were expected was unrealistically
short. Linkages to other federal water programs were not clearly delineated. Reorganization and staffing delays and changes made it difficult to focus on the planning responsibilities. Despite the need for major changes in behavior by private sector actors in agriculture, forestry, mining, and urban development, few incentives for change were provided.

Under these conditions it was impossible for a state to produce a plan that would completely satisfy the goals of the Federal Water Pollution Control Act amendments. What might have been expected was a foundation for future goal achievements. Broader problem recognition through the education of the public, interest groups, and government officials, and a start toward systematic data collection and development of potential solutions, might be coupled with increased staff expertise and action to clean up the most flagrant polluting activities.

Participation in such a program was bound to be frustrating. The combination of ambitious goals and limited means was likely to breed disillusionment. Consistently active participation could be expected only from those with a direct stake in the outcome—and this group consists largely of those engaged in pollution producing activities. The general public would likely be frustrated as they became aware of the dimensions of the problem of non-point pollution and the lack of capacity to address solutions in the immediate future.

Still the North Carolina 208 participation program produced a useful result. Interest in and knowledge about non-point pollution control programs was built among a large number of individuals, many of whom became committed participants. Staff broadened their understanding of the many issues involved in non-point pollution control, especially the political, institutional, and intergovernmental issues. Participant comment caused alteration in many of the provisions of the plan—generally in the direction of making the plan less stringent in terms
of the degree of control required, particularly with respect to on-site wastewater disposal, construction, and mining. In other cases, such as agriculture, participant comment reinforced staff's belief that non-regulatory plan recommendations were most appropriate for North Carolina. Support for the implementation of the plan will be greater because of the changes, and because of the exposure given to the planning process through participation.

Findings and Recommendations

While the involvement of the general public in great numbers could not have been expected, representation by civic and environmental groups should have taken place to a greater degree than it did. Staff were frustrated by the low turnout of these groups, but may have been partly responsible for it by failing to adequately publicize participation events, and sometimes by appearing to side publicly with industry.

In the future, care should be taken that groups are notified sufficiently in advance of participation events to facilitate their attendance. Environmentalists should be viewed as a constituency to be mobilized by water planning agencies. Permanent lists of environmental organizations and individuals interested in environmental quality should be maintained, and regular channels of direct communication with these groups and individuals should be developed. A speaker's bureau would help accomplish this, as would implementation of a "state-of-the-state" environmental quality report.

The interaction/dialogue participation methods that involved ongoing two-way communication between planners and publics were superior to other methods in building knowledge of planning issues among participants, in informing staff of considerations of which they were not aware, and in effecting change in the major decisions of the process including the plan recommendations. Other methods
played complementary roles, however. Review/reaction and informational/educational methods reached a larger spectrum of participants, including specific groups knowledgeable about particular activities. Among those taking part in the review/reaction and informational/educational methods, participants learned information better when they were expected to express opinions.

With the exception of Policy Advisory and Technical Advisory Committee (PAC and TAC), participants had lower evaluations of the planning program in its later stages. This probably reflects the inability of the process to satisfy raised expectations. It also results from the movement from a priority area based participation program in the first year of planning to a statewide participation program in later stages. Participants in later stages were assumed by staff to know things that in fact they did not know because they were attending a 208 meeting for the first time. "Two-track" participation events in later stages might help to familiarize newcomers with basics without straining patience of regular participants and staff. Higher PAC and TAC evaluations in the later period suggest that sustained involvement by these committee members resulted in greater appreciation of the complexities and restrictions of 208 planning.

Most notable of the failings of the participation effort was a lack of reporting about participation events to staff who did not attend those events, especially in the first period of the program. Staff non-attendees were largely ignorant of participant opinions or contributions. Lack of reporting led as well to incomplete treatment of participant suggestions. Participation staff must accept the role of communicators of public opinion, reminding other staff of public concerns, and encouraging responses. Formal reports of participation events are a must in a planning program of this size.

An additional failing concerned the unevenness of staff presentations at meetings. While some staff-members made well-prepared presentations, some were
ill-prepared to present the information for which they were responsible. This reflects not on how well staff members knew the material they were presenting but on how much attention they devoted to the presentation itself. The participation staff should take the role of in-house training of staff members for effective presentations. Staff members should be required to rehearse presentations before a participation staff member with enough time before the actual participation event to permit correction of inadequacies. All staff attendees should be well aware of the exact purposes of the event beforehand.

A third failing concerned the occasional inability of staff to perceive when decisions they were making should be subject to participant comment. Several significant decisions were made without participant input because staff viewed these as non-decisions at the time they were made, or because the decisions were resolved as they were articulated without time for lengthy discussion or review. These included the Priority Area Concept, the delegation to the Agricultural Task Force, the design of public participation activities for the final eighteen months of planning, and the separation of the plan into eight topical areas. Failure to go statewide with participation from the start aggravated later participation by not informing many late-stage participants about program basics. Careful process design of the planning program is essential to opening a planning effort to public participation. Critical planning decisions must be conceptualized in advance so that opportunities for public input into those decisions may be designed.

The productiveness of participatory activities appears closely related to the amount of staff time devoted to them. Partly because reporting to staff non-attendees was inadequate and partly because much of the value of participation lies in unstructured contact between publics and planners, those activities
which had high staff attendance were better able to satisfy Awareness and Effect criteria (see definitions of criteria in Chapter Three). The conclusion which must be drawn from this is that participation, if it is to be successful, must involve substantial staff effort.

The participation program has facilitated the development among staff of skills required and mechanisms necessary for successful participation. In addition, knowledge about water quality issues has been built in a large participation group. Liaisons have been established that will make future participation in water issues more productive. The danger is that the frustrations of this program may cripple future efforts. Every effort should be made to document the successes produced by the planning program and to publicize these successes, especially to participants who are curious to know what differences their efforts have made.

The exchange model of participation was adopted in this research because EPA's program requirements were too general and procedural to provide useful evaluation criteria, and because the state did not develop specific participation program objectives. The exchange model has proven to provide a useful basis for participation evaluation. It can be used to assess individual methods and techniques as well as complete programs. It includes the bottom-line measures of changes in officials' attitudes and decisions on plans, as well as changes in public attitudes and support for plans. It can incorporate various program goals and objectives within its basic criteria. Not only is it well-grounded in theory, but also it is understandable to citizens and public officials. If a model like this were to be widely used, a common language and view of participation would result, reducing the idiosyncratic nature of the field.

Further steps toward comparability of evaluations are required, and may be found in the development of attitude scales and indices for perceptions of
environmental problems, positions on decision-making power, orientation toward agencies and intent to participate. Used together with indicators of socio-economic status, beliefs in personal political efficacy, and trust in government, these scales and indices can provide a comparative data base across various programs.

The principal lessons for future participation programs derived from this study may be summarized as:

- Treat participants as a potential constituency to be mobilized.
- Cast a wide publicity net, even when meaningful input is expected from only a few people.
- Participants are willing to devote considerable time to participation if they see purposes or payoffs.
- Pay considerable attention to the design of the planning process as it affects related participation opportunities.
- Statewide planning programs require statewide participation programs.
- Basics must be reviewed with new participants late in the program.
- Formal reports of participation events are necessary to inform all staff about participant opinion; high staff attendance levels improve staff knowledge of participant opinion in the absence of reports.
- Participation staff should remind other staff of public concerns and should actively work to insure responses.
- Interaction/dialogue methods are most effective at informing participants and at obtaining input, but are complemented by other methods that reach wider audiences.
- Requiring participants to express opinions at an event improves their recall of basic information after the event.
- Participation staff should review and critique presentations by other staff before participation events take place.

A Final Word

Participants and public officials responsible for participation in the North Carolina 208 program should be proud of their accomplishments. It is clear
to this group of outside evaluators that the planning process was opened widely to North Carolina citizens, and that their participation did influence the resulting 208 plan. This was an authentic participation effort and the directly affected public and private groups took advantage of the available opportunities to tell the planners what they did and did not want. Everyone involved learned from the experience.

It also is clear that the 208 plan followed the typical North Carolina pattern of gradual change toward progressive goals (Pierce 1975; Rosenbaum forthcoming). The plan makes no radical alterations in the governmental approach toward basic private sector productive activities that generate non-point pollution. Given the political power of these private sector groups, especially the farm groups in a state whose economy is dependent on agriculture, it is not surprising that a strategy of voluntary compliance was chosen over a regulatory strategy. Nevertheless, the plan does contain progressive goals and procedures; it is not a do-nothing document. As with other North Carolina environmental management programs, the 208 program has established a firm and realistic base for continued progress.

Consensus formation was the essence of the North Carolina 208 planning process. This constructive approach is valuable and necessary in introducing new goals and methods for environmental management. In the majority of situations it is the preferred strategy. At certain times, however, it may be necessary to stand up for environmental goals in the face of determined opposition from other interests. State environmental planners should recognize that conflict among participants is sometimes a useful way of clarifying positions and of posing choices. Even reasonable people will not agree all the time, and legitimate conflict is better faced than swept under the rug where it will remain unresolved.
Implementation of the 208 plan will offer further opportunities for public participation. Indeed, the possibilities to influence the future course of 208 planning should be even greater than those of the past two-and-a-half years. Gaining acceptance for stronger measures for non-point pollution abatement will call for active and well-planned participation by the people of the state who care about the quality of North Carolina's waters.
THE NATIONAL 208 PROGRAM

- Seeks to alter a wide variety of pollution producing activities never before influenced by federal clean water legislation.
- Has been hindered by a slow start, mid-course changes in direction, insufficiency in available data, tight time schedule, and lack of specificity in goals.
- Has a strong mandate for effective public participation throughout the planning process.
- Must overcome public participation obstacles of inexact definitions of publics, participation goals and participation procedures; issue orientation of most participants; and lack of staff experience with participation.
Chapter 1. THE NATIONAL 208 PROGRAM

Involving the public in the preparation of the statewide Water Quality Management Plan was a major innovation for North Carolina. Not only was it one of the first times that state water engineers went public with a statewide planning process,¹ but also it was the first time that a statewide plan was drawn to deal with non-point sources of water pollution. These two firsts, combined with severe federal program requirements, demanded an innovative and flexible strategy from the state agency staff responsible for the public participation component of the plan.

How well did that strategy work? This report assesses the results of the two-and-one-half year participatory planning process from the perspectives of the participants and the planners. It examines both the overall participation outcomes and the results of each separate participation method used.

Before going into these outcomes, it is necessary to review the content and structure of the program in which North Carolinians were invited to participate. The program or decision process in which people participate is a major determinant of how, when, why, how much, and to what degree they become involved. Although voting for an elected official, protesting at a zoning hearing, and serving on a planning advisory board are all forms of public participation, they differ greatly in requirements and motivation. Similarly, taking part in shaping a statewide plan for management of water quality is very different from taking part in other forms of planning at the local, or even at the state level. Each planning process has its own goals and objectives, institutional structure, resources and limitations. Prior to evaluating

¹. Public participation efforts at the river basin level were part of the earlier North Carolina Water Resources Framework Study.
participation, the opportunities and constraints of that planning process must be carefully mapped.

**National Program Concerns**

In October 1972, Congress enacted Amendments to the Federal Water Pollution Control Act (P.L. 92-500). A major provision of those Amendments is Section 208, "Areawide Waste Treatment Management," which established procedures for states or designated regional agencies to formulate and carry out strategies to control both point and non-point sources of pollution.²

Point sources of pollution are defined as discrete conveyances, such as pipes, ditches, and containers. These are the easily-recognized, traditional sources of water pollution. Anyone can see that the effluent and wastewater from a sewage plant or factory discharge pipe is a potential pollution hazard. Non-point sources, on the other hand, are the more diffuse and hard-to-recognize sources of pollution, such as urban stormwater, agricultural runoff, and erosion from mining, logging, and development sites. It is now known that these non-point sources, which either seep through the soil or are carried over the surface of the land, present as large a pollution problem as the point sources (Wicker 1979). Despite the fact that they are not as visible, the accumulation of pollutants from diffuse runoff, seepage, and percolation contribute heavily to the degradation of surface and ground waters.

**Legislative Objectives and Their Implications**

The basic goal of the 1972 Amendments was to "restore and maintain the chemical, physical and biological integrity of the nation's waters." An interim goal was to achieve water quality sufficient for "the protection and

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² The Clean Water Act of 1977 (P.L. 95-217) amended the 1972 act, but Section 208 requirements were not materially affected, except for changes in financing and in treatment of agricultural non-point sources including provisions for agricultural cost sharing.
propagation of fish, shellfish, and wildlife and . . . recreation in and on the water." This interim goal has been described as making the country's waters "fishable and swimmable" by 1983 (Goldfarb 1976).

Initial efforts to achieve these goals focused on clearing up visible point sources of pollution, but the scope of the non-point source problem has since been recognized:

After several years of emphasis on point source water pollution abatement under the Clean Water Act . . . , non-point source water pollution control has now become a major concern in attaining the overall goals of the Act. It is clear that further gains in substantially improving water quality by abatement of point source pollution alone will be offset by continuing non-point source pollution. Thus, a shift to the control of non-point source pollution is underway (Schloesser 1978, p.589).

This change in emphasis has also shifted the focus of pollution management efforts from manufacturing and sewage treatment plants to agriculture, silviculture (logging), mining, and construction. According to Wicker (1979, p.421), "Erosion from an estimated 400 million acres of cropland is the greatest pollutant, yielding nearly two billion tons of sediment yearly." He notes that the collection and treatment of pollutants used to control point sources does not work for non-point sources, where appropriate management practices are needed to reduce or prevent the formation of runoff, seepage, and percolation of pollutants. He states that appropriate management practices could reduce sediment pollution from farmlands by 50%, and from construction sites by 70% (Wicker 1979, p.424). Despite forty years of national soil conservation program activities, 40% of non-irrigated cropland still needs better soil conservation practices and farmers today are losing an average of twelve tons of soil per acre through water erosion as compared to eight tons per acre in 1934 (Schloesser 1978, p.592).
EPA Program Definition

Administration of the Clean Water Act is the responsibility of the U.S. Environmental Protection Agency (EPA). Critics have suggested that EPA at first implemented Section 208 in a "dilatory manner," focusing its attention on issuance of waste discharge permits and funding for waste treatment plants in the early months following passage of the Act and treating 208 planning as a long-term objective (Jungman 1976, p.1048). EPA's first regulations, issued in two parts, were not published until September 1973 and May 1974. Despite the congressional intention that 208 plans would precede planning for the construction of new municipal sewage treatment works, the ailing construction industry in the mid-1970s was able to pressure EPA to proceed with allocating municipal treatment works planning and construction grants before 208 plans were completed ("Embroided Program..."1979).

In addition to a slow start, implementation of Section 208 suffered from a major mid-course change of direction. At first EPA interpreted the Act as requiring 208 planning only for those areas designated by states as having "substantial water quality problems." These were generally metropolitan areas, where 208 planning was to be done by local or regional agencies designated by the governor. Over half of the states refused to designate any problem areas (Jungman 1976, P-1073), and the others designated only limited problem areas. As a result, 95% of the nation's land area was not covered by 208 planning (Wicker 1979, p.427). However, this was changed by a 1975 court decision that held that the states must complete 208 plans for all areas not designated as critical problem areas. In Natural Resources Defense Council v. Train (396 F Supp. 1386 (1975)) the District of Columbia federal district court rejected
EPA's interpretation and decided that Section 208 requires state planning agencies to prepare 208 plans for all non-designated areas. The result has been described as "wall-to-wall 208s." Following this decision, EPA issued comprehensive new regulations for water quality management planning in 1975 and made 208 planning its top priority for fiscal year 1976, completely turning around its earlier position (Goldfarb 1976, p.119).

A second court decision bolstered the case for moving ahead with 208 planning. In National Association of Regional Councils v. Costle, (564 F 2d 583 (1977)), the D.C. District Court cited EPA's "tardiness and inaccuracy" in issuing regulations for areawide waste treatment management planning and directed it to obligate to planning agencies the funds authorized for 208 planning. Of the $150 million appropriated by Congress for 208 planning in fiscal years 1973 and 1974, only $13 million had been obligated by EPA.

Public Participation Requirements

Section 101(e) of the 1972 Federal Water Pollution Control Amendments established citizen participation as an integral part of the areawide water quality management process. It states:

Public participation in the development, revision, and enforcement of any regulation, standard, effluent limitation, plan, or program established by the Administrator or any State under this Act shall be provided for, encouraged and assisted by the Administrator and the State. The Administrator, in cooperation with the States, shall develop and publish regulations specifying minimum guidelines for public participation in such processes. (emphasis added).

According to one assessment, "Section 101(e) is the most comprehensive requirement and authority for public participation ever written into Federal law" (James Ragan Associates 1975, p. vi).

To carry out Section 101(e), EPA published general regulations for public participation (40 CFR 105; Federal Register August 23, 1973). The regulations state that the major objectives of such participation are "greater responsiveness of governmental actions to public concerns and priorities, and improved popular understanding of official programs and actions." They note that conferring with the public only after a decision has been made is not acceptable, and indicate that the intent is to "foster a spirit of openness and a sense of mutual trust" between the public and governmental agencies. They specify eight requirements that must be met:

1) To provide the public with information at the earliest practical times and at places easily accessible.

2) To assist the public on technical matters.

3) To consult with the public on major agency plans and programs.

4) To give public notice on important agency actions or materials.

5) To facilitate public access to information depositories.

6) To assure proper consideration of citizen information and evidence of violations of the law.

7) To provide full and open information about legal proceedings.

8) To give adequate public notice and hearings on all proposed regulations.

In addition, each state must submit an annual summary of Public Participation to include the measures taken, the public response, and the disposition of significant points raised. If EPA finds there has been inadequate opportunity for public participation, a program can be disapproved or suspended.
Water resources planning has been one of the more professionally dominated of government functions, however. The engineers and scientists involved in water planning have often been unable to see what contributions citizens might make to their work, and are largely unfamiliar with the range of available participation methods and lacking in training to use these methods (Dysart and others 1977). Accordingly, EPA issued the *Public Participation Handbook for Water Quality Management* to explain the public participation aspects of water quality planning more fully. This handbook states that the purpose of public participation is "to aid public education, create a plan sensitive to local needs and values, and build support for plan implementation" (1976, p.1). Noting that the expectation is that the public will play a key decision-making role in all water pollution control activities, it defines the "public" as all interested or affected parties--state and local elected officials and their key civil servants, businesses, unions, neighborhood groups, developers, environmentalists, and others.

In addition to the requirements under public participation regulations, the handbook urges that agencies also apply some non-mandatory but equally important "principles" in order to meet the spirit of the law (EPA 1976, pp.6-8). These four principles are:

1) The agency must take the initiative in encouraging citizen participation, assume an open attitude, and put forth preliminary estimates to inform citizens about potential impacts at an early stage in the decision process.

2) The agency must target and seek out key publics, including elected officials, civil servants, affected groups, and special interests--even if hostile or initially unwilling to participate.

3) The agency must provide participation with adequate funding and staff, including at least one person responsible on a daily basis plus the involvement of other technical people with the public during the process.
4) The agency must exchange information in a two-way process, both giving out information in understandable terms, and receiving and responding to citizen questions and ideas.

The handbook recommends that agencies structure their public participation programs around five broad phases of the water quality management process:

1) Establishment of goals and objectives
2) Design of alternatives
3) Impact assessment
4) Recommendation and acceptance of final plan
5) Implementation and plan revision.

For each phase, the participation staff is encouraged to carry out a set of short term tasks, including:

1) Identify objectives and decisions to be made
2) Define information needs for the public and planners
3) Identify key citizens and groups
4) Select productive methods for information exchange
5) Assure public impact on the decision-making process, and give evidence of citizen impact (EPA 1976, p.9).

In order to ensure adequate funding for the participation program, the handbook suggests a figure of 10% of the total planning budget (EPA 1976, p.36).

Finally, the handbook states:

To achieve the 1983 goals, regulatory controls will undoubtedly have to be used. This may involve such things as land use controls, issuing permits and licenses, setting standards, and imposing fiscal policies such as metering or increasing taxes. An active State public participation program can educate citizens and build support for one or more of these controls. Without citizen support, such regulatory controls may be viewed as politically unacceptable, and a potentially effective State program may not be approved (EPA 1976, p.29).
Assessment of the National 208 Program

The national 208 program has been criticized for the adequacy of both its planning and its public participation. Even EPA has recognized these problems:

Policy was often developed late, had changing objectives, and confused the ongoing planning efforts. There was a belated recognition that the program was a political process, and public participation was under-emphasized. Ill-defined and shifting relationships existed between States and areawides as to responsibilities. Most importantly, an overly ambitious attempt was made to cover all water quality and waste treatment problems in the initial two-year process (quoted in U.S. General Accounting Office 1978, p.7).

A General Accounting office report on the 208 program concluded that water quality management planning probably will not be effective for many years until: 1. cause and effect water quality data is obtained, 2. planning efforts become more comprehensive, and 3. public participation strategies are broadened (U.S. General Accounting Office 1978). This report stated that the two year time period required to complete 208 plans was completely inadequate to develop comprehensive information on sources and effects of pollution, particularly for non-point sources. Inadequate data bases could subject 208 plans to legal challenges which could render the plans unenforceable. The report criticized EPA's public participation strategy of emphasizing involvement of key interest groups, rather than the general public. It stated that some plans may be rejected because the views of the general public have not been obtained, and recommended that public opinion surveys be used to obtain the views of the general public.

Tight planning time requirements also stressed the cooperation of the many different government units required for successful completion of an effective water quality management program. The National League of Cities determined that the two year planning period for 208 did not allow an adequate period for the "delicate political maneuvering" necessary "because of the regional growth and
financial impact of large scale treatment systems." "Hastening the process," they said, "tends to further politicize the issues" (National League of Cities 1978).

A 1975 evaluation of public participation under Section 101(e) done for the National Commission on Water Quality by a consulting firm also was critical of the participation record, but for different reasons. This report recognizes the constraints of external factors:

Public participation's low place in a hierarchy of agency priorities, the program deadlines set by the Act and EPA, and the frequently disinterested or hostile attitude among high-level agency officials combine to give public participation activities little attention (James Ragan Associates 1975, p.xii).

It concludes that the general, unaffiliated public is not interested in participating in water quality management planning, despite considerable agency efforts to interest the mass public:

Interested citizen groups and local elected officials are demanding more attention—and agencies persist in trying to involve the general public (James Ragan Associates 1975, p.xiii).

The participation process also hinders effectiveness in several respects:

Organized public interest in participation is largely issue-oriented, while public participation opportunities are program-oriented...People participate when something they value is threatened; most do not when the proposed action is in their interest...most lay citizens, particularly in the states and localities, do not have the information necessary for effective participation....Few agency program personnel know what to do with citizen comments when they get them. There is little accountability to the public...many agencies see public participation as an opportunity for the citizen to vent his emotions...EPA itself is partially responsible...(James Ragan Associates 1975, pp.xiii-xiv).

This evaluation suggests that public participation planning involves ten essential components, all lacking as of 1975:
...agreement on definition of key public participation terms, a clear statement of objectives, a definition of functions, an assignment of responsibility for implementation, procedures for implementation, an allocation of funds, an identification of the affected and potentially interested publics, a plan for monitoring effectiveness, a provision for flexibility in implementation in the face of changing conditions (James Ragan Associates 1975, p.xv).

These assessments highlight several problems with the national 208 program which are relevant to this study of participation in the North Carolina 208 program. As will be seen, the state did not operate in a vacuum; many state-level constraints to participation reflect national problems.
THE NORTH CAROLINA 208 PROGRAM

- A two-and-one-half year, two-million-dollar, sixty-person effort, divided into eight topical areas.
- Consisted of two periods, Problem Identification and Alternatives Definition/Draft Plan Review, involving twelve "major decisions."
- Utilized seventeen different public participation methods.
Chapter 2. THE NORTH CAROLINA 208 PROGRAM

The North Carolina statewide 208 planning program was a two-and one-half year, $2 million effort. Approved for funding by EPA in December 1976, the plan was completed in July 1979. In addition to the statewide plan, two regional agencies were designated to prepare substate water quality plans: the Triangle J Council of Governments for a five county area in the Piedmont and the Land-of-Sky Council of Governments for four western counties. This research report is concerned solely with the statewide plan, but the existence of the substate designated area plans has had ramifications on the statewide program. An earlier case study of the Triangle J substate planning process was used by this research team to test the analytic framework to be used in the study of the statewide process (Herzberg 1978).

The North Carolina Water Quality Management Plan consists of eight topical plans, or plan sections. These are wastewater discharges, on-site wastewater disposal, urban stormwater runoff, agriculture, construction, mining, solid waste disposal, and forestry. Each plan has a section on public comments and staff response. In addition, an executive summary provides an overview of the total plan and an implementation summary brings together the recommendations from the eight topical plans and presents the status of wastewater discharges (NRCD 1979a-1979j).

Planning Organization and Staging

The Division of Environmental Management (DEM) in the North Carolina Department of Natural Resources and Community Development (NRCD) was primarily responsible for the preparation of the plan. A number of other agencies fulfilled either advisory or delegated planning roles. An Agricultural Task Force (ATF), composed of representatives of the Soil and Water Conservation
Section in NRCD, (now the Division of Soil and Water Conservation), the Agricultural Extension Service of North Carolina State University, the federal Soil Conservation Service, the N.C. Department of Agriculture, the N.C. Farm Bureau Federation, and the N.C. Grange, was responsible for the preparation of the agriculture portion of the plan. Representatives of the N.C. Department of Human Resources assisted in the preparation of the on-site disposal (septic tank) and solid waste portions of the plan. Personnel from several other divisions in NRCD also assisted DEM in the planning program. Several appointed commissions advised planners about 208 issues. These included the N.C. Environmental Management Commission (EMC), the N.C. Mining Commission, the Soil and Water Conservation Commission, and the Sedimentation Pollution Control Commission. Commission members were in a strict sense neither staff nor participants, but they typically were perceived as public officials by participants.

Major landmarks in the 208 program included the inauguration of Governor Hunt and his administration in January 1977, the selection of the priority study areas in October 1977, the reorganization of DEM in September 1978, the release of a draft 208 plan in February 1979, endorsement of the final plan by the EMC and Secretary of NRCD in July 1979, and certification of the plan by the Governor in August 1979.

The Hunt Administration came into office just after EPA approved the North Carolina 208 program for funding. It has been responsible for the political decisions as well as the technical appointments within the planning process.

An early decision was made to designate for planning purposes five priority study areas, representative of statewide water quality problems, because neither time nor money would permit monitoring water quality throughout the state. These areas were hydrologic sub-basins selected for their potential
for various non-point source pollution problems. The five areas were located within the following counties: New Hanover-Brunswick (Wilmington area), and Wayne-Lenoir in the Coastal area; Union-Anson, and Forsyth-Davidson (Winston-Salem area) in the Piedmont; and Mitchell-Yancey-Avery in the Mountain area. The five priority areas and the two designated sub-state planning areas are shown in Figure 1.

Figure 1. Priority Study Areas
Midway through the planning process, DEM was reorganized. The principal consequence of reorganization on the 208 program was the separation of 208 staff, formerly grouped together in the Water Quality Management Planning Branch, into four branches. While most 208 staff remained together in the Water Quality Planning Branch, others were shifted to Technical Services Branch, Air and Environmental Standards Branch and Local Programs Planning Branch. An organization chart for the period after reorganization appears as Figure 2.\(^1\)

The staff released a draft water quality management plan in February 1979. The draft consisted of ten volumes (NRCD 1979r-1979t) paralleling the final plan organization, and served as the basis for public comment prior to the issuance of the final plan.

The final plan was released in June 1979, was endorsed by EMC on 12 July 1979, and signed by Governor Hunt on 10 August.\(^2\) The plan was then forwarded to EPA. As of this writing EPA has not formally acted to accept or reject the plan.

For the purposes of this research, the North Carolina statewide 208 planning program has been divided into two periods: (1) Problem Identification Phase; and (2) Alternatives Definition and Draft Plan Review Phases.

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1. An organization chart for the period prior to reorganization may be found in Stiftel, Herzberg, and Godschalk (1979, p.73).

2. EMC remanded the text of the mining portion of the plan to the staff for alterations based on comments that had been made by the North Carolina Mining Commission in early July. The recommendations of the mining plan were not in question, however. They were endorsed by EMC and included with the plan signed by the Governor. Subsequently, changes in the mining plan were made and the plan was forwarded to EPA in January 1980.
Figure 2. Planning Staff Organization: 1979

Department of Natural Resources and Community Development
Howard Lee, Secretary
Nell Grigg, Assistant Secretary for Natural Resources

Division of Environmental Management
A.F. McAlpine, Director

Environmental Planning Section
R.W. VanTilburg, Asst. Director

Technical Services Branch
F. Westfall
J. Fisher
H. Bryant
E. Beck
C. Hawthorne
V. Schneiter
R. Farmer
A. Cobb
D. Perrotta
D. Lenoil
B. Burchard
R. Green
A. Perouze
D. Jessup
D. Cunningham
R. Brown
C. Heavener
B. Gehrner

Water Quality Planning Branch
A. Klima
J. Davis
R. Sharrett
J. Kinder
G. Fleming
K. Poston
D. Palmer
R. Casper
H. Davis
R. Sanders
C. Gardner
A. Duda
J. Williams
C. Woody
C. Blackwell
K. Cromartie

Division of Soil and Water Conservation
R. Bailey, ATI Coordinator

AGRICULTURAL TASK FORCE

Air & Environmental Standards Branch
W. Muldrow

Local Programs Branch
S. Wardrup

N.C. Farm Bureau Federation
B. Jenkins
D. French
W. Barfield

N.C. Department of Agriculture
R. Forrest
T. Ellis
D. McLeod
C. Teague
J. Devine

N.C. Orange
L. Massey

USDA Soil Conservation Service
T. Currin
F. Jeter
J. Canterbury

N.C. Soil

NRCD Division of Forest Resources
W. Callier

NRCD Coastal Resources
J. Smith

NRCD Groundwater
R. Crouch

NRCD Division of Community Assistance
D. Palmer

NRCD Division of Land Resources
R. Braud

USDA Soil Conservation Service
T. Currin

NRCD Division of Human Resources
M. Manntrez

NRCD Division of Soil and Water Conservation
R. Bailey

INTERAGENCY PLANNING GROUP
The Problem Identification Phase began in December 1976 and continued through July 1978. The Alternatives Definition and Draft Plan Review Phases ran from August 1978 to July 1979. The two periods are shown on a timeline along with planning program highlights and participation program activities in Figure 3.

**Problem Identification Phase**

During the Problem Identification Phase, the details of the "plan for planning" were worked out, five priority study areas were selected, decisions about how to monitor stream quality and where to take water quality samples were made, assessments of existing stream quality and of the sources of degradation were conducted, and proposed revisions of the North Carolina water quality standards were developed.

A large number of vacant positions existed on the planning team during the Problem Identification Phase, especially in the early months. The change in administration which took place in January 1977 and a state hiring freeze which affected 208 even though the program's positions were fully federally funded both had a lot to do with this. The necessity to create new job descriptions for positions requiring training seldom before required of DEM employees (biologists, chemists, geologists) also delayed hiring. The planning team was not at full strength until close to the end of this phase, roughly in July 1978.

For the purpose of analyzing public input and influence on the planning program, we have identified seven actions or products as "major decisions" of the Problem Identification Phase. Briefly described these are:

--- The Plan of Study: The development of the program that was followed in creating the 208 plan. This was completed and sent to EPA in December 1976 (N.C. Department of Natural and Economic Resources 1976).
Figure 3. Planning and Participation: An Overview

<table>
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**Problem Identification Phase**

- Alternative Definition Phase
- Draft Plan Review Phase

**Plan of Study Preparation**

- EPA Approves Plan of Study
- Priority Study Areas Selected
- Staff Reaches Full Strength
- Final Plan Issued

**Planning Program**

- James Hunt Inauguration
- Howard Lee, New Secretary of NRCD

**Participation Program**

- Public Hearing on Plan of Study
- Public Hearing on Draft Plan

- ATF Educational Meetings
- Water Quality Standards Hearings
- Newsletter

- Goal Setting Workshops
- Library Depositories

- Public Officials Meetings
- Alternatives Choice Meetings

- Report Circulation
- Draft Plan Review Meetings

- CWQP Steering Committee Meetings
- Public Hearings

- PAC
- TAC

- ATF Goal Setting Workshops
- CWQP Slide Show
- ATF Regional Presentations
- Technical Workshops
--Delegation to ATF: Actually a part of the plan of study, this delegation placed responsibility for preparing that part of the 208 plan which dealt with agriculture with the separate ATF made up of five agricultural agencies rather than with DEM.

--Resource Allocations: the composite of hiring, firing, and budgetary decisions.

--Priority Area Concept and Selection: The decision that because of budgetary restrictions, the 208 plan would have to be based on data collected in five priority study areas only. A ranking procedure was used to determine the hydrologic sub-basin with the greatest potential for water quality problems in each of the five principal hydrologic areas of the state. The decision was made in summer 1977. The ranking was conducted in Fall 1977 and published as 208 Phase I Results (NRCD 1978) in January 1978.

--Delegation to Stanly County: In the Spring of 1978 it was decided to fund a study of specialized septic tank problems in the south central Piedmont to be conducted by Stanly County. The $11,000 study developed procedures for identifying failing on-site waste disposal systems, and improving health department capabilities to advise homeowners on alternatives to septic tanks, and examined the feasibility of a county utility district that would maintain on-site systems based on an annual fee.

--Voluntary Implementation Strategy: The decision to focus the 208 plan on actions that 1) could be taken directly by state agencies, or 2) would be voluntary rather than regulatory in most cases.

--Water Quality Standards Revisions: Revisions of North Carolina's water quality standards were developed throughout the Problem Identification Phase. They were presented to the EMC in Spring 1979. The development of revisions to water quality standards is not formally a part of 208 planning, but rather is part of section 303 planning. It is included in this study because the determination of degradation which is a 208 function relies heavily upon water quality standards and because several public hearings were held in connection with the standards revisions while none were held in connection with other aspects of the Problem Identification Phase.

Alternatives Definition and Draft Plan Review Phases

During the Alternative Definition and Draft Plan Review Phases recommendations were developed for possible inclusion in the plan, the draft plan was prepared and reviewed, and the final plan was prepared, released, and endorsed.
Five actions or products have been identified as "major decisions" of the Alternatives Definition and Draft Plan Review Phases, as listed below, so that a total of twelve "major decisions" of the planning process are available for examination in the evaluation.

--Design of Period II Public Participation: Two changes in the original public participation program plan occurred during period II. First, in Fall 1978 the separation of ATF participation activities from DEM participation activities was ended. Second, in Spring 1979 the priority area focus of participation events was dropped in favor of a statewide focus.

--Separation of Plans: Each of the eight plans was drawn in relative isolation from the others. So, for example, cost-effectiveness comparisons between possible recommendations in the construction plan and those in the agriculture plan were not conducted.

--Generation of Alternative Implementation Options: From Summer through Fall 1978 the staff was principally occupied with the development of alternative recommendations to be included in the plans.

--Selection of Plan Recommendations: In preparation of the draft plans selection was made of those alternatives that would be included.

--Focus on Chowan Basin in Continuing Planning: In the year following the preparation of the 208 plan, the staff will devote attention to the particular problems of nutrient pollution in the Chowan River Basin.

Participation Activities

Staffing for public participation has been tight at both the state and regional levels. The Region IV EPA office, to whom North Carolina reports, had until mid-1978 one professional working full time to provide assistance to the 208 public participation efforts in the eight states of the region. Similarly, the North Carolina participation program was a one-person effort during its first year and a half. After mid-1978 EPA designated 208 participation assistance in the region as a part-time activity of one staff member. NRCD enlarged its 208 participation staff to three at that time, but reduced it to two later in the year.
Todd Llewellyn was hired as a full-time Public Participation Coordinator for the North Carolina statewide 208 program in November 1976. Llewellyn was an experienced public information officer. He had lived in North Carolina for eight years, was a Morehead Scholar with a degree in American Studies from the University of North Carolina and had worked for the cities of Raleigh and Richmond. Llewellyn served as Public Participation Coordinator throughout the Problem Identification Phase, but was shifted to related duties as Assistant to the Director of DEM shortly after the conclusion of the phase. While numerous agency staff members attended meetings and did preparatory and presentation work, no one else was concerned solely with public participation until June 1978, one month before the conclusion of the Problem Identification Phase when two new staff members were hired. Roger Sharrett, hired as an Editorial Assistant, holds a degree in Radio, Television, and Motion Pictures from the University of North Carolina. Jean Davis hired as a Public Information Specialist, became Public Participation Coordinator when Llewellyn left the post. She holds a masters degree in Environmental Management from the Duke University School of Forestry and Environmental Studies, and had experience in editing, copy preparation, and typesetting with Experimental Mechanics, University of Connecticut Publications Division, and Larkin Publications.

The participation effort initially was assigned a budget of $100,000 in addition to the participation staff salaries. This was later raised by $10,000 in a supplementary allocation.

During the Spring and Summer of 1977, Llewellyn prepared a working plan for 208 public participation in the Problem Identification Phase, partly with the assistance of this research team. The participation program was envisioned as a two-way flow of communication, with information flow to citizens.
termed "output" and information flow to the agencies termed "input" (Godschalk 1972). Necessary output during the planning process was described as:

- What is 208 planning?
- What are the planning agencies currently doing?
- What major decisions have already been made?
- How were those major decisions arrived at?

Necessary input during the planning process was described as:

- What are the water quality issues of concern to the public?
- What are the important water quality problems?
- How important is water quality in relation to other topics of public concern?
- What actions should be taken to restore water quality in the state?
- How workable and proper are the plan's recommendations?

Participants were envisioned not as a uniform "public," but as a series of distinct "publics" that could be categorized in four groups:

(1) government agencies concerned in one way or another with water quality;
(2) private interests with a substantial stake in water quality, such as polluting industries; (3) public interest groups whose objectives include the influence of water quality; and (4) the general public (Godschalk 1975).

In order to effectively reach these four groups of publics and to give and receive information concerning necessary input and output, a program of seventeen different public participation methods was selected. The seventeen methods were:

- ATF (Agricultural Task Force) Educational Meetings
- Public Officials Meetings
- Policy Advisory Committee
In addition, two methods of participation were envisioned, but never conducted because of staffing and time constraints. These were Mass Media Programming, and Problem Identification Report Meetings. Mass Media Programming was planned by ATF for use in promoting agricultural "best management practices," but was never developed. Problem Identification Report Meetings were to inform the public about the outcomes of the Problem Identification Phase. Instead, a letter was mailed to the participants in the Goal Setting Workshops containing that information.

Each of the seventeen methods used is described below and displayed in Figures 4 and 5.
Methods concerned primarily with the output of information to publics are called "informational/educational." Methods concerned primarily with the input of information to planners are called "review/reaction." Methods concerned with two-way flow of information are called "interaction/dialogue" (Warner 1971).

Period I Participation Methods

ATF Educational Meetings

In September 1977, ATF held a series of eight meetings throughout the state to explain the 208 program to almost 400 members of the agricultural community.

Public Officials Meetings

In November 1977, DEM held five meetings—one in each priority study area—to acquaint approximately sixty officials with the 208 program.

Policy Advisory Committee (PAC)

The PAC was a fifteen member advisory body composed of a majority of local elected officials, as well as representatives of private interests and public interest groups. It met bi-monthly from July 1977 through the conclusion of the period.

Technical Advisory Committee (TAC)

The TAC, consisting of fourteen representatives of state and federal agencies and professional groups, met bi-monthly from June 1977 through the end of the period. The TAC provided advice and assistance on technical matters to the staff.
**Figure 4. Period I Participation Methods**

<table>
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<th>Method of Participation</th>
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<td>Interaction/Dialogue</td>
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<tr>
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<td>Private Interests Public Interest Groups</td>
<td>Review/Reaction</td>
<td>3/78-5/78</td>
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<td>Public Interest Groups</td>
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<td>Orientation</td>
<td>Dates</td>
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<td>Informational/Educational</td>
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CWQP Steering Committee

A coalition of eight representatives from public and special interest groups was formed in December 1977 at an EPA-sponsored conference in Callaway Gardens, Georgia. This Citizens' Water Quality Project (CWQP) steering committee met again in February 1978. They adopted a goal of using EPA funds to develop and present the CWQP Slide Show discussed below.

Report Circulation

In January 1978, DEM mailed a report entitled 208 Phase I Results (NRCD 1978) to a list of 1,100 recipients identified through past expressed interest in water quality. This report explained how the five priority study areas were chosen.

Goal Setting Workshops

During the period March through May 1978, DEM held a series of five public meetings—one in each priority study area—to determine public attitudes about the importance of water quality and the most important water quality problems. Approximately 130 persons attended.

ATF Goal Setting Workshops

In June 1978, ATF held three meetings in the two agricultural priority study areas to determine public attitudes about the importance of water quality, the most important water quality problems, and the best approaches to correcting agricultural pollution. Approximately 100 persons attended.

Water Quality Standards Hearings

Proposed revisions of North Carolina's water quality standards were the subject of comments received at three public hearings, held in Raleigh, Kinston,

CWQP Slide Show

The CWQP prepared a slide show about the 208 program with funds from EPA and from DEM, which was shown at ten regional meetings to roughly eighty environmental and civic group representatives during the Summer of 1978.

Period II Participation Methods

Policy Advisory Committee

PAC continued to meet through period II, bi-monthly—except during Fall 1978 and Spring 1979 when additional meetings were held to discuss plan recommendations. PAC became concerned about its ability to address questions meaningfully in Fall 1978 and decided that it should have a chairperson and should vote on significant items. Newton Colston, Jr. of the engineering firm of Moore, Gardner and Associates was elected as the chairperson; Marion Nichol of the League of Women Voters as the vice-chairperson.

Technical Advisory Committee

TAC continued to meet through period II, bi-monthly, except more frequently in Fall 1978 and Spring 1979 when plan recommendations were discussed.

Technical Workshops

Two workshops were held in Raleigh in 1978 to discuss management practices for non-point source problems. The agriculture workshop on 27 July was attended by nine non-staff persons. The sedimentation workshop on 20 March was attended by twelve non-staff persons.
Newsletter

DEM began a newsletter concerned with 208 issues in Fall 1978. *Cleaning Up North Carolina's Waters* was mailed to 1,900 persons. Four issues were produced prior to completion of the plan. After plan completion the newsletter became a continuing activity of the Division.

Alternatives Choice Meetings

In November 1978 planners went to meetings in each of the priority areas where they presented the alternative implementation options under consideration. Discussion groups for each of the eight topical areas permitted feedback from participants concerning these options. Ninety-nine persons attended the five meetings.

Report Circulation

Four thousand and four hundred copies of the draft plan documents (NRCD 1979k-1979t) were released in February 1979. Nine thousand and eight hundred copies of final plan documents (NRCD 1979a-g; 1979i-1979j) were released in June 1979. Eight hundred copies of the Mining Plan (NRCD 1979h) were released in January 1980.

Draft Plan Review Meetings

Four meetings were held statewide in February and March 1979 at which planners presented the draft plan. Topical discussion groups permitted feedback from participants on those plan segments of significant interest in each geographic area. For instance, mining, agriculture, and forestry, but not the other plan subjects, were discussed at Spruce Pine. One-hundred and forty-two persons attended. An additional meeting was held after local request in Edenton on 29 March 1979.

40
Library Depositories

By arrangement with the state library system, a depository of water quality materials was established at sixty-one libraries statewide in June 1979. A display was provided to the libraries to promote use of the depository.

Public Hearings

Six hearings on the final 208 plan were held statewide in Spring 1979. Three of these were scheduled well in advance to be held in March and April in Asheville, Winston-Salem and Greenville. Three more were scheduled after local request to be held in the coastal communities of Hertford, New Bern, and Wilmington in June. One member of the North Carolina Environmental Management Commission and one member of the North Carolina Soil and Water Conservation Commission served as hearing officers at each hearing. The June hearings focused almost exclusively on the on-site wastewater disposal portion of the plan. A total of 234 persons attended the six hearings.

ATF Regional Presentations

Final provisions of the agricultural plan were presented to the seven regional meetings of the soil and water boards of supervisors held in July 1979. One hundred forty-three persons were in attendance.

Assessments of the North Carolina 208 Program

Because the North Carolina plan has only recently been released, there are few published assessments. An article by the deputy state conservationist questions whether adequate funding can be found for agricultural erosion control to meet the needs identified in the North Carolina plan (Brown 1979). An in-house review of the North Carolina 208 public participation effort
goes into more detail about the achievements and shortcomings of that aspect of the planning (NRCD 1979).

The in-house review identifies five achievements:

1. Plan modification to reflect constraints introduced by various interests and general public sentiment against government regulation, to gain wider plan acceptance.

2. Development of contacts across the state who are informed on water quality.

3. Development of the Policy Advisory Committee into an effective body for advice to the staff.

4. Growth of interest and skills within the staff in public involvement work.

5. Improvement in routine procedures such as bulk mailings, mailing list generation, and media contacts.

The shortcomings are listed as:

1. Uneven coordination between the public involvement work of the Division of Environmental Management and that of the Agricultural Task Force.

2. Less than optimal staffing.

3. Inadequate knowledge of the status of the participation budget and expenditures.

4. Lack of structure in the Technical Advisory Committee and Policy Advisory Committee, rectified by the PAC during the second year of the process when they elected officers and took group positions.

5. Lack of systematic reporting on results of participation activities to staff.

6. Failure to provide response to public comments at early stages in the planning.

7. Partial neglect, due to staff time limitations, of media contacts, the 208 newsletter, local public information, and relationships with regional councils of government.

The report also describes two "significant mistakes." The first was insufficient attention to informing elected and staff officials of local
governments outside the priority study areas about 208 planning. The second was not staging extensive public meetings to discuss the draft plan alternatives so that more people could have been informed earlier and developed a basis for responding to the draft recommendations. In conclusion, the report acknowledges the difficulty of meeting public participation goals, given the "sheer size of the State and the complexity of handling eight topics at once," and looks forward to devoting more time to citizen contact in the implementation process, now that the plan has been produced.
EVALUATION OF PARTICIPATION

- Based upon a process model of participation as an exchange process between planners and publics rather than on articulated program goals.
- Utilized data collection methods of field observation, staff interviews, mail survey of participants, and staff time logs.
Chapter 3. EVALUATION OF PARTICIPATION

Evaluation research methodology seeks to measure the effects of an activity against the goals it sets out to accomplish. Since there is rarely an agreed-upon set of participation goals and often not even a rigorous public participation program, evaluators often are forced to develop assumed goals and program structures from legislation and official documents after the fact (Rosener 1978). The danger, of course, is that the evaluators will attribute more formality, rationality, pre-determination, and specificity to participation goals and programs than in fact ever existed. Under these circumstances, evaluation can readily become an empty formalism.

Another approach is to assess the impacts of specific participation activities in terms of their effects on actual participation processes and their products. Instead of asking whether the activity contributed to a general goal (which may or may not have existed or had meaning), the question becomes what difference the activity made in terms of features of the participation process, such as its accessibility to public scrutiny and involvement, or in terms of products of participation, such as changes in plans or attitudes. This approach requires that the evaluation be organized around a model of the major features of the participatory planning process, rather than around a set of goals.

This evaluation relies primarily on the second approach; a model is presented later in this chapter. We also attempt to identify the stated goals for 208 program participation -- (See Chapter One) and to indicate progress toward them. However, given the nature of the statewide 208 program in North Carolina, we believe that more can be learned from assessing impacts on the participation process and products, than from attempting to measure effects
against goals. Another value of this approach is that it is easily explained to, and understood by, participating publics.

The Consumer Perspective

Planners inexperienced in participation often make the mistake of assuming that public involvement is given free for the asking. They think that people will voluntarily participate in planning, if only the opportunity is provided. These planners are surprised and disappointed when they hold a workshop or public hearing and few people show up.

Another common mistake is to assume that the most valid and desirable participation is that of the general public, the so-called "man in the street." Planners with this belief are frustrated when their active participants turn out to be those who are most affected by the decisions to be made in the planning process, either from the private sector or the public sector.

A third error stems from the assumption that many participants will be interested in taking part in planning programs lasting several years and dealing with comprehensive, long-term approaches to problems and needs. Planners who made this error are unhappy when most participants turn out to oppose an unpopular plan or to comment on a particular current issue and then lapse into silence.

A 1975 assessment of public participation in water quality planning laid these errors to rest, along with several others. James Ragan Associates (1975, pp.147-151) found that the public interest in participation is largely short-term, issue-oriented and adversarial, that the general public is not interested in the general topic of water quality planning (as opposed to local issues such as facility location), and that participating groups are there for a purpose—to influence federal regulations on the part of national groups.
and to influence local issues on the part of local groups.

The reality of participation in water quality planning, as in other types of planning, is that to be effective there must be a *quid pro quo*. The danger is that planners who understand this may be tempted to promise a larger quid than they can deliver, especially in a statewide program hedged by federal constraints. Overheated expectations can turn against an agency and undercut any temporary interest that may have been stimulated. The basis for a successful participatory planning program is an open and honest exchange that neither promises too much or too little.

**An Exchange Model of Participation**

Public participation can be thought of as an exchange process taking place within three arenas: opportunities, information, and response.

In the arena of opportunities exchange, planners offer to publics access to various phases of the planning program and decision-making processes. In return, publics give to planners attention to their messages and involvement in their program activities. By exchanging opportunities for contact, each party sets the stage or provides the opportunity for activity in the other arenas.

In the arena of information exchange, planners provide publics with information about the problem situation and the planning program. Publics give planners information about their values, attitudes and issues, which constitute the organizational environment—"the real world" in which plans must be approved and carried out. Through this communication of information both groups become better prepared to achieve their objectives.

In the arena of response exchange, planners respond to public suggestions and comments with changes in their opinions and plans. Publics, in return, respond to planner information and analyses with changes in their opinions and
actions supporting or challenging plans. Through this exchange of responses, each group may bargain and obtain concessions from the other side which help to secure its own objectives. This model of participation is shown in Figure 6.

The two directional flow of the media of exchange in each of the arenas suggests convenient analytical criteria for evaluation of public participation. For the *opportunities* arena, the criteria are Accessibility and Involvement. Accessibility refers to the level of access to the planning process which planners have provided to publics. Involvement refers to the degree to which publics have used participation opportunities. For the *information* arena, the criteria are Public Awareness and Staff Awareness, each measuring the degree to which one group has received information and learned from the other. For the *response* arena, the criteria are Effect on Staff and Plan, and Effect on Public and Plan Support. The former refers to changes in planners' opinions and influences on decisions concerning the plan, in response to public involvement. The latter refers to changes in public opinion and influences on public actions to support or challenge the plan, in response to participation information and experience.

The evaluation of these six criteria forms the heart of our analysis.

In addition, because the benefits of any activity are always accompanied by costs, we have added a seventh criterion: Cost. Under the Cost criteria are reported the amounts of staff time and support expenses devoted to the participation program.

In summary, seven analytical criteria expressed as research questions, are:

--How accessible was the planning program to public scrutiny and involvement? (the Accessibility criterion)
Figure 6. Model of Public Participation in Planning As An Exchange Process With Three Arenas

Openness of the Planning Process

- Accessibility
  - OPPORTUNITIES
    - Involvement

Participation in the Planning Process

Information About Planning

- Public Awareness
  - INFORMATION
    - Staff Awareness

Information About Organizational Environment

Changes in Planners Opinions and in Plans

- Effect on Staff and Plan
  - RESPONSE
    - Effect on Publics and Plan Support

Changes in Public Opinion and in Support for Plan
- What was the actual level of public participation and what publics were involved? (the Involvement criterion)

- How knowledgeable did public participants become about the planning program—goals, process, problems, personnel, results? (the Public Awareness criterion)

- How knowledgeable did agency staff members become about the views of publics? (the Staff Awareness criterion)

- To what extent did public participation alter staff opinions and/or the products of the planning process? (the Effect on Staff and Plan criterion)

- To what extent did public participation alter public opinions and/or public actions to support or challenge the plan? (the Effect on Publics and Plan Support criterion)

- What costs were incurred in conducting public participation? (the Cost criterion)

These questions are drawn from an exchange model of public participation that stresses the reciprocal effects of the participatory planning process by linking the related pairs of exchange features: Accessibility/Involvement, Public Awareness/Staff Awareness, Effect on Staff and Plan/Effect on Publics and Plan Support. In effect, these are the major elements of participatory planning as a two-way social communication process.

**Data Collection**

Conducting experimental research in public participation is rarely possible. The complex and dynamic interrelationships defy laboratory conditions. Field research is necessary to study participation processes.¹ But field research has suffered from challenges to the reliability of the data collected.

In order to minimize reliability problems, multi-method research has been developed. Several different data collection methods are used, and the results

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¹ For a discussion of the reasons underlying field research and the methods of conducting such research, see Pilstead (1971), Shatzman and Strauss (1971), and Glazer and Strauss (1976).
of each method are "tested" against the results of the other methods in order to reduce unreliable data. Multi-method research also provides more depth than a single method would be capable of providing by using several perspectives to view the subject rather than one.2

This research is such a multi-method study. Four distinct methods of data collection were conducted: field observation, interviews with agency staff members, mail surveys of public participants, and reports of staff time devoted to participation.

Field Observation

Researchers from the Department of City and Regional Planning acted as participant-observers throughout the 208 planning process. We attended the majority of the participation activities, observing the events and recording them through notes, and discussing the events with both staff and publics. In addition we maintained contacts with DEM staff, through which we learned of future agency plans, official actions, and individual staff reactions to past events and philosophies of participation. In addition, we reviewed 208 program documents as they were prepared, looking primarily for the fate of suggestions made by the public.

Our observations are the primary source of information on what activities took place, who took part, and what ideas, proposals, comments and/or suggestions were generated by the citizens. Notes taken at each participation event formed the basis for a series of memoranda concerning the events themselves. A list of observations including physical characteristics of the meeting place, number and socio-economic characteristics of participants, level and nature of interaction, and the content of communications were recorded in every instance. Additional notations concerning a wide range of subjects were also made as

appropriate and served as the basis of suggestions made to the participation staff.

Staff Interviews

Two sets of staff interviews were conducted: twelve staff members were interviewed during the Problem Identification Phase and sixteen during the Alternatives Definition and Draft Plan Review Phases. The interview respondents were chosen in order to represent each of the major subdivisions within DEM responsible for 208 planning and the agencies in ATF with substantial 208 responsibilities. In addition, an effort was made to obtain a distribution of higher, medium, and lower level personnel. (See Appendix A for listing of staff respondents.)

The interview schedule was highly structured but did include a large number of open-ended questions. On the average, over two hours were spent with each respondent.

The interview questions addressed several general topics. We wanted to find out what important decisions had been made in the program and which of these decisions had been informed by public comment. We wanted to know what the staff felt were the most important water quality problems in the state and the nature of their understanding of public views on these problems. We also questioned the staff about each of the public participation activities in order to get their evaluation of these methods.

In addition, the staff was asked questions about the functions of participation and about the expectations they brought to this particular participation program. They were asked to describe the ways in which being involved in this program had affected them and their perception of participation. They were also asked their opinions about the degree to which the 208 program would correct
different water quality problems, and the amount of time they devoted to participation activities.

Mail Survey of Participants

A two-wave mail survey was conducted. The first questionnaire was mailed during the Problem Identification Phase in August 1978 to a sample of 652 participants. The second was mailed following the release of the final 208 plan in July 1979 to a sample of 688 participants. The overall response rate was 69.6% for the first survey and 62.9% for the second. Figure 7 provides details on the responses.

The first sample of 652 participants included a 100% sample of the 364 attendees at DEM meetings who signed the attendance sheets there, a 47% sample of the 454 persons who attended ATF meetings and signed in, and a 6% sample of the 1100 persons who received the report entitled 208 Phase I Results (NRCD 1978). The ATF sample was chosen randomly from those participants for whom we could obtain addresses. The report sample was chosen randomly from the mailing list used to mail the report itself.

The second sample of 688 participants included a 100% sample of all 593 meeting participants for whom we could obtain addresses and a 5.2% sample of newsletter recipients chosen randomly from the newsletter mailing list. No distribution lists were available for period II reports. Consequently, period II report-only-participants could not be included in the sample. Many of the period II respondents did receive the reports, however.

The questionnaires included questions on the participants' history of involvement in 208, attitudes about water quality, knowledge about the 208 planning program, views about the results of 208 planning, evaluation of the planning program, and background socio-economic characteristics.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Participants</th>
<th>Size of Participants</th>
<th>Number of Respondents</th>
<th>Percent of Sample Responding</th>
<th>Percent of Participants Responding</th>
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<td><strong>34.1</strong></td>
<td><strong>454</strong></td>
<td><strong>69.6</strong></td>
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<td><strong>62.9</strong></td>
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<td><strong>28.5</strong></td>
<td><strong>827</strong></td>
<td><strong>65.9</strong></td>
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</table>

*a. The column sums of activities and of period and method subtotals, and the grand totals are not equal because individuals who participated in several activities are listed in each such activity, and in each applicable subtotal, but are listed only once in the grand totals.*
The first questionnaire was eight pages in length. There were ninety-three closed-ended and four open-ended questions asked of all participants. In addition, depending upon the participation method, as many as thirty-six closed-ended and two open-ended additional questions were asked. The second questionnaire included 117 open-ended and five closed-ended questions asked of all participants and twenty open-ended and one closed-ended questions asked only of PAC and TAC members. The first questionnaire is reproduced in Stiftel, Herzberg and Godschalk (1979, Appendix A). The second questionnaire appears as Appendix B of this document.

**Staff Time Logs**

A bi-weekly time report form was sent to the personnel in the various 208 agencies that were active in public participation from April 1978. Thirty-two individuals were mailed Time Logs. Ten responded regularly. Six others responded occasionally, presumably whenever they took part in public participation activities. Phone calls to the non-respondents were unsuccessful in improving response rate appreciably.

For the purpose of the Time Logs, time devoted to public participation was defined as time spent in travel and preparation, presentation, observation, and/or debriefing associated with any event or process designed to obtain input from non-planning agency-personnel. A copy of the Time Log appears in Stiftel, Herzberg and Godschalk (1979, Appendix C).

**Analysis Methods**

The seven analytical criteria suggested by the exchange model of participation were evaluated based upon the data collected through field observation, staff interviews, mail survey of participants and staff time logs. Field observation data contributed to the analysis of each of the seven criteria, but the
Figure 8. Source of Data for Study of Analytical Criteria

<table>
<thead>
<tr>
<th>Analytical Criteria</th>
<th>Field Observation</th>
<th>Staff Interviews</th>
<th>Mail Survey</th>
<th>Time Logs</th>
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<td>Accessibility</td>
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<td>Effect on Publics and Plan Support</td>
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<td>Cost</td>
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</table>

● - Primary source of data
X - Additional source of data

Contributions are most evident in Accessibility, Effect on Staff and Plan, and Cost. Interview data was used primarily in analyzing Accessibility, Staff Awareness, Effect on Staff and Plan, and Cost and secondarily in analyzing Involvement, Public Awareness, and Effect on Public and Plan Support. Mail survey data was used in analyzing Involvement, Public Awareness, Staff Awareness, Effect on Public and Plan Support, and Effect on Staff and Plan. Time log data was used only in the analysis of Cost. The use of each data collection method for gaining information about the analytical criteria is summarized in Figure 8.

Field observation notes were used to tabulate a roster of staff attendance at participation events which became the principal source of information on Cost and which permitted the examination of differences between Staff Awareness.
of staff in attendance and not in attendance. Attendance rosters and mailing lists gathered, and head counts made at meetings were used in tabulating the size of the participant population. Observation notes and review of plan documents contributed to the determinations of Accessibility and Effect on Staff and Plan.

Appropriate staff interview questions were reviewed under each of the criteria. Closed-ended interview questions were tabulated according to participation method where such a break down was possible.

Mail survey data was first reported by participation method and for the entire respondent group. In cases where semantic differential scales were used, mean values were calculated. Answers which appeared to vary by the orientation of the method as informational/educational, review/reaction, or interaction/dialogue, were arranged in cross-tabulation tables and evaluated using the probability of the chi-square ($\chi^2$) statistic.³

Cross tabulations were then prepared comparing period I responses to period II responses for those mail survey questions asked in both periods. Chi-square probabilities were again used to evaluate differences between the periods.

Time log data was used in conjunction with other sources of staff time data to determine staff salaries spent in participation using calculations based upon typical salaries of staff in each of four categories: Management, Technical Planners, Institutional Planners, and ATF Planners.

³ The chi-square statistic is intended to measure the independence or association of two categorical attributes. In its calculation the frequencies of the attributes expected according to laws of probability are compared to the actual frequencies of the data. Probabilities of actual frequencies below 0.05 were considered to be significant. In such cases there is less than a one in twenty chance that the observed pattern would occur at random. While chi-square is capable of showing that independence between the attributes does not exist, it says nothing about the strength of the association. Accordingly, the findings reported here using this statistic must be regarded as suggestive, not conclusive.
PARTICIPANTS

- 1,600 meeting participants plus 3,000 newsletter or report recipients.
- Substantially above state averages for all measures of socio-economic status.
- Overwhelmingly male and white.
- Largely represent government, business, or farm interests.
Chapter 4. PARTICIPANTS

In order to make any assessment of a participation program it is first necessary to ask how widespread was participation in the program, and what were the socio-economic characteristics of the participants. These questions are addressed in this chapter.

Actual government decisions have seldom directly involved more than a small portion of the population, but several notable counter-examples exist. The civil rights, Vietnam war, environmental, and abortion rights controversies have involved sizeable portions of the population, and local decisions made under the Economic Opportunity Act and Model Cities program evoked extensive participation.

Even when participation is extensive, however, participants are seldom representative of the population at large. Verba and Nie's (1972) standard model of social status and political participation shows that "citizens of higher social and economic status participate more in politics." Participation in natural resource decision-making has been even more the domain of the middle and upper classes than has been participation in general (Burch 1976; Ertel 1979). Czarnecki and Kamieniecki (1978) found in their study of a 208 program in upstate New York that educational achievement, membership in groups, and the type of community one lives in were determinants of intent to participate.

Some have argued that the failure of participation programs to involve representative samples of the public meant that those programs were non-democratic (Wengert 1971). Others claim that the positive benefits expected of citizen participation in water planning are not dependent upon achievement of a representative cross-section in the participant pool (Hoinville and Jowell 1972; Willeke 1976).
A complete assessment of the adequacy of the participant population must, accordingly, include consideration of what views were expressed by participants and whether there were views held in the general population that were not expressed. Such consideration takes place later in this report, but must be prefaced by examination of the absolute size and socio-economic characteristics of the participant population.

**Size of Participant Population**

In the course of our field observations we collected estimates of the number of participants at the various public meetings held in conjunction with the planning process. We also obtained lists of registrants at these events from the Public Participation Coordinators and the ATF Coordinator. These lists show a total of 1364 participants in meeting methods and are tabulated in Figure 7. Our field observation suggests that the list of registrants underestimates attendance by about twenty percent. A revised estimate of 1600 meeting participants seems appropriate. This would mean that three hundredths of one percent of the population of North Carolina actively participated in the planning program.

In addition to participants who attended meetings, 3044 persons received copies of either newsletters or reports, and an unknown number of persons made use of the library depositories.

**Socio-Economic Portrait of Participants**

The participants are above average for the state on each measure of socio-economic status used: income, education, and occupation. In addition, they are overwhelmingly male, and almost entirely white. Eighty-two percent of the participants have family incomes of $15,000 per year or higher while only 20% of all North Carolinians have incomes that great (U.S. Bureau of the Census 1973).
The median number of years of education of the participant sample is 16.0—or four years of college. This compares with a state median of 10.6 (U.S. Bureau of the Census 1973). Of the 75.7% of our respondents for whom we obtained occupation information, 89.4% reported occupations in one of three categories: Professional, Technical and Kindred; Managers and Administrators, except Farm; and Farmers and Farm Managers. These three categories were heavily overrepresented when compared to the occupations of North Carolinians as a whole (U.S. Bureau of the Census 1973). Sales Workers; Clerical Workers; Craftsmen; Operatives, except Transport; Service Workers; and Laborers, except Farm were heavily underrepresented among the respondents. No Transport Operatives; Farm Laborers; or Private Household Workers were present in the respondent group.

The age distribution of those participants over twenty-five corresponds closely to the age distribution of all North Carolinians over twenty-five years of age. Those in ages forty-five to sixty-four are slightly overrepresented among the participants. Adults of other ages are slightly underrepresented.

The participant sample is overwhelmingly male, 86.0%, while all North Carolinians over eighteen years of age are 47.9% male (U.S. Bureau of the Census 1971, Table 16).

The respondent group is 96.8% white, while the state is 76.8% white (U.S. Bureau of the Census 1971, Table 18). The distributions of the participant group and the general North Carolina population for each of these characteristics are illustrated in Figure 9.

Priority study area and designated study area residents are overrepresented in the participant group, as are urban residents and persons with long-time residence in their communities. 24.2% of respondents live in priority study
Figure 9. Comparison of Participants and All State Residents: Socio-economic Characteristics

**INCOME**

- $15-24,999: 38.90%
- $10-14,999: 11.62%
- $5-9,999: 5.20%
- $25,000 or More: 42.60%

**STATE RESIDENTS**

- $0-4,999: 28.23%
- $15-24,999: 22.22%
- $5-9,999: 38.04%
- $25,000 or More: 11.51%

**EDUCATION**

- 13-16 Years: 46.42%
- 0-8 Years: 47.32%
- 9-12 Years: 22.38%
- 17-20+ Years: 2.49%

**STATE RESIDENTS**

- 13-16 Years: 35.35%
- 9-12 Years: 30.70%
- 0-8 Years: 37.09%
- 17-20+ Years: 2.49%

**OCCUPATION**

- Professional, Technical and Kindred: 51.52%
- Sales Workers: 4.19%
- Other: 6.93%
- Farmers & Farm Managers: 25.60%
- Mgrs & Admin., Except Farm: 16.70%

**STATE RESIDENTS**

- Professional, Technical and Kindred: 51.67%
- Sales Workers: 6.57%
- Prof, Teach and Kind: 11.87%
- Farmers & Farm Managers: 22.87%
- Other: 7.27%
Figure 9 (continued)
area countries; 18.2% in designated study area countries; 57.0% in the other counties of North Carolina, and 0.6% in areas outside the state. By comparison, 12.1% of all North Carolinians live in priority study area counties, 12.6% live in designated area counties and 75.3% in other counties of the state (U.S. Bureau of the Census 1971, Table 16).

40.8% of the respondents live in rural areas, and 59.2% live in cities, towns, or suburbs. In contrast 55.0% of all North Carolinians live in urban areas (U.S. Bureau of the Census 1971, Table 16). 63.5% of the respondents have lived in their community for over ten years, 16.3% for five to ten years; and 20.3% for under five years. 53.4% of all North Carolinians have lived in their community for five or fewer years. 83.0% of the respondents own their own homes; 10.7% rent; and an additional 6.5% have some other living arrangement such as living with parents. 65.3% of all North Carolinians own their own homes; 34.5% rent; and 0.2% have some other living arrangement (U.S. Bureau of the Census 1972, Table 2). The residence characteristics of participants and of all North Carolinians are illustrated in Figure 10.

Just under half of the participant respondents said that they took part in water quality planning activities as representatives of an interest group. The largest group of these 34.2%, said they represented a government organization. 31.3% identified a farm group or interest, and 16.1% identified a business organization or firm. A surprisingly low percentage identified civic or environmental organizations. 10.2% said civic; 7.0% environmental. Figure 11 illustrates this distribution.
Figure 10. Comparison of Participants and All State Residents: Residence Characteristics

### SIZE OF PLACE OF RESIDENCE

- **Participants**
  - City Under 50,000
    - 38.57%
  - City of 50,000 Or Above
    - 24.49%
  - Rural
    - 40.82%

- **State Residents**
  - Urban
    - 49.00%
  - Rural
    - 51.00%

### LENGTH OF RESIDENCE

- **Participants**
  - Over 10 Years
    - 63.84%
  - 0-4 Years
    - 20.24%
  - 5-10 Years
    - 16.32%

- **State Residents**
  - Over 10 Years
    - 30.00%
  - 0-4 Years
    - 51.40%
  - 5-9 Years
    - 16.52%

### HOME OWNERSHIP

- **Participants**
  - Own
    - 83.00%
  - Rent
    - 11.00%

- **State Residents**
  - Own
    - 66.67%
  - Rent & Other
    - 33.33%
Figure 10 (continued)

Figure 11. Participant Interest Group Affiliation
OPPORTUNITIES

- Participants had access to many but not all major decisions because planners could not always identify significant decisions before the fact.
- Participant appraisal of the openness of the process is good.
- Participants believed that the program was not well publicized.
- Priority area organization of early planning limited necessary statewide participation.
- Participants were committed to the program, as a group.
- State planners should recognize their role as mobilizers of a constituency for environmental quality.
Chapter 5. OPPORTUNITIES

Selection of methods for public participation; timing of methods so that input will be useful to the planning process; identification of publics who would be interested; and encouragement of that interest through adequate publicity are all design elements that are within the planners' control, and are defined as "Accessibility" in our analytic framework. Also an important precursor to the successful accomplishment of participation objectives is the actual interest and serious commitment of the participants. This we consider under the heading of "Involvement."

A large number of possible methods for public participation have been developed over the last twenty years. The methods were categorized by Warner (1971) into three functional types; educational/informational (output); review/reaction (input); and interaction/dialogue (exchange). Educational/informational methods are concerned with preparing participants for meaningful participation and with notifying the nonparticipating public about the planning process and its ramifications. Review/reaction methods are oriented around providing planners with an indication of people's preference patterns and their relative intensities. Interaction/dialogue methods attempt to produce for planners and participants a mutual understanding about the complex issues surrounding the planning process. They are generally restricted in numbers of participants but intensive in time and effort. Any successful public participation program needs to draw upon all three functional types of methods.

Structuring and timing the methods so that they complement the ongoing planning process require that participation program design begin early; that the planning process itself be designed with participation in mind; that the planning process be conceptualized in terms of reactions sought from participants
and information required by participants in order to provide those reactions; and that participation take place throughout the planning process (Borton and others 1970; Widditsch 1971; Bishop 1975).

Willeke (1976) discusses the identification of publics in water resources planning. He finds that four general sets of characteristics are precursors to potential participation: location, interests, social characteristics, and demographic characteristics.

Adequate publicity consists of notifying all the properly identified publics sufficiently in advance of participation methods so that they may make arrangements to attend and prepare themselves for the event. Notices must be clear and complete enough so that potential participants will be able to accurately judge if they should attend, and so that they will know what to expect when they do attend. Czarnecki and Kamieniecki (1978) found that the pool of potential participants in a planning program is considerably larger than the number of actual participants. Adequate publicity should help to reduce the discrepancy.

The interest and commitment of the participants is, of course, somewhat outside the control of the planners. But planners can take actions that will influence these factors, such as expression of good faith intentions and illustration of how participant input was utilized (Rosenbaum 1976, pp.25-26).

Accessibility

Accessibility is defined as the degree of openness of the planning process. It is affected by the selection, structuring, and timing of methods for participation so that participants can meaningfully influence the planning process, the identification of relevant publics for participation, and the notification of identified publics in a manner that encourages their participation.
Design, Structure, and Timing

All three functional types of participation methods were utilized in this participation program. The Newsletter, Depositories, Report Circulation, ATF Educational Meetings, Public Officials Meetings, CWQP Slide Shows, and ATF Regional Presentations were educational/informational methods. The Goal Setting Workshops, ATF Goal Setting Workshops, Water Quality Standards Hearings, Alternative Choice Meetings, Draft Plan Review Meetings, and Public Hearings were review/reaction methods. The PAC, TAC, CWQP Steering Committee, and Technical Workshops were interaction/dialogue methods.

To determine if the planning process was designed so as to permit publics to understand it and to be involved in it, and to determine if participation activities were structured and timed so that publics could meaningfully influence the planning process, we first asked several questions of our participant sample. Participants were asked to rate the planning process as Closed to Input vs. Open to Input, and as Confusing vs. Easy to Understand. A scale of 1 to 5 was used where 5 represented the Open to Input and Easy to Understand conditions. The mean participant responses were 3.50 for openness in the first period and 3.56 in the second, and 2.89 for understandability in the first period and 2.86 in the second. Two similar questions were then asked of the staff sample. Mean staff responses were 3.5 for openness in the first period and 4.2 in the second, and 2.3 for understandability in the first period and 2.9 in the second.

We went on to ask the participant sample whether they were provided with enough opportunity to express their preferences or opinions at the meetings they attended. Respondents were asked for a simple "Yes" or "No" answer. In addition, PAC and TAC respondents were asked to indicate a second response on a scale from "Always" to "Never." Ninety percent of respondents to the yes/no question answered "Yes," they were provided with enough opportunity to express their
preferences or opinions; only 9% answered "No." There was little difference between the periods. Among the PAC and TAC respondents in period I, 41% said "Always," 45% said "Most of the time"; only 5% said "Half of the time," 9% said "Sometimes." In period II, 82% said "Always"; and 18% said "Most of the time." No one gave any of the lower responses. Responses to each of these questions concerning accessibility are given in Figure 12.

Participation events were generally held on weekday evenings or on weekends to maximize participation by persons not attending in official capacities. Wednesday evenings were usually avoided to prevent conflicts with prayer meetings. Exceptions to the evening meeting rule were made for PAC and TAC meetings where participants had to travel long distances, and for Technical Workshops where most participants attended in official capacities.

To gain further insight into these two aspects of accessibility we asked the staff sample a series of questions designed to determine if publics had an opportunity to provide input on each of the major decisions of the planning process. For each of the major issues of the planning process identified in Chapter Two, staff respondents were asked whether publics contributed a great deal, somewhat, or not at all, to the decision.
Figure 12. Participant and Staff Views of Openness and Understandability of Planning Process; and Participant View of Sufficiency of Opportunity to Express Preferences

<table>
<thead>
<tr>
<th></th>
<th>Period I</th>
<th>Period II</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Openness of Planning Process: Mean Responses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant</td>
<td>3.5</td>
<td>3.6</td>
</tr>
<tr>
<td>Staff</td>
<td>3.5</td>
<td>4.2</td>
</tr>
<tr>
<td><strong>Understandability of Planning Process: Mean Responses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Participant</td>
<td>2.9</td>
<td>2.9</td>
</tr>
<tr>
<td>Staff</td>
<td>2.3</td>
<td>2.9</td>
</tr>
<tr>
<td><strong>Sufficiency of Opportunity to Express Preferences: All Respondents: Percent of Responses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>91.2%</td>
<td>90.6%</td>
</tr>
<tr>
<td>No</td>
<td>8.8</td>
<td>9.4</td>
</tr>
<tr>
<td><strong>Sufficiency of Opportunity to Express Preferences: PAC &amp; TAC: Percent of Responses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Always</td>
<td>40.9%</td>
<td>81.8%</td>
</tr>
<tr>
<td>Most of the Time</td>
<td>45.5</td>
<td>18.2</td>
</tr>
<tr>
<td>Half of the Time</td>
<td>4.6</td>
<td>0</td>
</tr>
<tr>
<td>Sometimes</td>
<td>9.1</td>
<td>0</td>
</tr>
<tr>
<td>Never</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
Of the twelve major decisions of the planning process, four were rated as having a great deal of public input: Delegation to Stanly County, Voluntary Implementation Strategy, Water Quality Standards Revisions, and Selection of Plan Recommendations. Three were rated as having some input: Priority Area Concept, Plan of Study, and Generation of Alternative Implementation Options. Four were rated as having no input: Delegation to ATF, Resource Allocations, Design of Period II Public Participation, and Separation of Plans. One, Focus on the Chowan Basin, was determined as inappropriate to classify on this scale.

The Delegation to Stanly County was discussed at length by the PAC. The Water Quality Standards Revisions were the subject of comment at three public hearings in July and August 1978. Extensive revisions resulted from the comments made at those hearings. The Voluntary Implementation Strategy resulted in part from discussions held at the Public Officials Meetings, the ATF Goal Setting Workshops, PAC, and TAC.

Plan recommendations were extensively reviewed by participants at the alternatives stage in Alternatives Choice Meetings, and before the PAC and TAC; and at the draft plan stage in Draft Plan Review Meetings, Public Hearings, and before the PAC and TAC. Respondents indicated that while participants had the opportunity to comment on all eight plans, few comments were received on the forestry and mining plans, and virtually none on the point source plan. Significant comments were received concerning the on-site wastewater disposal, agriculture, construction, urban stormwater, and solid waste disposal plans.

The Priority Area Concept was an important issue that was decided very early in the planning process. It is important because it set the strategy.
the state would use in trying to come up with a state-wide plan. Applying the priority area organization to the participation effort as well as to the data gathering for technical purposes had problematic consequences recognized mid-stream by staff. Beginning March 1979 the participation program went statewide because the plan to be adopted would have statewide provisions, but no statewide participant group had been built. Persons with little or no background about 208 goals or organization were asked to comment on recommendations. The use of priority areas for planning purposes during the first year did not provide for the development of an informed statewide 208 constituency. The staff felt, however, that the citizens had little, if any, input on the Priority Area Concept. Only after the decision was made was it presented to the PAC, TAC, at the Public Officials Meetings, and in the Report. The staff did say that, if publics had violently opposed the Priority Area Concept and Selection they probably would have changed.

The Plan of Study was produced before 208 funds were available to DEM, and before staff specifically for 208 had been hired. The Plan of Study was, however, printed and distributed widely and presented for comment at a public hearing in November 1976. Few of the comments made at that hearing affected the plan, although the future composition of the PAC was adjusted to include an environmental group representative based on a comment made by a Sierra Club spokesman. The Plan of Study was prepared working against a short deadline. Further participation in its preparation would not have been feasible.

The Technical Workshops afforded opportunity for suggestions on Alternative Implementation Options, as did PAC and TAC discussions in early Fall 1978, but the staff respondents agreed that most options were developed by the staff.

Five of nine respondents felt the public had a great deal of input on the Delegation to ATF. When probed, however, it was revealed that this participation
was, in fact, the input of the agencies that later actually served on ATF. Because of this, and since no formal public participation activities dealt with the delegation, we do not consider that the public had an opportunity to affect this decision.

Resource Allocation, personnel and budgetary decision-making, is a sensitive subject. It involves delicate negotiations within DEM, with NRCD, and with the Governor's office. It is not surprising then, that the public was not given any direct opportunity to influence these decisions. The fact that they were not, however, may have had substantial impact on the planning process. The power of budgetary decision-making exerts considerable control over the actions of an agency or program.

None of the three respondents who addressed the Design of Period II Public Participation felt the public had any direct influence. During period I design of the participation program was presented to the PAC and TAC. No such presentations were made in the second year. In addition, during the first year a few PAC members inquired as to the state of the participation program. No such inquiries were made in the second year.

Staff agreed that the Separation of Plans was also decided without participant review. By choosing to develop the plan recommendations in topical areas based upon sources of pollution (agriculture, mining, etc.), the planners may have helped to facilitate the involvement of interest groups rather than of the general public. Had plan recommendations been organized around counties, multi-county planning regions, or geophysical areas of the state, the general public might have seen a more direct link between their participation in the planning program and the resolution of problems in their communities. Concurrently, special interests might have found fewer opportunities for
participation in the locally-based planning activities. While these thoughts are speculative, they suggest that the division of the planning task was a critical planning decision that probably had far reaching participation consequence. That the public had no say in this decision was a significant omission.

Public outcry was the reason for the Focus on the Chowan Basin in Continuing Planning. This was substantiated by all period II respondents. At issue is whether this outcry was received through participation methods or through other means. The Chowan had not been selected as a Priority Study Area, nor had any 208 meetings been held there prior to Spring 1979. Public sentiment on this issue was registered through traditional political channels and was made known to the staff through NRCD channels. Thus, although there was a great deal of public input on this issue, it was not received through the participation channels of the 208 program. For this reason, this decision is not classified with the others.

Identification and Notification of Publics

Participant respondents were asked to rate the 208 program on a five point scale from Not Well Publicized (1) to Well Publicized (5). The mean response was 2.63 in period I and 2.58 in period II—the lowest mean scores of ten such evaluation questions asked of the participant sample. Staff respondents were asked to make a similar rating. The mean response was 3.5 in period I and 2.9 in period II.

Participant and staff responses to these questions lead us to the conclusion that more effort should have been made to inform people about the opportunities that were available for participation in the 208 program. Very little coverage of 208 appeared in the press, or on radio or television. The
Newsletter did not begin until period II, and the Depositories were not in place until almost the end of the planning program. Several staff respondents, in fact, raised questions about low participation rates of ordinary citizens.

We asked our participant sample a series of questions designed to determine what means they relied upon for information about the 208 program. We asked where they first learned about 208, and how much they depend upon each of eight different sources of information for information about 208. We found that over half of the respondents first learned about 208 either through a direct notice mailed by the state, or through a personal contact. Similarly, notices from the state, and personal contacts are the two methods most relied on for continued information about 208. These responses are presented in Figures 13 and 14.

**Involvement**

Involvement is defined as the level of interest and commitment of the participants. We asked the participant sample five questions designed to measure their involvement in the planning process. Based upon the median responses to these questions, the "typical" participant can be described as very interested in the plan, somewhat involved in the process of creating it, having attended at least one meeting or workshop concerned with the plan, having contacted state officials once or twice, and having read through all the written materials about the plan which he received.

The first question asked "How interested are you in the water quality plan which is being developed for the State of North Carolina?" In period I, 67% of the respondents said they were "Very interested," and 28% said "Moderately interested." In period II, 72% said "Very interested" and 26% said "Moderately interested."

The second question asked "How involved have you been in the '208' planning process so far?" In period I, 53% said "Moderately involved" or "Somewhat
Figure 13. How Participants First Learned About the Planning Process

<table>
<thead>
<tr>
<th>Response</th>
<th>Period I</th>
<th></th>
<th>Period II</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Responses</td>
<td>Percent of Responses</td>
<td>Number of Responses</td>
<td>Percent of Responses</td>
</tr>
<tr>
<td>Newspapers</td>
<td>37</td>
<td>8.6</td>
<td>32</td>
<td>9.6</td>
</tr>
<tr>
<td>Radio or TV</td>
<td>4</td>
<td>0.9</td>
<td>3</td>
<td>0.9</td>
</tr>
<tr>
<td>Personal contacts</td>
<td>112</td>
<td>26.0</td>
<td>77</td>
<td>23.2</td>
</tr>
<tr>
<td>Direct notice from state agency</td>
<td>149</td>
<td>34.7</td>
<td>146</td>
<td>44.0</td>
</tr>
<tr>
<td>Citizens organization</td>
<td>66</td>
<td>15.3</td>
<td>29</td>
<td>8.7</td>
</tr>
<tr>
<td>Local government</td>
<td>62</td>
<td>14.4</td>
<td>45</td>
<td>13.6</td>
</tr>
<tr>
<td>Total</td>
<td>430</td>
<td>100.0</td>
<td>332</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Figure 14. Participant Dependence on Sources of Information About Planning Process: Percent of Responses

<table>
<thead>
<tr>
<th>Response</th>
<th>Period I</th>
<th>Period II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>A Great Deal</td>
<td>Somewhat</td>
</tr>
<tr>
<td>Newspapers</td>
<td>24.6</td>
<td>56.9</td>
</tr>
<tr>
<td>Radio or TV</td>
<td>7.7</td>
<td>49.0</td>
</tr>
<tr>
<td>Personal contacts</td>
<td>53.4</td>
<td>35.3</td>
</tr>
<tr>
<td>Citizen's organizations</td>
<td>22.8</td>
<td>35.2</td>
</tr>
<tr>
<td>Direct notice</td>
<td>52.0</td>
<td>36.2</td>
</tr>
<tr>
<td>Newsletters</td>
<td>34.6</td>
<td>36.4</td>
</tr>
<tr>
<td>Reports</td>
<td>41.6</td>
<td>33.3</td>
</tr>
<tr>
<td>Public meetings</td>
<td>29.0</td>
<td>53.0</td>
</tr>
</tbody>
</table>
involved;" 15% said "Very involved." In period II, 58% said moderately or somewhat involved and 12% said "Very involved."

Third, we asked "Approximately how often have you contacted officials working on the '208' water quality plan about the planning efforts?"

In period I, the greatest number of respondents, 33%, answered once or twice; 30% said never; and 37% said more than twice. In period II, 32% answered once or twice; 27% said never; and 42% said more than twice.

Fourth, we asked which of a range of activities respondents had engaged in to express views about the planning process. Seventy-seven percent of period I respondents, and 79% of period II respondents said they had attended meetings. In each of the other activities, participation rates were near 20%.

Finally, we asked participants how thoroughly they studied or reviewed the reports and newsletters that they received. Of those who received the phase I report, 24% said they studied it carefully, and 39% said they read it through. Of those who received the executive summary of the plan, 18% said they studied it carefully, and 45% said they read it through. Of those who received one or more plan documents, 23% said they studied them carefully, and 42% said they read them through. Of those who received the newsletter, 15% studied it carefully, and 50% read it through.

When it is recalled that the participant sample is intended to be representative of 1600 individuals statewide, it would seem that the public had a considerable interest in and commitment to the planning process. The agency staff, however, question the representativeness of the participants.

A recurrent theme expressed by staff members was the failure of the "disinterested public" to participate in the program. Three staff respondents said their greatest frustration was that the program did not reach enough
people. Three thought it had reached the wrong people—politicians, developers, and special interests rather than "ordinary people." Three others cited public apathy as their greatest frustration. Six of eleven respondents felt public attendance at the Alternatives Choice Meetings was too low. Several respondents complained that while general attendance at the Draft Plan Review Meetings was good, almost all the participants were interested in only two of the eight plan areas. Two staff remarked that almost all the comments they received came from people directly affected by the subject matter under consideration.

In large part, the staff's dissatisfaction with public turnout and willingness to speak would seem to be due to the conflict between desire of staff to produce a plan that would cause rapid change in water quality conditions in the state, and the predominance of public comment for more lenient regulations, voluntary strategies, and further study. This predominance is discussed in Chapter Seven and follows from the heavy representation of government, business, and farm interests, and light representation of civic and environmental interests described in Chapter Four.

Certainly the light representation of civic and environmental interests is a pressing problem in this case. Several possible explanations exist. The first is that there simply aren't very many environmentalists and/or civic activists in the state. This may be dismissed quickly. National environmental organizations maintain substantial rosters in North Carolina. Hoffius and Peacock (1976) list one hundred and three active environmental organizations in the state. Sport fishing, tourism, and, to a lesser extent, hunting are major industries here. A second explanation is that environmentalists and civic activists didn't know where or when to participate.
Given the low ratings with which participants evaluated publicity in this program this would seem to be a likely explanation. Trade associations, agricultural extension agents, and personal contacts may have given business, farm, and government interests an edge in finding out about meetings. A final explanation concerns the possibility that environmentalists knew about but did not believe their participation in the planning process would have any significant effect. This explanation deserves consideration.

At a recent North Carolina water resources conference, Wallace Kaufman, president of the North Carolina Conservation Foundation, expressed the view that citizens in this state believe that despite considerable activity and expense little, if anything, has been accomplished in environmental control here in recent years. He cited reports of studies, commissions, new standards, and reorganizations as the predominant content of government communication to citizens on environmental issues. According to this view, substantive improvements in environmental quality have not taken place (Kaufman 1979).

The experience of the Clean Water Association of Coastal North Carolina Inc. (CWA) in this statewide 208 program supports the explanation of frustration as well. CWA contacted DEM in September 1977 to ask that the 208 plan address problems of on-site disposal in the Wilmington area (Foster 1977). CWA held that population growth itself was the culprit and fundamental action was needed on the issue. DEM responded that the area had been chosen as a Priority Study Area and encouraged CWA to pursue its goals through participation in 208 (DeVane 1977). CWA representatives did participate in meetings held in Wilmington in November 1977, June 1978, and November 1978. At each they actively supported strong action in the on-site plan. In November 1977 they were told the staff would do what could be done—that it all had to be studied first.
In November 1978 their arguments were met by a Division of Health Services (DHS) representative who was of the general opinion that septic tank problems were best left in the hands of the people who now handled them, and that given time, money, and fine-tuning the present regulatory scheme would produce results. CWA contentions that growth management measures in coastal areas were necessary were dismissed by the DHS official. DEM staff did nothing to suggest that its opinions were at variance with the DHS spokesman. CWA became disillusioned as to the possibility of effecting change through the 208 process. By April 1979, they chose not to even make a presentation at the Public Hearing. In response to our period II questionnaire, one member of CWA wrote "I have come to the conclusion that the political process at the state level is governed by a few special interest pressure groups and that the state employees spend most of their time avoiding controversy."

Some other comments to the period II questionnaire echoed the sentiment that state officials were pro-industry or that nothing would result from the plan. The following are illustrative comments:

---Many officials are not fully aware of the severity of the problems—they would prefer to gloss over problems until someone else can handle.

---State staff continuously gives the impression that no alternatives exist and that there is not sufficient time to re-evaluate alternatives presented by the audience.

---The moderator showed favoritism to industry and mining interests and downplayed environmental arguments.

In order to see how widespread these sentiments were among environmentalists in the sample we performed a content analysis on the responses to the questions "What did you like best about the meetings or hearings you attended?" and "What did you dislike most about the meetings or hearings you attended?"
Only 50% of the six environmentalists responding to the period II questionnaire responded to the question of what they liked best—compared with 71% of the non-environmentalists. By contrast, five of the six environmentalists, or 83%, responded with something they dislike and only 65% of the non-environmentalists responded. The criticisms raised by the environmentalists concerned biased state representatives, domination by one locality, delay in the achievement of goals, the format of the meetings in general, and the results of the meetings in general.

Caution must be applied in interpreting these results. First, the sample of environmentalists responding is small. Second, bearing in mind that the final 208 plan was not strong in terms of new regulations or mandatory actions, it is likely that environmentalists are not as happy as others with that plan (see Chapter Seven for a discussion of this issue), and they may be more inclined to find fault with the process leading to the plan because of that. It is also important to note that many of the complaints concerning biased state representatives were generated in response to the actions of persons who were not, in fact, state agency staff members. Appointed EMC members and Soil and Water Conservation Commission members presided over the public hearings held during the planning process. One such commissioner repeatedly made it clear that he was opposed to environmental quality improvements that would adversely affect economic activity. Many, although not all, of the participant reactions to state staff bias came in response to this commissioner's declarations.

Problems of poor publicity, low expectations of environmentalists of what 208 would accomplish, and environmentalist views that state agency staff were biased against environmental quality improvement may be grouped together as a failure to mobilize the environmental constituency in North Carolina.
Several particular actions, but more importantly, a change in philosophy about DEM's role in state decision making will be necessary to reverse this situation. Kaufman (1979) recommended an annual "state-of-the-state" environmental quality report similar to the Council on Environmental Quality's annual report (U.S. Council on Environmental Quality 1980), and DEM has discussed the need for such a report. Additionally, development of ready communication channels with environmental quality groups in the state would help rectify poor publicity contacts. A speakers' bureau, or roster of staff and/or key participants who could speak at civic and environmental group meetings about state environmental problems and programs would help to make DEM's activities and goals clearer to such groups. But more importantly, DEM should recognize its role as the state government access point for persons and groups with environmental quality interests. Many state agencies speak for particular interests within government administrative processes. Such relationships between the regulated and the regulators are well documented in the literature on administrative decision-making (Lowi 1969; McConnell 1966; Freeman 1955; Maass 1951). Most widely recognized in North Carolina is the relationship between the North Carolina Department of Agriculture and the farming interests of the state. If an environmental constituency is to be mobilized, then natural resources offices in NRCD should function in part as mission agencies representing environmental quality goals. If environmental quality does not have an advocate in state government those interest groups that do have such advocates will succeed in defeating environmental quality proposals when these proposals conflict with those other policy interests.

Conclusions

The planning process was designed to permit public access and input to many
of the major decisions. Several significant decisions were made without participant comment. However, these either occurred early in the planning process, involved sensitive staffing matters, or were not perceived by the planners as significant decisions when they were made. Several omissions concerning design of planning or participation activities may have had significant consequences on the public who became involved in the planning process and as a result on the recommendations reached. Priority area organization for participation precluded needed early involvement of publics statewide, and created difficulties later in the program when participation was statewide.

All three functional types of participation methods were utilized in each phase of the participation program. Participant appraisal of the openness of the process is good; and while many participants found period I processes difficult to understand, fewer found period II processes to be so.

Participants and staff both believed that the participation program was not well publicized. Staff were frustrated by the strong predominance of persons who would be directly affected by pollution control actions among the participants. We speculate that those who favor strong pollution control may not have known about the participation opportunities or may not have been given reason to believe that their active participation would yield results. State environmental quality planners should recognize their roles as mobilizers of a constituency for environmental quality in the state. Participation methods such as a "state-of-the-state" environmental quality report, and a speakers' bureau would help to fill this role.

Those who did participate in the planning process were a committed group taking part in multiple participation methods, reading the written materials they received, and expressing a high level of interest in the plan.
INFORMATION

- Interaction/dialogue methods were most successful at educating participants about program issues. Next were review/reaction methods.

- A high percentage of staff attended participation events, but those staff who missed the events did not learn what went on.

- Formal reports of participation events, and follow-ups by participation staff to insure the use of participant input are necessary.

- “Two-track” events late in the planning program may help familiarize newcomers with basics without straining the patience of regular participants and staff.

- Documents released to the public were easy to understand and useful to participants.
Chapter 6. INFORMATION

The bread and butter of participation is communication. Effective communication requires that information be accurately received as well as accurately transmitted. If communication is not effective, then the participation process is short-circuited, and the desired outcomes of improved decisions and increased support for the decisions cannot result.

Communication in the statewide participation setting is complicated by the widely divergent perspectives of participants. Language is at best imprecise even among people of common background. When various backgrounds are involved different meanings may be applied to the same terms. Additionally, interpersonal dynamics and strategic behavior may distort the interpretation of messages.

Borton and others (1970) found that interaction/dialogue types of participation methods were successful in achieving "nearly congruent" perceptions of water resource problems, and in disseminating information. Evidence from other participation programs suggests that taking people out of their normal environs and roles may reduce strategic behavior and improve communication (Batchelor 1971; Duke 1974). The creation of a lasting record of what was said by participants is important to making use of those comments and to defending decisions based upon those comments (Clark and Stankey 1976).

This chapter will examine how well participation staff fulfilled the roles necessary to achieve effective communication among the publics in the statewide 208 planning process. The evaluation criteria used are Public Awareness and Staff Awareness. Public Awareness asks how knowledgeable participants are about planning program goals, process, problems, personnel, and results. Staff Awareness asks how knowledgeable staff members are about the views of participants.
Public Awareness

The Public Awareness criterion will be examined in three ways. First, we will look at participant responses to a series of "test" questions in the mail survey. Then, we will present responses to a series of mail survey questions aimed at determining the participants' own evaluation of their knowledge and of the information made available to them. Finally, we will present staff appraisals of Public Awareness.

"Test" Questions

We asked the participant sample a series of four questions requesting information about specific aspects of 208. These "test" questions were coded as being answered correctly or incorrectly. Figure 15 summarizes responses to "test" questions.

The first of the test questions asked "Who would you contact if you had any questions or wanted more information about the '208' planning process?" A response which included any 208 funded agency or any staff member of such an agency was coded as correct. Fifty percent of respondents named such an agency or person. Participants in interaction/dialogue methods did best at 72%. Participants in review/reaction methods scored lower at 50%. And participants in informational/education methods scored still lower at 43%.

The second test question asked "Do you know which level of cleanliness is to be achieved by the '208' plan?" Only 31% of respondents were able to identify fishable/swimmable waters as a goal of the 208 program. Correct answers were given by 66% of interaction/dialogue respondents; 28% of review/reaction respondents; and 22% of informational/educational respondents.

The third question, "Could you briefly explain the difference between point and non-point sources of pollution?" was correctly answered by 40%
Figure 15. Participant Responses to "Test" Questions:
Percentage Correct Response

<table>
<thead>
<tr>
<th>Question</th>
<th>Contact</th>
<th>Program Goal</th>
<th>Point/Non-Point</th>
<th>Priority Area Residence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interaction/Dialogue</td>
<td>72.1</td>
<td>65.6</td>
<td>37.7</td>
<td>67.2</td>
</tr>
<tr>
<td>Review/Reaction</td>
<td>50.1</td>
<td>28.1</td>
<td>29.8</td>
<td>46.3</td>
</tr>
<tr>
<td>Informational/Educational</td>
<td>42.8</td>
<td>22.2</td>
<td>9.7</td>
<td>51.4</td>
</tr>
<tr>
<td>Period I</td>
<td>50.0</td>
<td>31.5</td>
<td>60.5</td>
<td>52.6</td>
</tr>
<tr>
<td>Period II</td>
<td>49.0</td>
<td>31.2</td>
<td>17.4</td>
<td>43.6</td>
</tr>
<tr>
<td>Total</td>
<td>49.5</td>
<td>31.3</td>
<td>39.9</td>
<td>49.9</td>
</tr>
</tbody>
</table>

of all respondents; 38% of interaction/dialogue respondents; 30% of review/reaction respondents; and 10% of informational/educational respondents.

On the fourth question 50% of all respondents were able to correctly identify whether they lived in a priority area or not. Sixty-seven percent of interaction/dialogue respondents could correctly do so; 46% of review/reaction respondents; and 51% of informational/educational respondents.

Differences in response rates between participants in the three types of methods for each of the four questions were significant. The first three had a probability of 0.0001, the fourth a probability of 0.007. This suggests that interaction/dialogue methods were substantially more successful at building participant awareness than were other types of methods, and that review/reaction methods were substantially more successful than were informational/educational methods. The critical factor in the superiority of interaction/dialogue methods may well have been their duration. While most involved only one event per
participant, PAC and TAC meetings occurred regularly throughout the planning process, and CWQP Steering Committee meetings totalled three full days.

There is little difference in the test question responses between period I and period II for two of the questions: contact and fishable/swimmable waters. There were significant decreases in knowledge of residence in priority area, and ability to identify the difference between point and non-point source pollution in the second period. Percentage correct responses went from 53% to 44% and from 61% to 17%, respectively. The probabilities of these shifts are 0.007 and 0.0001.

Participant Evaluation Questions

A number of different questions were asked of the participant sample in order to obtain their evaluation of their own knowledge, and of the information which was made available to them. First all respondents were asked a series of questions about the mailed reports and about their ability to form an opinion. Second, those who had attended meetings were asked about the information provided at those meetings, and then about whether staff answered their questions satisfactorily. Finally PAC and TAC respondents only were asked a long series of questions relating to the information made available to them.

Report and newsletter recipients were asked how useful those materials were, and how easy they were to understand. The full range of responses is given in Figure 16. Seventy-two percent found the 208 Phase I Report very or moderately useful. Seventy percent found the Executive Summary to be so; 64% found the plan segments to be so; and 63% found the newsletter to be so. Seventy-five percent found the phase I report to be very or moderately easy to understand; 80% the Executive Summary; 82% the plan segments; and 97% the newsletter.
All participants were asked if they had enough information to form an opinion about what was being done in the program. Twenty-seven percent of respondents in period I, and 38% of respondents in period II said they had enough information to form a definite opinion. Fifty-seven percent (period I) and 50% (period II) said they had only enough information to form a tentative opinion. Sixteen percent and 12% said they did not have enough information to form any opinion. The greater ability to form a definite opinion in period II is significantly different from period I (probability = 0.0025), suggesting that the participant effort, or at least the second year of the participation effort, was successful in improving public understanding of the planning program.
Meeting attendees were asked to evaluate the interest, accuracy, newness, usefulness, comprehensibility and adequacy of the information they received on a scale of 1 to 5. Mean responses to each question in each period are given in Figure 17. In each instance period II evaluations were lower than period I evaluations, although only in the case of newness of information was the difference statistically significant (probability = 0.0005). All means were between 3 and 4 in period I. In period II, newness and adequacy means were 2.56 and 2.83 and the remainder were between 3 and 4.

The public's appraisal of the sufficiency of the information made available to it was determined by an additional question. Twenty-seven percent of respondents in period I and 38% in period II said they had enough information to form a definite opinion about what is being done in the planning program. The differences in all responses between the periods were significant with a probability of 0.0025, so participants in period II seem to have been better informed than participants in period I.

Meeting participants were also asked if staff running the meetings satisfactorily answered their questions. Eighty percent of respondents in period I and 67% of respondents in period II said "yes". The probability of such a difference is a significant 0.0005.

Seventy-one percent of PAC and TAC members reported that they received reports sufficiently in advance of needing them "most of the time." Eighty-five percent said they received adequate explanation of reports most or all of the time. And 79% said that reports were easily understandable most or all of the time. In each instance the evaluations improved in period II but the differences do not meet tests of significance. PAC and TAC members were generally "fairly satisfied" with the information they received on twenty-two specific
### Figure 17. Participation Evaluation of Information Received in Meetings

<table>
<thead>
<tr>
<th></th>
<th>Period I</th>
<th></th>
<th>Period II</th>
<th></th>
<th>(x^2) probability of difference between periods</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>mean</td>
<td>n</td>
<td>mean</td>
<td>n</td>
<td></td>
</tr>
<tr>
<td>Interest</td>
<td>3.53</td>
<td>191</td>
<td>3.51</td>
<td>264</td>
<td>0.5275</td>
</tr>
<tr>
<td>Accuracy</td>
<td>3.76</td>
<td>181</td>
<td>3.63</td>
<td>250</td>
<td>0.1607</td>
</tr>
<tr>
<td>Newness</td>
<td>3.27</td>
<td>181</td>
<td>2.56</td>
<td>262</td>
<td>0.0005</td>
</tr>
<tr>
<td>Usefulness</td>
<td>3.45</td>
<td>186</td>
<td>3.32</td>
<td>255</td>
<td>0.0804</td>
</tr>
<tr>
<td>Comprehensibility</td>
<td>3.39</td>
<td>189</td>
<td>3.21</td>
<td>259</td>
<td>0.2099</td>
</tr>
<tr>
<td>Adequacy</td>
<td>3.13</td>
<td>182</td>
<td>2.83</td>
<td>258</td>
<td>0.1281</td>
</tr>
</tbody>
</table>

Subjects including each of the eight plan sections. Evaluations generally improved in period, but the differences were not significant.

**Staff Evaluation Questions**

Almost all staff respondents reported that participants were well informed about 208 issues. Seven said so without qualification. Four stated that participants were well informed but only about the particular issues that they were interested in. Three stated that the large participant group that had a work-related interest in an issue was well informed, but that others were not. Two noted that participants became informed only as a direct result of participation activities.

Three staff members reported that participants were not well informed. One believed that even the PAC and TAC members were not well informed, and that they did not make an effort to become so. One expressed frustration with the need to repeat information because of changing participant groups at successive meetings.
Three respondents noted that while participants were well informed, the non-participating public was very poorly informed about 208.

**Staff Awareness**

The Staff awareness criterion will be considered in terms of three components: How many and which agency staff members attended participation events; how well staff that did not attend know what took place; and how well all staff members know the opinions and concerns expressed by publics at participation events. Of particular interest will be differences in knowledge about opinions between staff members who did attend participation events and those who did not, because these differences will reflect the effectiveness with which information about the events was transmitted through the planning agencies' communication systems.

**Staff Attendance at Participation Events**

In total 57% of the 208 professional staff attended at least one participation event in period I, and 52% in period II. This is a large proportion in comparison to other highly technical, state-level planning programs, and reflects the strong commitment of these agencies to public participation.

Management and Institutional Planners had higher attendance rates than did Agricultural and Technical Planners. One hundred percent of Management attended at least one event in period I; 60% in period II. One hundred percent of Institutional Planners attended at least one event in period I, 69% in period II. Sixty percent and 45% of Agricultural Planners attended at least one event, as did 57% and 48% of Technical Planners, in periods I and II respectively.

The PAC and TAC were the best-attended single methods. Twenty-nine percent of all 208 professional staff attended at least one PAC meeting in period I;
38% in period II. Thirty-seven percent of all professional staff attended at least one TAC meeting in period I; 32% in period II.

**Non-Attendee Knowledge about Participation Events**

In order to determine how well information about the participation events was communicated within the planning agencies we asked those members of the staff sample who did not attend participation events, whether they received any information about what took place at those meetings or what the results were. Frequency of reporting about participation events varied widely with the method. Two-thirds of staff respondents felt they had been informed of major developments at PAC and TAC meetings. Staff respondents also indicated that they had received oral reports about Goal Setting Workshops and Draft Plan Review Meetings. Other DEM methods were not well reported according to the respondents. Too few of the ATF respondents were absent from ATF meetings to permit conclusions about reports from those meetings. PAC and TAC meetings were the only methods for which written reports were prepared and circulated; these reports were in the form of minutes issued following each meeting.

**Staff Knowledge of Public Opinions and Concerns**

Staff and Participants were both asked to evaluate staff knowledge of public opinion and concerns. In addition, staff perceptions of participant attitudes toward water quality problems were compared to those participant attitudes.

Staff respondents who had attended meetings felt well informed about participant opinion. Participants, they said, were not shy about letting the staff know what they thought. On the other hand, none of the staff respondents felt they knew what the general public thought about 208. Staff respondents who had not attended meetings said they did not know what participants thought.
about issues unless the issue had developed into a point of controversy in plan development, and then not until later than staff would have liked.

Those who led discussion groups at Alternatives Choice Meetings and Draft Plan Review Meetings were not always involved with preparation of the section of the plan covered by the discussion groups. When combined with poor reporting about participation events this could have had a serious effect on staff knowledge about public opinion.

Participant respondents were asked to evaluate how well staff understood water quality problems in their area. A majority, 59% of all respondents, responded that staff understood water quality problems in their area "Fairly well." The distribution of responses is presented in Figure 18.

Staff respondents were only moderately familiar with public opinion on water quality problems when actually asked to name those issues given high rankings at Goal Setting Workshops. The item listed most often at the workshops, urban runoff, was not mentioned by any staff respondent; and staff listed three problems that were not ranked at the workshops; flooding, eutrophication, and economic impacts of clean-up. Staff did frequently include, however, the three problems most often ranked after urban runoff: septic tanks, municipal sewage, and industrial waste.

Conclusions

Publics participating in the planning process were well informed about 208 issues. The general public, however, probably knew very little about the 208 program. Participants in period II were better able to form an opinion about the planning program than participants in period I. Interaction/dialogue methods were more successful at building Public Awareness than were review/reaction methods; and review/reaction methods were better than in-
Figure 18. Participant View of How Well Staff Understood Water Quality Problems

<table>
<thead>
<tr>
<th>Response</th>
<th>Period I</th>
<th>Period II</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number of Responses</td>
<td>Percent of Responses</td>
</tr>
<tr>
<td>Not very well</td>
<td>105</td>
<td>25.1</td>
</tr>
<tr>
<td>Fairly well</td>
<td>244</td>
<td>58.3</td>
</tr>
<tr>
<td>Very well</td>
<td>69</td>
<td>16.5</td>
</tr>
<tr>
<td>Total</td>
<td>418</td>
<td>100.</td>
</tr>
</tbody>
</table>

Participants in period II were not as satisfied with information given them as participants in period I but period II participants said they were better able to form opinions. The mixed results concerning participant information in period II suggest that "two-track" participation events may be needed in later months of complex programs. Meetings should be held on two successive nights with the first night devoted to repeat of basics for newcomers and the second night devoted to discussion of current subjects.

Documents released to the public were found to be easy to understand and useful.

An unusually high percentage of staff members actually attended participation events. These staff members had good knowledge of participant opinion expressed at the meetings they attended. However, staff members received few reports, either oral or written about meetings they did not attend, and consequently were poorly informed about opinions expressed at those meetings.

These observations suggest that there is a need for some form of formal reporting by participation staff about participation events. Written reports
could summarize participant comment and organize such comment into a form most useful to ongoing decision-making. Reports should be followed-up by direct attempts by participation staff to insure that participant comment is considered and responded to by planning staff. This would not remove the responsibility of all agency staff to concern themselves with participant opinion, but it would create a focus for such concern in the participation staff and thereby insure that participant ideas and opinions are not lost after they are expressed.
RESPONSE

- Six of the twelve “major decisions” of the planning process were significantly influenced by participation. Participants agreed with 50 of the 76 plan recommendations.
- The 208 plan is considerably milder in its recommendations as a result of participation activities.
- The participation program appears to have built staff respect for the value of participation in planning.
- Interaction/dialogue participants rated the program higher and thought they had more of an effect on it than did other participants.
Responsiveness is the bottom line for participation programs. Citizens and planners engage in participation activities primarily to achieve the cooperation, support, or action of other participants. Planners want the public to endorse the plan, work for its adoption, and contribute to its implementation. Citizens hope to alter the content of the plan to support their views or positions. Because changes in the plan will generally be accompanied by changes in plan support, responses can resemble a balance sheet. This chapter adds up this balance sheet, asking first under Effect on Publics and Plan Support if participation altered public opinion about the plan, then under Effect on Staff and Plan if the plan was different because of public comment at participation events.

Effect on Publics and Plan Support

Two sources were used to examine the degree to which participation altered public opinion and/or public actions to support or challenge the plan. The first source was attitudinal data on the planning process, the plans produced, and water quality issues collected from the participant sample. The second was direct staff respondents' appraisal.

Participant Evaluation and Attitude Questions

Participants were asked to evaluate five aspects of the planning program: management, importance, realism, accuracy, and influence. Then they were asked to make a general evaluation of the planning program. With one exception each of the mean responses in both phases were between three and four on a five point scale where five represented the best evaluation. The only exception, importance, had a mean response of 4.01 in period I. In each instance, mean responses were
lower in period II than in period I, although the differences were statistically significant in only two categories: management (probability = 0.0004), and realism (probability = 0.05). Participants were also asked to rate on a five point scale the degree to which the information presented changed their outlook (persuasiveness). Mean response fell in period II to 2.23 from an already low of 2.80 in period I. The probability of such a drop is a statistically significant 0.0001. Responses to these seven evaluation questions are presented in Figure 19. 

In an effort to explain the lower evaluations in period II, responses were analyzed based upon the interest group affiliation of the participants. It was suspected that since the interest group composition of the respondents was somewhat different in the two periods, differences in mean evaluations might be based not upon a change in the thinking of particular individuals, but upon changes in the affiliation of individuals present in the respondent group. However, significant differences in attitudes based upon interest group affiliation were found in only two cases, and neither of these cases showed significant differences between periods. The two differences found in attitudes based upon interest group affiliation were in evaluation of importance of the planning program, and general evaluation of the planning program. In both these cases, civic and environmental group affiliates gave higher evaluations than did farm and business group affiliates, while government affiliates took a middle position (probability = 0.0211 for importance, and 0.0057 for general evaluation). Thus, the significantly different evaluations between periods cannot be explained by differences in the affiliation of respondents.

The generally lower evaluations in period II than in period I suggest that either the participants had higher than realistic expectations of what 208 would produce; the plan failed to reflect the goals and aspirations of partici-
In the discussion of "Effect on Staff and Plan" it will be shown that the final plan was close to the aspirations of participants, and in Chapter Six it was shown that participants were generally well informed about the planning program. Therefore, the most likely explanation for the drop in participant evaluations of the planning process in the second period is a higher than realistic set of participant expectations for what 208 would produce.

In each of the evaluation questions, interaction/dialogue methods participants gave higher ratings than did participants in the other methods, but in only three were the differences significant: persuasiveness (probability = 0.0002); accuracy of the planning program (probability = 0.003); and realism (probability = 0.04). There were no consistent differences between evaluations of those participating in review/reaction methods and those participating in informational/educational methods.

<table>
<thead>
<tr>
<th>Aspect of Planning</th>
<th>Period I</th>
<th>Period II</th>
<th>( \chi^2 ) Probability of Difference Between Periods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management</td>
<td>3.26</td>
<td>3.00</td>
<td>0.0004</td>
</tr>
<tr>
<td>Importance</td>
<td>4.01</td>
<td>3.99</td>
<td>0.9033</td>
</tr>
<tr>
<td>Realism</td>
<td>3.38</td>
<td>3.16</td>
<td>0.0540</td>
</tr>
<tr>
<td>Accuracy</td>
<td>3.56</td>
<td>3.37</td>
<td>0.1259</td>
</tr>
<tr>
<td>Influence</td>
<td>3.12</td>
<td>3.05</td>
<td>0.2891</td>
</tr>
<tr>
<td>Overall Summary</td>
<td>3.65</td>
<td>3.53</td>
<td>0.1460</td>
</tr>
<tr>
<td>Persuasiveness of Information (caused change in outlook)</td>
<td>2.80</td>
<td>2.23</td>
<td>0.0001</td>
</tr>
</tbody>
</table>
A final series of evaluation questions asked participants to report their satisfaction with the overall approach to the plan in period I, and to the plan as a whole and to each of its sections in period II. The largest group of respondents always responded that they were "Fairly satisfied." Satisfaction with the agriculture and point source sections was lowest; and satisfaction with the urban stormwater runoff and solid waste sections was highest (probability of difference = 0.0001). Responses to these questions are given in Figure 20. These responses do not vary significantly with interest group affiliation or with participation method type.

Participant attitudes about seven aspects of water quality planning were collected. The aspects were: 1) pollution levels in area lakes and streams; 2) concern over area water quality; 3) belief that government should make environmental plans; 4) proper place of emphasis on environmental protection or economic development; 5) importance of need to clean up water; 6) clean-up responsibility with government or with polluters; and 7) support for tax increases to fund clean-up efforts. Differences in these participant attitudes between the periods can be used as measures of the extent to which participant opinion was changed as a result of participation in the second period of the planning program. Such differences were found for only two of the seven aspects: proper place of emphasis on environmental protection or economic development, and clean-up responsibility with government or with polluters.

Respondents were given three choices to respond to the question, "In reaching decisions on the planning and regulation of private property, what emphasis do you think governmental decision-makers ought to place on environmental protection versus economic development?" Period II respondents were more likely to choose the answers "Emphasize economic development", or "Give
Figure 20. Participant Satisfaction with Plan Approach and Plan Products: Percent of Responses

<table>
<thead>
<tr>
<th>Responses</th>
<th>Completely Satisfied</th>
<th>Fairly Satisfied</th>
<th>Not Very Satisfied</th>
<th>Not at all Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PERIOD I</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall approach to plan</td>
<td>8.2</td>
<td>63.2</td>
<td>21.8</td>
<td>6.8</td>
</tr>
<tr>
<td><strong>PERIOD II</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall plan</td>
<td>2.6</td>
<td>61.7</td>
<td>27.6</td>
<td>8.1</td>
</tr>
<tr>
<td>Urban stormwater plan</td>
<td>24.2</td>
<td>46.9</td>
<td>21.2</td>
<td>7.7</td>
</tr>
<tr>
<td>Agriculture plan</td>
<td>21.7</td>
<td>38.2</td>
<td>23.4</td>
<td>16.8</td>
</tr>
<tr>
<td>Mining plan</td>
<td>25.3</td>
<td>47.7</td>
<td>16.3</td>
<td>10.7</td>
</tr>
<tr>
<td>On-site plan</td>
<td>27.5</td>
<td>43.1</td>
<td>19.6</td>
<td>9.8</td>
</tr>
<tr>
<td>Forestry plan</td>
<td>26.0</td>
<td>45.8</td>
<td>17.9</td>
<td>10.3</td>
</tr>
<tr>
<td>Point source plan</td>
<td>29.2</td>
<td>42.5</td>
<td>13.3</td>
<td>14.9</td>
</tr>
<tr>
<td>Solid waste plan</td>
<td>26.6</td>
<td>45.0</td>
<td>16.8</td>
<td>11.6</td>
</tr>
<tr>
<td>Construction plan</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>a—Question not asked</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

equal emphasis to both", and less likely to choose "Emphasize environmental protection", than were the period I respondents (probability of difference = 0.0149); but this difference was found to be attributable to a change in the interest group affiliation of the participants. Period II involved proportionally fewer civic and environmental affiliates than period I, twenty-four versus forth-three. These fewer civic and environmental affiliates shifted belief in proper emphasis from environmental protection only to equal emphasis on both (probability = 0.0055), but other group affiliates (business, farm, government,
and non-affiliated) did not significantly alter their responses from one period to the other.

Period II respondents were more likely to identify polluters and less likely to identify government as the appropriate agent for cleaning up water pollution. In response to the question, "Who do you think should be responsible for cleaning up the pollution in the lakes and streams? The individuals or industries causing the pollution? the government? or the polluters and government working together?", 36% of respondents in period I and 46% in period II thought polluters alone should be responsible; 12% in period I and 0% in period II thought government alone should be responsible; and 52% in period I and 53% in period II thought polluters and government working together should be responsible. The probability of such a difference is a significant 0.0001. The difference is not explained by changes in interest group affiliation of participants between the periods.

**Staff Appraisals**

Staff were asked what they felt the impact of the participation program had been on public opinion and public willingness to support the plan.

Eleven of the seventeen respondents felt the participation process left the public more willing to support the plan. The reasons cited focused on changes made to the plan between the drafting of recommendations and the preparation of the final plan. First, participation provided a forum to clear up misunderstandings about the content of proposals. In several instances this resulted in wording changes in the plan. Second, public comment frequently resulted in a softening of plan recommendations as reported under "Effect on Staff and Plan." The particular interest groups seeking those changes were viewed by staff as more supportive of the plan once the changes were made.
Finally, several staff expressed the belief that the fact that staff went out to meet people throughout the planning process left the public with a more favorable orientation to the plan regardless of what was accomplished at those meetings.

One staff member felt that the participation program had a negative effect on public opinion because promises were made at early meetings about future reports to be made by staff that never were made. This respondent was particularly concerned about promises that participant rankings of water quality problems made in the Goal Setting Workshops would be followed by staff reports of their appraisals of these problems. These reports were given only in a letter sent to Goal Setting Workshops attendees rather than at a later meeting where participants could question or explore the findings.

Four respondents were tentative in their appraisals. One thought that participation had changed the way participants thought about 208 issues, but had not necessarily changed their support of the plan. A second believed that "the plan" does not really exist; that some think the plan too weak--others think the plan too strong. A third noted that plan support does not extend to some environmental groups. And a fourth believed too few people participated for the process to have had a meaningful impact on public support.

**Effect on Staff and Plan**

Two types of effects are possible as a result of participation. First, and of immediate interest to observers, are effects on the outcomes of the planning process. Plans may be modified, or their chances for implementation may be altered. Second are the longer term effects which result from changes in thinking about the issues involved. A staff member may have been impressed today with a new way of approaching an issue that does not get reflected in
the plan currently in preparation, but that does influence a future planning or decision effort. Our assessment of Effect on Staff and Plan attempts to account for both these types of effects; short and long term.

Effect on Staff and Plan was considered first in terms of effect on the twelve major decisions of the 208 program outlined in Chapter Two, and second in terms of general appraisals of effect made by participants and staff.

In Chapter Five it was shown that four of the major decisions of the planning process were not informed by public participation. Consequently these four decisions: Resource Allocations, Delegation to the ATF, Separation of Plans, and Period II Public Participation Design, which offered no opportunities for public participation, are not discussed further here.

The remaining eight major decisions of the planning process were characterized in Chapter Two as having had some or a great deal of public participation associated with them. Of these, Plan of Study, Delegation to Stanly County, Voluntary Implementation Strategy, Water Quality Standards, and Selection of Plan Recommendations were significantly influenced by participation. Priority Area Concept, and Generation of Alternative Implementation Options were not substantially influenced by participation. Focus on Chowan Basin in Continuing Planning was strongly influenced by public comment but not through participation channels.

Plan of Study

The Plan of Study (N.C. Department of Natural and Economic Resources 1976) was the initial design for the North Carolina 208 planning process; it was the "plan for planning." Two principal aspects of the Plan of Study—Delegation to the ATF and Resource Allocations—have been broken out for separate treatment. This section is concerned with all other aspects of the Plan of Study.
Speakers at the November 1976 hearing on the Plan of Study made a number of specific comments concerning composition of advisory committees and staff organization. Representation on the PAC of general civic interests, and of the North Carolina Wildlife Federation were recommended. Dissatisfaction with the domination of PAC by local government representatives was expressed. Representation on the TAC by the North Carolina Wildlife Resources was also recommended. It was suggested that the planning team be expanded to include NRCD Division of Parks and Recreation and U.S. Forest Service, and that the ATF include representatives of non-farming interests. In addition, public comment at the hearing expressed the need for a technical editor to insure that 208 documents could be understood by laypersons.

Many of these comments resulted in changes in the Plan of Study. A member of the League of Women Voters was added to the PAC, although this was accompanied by the removal of a second seat for environmental group representatives. A representative of the North Carolina Wildlife Resources Commission was added to the TAC as well. The U.S. Forest Service was asked by the NRCD Division of Forest Resources to play a role in development of the Forestry plan, although this may have been intended all along. Finally, a technical editor was added to the Public Involvement Unit.

Several of the comments were not instrumental in achieving changes. PAC composition was fixed by EPA regulations at 50% local government representation. Consequently the addition of a North Carolina Wildlife Federation representative was not made. The Division of Parks and Recreation was not asked to play a role in planning, and the ATF was not altered to include non-farming interests.

The single staff respondent who commented on public input into the Plan of Study felt that public input did make him aware of impacts or problems with
respect to the Plan of Study which he was not aware of before.¹ He rated public input as "Highly useful."

**Delegation to Stanly County**

Consideration of the question of how to get local governments more involved in the planning process led to examination of delegating authority to implement certain portions of the plan to local governments. A proposal by Stanly County to develop new strategies for, and alternatives to, the installation of septic tanks for on-site wastewater disposal forced DEM to make a direct decision concerning delegation.

DEM asked the PAC's advice on the delegation. The PAC was generally hesitant—raising a number of questions of policy about delegation that they thought should be addressed before any specific delegations were made. The PAC raised questions of equity in delegations to both rural and urban areas, and to places with a small, or non-existent administrative staff. The time and money costs of advertising for delegation proposals were pointed out.

PAC comments helped DEM to resist pressure from Stanly County to allocate money very quickly, before criteria and requirements for delegations could be settled. Based upon the PAC's comments, DEM decided on a policy level to delegate to only a few local governments and not to advertise. The delegation to Stanly County was made, but it entailed lower funding than the county had asked for.

Most staff respondents cited PAC input on the delegation as having made

¹ Many of the staff respondents were not employed by the 208 program at the time the Plan of Study was prepared. In addition, ATF respondents did not feel qualified to comment on the non-agricultural portions of the Plan of Study. Still other staff respondents did not believe that publics had any input into the Plan of Study. As a result, the comments of only one staff respondent are considered.
them aware of problems of which they were not previously aware. Staff also summarized public input as having been "Highly useful."

Voluntary Implementation Strategy

The Voluntary Implementation Strategy refers to the question of whether non-point source pollution controls should be based on mandatory regulations or voluntary efforts. During summer 1978 the decision was made to utilize voluntary controls in most cases, and to focus on actions which could be taken by state government itself.

The "voluntary" or "mandatory" nature of plan recommendations was raised as a direct question for discussion only at ATF Goal Setting Workshops, but comments received at various other participation events, including Goal Setting Workshops, PAC, and TAC, helped mold staff thinking on the issue.

Public comments expressed the opinion that staff could not expect individuals to clean up their contributions to water quality problems until the state had shown that it was not a major contributor to water quality problems. Others raised the problem of rented land--where responsibility for installation and maintenance of pollution abatement practices could not fairly be levied against either tenant or landlord. Still other comments, widely voiced, expressed concern over the economic impact of mandatory pollution abatement actions on industry, agriculture, and development. There was not unanimity on these issues however. Many participants, including some farmers, felt that voluntary strategies might not work. Some farmers noted that much of the sedimentation problem originates upslope, and that to clean up one drainage basin each landowner must do his part.

Public input changed many respondents' thinking about how to implement the 208 plan. The staff began to feel that the public supported a voluntary
strategy and so tended to concentrate more on how to include voluntary efforts rather than mandatory controls in the plan.

Staff respondents stressed the role of public input in influencing the staff to choose a voluntary implementation strategy. Some commented that the input made the staff do better thinking on the subject, going back and reconsidering their positions; that the input made them think it would be a good idea to let people try the voluntary approach, but they still believed the voluntary approach should be backed up by a mandatory program in case results were not forthcoming; that public input simply supported the biases already existing within DEM on this issue; and that public input confirmed several staff members' own opinions on what the public would accept.

Several staff respondents stated that public input made them decide to rely more heavily on a voluntary strategy than they would have otherwise. Other respondents said that "there was general agreement that with the database we have now, with the complexity and cost of the program, this is the only approach that can be justified now," and that this was the most the public would accept; and that public input was very helpful in focusing implementation activities on state agencies first.

Five of seven staff respondents characterized public input on the voluntary implementation strategy as having been "Highly useful."

Water Quality Standards

Water quality standards revisions, while not an explicit requirement of section 208, are nevertheless an important part of the 208 process. Standards are used as a baseline against which to evaluate the severity of any pollution problem which may exist.
Extensive comments on Water Quality Standards were received from participants at the Water Quality Standards Hearings in summer 1978. Several of these comments were directed toward technical information, such as the toxicity of certain types and forms of heavy metals, or radioactive substance standards. Others raised the possibility of background levels exceeding the standards; still others concerned the economic impacts of the proposed standards, and how widespread certain problems were and what kind of support DEM could hope to get.

Public input was responsible for producing significant revisions in the standards presented at the hearings. Three staff respondents mentioned that portions of the standards, as originally proposed, were more stringent than necessary or realistic. One respondent also stated that the radioactive substances standards were based on a participant's comments. Public input had a substantial impact on how the staff respondents thought about certain specific water quality standards, and the levels at which certain pollutants became a problem. This input caused the staff to change the levels at which a substance would be in violation of the standards, in some cases becoming more stringent, in other cases becoming less so. The staff, based on the input, also developed standards for substances they had not included beforehand (radioactive substances) and for forms of substances they had not included (certain forms of specific heavy metals).

Staff respondents with exposure to the water quality standards setting process all agreed that public input was "Highly useful."

Selection of Plan Recommendations

Public participants made comments concerned with the selection of plan recommendations at the Alternatives Choice Meetings, Draft Plan Review Meetings, and Public Hearings; and in meetings of the PAC and TAC. Participants were
instrumental in the selection of recommendations in four of the eight plan sections: construction, mining, on-site wastewater disposal, and agriculture. In the case of agriculture, participant influence took the form of approval of those options supported by the staff. In the other three plan sections, participant influence resulted in changes in the proposals made by staff.

Assessment of the significance of public comment on the Selection of Plan Recommendations was conducted in two ways. First, the descriptions of public comment in each of the plan sections were reviewed and tabulated according to numbers of recommendations either added or deleted with participant concurrence or over participant objection. Opinions of appointed advisory commissions are not considered in these calculations. The tabulations are presented in Figure 21. Second, staff concerned with each plan section were asked a series of questions about the influence of the public on the Selection of Plan Recommendations within each section much as they were asked about public influence on the other major decisions of the planning process.

Figure 21 shows that of seventy-six recommendations considered for the 208 plan, fifty were chosen or deleted in concurrence with participant opinion. Eleven were chosen or deleted over participant opposition. Fifteen had either no participant comment or divided participant opinion.

Participants discussing the agriculture plan reported that participants gave strong, although not universal, support to the recommendations proposed by staff in Fall 1978. This support confirmed staff estimates of opinion in the agricultural community and helped AFT planners to argue for voluntary and educational measures in discussions with DEM. Because the recommendations of the agriculture plan are not listed separately, but are incorporated in a unitary plan of action, it was not possible to tabulate concurrence of agri-
Figure 21. Correspondence of Plan Recommendations
With Participant Preferences *

<table>
<thead>
<tr>
<th>Plan Section</th>
<th>Total Number</th>
<th>Number Added or Deleted with Participant Concurrence</th>
<th>Number Added or Deleted with Participant Objection</th>
<th>Number Without Clear Participant Opinion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>a</td>
<td>a</td>
<td>a</td>
<td>a</td>
</tr>
<tr>
<td>Construction</td>
<td>23</td>
<td>19</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Forestry</td>
<td>7</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Mining</td>
<td>7</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>On-Site Wastewater</td>
<td>14</td>
<td>12</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Point Sources</td>
<td>9</td>
<td>3</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>Solid Waste</td>
<td>12</td>
<td>6</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Urban Stormwater</td>
<td>4</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>76</td>
<td>50</td>
<td>11</td>
<td>15</td>
</tr>
</tbody>
</table>

*Source: NRCD 1979a-1979h. Opinions of appointed advisory commissions are not considered as participant preferences.

a. The format of agriculture plan recommendations does not permit tabulations as to number of recommendations.

culture plan recommendations with participant opinion.

There was high concurrence between plan recommendations and participant opinion in the on-site wastewater disposal plan, although particular groups within the participant population disagreed substantially with the population as a whole. Listening to the dominant group, planners changed the plan wording and recommendation concerning vertical separation between septic tanks and water
table, removed from the text of the plan the quote of a citizen's comment that
local enforcement of septic tank regulations had been inadequate, deleted a
recommendation about research on alternative on-site systems, and rejected
drainage districts as an administrative management form to be pursued. In
all, twelve of fourteen total on-site plan recommendations were in concurrence
with participant opinion.

Significant changes in construction plan recommendations resulted from
participant comments as well. Increased staffing of the NRCD Land Quality
Section was proposed. Attention was focused on clearing up erosion caused
by state agency actions such as highway construction. An amendment to the
Sedimentation Pollution Control Act to allow for citizen suits was endorsed.
Of twenty-three construction plan recommendations considered, nineteen were
in concurrence with participant opinion. Only one was adopted over partici-
pant objection.

Considerable disagreement existed among the various participant groups
about provisions of the mining plan. Accordingly, it is somewhat difficult
to assess the effect of public comment on this plan. The PAC generally
supported vigorous provisions in this plan, while comments at meetings in
the mining priority area of Mitchell-Yancey-Avery Counties called for extreme
moderation in government regulation of mines. DEM drafted a fairly vigorous
plan on the presumption that general public opinion or interest was reflected
by PAC comments, but remarks by the North Carolina Mining Commission in review
of the draft plan caused a number of the plan provisions to be modified.
Tabulations in Figure 21 show that of seven recommendations considered, three
were adopted or rejected in concurrence with participant opinion. Only one--
a proposal to establish a committee to explore ways to fund reclamation of

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abandoned mines—was deleted over participant objection.

Staff discussing the point source, solid waste, forestry, and urban stormwater plans reported receiving very few comments that influenced the outcome of those plans. Public response to proposed recommendations in these plans was generally favorable, however. Of thirty-nine recommendations considered, twenty-three were adopted or deleted with participant concurrence.

**Priority Area Concept**

Because DEM felt it lacked the resources to do a truly comprehensive state-wide plan, the staff developed the concept of studying in detail one sub-basin in each of the five major geographic divisions of the state. In addition to location, sub-basins were to be selected on the basis of their potential for containing water quality problems resulting from the seven major pollution sources. The Priority Area Concept was reviewed by the PAC and TAC, and was the subject of communication between DEM and CWA.

As the decision to use the Priority Area Concept was made before any of the organized public participation activities were underway—including the PAC and TAC—PAC and TAC review was after the fact. The issue had to be presented, debated, and decided in one meeting. Considering the degree of support the concept received from the staff and the severe time constraints, some PAC members expressed the feeling that they had no time to develop alternatives, and basically had no choice but to "sign off" on the staff's recommendation.

The Wilmington Clean Water Association (CWA) was led to believe that 208 might be a vehicle for controlling growth through controls on septic tanks in low coastal areas. In September 1977 they wrote to a member of the Institutional Planning Unit to request that the Wilmington Area be designated as a priority
study area. They cited the availability of extensive data on land-use and soil conditions in the area, the expertise of the Wilmington-New Hanover Planning Department, and their own willingness to cooperate with the study, as reasons for the selection. Several members of the DEM staff met with a CWA delegation in Wilmington later that month to discuss the issue. The Wilmington area was selected as one of the five priority study areas.

All the respondents agreed that public input on the issue in no way changed the staff's decision to go ahead and study only five sub-basins in detail, nor did it have any significant direct effect on the five area selected. Several staff characterized public input on this decision as being useful, however, because this was the first decision brought to public participants for comment. Staff learned what to expect from participants as a result of the experience.

Generation of Alternative Implementation Options

Participants had a very limited influence on the generation of recommendations to be considered for inclusion in the plan.

Participants were responsible for the consideration of landfill siting issues. A large turnout at the Wilmington Goal Setting Workshop by persons concerned with a particular landfill already in operation prompted that consideration. One staff respondent cited the PAC as having contributed ideas that were considered in the options list. Both PAC and TAC minutes are scattered with suggestions during the first year of planning, but no formal effort was made to compile suggestions from these committees. The Workshops were not mentioned by any of the staff respondents, but minutes record a number of suggestions that were included in those given serious consideration. These concerned a water quality standard for sediment, improved enforcement
provisions for the Sedimentation Pollution Control Act, reenactment of that Act, increasing the staff of the Land Quality Section of NRCD, and allowing citizen suits for erosion violations.

Five staff respondents stated directly that participants had no input. Four others believed that participants played a general role in generation of alternatives by framing the staff's thinking or by making suggestions about the problems during early meetings.

Focus on Chowan Basin in Continuing Planning

During the year following completion of the initial 208 plan, DEM is devoting much of its water quality planning staff to problems of nutrient pollution in the Chowan River basin. All respondents who discussed the Chowan believed that the public was chiefly responsible for this emphasis. Public outcry about the Chowan was substantial. Participation methods were not used as vehicles to express this outcry, however. Pressure was brought on the state legislature, the EMC, and high level NRCD officials. The Chowan was not a 208 priority area and few if any, people from the basin attended participation events until after this decision was made.

General Effects

Both the staff members interviewed and the participant sample were asked a series of questions to determine what impact the public had on staff attitudes and opinions in general. We asked the staff which if any of their basic opinions about 208 and about the public had been changed during the course of the program. In addition, we asked participants how responsive they thought the staff was to their ideas and input.

Most of the staff members interviewed said that their opinion of public
participation was positively altered by their exposure to the program. Several said they had always considered participation to be important, and that their experiences had reinforced the belief.

In terms of specific comments, staff respondents said that they now know more of what to expect from the public; that exposure to the public had left a favorable impression; and that this program had showed them just how useful public participation could be. Most of the respondents' previous experiences with public participation had been very frustrating, leading them to believe the public had very little of value to contribute. Now, as one respondent said "I see a real need for involving people." Another stated "I was skeptical before, now I have a better feeling about the workability of public participation." Several respondents stated that now they realize how frustrating it can be. Another noted that he now sees how much public acceptance is necessary to plan implementation.

Most of the staff respondents stated that their opinions about the planning process, issues and about the public itself (as distinct from their opinions about public participation) were altered by their exposure to the public participation process. Several respondents stated that they recognized the need to make solutions in the plan acceptable to the public, and how complex not only the solutions, but the problems, appear to be. Others discovered that the public was much more frustrated with government intruding into their lives than they had imagined; and that their opinion and understanding of the costs and benefits of environmental protection had been improved through public input—their awareness of the social and economic effects of environmental protection being heightened by listening to those who were directly affected.
Participant respondents were not equally satisfied with their influence on the planning process. They were asked three questions in this area which are reported in Figure 22. First, all participant respondents were asked how seriously the staff considered their opinions. Only 33% of period I respondents and 20% of period II respondents reported that staff considered their opinions "Very seriously." The drop in the second period is disturbing.
The probability of such a drop is 0.002 indicating that there was a decline in participant evaluation of staff consideration.

Second, PAC and TAC respondents were asked to report how often staff demonstrated use of their input. In period I, 61% said "Most of the time" or "Always." In period II, 91% gave one of these responses (probability of difference = 0.02). Thus, PAC and TAC perceptions of the receptiveness to their influence increased in the second period of planning.

Third, PAC and TAC members also were asked how much of an impact they felt they had on the plan. In period I, 92% said they had a very small or moderate impact on the plan. In period II, 80% reported a moderate or substantial impact, a sizable increase, although not significant (probability = 0.07).

Together, these responses show that while participants in general thought they had less effect in period II than in period I, PAC and TAC members thought they had more effect in the later period.

Conclusions

Participants had generally fair evaluations of the planning program and the plan itself. However, evaluations are lower in period II possibly because of unrealistic participant expectations about what the program could accomplish. Still final evaluations were high enough to expect participant support of, or at least non-opposition to, the plan. Participants at the end of the program were more likely to believe that polluters should be responsible for clean-up than were participants midway through the program. Interaction/dialogue method participants rated the program higher than did participants in other methods. Staff believed that changes made in the plan as result of participation activities were responsible for improved public support of the plan.
The 208 plan is considerably milder in its recommendations as a result of participation activities, particularly in the areas of on-site wastewater disposal, construction, and mining. The Voluntary Implementation Strategy results in large part from participant comment. Water quality standards revisions were made more adaptable to several local problems based upon participant comment. Several major administrative decisions in the planning program, such as the Delegation to Stanly County and the composition of the PAC and TAC, were altered by participant comment. Participation appears to have had little effect on the point source, solid waste, silviculture, and urban stormwater runoff plans. Several major administrative and organizational decisions were not informed by participation and therefore were not influenced by it.

The participation effort appears to have been instrumental in building staff respect for the value of public participation—for the ability of publics to make comments of use in the preparation of water quality plans. In addition, the effort appears to have deepened staff understanding of the nature of public decision-making. Participants varied in their opinions on how much they affected staff thinking and how much they affected the plan. Most participants thought they had less effect in period II. PAC and TAC members, however, thought they had more of an effect in that period.
COST

- The participation program cost over $120,000—6% of the planning budget—and required 3.7 man-years of staff effort.
- Costs are very sensitive to staff attendance levels at meetings.
- Travel represents 12% of the dollar cost of the program.
Chapter 8. COST

How costly was the participation program? Participation benefits are achieved only with expenditures of staff time and money. Cost is considered as a separate criterion independent of the arenas of exchange, and is examined in two separate ways. First, we examine estimated staff time devoted to the various participation methods. Then, we examine estimated dollar costs of the methods.¹

Estimated Staff Time Devoted to Participation

It was our intention to determine professional staff time based on an actual record of time devoted to public participation by agency staff. In order to accomplish this, we began a program of sending Time Log forms to every agency staff person whom we anticipated would have substantial direct involvement in the participation effort—a total of thirty-two individuals. Of the thirty-two, only twenty regularly responded to the Time Log during the first three months even though each respondent had received a letter from the Chief of the Environmental Planning Section requesting a response. Phone calls made to staff had little effect in improving response. Because of this low response rate the Time Log data is of limited use in calculating overall staff time. As a supplement to the Time Log data we therefore calculated an estimate of staff time based on our field observations.

The estimates begin with the number of staff members in attendance at each participation event. This is multiplied times the number of hours of the event itself to determine staff hours spent at events, and by the travel

¹. Water Quality Standards Hearings costs are included in this chapter because the content and results of the hearings are examined in this report. These hearings are not, however, formally a part of 208 planning. Consequently their costs cannot be considered part of the 208 budget.
time to and from Raleigh to determine staff hours spent in travel. Staff hours spent in preparation for and in reporting or debriefing participation events were estimated based upon the interviews with staff respondents. In those interviews staff consistently reported a range of one-half to two days preparation time for a presentation; and one-half to one hour preparation time for a meeting where they did not make a preparation. The staff was divided into four categories: Management, Institutional Planners, Technical Planners, and ATF Planners, but subtotals for these categories are not reported here. The estimates of staff time by participation method are presented in Figure 23.

The PAC and TAC were the most staff time intensive methods, each using over 900 man-hours. This was because these two methods were ongoing throughout the planning program while all other methods consisted of one-time events. The Newsletter used 620 hours of staff-time. The ATF Educational Meetings used over 600 hours of staff-time because they were heavily attended by staff and because there were eight such meetings, more than the other one-time events. Of the remaining methods, all required roughly 200-400 man-hours except the two CWQP methods and the ATF Regional Presentations. The CWQP Slide Show was produced by a contractor working directly for EPA. Staff time for this event represents assistance to the contractor and attendance at one presentation. Of the two CWQP Steering Committee events, the major one was staged by another EPA contractor, so very little staff time was required. The ATF Regional Presentations were staffed by only two staff persons and were a brief part of larger regularly scheduled meetings. An estimated total of 3.7 man-years were devoted to the public participation effort during the planning process.

In order to enable comparisons between the staff time figures, these figures have been converted to man-hours per event, and man-hours per participant. Ratios are presented in Figure 24. The PAC and TAC far exceed all
### Figure 23. Estimated Staff Time in Public Participation: By Method

<table>
<thead>
<tr>
<th>Method</th>
<th>Staff Man-Hours: Events</th>
<th>Staff Man-Hours: Preparation etc.</th>
<th>Staff Man-Hours: Travel</th>
<th>Total Man-Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report</td>
<td>--</td>
<td>520</td>
<td>--</td>
<td>520</td>
</tr>
<tr>
<td>Public Officials Meetings</td>
<td>40</td>
<td>82</td>
<td>112</td>
<td>234</td>
</tr>
<tr>
<td>Goal Setting Workshops</td>
<td>44</td>
<td>103</td>
<td>90</td>
<td>237</td>
</tr>
<tr>
<td>CWQP Slide Show</td>
<td>2</td>
<td>61</td>
<td>4</td>
<td>67</td>
</tr>
<tr>
<td>CWQP Steering Committee</td>
<td>45</td>
<td>19</td>
<td>24</td>
<td>88</td>
</tr>
<tr>
<td>Water Quality Standard Hearingsa</td>
<td>41</td>
<td>201</td>
<td>109</td>
<td>351</td>
</tr>
<tr>
<td>ATF Educational</td>
<td>96</td>
<td>190</td>
<td>320</td>
<td>06</td>
</tr>
<tr>
<td>ATF Goal Setting</td>
<td>57</td>
<td>152</td>
<td>105</td>
<td>314</td>
</tr>
<tr>
<td>Newsletter</td>
<td>--</td>
<td>620</td>
<td>--</td>
<td>620</td>
</tr>
<tr>
<td>PAC</td>
<td>368</td>
<td>668</td>
<td>0</td>
<td>1036</td>
</tr>
<tr>
<td>TAC</td>
<td>324</td>
<td>588</td>
<td>0</td>
<td>912</td>
</tr>
<tr>
<td>Alternate Choice Meetings</td>
<td>93</td>
<td>141</td>
<td>172</td>
<td>406</td>
</tr>
<tr>
<td>Technical Workshops</td>
<td>96</td>
<td>54</td>
<td>0</td>
<td>150</td>
</tr>
<tr>
<td>Draft Plan Review Meetings</td>
<td>105</td>
<td>91</td>
<td>180</td>
<td>376</td>
</tr>
<tr>
<td>Public Hearings</td>
<td>93</td>
<td>79</td>
<td>207</td>
<td>379</td>
</tr>
<tr>
<td>ATF Regional Presentations</td>
<td>28</td>
<td>10</td>
<td>56</td>
<td>94</td>
</tr>
<tr>
<td>Library Depositories</td>
<td>280</td>
<td>--</td>
<td>280</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>--</td>
<td>740</td>
<td>--</td>
<td>740</td>
</tr>
</tbody>
</table>

**GRAND TOTAL** 1,432 4,599 1,379 **7,410**

*a. Water Quality Standards Hearings are not formally a part of 208 planning.*
Figure 24. Estimated Staff Time Per Event and Per Participant: By Participation Method

<table>
<thead>
<tr>
<th>Method</th>
<th>Number of Events</th>
<th>Hours per Event</th>
<th>Number of Participants</th>
<th>Hours per Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Circulation</td>
<td>--</td>
<td>--</td>
<td>16,100&lt;sup&gt;a&lt;/sup&gt;</td>
<td>0.3</td>
</tr>
<tr>
<td>Public Officials Meetings</td>
<td>5</td>
<td>46.8</td>
<td>55</td>
<td>4.3</td>
</tr>
<tr>
<td>Goal Setting Workshops</td>
<td>7</td>
<td>33.9</td>
<td>121</td>
<td>2.0</td>
</tr>
<tr>
<td>CWQP Steering Workshops</td>
<td>2</td>
<td>44.0</td>
<td>3</td>
<td>11.0</td>
</tr>
<tr>
<td>CWQP Slide Show</td>
<td>8</td>
<td>8.4</td>
<td>79</td>
<td>0.8</td>
</tr>
<tr>
<td>Water Quality Standards Hearings&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3</td>
<td>117.0</td>
<td>87</td>
<td>4.0</td>
</tr>
<tr>
<td>ATF Educational Meetings</td>
<td>8</td>
<td>75.8</td>
<td>371</td>
<td>1.6</td>
</tr>
<tr>
<td>ATF Goal Setting Workshops</td>
<td>3</td>
<td>104.7</td>
<td>84</td>
<td>3.7</td>
</tr>
<tr>
<td>PAC</td>
<td>15</td>
<td>69.1</td>
<td>13</td>
<td>79.7</td>
</tr>
<tr>
<td>TAC</td>
<td>14</td>
<td>65.1</td>
<td>14</td>
<td>65.1</td>
</tr>
<tr>
<td>Newsletter</td>
<td>4</td>
<td>155</td>
<td>1,944</td>
<td>0.3</td>
</tr>
<tr>
<td>Alternative Choice Meetings</td>
<td>5</td>
<td>81.2</td>
<td>99</td>
<td>4.1</td>
</tr>
<tr>
<td>Technical workshops</td>
<td>2</td>
<td>75.0</td>
<td>21</td>
<td>7.1</td>
</tr>
<tr>
<td>Draft Plan Review Meetings</td>
<td>5</td>
<td>75.2</td>
<td>142</td>
<td>2.6</td>
</tr>
<tr>
<td>Public Hearings</td>
<td>6</td>
<td>63.2</td>
<td>234</td>
<td>1.6</td>
</tr>
<tr>
<td>ATF Regional Presentations</td>
<td>7</td>
<td>13.4</td>
<td>143</td>
<td>0.7</td>
</tr>
<tr>
<td>Library Depositories</td>
<td>--</td>
<td>--</td>
<td>b</td>
<td>--</td>
</tr>
<tr>
<td>Other</td>
<td>--</td>
<td>--</td>
<td>b</td>
<td>--</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>94</td>
<td>78.8</td>
<td>19,515</td>
<td>0.4</td>
</tr>
</tbody>
</table>

<sup>a</sup> The actual number of participants is not known. The number reported is the number of volumes distributed to non-state agency persons.

<sup>b</sup> The number of participants is not known.

<sup>c</sup> Water Quality Standards Hearings are not formally a part of 208 planning.
other methods in staff man-hours per participant—80 and 65. The CWQP Steering Committee used 11 staff man-hours per participant.

**Estimated Dollar Costs of the Participation Effort**

The principal cost of the participation effort was that of the professional staff time devoted to it. For each of the four staff categories, a typical per hour salary was determined based on the pay scales of the staff members in the category. Step increase effects based on the length of time a staff member has been employed are not considered. In this way, the staff cost estimates do not necessarily reflect the actual cost of this participation effort, but are indicative of what a similar effort utilizing similar staff would cost. ²

Overhead costs of twenty percent of staff salaries are included in the cost estimates. This is NRCD's own figure of overhead used on funding applications to EPA. It is meant to account for rent, utilities, basic support services, and office supplies.

Travel expenses are calculated based on four-passenger vehicles at 15¢ per mile, and assuming that trips to each event are made directly to and from Raleigh. In addition to the mileage cost, travel costs include per diem allowance—$5.00 per staff person for one dinner for each evening event held outside of Raleigh, and $20.25 for dinner, lodging, and breakfast for each event at which staff spend the night out of Raleigh. Actual travel costs paid to participants are included for the PAC and TAC; estimated costs are used for the CWQP Steering Committee.

² Management time is calculated at $11.00 per hour—approximately pay scale 79, step 2. Institutional Planners' time is calculated at $8.00 per hour—approximately pay scale 72, step 2. Technical Planners and ATF Planners are calculated at $9.00 per hour—approximately pay scale 74, step 2.
NRCD accounting procedures make it impossible to determine the costs of many mailings, handouts, and clerical aids devoted to the participation meetings. It is reasonable to say that these are roughly related to the number of participants in a method and that they do not vary significantly between methods, with the exceptions of the PAC, TAC, Water Quality Standards Hearings, and Public Hearings. Separate estimates for clerical costs for these four methods are therefore included. It should be noted that the total figures for costs of the effort are systematically underestimated because of the unavailability of some mailing, printing, and clerical costs.

Finally, an "other" cost category was used. This includes clerical costs as just described, and the costs of contracts fulfilled by Comarc Corporation, the Conservation Foundation of North Carolina, and of this research project. A tabular summary of these calculations of the costs of each participation method appears as Figure 25. The rankings of methods by dollar cost is similar to the ranking by staff time. PAC and TAC are among the most expensive methods at $14,400 and $8,400, but the most expensive is Report Circulation at $21,000. The Newsletter is fourth at $8,000. Most meeting methods cost between $2,000 and $6,000.

In order to facilitate comparison among the dollar cost figures for the methods, Figure 26 displays these costs on a per event, and a per participant basis. The TAC and PAC are again most expensive, at $1100 and $600 per participant. The CWQP Steering Committee is third at $370 per participant. ATF Regional Presentations are lowest of meeting methods at $9 per participant.

3. Two Goal Setting Workshops were conducted by Comarc Corporation, San Francisco. The Callaway Gardens, Georgia meeting of the CWQP Steering Committee was funded by EPA through a grant to the Conservation Foundation, Washington, D. C. The CWQP Slide Show was prepared by the Conservation Foundation of North Carolina with funds provided partially by EPA.
Figure 25. Estimated Dollar Costs of the Public Participation Effort: By Participation Method

<table>
<thead>
<tr>
<th>Method</th>
<th>Staff Time</th>
<th>Overhead</th>
<th>Travel</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Circulation(^a)</td>
<td>$4,160</td>
<td>832</td>
<td>0</td>
<td>$16,000 Printing and Mailing</td>
<td>$21,000</td>
</tr>
<tr>
<td>Public Officials Meetings</td>
<td>2,013</td>
<td>403</td>
<td>260</td>
<td></td>
<td>2,700</td>
</tr>
<tr>
<td>Goal Setting Workshops</td>
<td>2,006</td>
<td>401</td>
<td>266</td>
<td>$400 Comarc Corp. Contract</td>
<td>3,200</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$125 Mailings</td>
<td></td>
</tr>
<tr>
<td>CWQP Steering Comm.</td>
<td>800</td>
<td>160</td>
<td>2,010</td>
<td></td>
<td>3,000</td>
</tr>
<tr>
<td>CWQP Slide Show</td>
<td>538</td>
<td>108</td>
<td>17</td>
<td>$5,000 CCNC Contract</td>
<td>5,700</td>
</tr>
<tr>
<td>Water Quality Standards Hearings(^b)</td>
<td>1,272</td>
<td>254</td>
<td>397</td>
<td>$960 Additional Clerical Cost</td>
<td>2,900</td>
</tr>
<tr>
<td>ATF Educational Meetings</td>
<td>3,896</td>
<td>780</td>
<td>435</td>
<td></td>
<td>5,100</td>
</tr>
<tr>
<td>ATF Goal Setting Workshops</td>
<td>2,658</td>
<td>532</td>
<td>247</td>
<td></td>
<td>3,400</td>
</tr>
<tr>
<td>PAC</td>
<td>8,616</td>
<td>1,723</td>
<td>3,510</td>
<td>$600 Additional Clerical Cost</td>
<td>14,400</td>
</tr>
<tr>
<td>TAC</td>
<td>6,530</td>
<td>1,306</td>
<td>0</td>
<td>$560 Additional Clerical Cost</td>
<td>8,400</td>
</tr>
<tr>
<td>Newsletter</td>
<td>4,960</td>
<td>992</td>
<td>0</td>
<td>$2,100--Printing and Mailing</td>
<td>8,000</td>
</tr>
<tr>
<td>Alternative Choice Meetings</td>
<td>2,964</td>
<td>593</td>
<td>642</td>
<td>$100 Mailing</td>
<td>4,300</td>
</tr>
<tr>
<td>Technical Workshops</td>
<td>1,336</td>
<td>267</td>
<td>0</td>
<td></td>
<td>1,600</td>
</tr>
<tr>
<td>Draft Plan Review Meetings</td>
<td>3,259</td>
<td>652</td>
<td>747</td>
<td></td>
<td>4,700</td>
</tr>
<tr>
<td>Public Hearings</td>
<td>3,213</td>
<td>643</td>
<td>832</td>
<td>$960 Additional Clerical Cost</td>
<td>5,500</td>
</tr>
<tr>
<td>ATF Regional Presentation</td>
<td>846</td>
<td>169</td>
<td>280</td>
<td></td>
<td>1,300</td>
</tr>
<tr>
<td>Library Depositories</td>
<td>2,240</td>
<td>448</td>
<td>0</td>
<td>$3,400--Materials</td>
<td>5,100</td>
</tr>
<tr>
<td>Other</td>
<td>5,920</td>
<td>1,184</td>
<td>0</td>
<td>$13,000--UNC Evaluation Contract</td>
<td>20,100</td>
</tr>
<tr>
<td>TOTAL</td>
<td>$58,000</td>
<td>$12,000</td>
<td>$10,000</td>
<td>$43,900</td>
<td>$120,000</td>
</tr>
</tbody>
</table>

\(^a\) Includes only costs related to printing and distribution of copies to non-state agency persons.

\(^b\) Water Quality Standards Hearings are not formally a part of 208 planning.
Figure 26. Estimated Per Event and Per Participant Dollar Costs:
By Participation Method

<table>
<thead>
<tr>
<th>Method</th>
<th>Number of Events</th>
<th>Dollar Cost per Event</th>
<th>Number of Participants</th>
<th>Dollar Cost per Participant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Report Circulation</td>
<td>--</td>
<td>--</td>
<td>16,100&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1.3</td>
</tr>
<tr>
<td>Public Officials</td>
<td>5</td>
<td>540</td>
<td>55</td>
<td>49</td>
</tr>
<tr>
<td>Meeting</td>
<td>7</td>
<td>460</td>
<td>121</td>
<td>26</td>
</tr>
<tr>
<td>Goal Setting Workshops</td>
<td>8</td>
<td>710</td>
<td>79</td>
<td>72</td>
</tr>
<tr>
<td>CWQP Slide Show</td>
<td>2</td>
<td>1,500</td>
<td>8</td>
<td>370</td>
</tr>
<tr>
<td>CWQP Steering Committee</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Water Quality Standard Hearings&lt;sup&gt;c&lt;/sup&gt;</td>
<td>3</td>
<td>970</td>
<td>87</td>
<td>33</td>
</tr>
<tr>
<td>ATF Educational Meetings</td>
<td>8</td>
<td>640</td>
<td>371</td>
<td>14</td>
</tr>
<tr>
<td>ATF Goal Setting Workshops</td>
<td>3</td>
<td>1,100</td>
<td>84</td>
<td>40</td>
</tr>
<tr>
<td>PAC</td>
<td>15</td>
<td>960</td>
<td>13</td>
<td>1,107</td>
</tr>
<tr>
<td>TAC</td>
<td>14</td>
<td>600</td>
<td>14</td>
<td>600</td>
</tr>
<tr>
<td>Newsletter</td>
<td>4</td>
<td>2,000</td>
<td>1,944</td>
<td>4</td>
</tr>
<tr>
<td>Alternatives Choice Meetings</td>
<td>5</td>
<td>860</td>
<td>99</td>
<td>43</td>
</tr>
<tr>
<td>Technical Workshops</td>
<td>2</td>
<td>800</td>
<td>21</td>
<td>76</td>
</tr>
<tr>
<td>Draft Plan Review Meetings</td>
<td>5</td>
<td>940</td>
<td>142</td>
<td>33</td>
</tr>
<tr>
<td>Public Hearings</td>
<td>6</td>
<td>920</td>
<td>234</td>
<td>24</td>
</tr>
<tr>
<td>ATF Regional Presentations</td>
<td>7</td>
<td>190</td>
<td>143</td>
<td>9</td>
</tr>
<tr>
<td>Library Depositories</td>
<td>--</td>
<td>--</td>
<td>b</td>
<td>--</td>
</tr>
<tr>
<td>Other</td>
<td>--</td>
<td>--</td>
<td>b</td>
<td>--</td>
</tr>
<tr>
<td>TOTAL</td>
<td>94</td>
<td>$970</td>
<td>19,515</td>
<td>$6.1</td>
</tr>
</tbody>
</table>

<sup>a</sup> The actual number of participants is not known. The number reported is the approximate number of volumes distributed to non-state agency persons.

<sup>b</sup> The number of participants is not known.

<sup>c</sup> Water Quality Standards Hearings are not formally a part of 208 planning.
The remaining meeting methods are all between $25 and $76 per participant. The Reports costs were $1 per participant; the newsletter $4 per participant.

Conclusions

Staff time is by far the largest component of the cost of the public participation effort. Accordingly, the costs reported for the various methods are not necessarily costs which are inherent to the method used, but to some degree simply reflect the staff turnout at the events. This suggests that evaluations of the methods by the six non-cost criteria must in some way be standardized by staff turnout.

The TAC and PAC were the most expensive methods in absolute units of staff time. When viewed on a per participant basis these methods are far more expensive than the others—4 to 1 over the closest third in staff time. Report Circulation was the most expensive method in dollar costs—$21,000.

Travel represents a large portion of the staff time devoted to participation—19% and 12% of the dollar costs.

In total, the participation effort cost somewhat over $120,000 and required 3.7 man-years of staff effort. Slightly less than one-half of this effort was provided by the full-time participation staff. The remainder of the staff of the 208 agencies put in an additional 1.9 man-years.
APPENDIX A

Schedule for Personal Interviews with Agency Staff (Period II) and List of Respondents

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In what way did the public have an influence? How was this influence important?

1. What do you consider to be the major issues or decisions made in the 208 planning process after June 1978?

2. OW has decided to focus on the continuing planning process on the problems in the Chowan River area in the years just beginning. What role did the public play in that decision? Did they make any specific recommendations or suggestions?

3. The public participation staff decided on a certain design for the participatory program used during the next year.
   a) How significant was public input in designing this proposal?
   b) What specific aspects of the program were a direct result of public comments?

4. Concerning the plan:
   a) Did the public have any influence over which implementation actions were included in the final or regional action plans? In what ways did the public have an influence? Did you think their influence important?

5. How did the public react to the list of recommended options? (very strongly, favorably, moderately, little or no influence, strongly opposed)

6. How did the public react to the list of recommended actions? What were they? How important were they?

7. How much of an impact do you think the public participation program had on public opinion about these particular 208 issues and on the public's willingness to support the 208 plan?

8. What is your impression of how aware and informed the public participants were about these 208 issues?

9. How well informed do you feel you are about the public's opinion on 208 issues?
11) Which, if any, of your basic opinions about the 108 planning process, 108 issues, and about the public itself have been changed by this public participation program?

12a) Did you want to get anything specific out of the public participation program in this phase? What was that?

12b) Was the program successful in accomplishing these things?

12c) Please describe a particular participation technique or event which was most effective at providing you with what you wanted?

We would now like to ask you some questions about the public participation method used in this phase of the 108 planning process. These methods include the Public Advisory Committee, the Technical Advisory Committee, the three technical workshops, the IAC meetings, public input at the various implementation steps, and review of the draft plan, the public hearings on the 108 plan and the 108 newsletter.

13a) Turning to the POLICY ADVISORY COMMITTEE meetings:

a) Did you attend any of these meetings?
   - Yes
   - No

b) How many meetings did you attend?

13b) What did you want to accomplish through these PAC meetings?
5) How much of an influence did these meetings have on your thinking and the decisions you made?


6) Were the participation methods used, and the information presented, appropriate considering the technical nature of the plan and the capabilities of these participants? Why is this so?

☐ Yes  ☐ No


7) Were there any instances in which controversy or conflict arose at these meetings?

☐ No

☐ Yes - Did these meetings help reduce or resolve these controversies or conflicts?


8) Turning to the TECHNICAL ADVISORY COMMITTEE meetings:

a) Did you attend any of these meetings?

☐ Yes [GO TO b)]

☐ No [GO TO g)]

b) How many meetings did you attend?


c) What did you want to accomplish through these TAC meetings?


9) How much of an influence did these meetings have on your thinking and the decisions you made?


10) Were the participation methods used, and the information presented, appropriate considering the technical nature of the plan and the capabilities of these participants? Why is this so?

☐ No

☐ Yes


11) Were there any instances in which controversy or conflict arose at these meetings?

☐ No

☐ Yes - Did these meetings help reduce or resolve these controversies or conflicts?


12) Last fall and winter FHSU and the Institute of Government held two Darling Technical workshops on the problems of agriculture and sedimentation.

a) Did you attend either of these workshops?

☐ Yes [GO TO b)]

☐ No [GO TO g)]

b) Which of these workshops did you attend?

☐ Agriculture  ☐ Sedimentation

c) What did you want to get out of these workshops?


[GO TO QUESTION 15]
1) Were there any instances in which controversy or conflict arose at these workshops?
   □ Yes - Did these workshops help reduce or resolve these controversies or conflicts?
   □ No

2) Were the participation methods used, and the information presented, appropriate considering the technical nature of the plan and the capabilities of these participants? Why in this text?
   □ No
   □ Yes

3) How much of an influence did these presentations have on your thinking and the decisions you made?

4) Were there any instances in which controversy or conflict arose at these presentations?
   □ Yes - Did these presentations help reduce or resolve these controversies or conflicts?
   □ No

5) Last February and March the ATC did a series of presentations at the 8 Soil and Water Conservation District Area meetings.
   a) Did you attend any of these presentations?
      □ Yes [GO TO b]  □ No [GO TO c]
   b) How many presentations did you attend?
   c) What did you want to accomplish at these presentations?

6) During the fall 1970 a series of meetings at which the various implementation options were first presented to the public for discussion and comment.
   a) Did you attend any of these meetings?
      □ Yes [GO TO b]  □ No [GO TO c]
   b) Which meetings did you attend?
      □ Roanoke □ Winchester □ Richmond-Salem □ Harrisonburg □ Prince
   c) What did you want to accomplish in these meetings?
1) How much of an influence did these meetings have on your thinking and the decisions you made?

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2) Were the presentation methods used, and the information presented, appropriate considering the technical nature of the plan and the capabilities of these participants? Why is this so?

<table>
<thead>
<tr>
<th>No</th>
<th>Yes</th>
</tr>
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</table>

3) Were there any instances in which controversy or conflict arose at these meetings?

<table>
<thead>
<tr>
<th>No</th>
<th>Yes - Did these meetings help reduce or resolve these controversies or conflicts?</th>
</tr>
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</table>

4) A series of formal public hearings was just conducted by DEM on the 208 plan.

a) Did you attend any of these hearings?

<table>
<thead>
<tr>
<th>Yes (GO ON TO b)</th>
<th>No (GO ON TO c)</th>
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b) Which hearings did you attend?

<table>
<thead>
<tr>
<th>Greenville</th>
<th>Hazleton-Salem</th>
<th>Asheville</th>
<th>Hertford</th>
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<th>Wilmington</th>
<th>New Bern</th>
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c) What did you want to accomplish through these hearings?

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</table>

[GO TO QUESTION 13]
2) How much of an influence did these hearings have on your thinking and the decisions you made?


3) Were the participation methods used, and the information presented, appropriate considering the technical nature of the plan and the capabilities of those participants? Why is this so?

☐ No
☐ Yes

4) Were there any instances in which controversy or conflict arose at these hearings?

☐ No
☐ Yes - Did these hearings help reduce or resolve those controversies or conflicts?

5) In reaching decisions on the planning and regulation of private property, do you think governmental decision-makers ought to emphasize environmental protection over economic development, economic development over environmental protection, or give equal emphasis to both?

☐ Environmental protection over economic development
☐ Economic development over environmental protection
☐ Equal emphasis on both

6) Were there any issues you faced, or decisions you made, where you would have liked to have had public input, but for one reason or another did not receive any such input?


7) How do you think should be responsible for cleaning up the pollution in the lakes and streams—the people and individuals who pollute, the government, or the polluters and government together?

☐ Polluters
☐ Government
☐ Both together

8) What is your estimate that the 208 plan will eventually be implemented? Do you think:

☐ That it won’t be implemented at all
☐ That it will be implemented in nine years
☐ That it will be about half implemented
☐ That it will be substantially implemented
☐ That it will be completely implemented

9) Do you think the 208 plan will produce an improvement, some improvement, or substantial improvements in water quality in the priority areas in comparison to the quality of the water had the plan not been proposed?

☐ No improvement
☐ Some improvement
☐ Substantial improvement

23a) Did you make any presentations at any of the public participatory events?

☐ No [00 to 22]
☐ Yes [00 to ]

23b) At which events did you make presentations?


24a) Within this phase of the planning process, which particular meeting or meetings did you find least satisfying?


24b) Why was this unsatisfying?


25a) Turning finally to the newsletter published by the 208 public involvement group entitled “Cleaning Up”:

a) Have you seen the newsletter?

☐ Yes
☐ No

b) Did you help prepare any of it?


26) How effective is this newsletter as:

☐ a) Communicating 208 information to the public?

☐ (READ) Completely Effective
☐ Largely Effective
☐ Somewhat Effective
☐ Not very Effective
☐ Not at all Effective

☐ b) Obtaining public opinion on specific 208 issues?

☐ (READ) Completely Effective
☐ Largely Effective
☐ Somewhat Effective
☐ Not very Effective
☐ Not at all Effective

☐ c) Identifying the range of public ideas and concerns?

☐ (READ) Completely Effective
☐ Largely Effective
☐ Somewhat Effective
☐ Not very Effective
☐ Not at all Effective

☐ d) Know nothing about the newsletter.
Environmental regulations often affect other aspects of community life. Do you think the 208 plan will increase, decrease or leave unaffected the following aspects of community life?

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Increase</th>
<th>Decrease</th>
<th>Leave Unaffected</th>
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</thead>
<tbody>
<tr>
<td>a. Regulation of Land Use</td>
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<tr>
<td>b. Local Taxes</td>
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<tr>
<td>c. Local Economic Development</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. Recreational Use of Water Resources</td>
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</tr>
</tbody>
</table>

Do you believe that your present understanding of public participation is sufficient, fair, poor, or inadequate?

- Sufficient
- Fair
- Poor
- Inadequate

Where did you learn about public participation and public participation techniques?

This is the end of our interview. Thank you very much for your cooperation.

Questions to administer interview:

- How old are you? (Fill in correct box)
- How long have you lived in your community?
- Do you own or rent your home or apartment?
- How long have you been with 208?
- How long have you been in your present position?
- How many years have you led at least some management and/or planning responsibilities?
- How long have you been involved with some aspect of water quality?
- What was your undergraduate degree in?
- What year did you receive this degree?
- Do you have a graduate degree (Master, Ph.D.)
- In what field?
- In what year did you receive this degree?
Would you like to rate the effectiveness of the Technical Workshops in the following characteristics? If you have any questions, please do not hesitate to ask.

How effective were these meetings as:

d) communicating 208 information to the participants?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| effective  | effective | effective | ineffective | ineffective |

a) obtaining participant opinion on specific 208 issues?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| effective  | effective | effective | ineffective | ineffective |

b) identifying the range of participant ideas and concerns?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| effective  | effective | effective | ineffective | ineffective |

c) How pleased were you with the outcomes of these meetings?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| pleased    | pleased | pleased | not at all | not at all |

d) How satisfied do you think the participants were with the process and procedures of these workshops?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| satisfied  | satisfied | satisfied | not at all | not at all |

We would now like you to rate the effectiveness of the 208 Stakeholder Workshops in the following characteristics. If you have any questions, please do not hesitate to ask.

How effective were these workshops as:

e) communicating 208 information to the participants?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| effective  | effective | effective | ineffective | ineffective |

f) obtaining participant opinion on specific 208 issues?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| effective  | effective | effective | ineffective | ineffective |

g) identifying the range of participant ideas and concerns?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| effective  | effective | effective | ineffective | ineffective |

h) How pleased were you with the outcomes of these meetings?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| pleased    | pleased | pleased | not at all | not at all |

i) How satisfied do you think the participants were with the process and procedures of these workshops?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| satisfied  | satisfied | satisfied | not at all | not at all |

We would now like you to rate the effectiveness of the 208 Stakeholder Workshops in the following characteristics. If you have any questions, please do not hesitate to ask.

How effective were these workshops as:

j) communicating 208 information to the participants?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| effective  | effective | effective | ineffective | ineffective |

k) obtaining participant opinion on specific 208 issues?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| effective  | effective | effective | ineffective | ineffective |

l) identifying the range of participant ideas and concerns?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| effective  | effective | effective | ineffective | ineffective |

m) How pleased were you with the outcomes of these meetings?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| pleased    | pleased | pleased | not at all | not at all |

n) How satisfied do you think the participants were with the process and procedures of these workshops?

| completely | largely | somewhat | not very | not at all 
|------------|---------|----------|----------|----------
| satisfied  | satisfied | satisfied | not at all | not at all |
We would now like you to rate the effectiveness of the formal public hearings on the draft 208 plan on each of the following characteristics. If you have any questions, please do not hesitate to ask.

How effective were these hearings?

d) communicating 208 information to the participants?
   - completely effective
   - largely effective
   - somewhat effective
   - not very effective
   - not at all effective

 e) obtaining participant opinion on specific 208 issues?
   - completely effective
   - largely effective
   - somewhat effective
   - not very effective
   - not at all effective

 f) identifying the range of participant ideas and concerns?
   - completely effective
   - largely effective
   - somewhat effective
   - not very effective
   - not at all effective

 g) how pleased were you with the outcomes of these hearings?
   - completely pleased
   - largely pleased
   - somewhat pleased
   - not very pleased
   - not at all pleased

 h) how satisfied do you think the participants were with the process and procedure of these hearings?
   - completely satisfied
   - largely satisfied
   - somewhat satisfied
   - not very satisfied
   - not at all satisfied

 i) how satisfied do you think the participants were with the outcomes of these hearings?
   - completely satisfied
   - largely satisfied
   - somewhat satisfied
   - not very satisfied
   - not at all satisfied

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<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Division</th>
</tr>
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<tbody>
<tr>
<td>Roderic Bailey</td>
<td>Agricultural Planning Consultant</td>
<td>Division of Land Resources, NRCD</td>
</tr>
<tr>
<td>Edward N. Beck</td>
<td>Environmental Engineering Technician</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>Watson DeVane</td>
<td>Environmental Engineer</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>Alfred Duda</td>
<td>Environmental Scientist</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>George Fleming</td>
<td>Environmental Scientist</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>Ray Forrest</td>
<td>Environmental Engineer</td>
<td>N.C. Department of Agriculture</td>
</tr>
<tr>
<td>Alan Klimek</td>
<td>Environmental Engineer</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>Todd Llewellyn</td>
<td>Information Communication Specialist</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>R.F. McGhee</td>
<td>Environmental Engineer</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>A.F. McRorie</td>
<td>Acting Director</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>R.W. Van Tilburg</td>
<td>Acting Assistant Director</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>Chris Woody</td>
<td>Environmental Engineer</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
</tbody>
</table>

### Period II Staff Interview Respondents

<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Division</th>
</tr>
</thead>
<tbody>
<tr>
<td>Roderic Bailey</td>
<td>Agricultural Planning Consultant</td>
<td>Division of Soil and Water Conservation, NRCD</td>
</tr>
<tr>
<td>Reginald L. Baird</td>
<td>Environmental Engineer</td>
<td>Division of Land Resources, NRCD</td>
</tr>
<tr>
<td>James Canterbury</td>
<td>State Resource Conservationist</td>
<td>U.S. Soil Conservation Service</td>
</tr>
<tr>
<td>Whit Collier</td>
<td>Forester</td>
<td>Division of Forest Resources, NRCD</td>
</tr>
<tr>
<td>Richard Crouch</td>
<td>Groundwater Hydrologist</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
</tbody>
</table>

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Period II Staff Interview Respondents (continued)

<table>
<thead>
<tr>
<th>Name</th>
<th>Position</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dean Cunningham</td>
<td>Environmental Engineer</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>Jean Davis</td>
<td>Information Communication Specialist</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>Alfred Duda</td>
<td>Environmental Scientist</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>Thomas Ellis III</td>
<td>Environmental Planner</td>
<td>N.C. Department of Agriculture</td>
</tr>
<tr>
<td>George Fleming</td>
<td>Environmental Scientist</td>
<td>Division of Environmental Management, NRCD</td>
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<tr>
<td>Harvey Kinder</td>
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<td>Alan Klimek</td>
<td>Environmental Engineer</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>Fred Koehler</td>
<td>Research Assistant</td>
<td>N.C. Agricultural Extension Service</td>
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<tr>
<td>Todd Llewellyn</td>
<td>Information Communication Specialist</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>A.F. McRorie</td>
<td>Director</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>Roger Scharrett</td>
<td>Editorial Assistant</td>
<td>Division of Environmental Management, NRCD</td>
</tr>
<tr>
<td>R.W. Van Tilburg</td>
<td>Assistant Director</td>
<td>Division of Environmental Management, NRCD</td>
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APPENDIX B

Mail Survey of Participants:
Schedule and Materials (Period II)
were participants in the North Carolina "DEF" project

Do you think the_efforts by the state to improve the quality of water in the state? This plan is often called the "DEF" plan.

1. How did you learn about this planning process? (CHECK ONE RESPONSE ONLY)
   - Personal contact
   - Government report
   - Newspaper
   - Personal contact
   - Government report
   - Newspaper
   - Government report
   - Newspaper
   - Government report
   - Newspaper

2. How much do you depend on one of the following to learn about this program?
   - Newspaper
   - Personal contact
   - Government report
   - Newspaper
   - Personal contact
   - Government report
   - Newspaper
   - Personal contact
   - Government report
   - Newspaper

A: equal weight
   B: more weight
   C: less weight
   D: no weight

3. Considering all these sources of information available to you, do you think you have
   - too much information in too difficult a format?
   - too little information?
   - a satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
   - too much information in too difficult a format?
   - too little information?
   - satisfactory amount of information?
13. Here are some choices that have been given for taking part in the water quality planning process. For each, please tell us if it was very important, moderately important, slightly important, or not at all important for you. (CHECK ONE RESPONSE FOR EACH ITEM)

- Very important
- Moderately important
- Slightly important
- Not at all important

a) Because of the possible effect of the decisions on your property

b) Because of the possible effect of the decisions on your community

c) Because of the possible effect of the decisions on city/county/State

d) Because I want to know what you people around here think about the important water quality problems

e) Because of the possible effect of the decisions on my business or occupation

Potentially Impact of the "200" Plan

1. What is your estimate that the "200" plan will eventually be implemented? (CHECK ONE RESPONSE ONLY)
   - Not at all satisfied
   - Slightly satisfied
   - Moderately satisfied
   - Completely satisfied

2. How much confidence do you think the "200" plan will improve the water quality in your area? (CHECK ONE RESPONSE FOR EACH ITEM)
   - Less than all
   - About all
   - Almost all
   - All at all

3. Would you please tell me how specifically you think the "200" plan will help the water quality in your area? (CHECK ONE RESPONSE FOR EACH ITEM)
   - Pollutants from agriculture
   - Pollutants from construction
   - Pollutants from industry
   - Pollutants from septic tanks
   - Pollutants from urban storm water runoff
   - Pollutants from forestry/lumbering
   - Pollution from municipal waste treatment
   - Pollution from livestock

4. Environmental regulations often affect other aspects of community life. We would like to know how much you think the "200" plan will affect these aspects of community life. (CHECK ONE RESPONSE FOR EACH ITEM)

   - Very little
   - Slightly
   - Moderately
   - Very much

   - Regulation of land use
   - Local taxes
   - Local economic development
   - Increased use of non-fossil resources

5. What is your estimate of the "200" plan's impact on the "200" planning process? (CHECK ONE RESPONSE FOR EACH ITEM)
   - Not at all satisfied
   - Slightly satisfied
   - Moderately satisfied
   - Completely satisfied

6. What aspects of the state "200" program are you most satisfied with? (CHECK ONE RESPONSE)

7. What aspects of the state "200" program are you most dissatisfied with? (CHECK ONE RESPONSE)

8. What aspects of the state "200" plan are you most satisfied with?

9. What aspects of the state "200" program are you most dissatisfied with?

DESTRUCTION LEVELS

Many aspects of the state "200" planning process are quite technical in nature. One of the objectives of the citizen participation program is to explain the technical aspects of the "200" program as clearly as possible. We would like to have the state officials have adequately explained these technical aspects. The following questions will help identify issues which should be discussed more completely in the future.

1. Who would you contact if you had any questions or wanted more information about the "200" planning process?

2. Environmental regulations often affect other aspects of community life. We would like to know how much you think the "200" plan will affect these aspects of community life. (CHECK ONE RESPONSE FOR EACH ITEM)

3. Different levels of water quality are needed to use inland waters for industrial purposes, fishing, swimming or drinking. Do you think which level of cleanliness is to be achieved by the "200" plan?

4. In what area of the state has been designated a priority area for "200" planning?

5. In what area is the state located by the "200" program?

6. In what area is the state located by the "200" program?

7. How long have you lived in your community?

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1. How often do you attend the meetings of the advisory committee?
   - Almost all of the time
   - About half of the time
   - Sometimes
   - Never

2. How often do you discuss the staff of the State Department of Natural Resources and Community Development programs with other citizens or residents who are familiar with the agency's programs?
   - Always
   - Almost all of the time
   - About half of the time
   - Sometimes
   - Never

3. In general, how much of the information provided to you by the agency staff regarding each of the following is accurate and useful? (Please check one response for each item)
   - The construction plan
   - The capital budget
   - The long-range plan
   - The agricultural plan
   - The public service plan
   - The long-range plan
   - The current financial plan
   - The current financial plan

4. Would you like a copy of the results of this survey?
   - Yes
   - No

5. This is the end of the supplementary questionnaire. Thank you very much for your cooperation.

6. We would like to ask you a few questions about your participation in the Federal Advisory Committee of the State Department of Natural Resources and Community Development programs.

7. How often do you attend the meetings of the advisory committee?
   - Always
   - Almost all of the time
   - About half of the time
   - Sometimes
   - Never

8. How often do you discuss the staff of the State Department of Natural Resources and Community Development programs with other citizens or residents who are familiar with the agency's programs?
   - Always
   - Almost all of the time
   - About half of the time
   - Sometimes
   - Never

9. In general, how much of the information provided to you by the agency staff regarding each of the following is accurate and useful? (Please check one response for each item)
   - The construction plan
   - The capital budget
   - The long-range plan
   - The agricultural plan
   - The public service plan
   - The long-range plan
   - The current financial plan
   - The current financial plan

10. Would you like a copy of the results of this survey?
    - Yes
    - No

11. This is the end of the supplementary questionnaire. Thank you very much for your cooperation.
July 11, 1979

Mr. John Doe
Rt. 1 Box 400
Tar Heel, N.C. 27000

Dear Mr. Doe;

Government agencies today spend great amounts of time and money on citizen participation programs in order to increase the information available to decision-makers and to make public policies fit public needs. But very little is known about how to design citizen participation programs so that they operate effectively and at least cost. We are conducting a study to expand available knowledge about citizen participation.

As a citizen participant in the North Carolina statewide "208" water quality planning program, you have experiences that make your opinions and recollections valuable to us in the conduct of this study. Will you please take the time to complete the attached questionnaire and return it to us. The questions are short and direct. Most can be answered with a check mark. Many are opinion questions for which there are no right or wrong answers. The questionnaire will take about one-half hour to complete.

You may have received and completed a questionnaire similar to this one last fall. If so, you should still complete and return this questionnaire. It concerns recent events and your current opinions are important to our study.

We have enclosed a self-addressed, stamped envelope on which your name appears, exclusively for the purpose of reducing the costs of a second mailing to those who have not returned the original questionnaire. All information, however, is strictly confidential and will be used in tabulated form only.

Your cooperation is greatly appreciated. We look forward to receiving your response soon.

Sincerely,

[Signature]

David R. Godschalk
Professor and Chairman

DRG:1m

Enclosure
Dear Mr. Doe:

You received a questionnaire over a week ago soliciting your opinions about the State of North Carolina's 208 water quality planning program. Your response to this questionnaire is very important to the successful completion of this research. If you have not already done so, would you please take the time to complete the questionnaire and return it to us in the self-addressed, stamped envelope we included with the questionnaire. Your cooperation is greatly appreciated.

Sincerely,

David R. Godschalk
Professor and Chairman
August 7, 1979

Mr. John Doe  
Rt. 1 Box 400  
Tar Heel, N.C. 27000

Dear Mr. Doe;

You were mailed a questionnaire within the last few weeks asking for your opinions on water quality issues and on your participation in North Carolina's "208" planning process. Your answers to those questions will be very valuable in designing future state water quality activities.

We have not yet received your response. In the event that you misplaced this questionnaire, we are enclosing a second copy. Would you please complete the questionnaire and return it to us as soon as possible. The questionnaire should take less than one-half hour to complete.

The questionnaire concerns recent events. Even if you completed a similar questionnaire for us last fall, your answers to these questions at this time are important.

We have enclosed a self-addressed, stamped envelope on which your name appears, solely for record keeping purposes. All information is strictly confidential and will be used in tabulated form only.

Your cooperation is greatly appreciated. We look forward to receiving your response soon.

Sincerely,

David R. Godschalk  
Professor and Chairman

Enclosure
REFERENCES


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North Carolina Department of Natural Resources and Community Development (1979a) *Water Quality and Wastewater Discharges: A Management Plan.* Raleigh, NC: N.C. Department of Natural Resources and Community Development, Division of Environmental Management.


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# Glossary of Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATF</td>
<td>Agricultural Task Force</td>
</tr>
<tr>
<td>CWA</td>
<td>Clean Water Association of Coastal North Carolina, Inc.</td>
</tr>
<tr>
<td>CWQP</td>
<td>Citizens Water Quality Project</td>
</tr>
<tr>
<td>DEM</td>
<td>Division of Environmental Management, North Carolina Department of Natural Resources and Community Development</td>
</tr>
<tr>
<td>DHS</td>
<td>Division of Health Services, North Carolina Department of Human Resources</td>
</tr>
<tr>
<td>EMC</td>
<td>North Carolina Environmental Management Commission</td>
</tr>
<tr>
<td>EPA</td>
<td>United States Environmental Protection Agency</td>
</tr>
<tr>
<td>NRCD</td>
<td>North Carolina Department of Natural Resources and Community Development</td>
</tr>
<tr>
<td>PAC</td>
<td>Policy Advisory Committee</td>
</tr>
<tr>
<td>TAC</td>
<td>Technical Advisory Committee</td>
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</tbody>
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AUTHORS PROFILES

DAVID R. GODSCHALK is Professor and Chairman of the Department of City and Regional Planning at the University of North Carolina at Chapel Hill. He has worked with citizen participation in planning practice and through his research and teaching. He is the author of a number of articles and reports on participatory planning.

BRUCE STIFTEL has followed the development of citizen involvement in environmental planning since Earth Day. He has worked as a planner for the U.S. Environmental Protection Agency, and as an activist for local and national citizen organizations. He is presently Research Associate in the Center for Urban and Regional Studies and the Department of City and Regional Planning at the University of North Carolina at Chapel Hill, and candidate for the Ph.D. in city and regional planning at that institution.